THE MIND AS A WEAPON: A PHENOMENOLOGICAL EXPLORATION OF HOW ELEMENTARY TEACHERS USE MENTAL IMAGERY TO PREPARE FOR ACTIVE SHOOTER EVENTS

by

Aaron R. Wheeler

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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ABSTRACT

The purpose of this transcendental, phenomenological study was to understand how teachers use aspects of mental imagery as a preparatory stress inoculation tool for potentially confronting active shooters at Truman Elementary School (pseudonym). The theory guiding this study was self-efficacy theory as theorized by Albert Bandura; self-efficacy theory rationalizes the way one views oneself will be the source of motivation in subsequent performance. In the context of this study, if teachers saw themselves as successful, then they were successful. Mental imagery was generally defined as visualization techniques that prepared teachers to mentally condition themselves to deal with active shooter events. The study took place at Truman Elementary School, and the participants consisted of 10 certified teachers. Prior to conducting interviews, site documents pertaining to current training for active shooter events were reviewed. Primary data were collected by interviewing 10 teachers, followed by a focus group session with the same participants. The collected data were analyzed using Moustakas' seven steps of phenomenological research, which included identifying key statements from the participants, clustering responses into themes, and the construction of textural and structural descriptions for each participant. Results from the study included the desire of participants to preserve life, participants desire for additional training, the need for participants to always be prepared, collaboration with other participants, and the outside influences of each participant, which aided in mental image formation. The study determined teachers used mental imagery as a stress inoculation tool for potentially confronting active shooters.

Keywords: active shooter, mental imagery, stress inoculation training, mental imagery scripts

Dedication

To the Fathers who impacted this journey. First to my Heavenly Father, who was with me during this entire journey and gave me the strength in the hardest of times. Thank you for guiding my life and giving me the abilities to accomplish what you have allowed me to accomplish.

To my Father, who set the example for me many years ago as he worked tirelessly to finish his doctorate to make a better life for his family. As a young boy, I watched him spend countless nights studying, typing his dissertation, and working long hours after we had all gone to bed. Thank you to my Mother who helped him during his career and has always been there to support me.

To my children, I hope I have set the same example for you that your Poppy set for me. It is my desire you will one day understand the sacrifices made by your Heavenly Father, your Father, and your Grandfather. You are all wonderful children with special gifts and amazing personalities. You can all achieve great things.

To my wonderful wife, Annie. You supported me during this entire journey. Thank you. You were an amazing help during many long hours and always encouraged me. Thank you.

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Thank you to my committee members, you were a tremendous strength during this journey. Dr. Craig Bailey, my chair, thank you for your support and prayers throughout this process. Dr. Swezey and Dr. Russell Yocum, thank you for your continued support and feedback throughout this entire journey.

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CHAPTER ONE: INTRODUCTION

Overview

The purpose of this chapter is to introduce the present study and provide an overview of the study. The purpose of this phenomenological study was to better understand how mental imagery was being used to prepare classroom teachers for violent encounters with active shooters. This study explored the mental rehearsals classroom teachers were already using to prepare for the threats they perceived to exist in their current social and workplace climates. The focal point of this study was to identify the resulting gap that is formed between the teacher's level of preparation, and the training that is offered to the classroom teacher to prepare for an active shooter event. The gap that appears when these differing images converge becomes the focal point for future active shooter training. To gain a better understanding of this phenomenon, this chapter explores the background of this area of research from a historical perspective. This chapter also outlines the problem statement, the significance of this study, research questions, the research plan, and definitions of key terms that assist the reader in better understanding this phenomenon.

Background

The prevalence of school shootings has become a mounting headline in the national media over the last 15 years. Blair and Martindale (2013) explained that from 2000-2010 there were approximately 28 school shootings. While school shootings have peppered the history of education in the United States for decades, the Columbine High School Shooting in Littleton, Colorado in 1999 served as the metaphorical jumping off point for the current era of training and preparedness for school shooting training (Blair & Martindale, 2013). The Governor's Columbine Review Commission (2001) indicated because of failures in preparedness and

incident coordination, future training resources should focus on interagency training, which reinforces joint training between state and local law enforcement agencies, federal law enforcement agencies, and local school administrators. State and local police agencies and federal law enforcement agencies have directed a significant amount of resources in their response to these incidents, but school administrators have not reciprocated their efforts. Therefore, classroom teachers, left with little training, have been forced to develop their own strategies for equipping themselves to deal with active shooter events. While these events do not personally impact every student and teacher in the United States, the occurrence of such events forces those employed within and serviced by the American education system, to devote time and resources to assessing and training for a similar event to occur at their school. Subsequently, those who are potentially targeted based on their status as an educator begin to mentally equip themselves to prepare for an event that may one day directly impact them.

The use of mental imagery was integrated into daily human activity long before researchers began to study this phenomenon and research ways in which mental imagery can be used as a training mechanism. It is instinctive human nature to think before acting and envisioning the action is a natural part of mentally preparing for and processing the action. However, as theorists such as Albert Bandura (1989) began to develop theories related to cognitive processing, other research focused on cognitive processing in the context of mental imagery. As theories transformed to application, researchers began to test the practical applications for mental imagery.

For decades, this body of research has focused on researchers studying mental rehearsals to examine the impact mental rehearsal exercises have on athletic performance (Frank, Land, Popp, & Schack, 2014). Following the success of athletes who used mental rehearsals for

performance preparation, the field of mental imagery expanded to address other disciplines (Colin, Nieuwenhuys, Visser, & Oudejans, 2013). Researchers have further exploited this process to make task execution more proficient and have done so by permitting participants to visualize their performance before they execute it and, in some cases, applying movement in conjunction with imagery.

The widespread effects of the Sandy Hook Elementary School shooting spurred legislators to explore alternatives for protecting their schools further. A handful of states, to including Missouri, introduced legislation that would allow school districts to implement active shooter training as part of district-wide training. Missouri Revised Statute 170.315, Active Shooter and Intruder Response Training for Schools Program (ASIRT), allows districts to include active shooter training, including simulations, for all faculty and staff. The training must be instructed and facilitated by sworn law enforcement officers (ASIRT, 2015). The training prepares teachers further for an active shooter event before it occurs.

An overwhelming disagreement for this study might be based on the premise and flawed conclusion that it is not the duty of a classroom teacher to develop a combative mindset that would prepare them to react in an efficient manner that would protect themselves and their students from an active shooter. However, the repeated engagement of active shooters at a variety of educational institutions would indicate otherwise. The reality is the number of school shootings is not decreasing. The alternatives to reducing or preventing these shootings are costly, ineffective, and far from implementation. The gap in the literature is formed when the literature pertaining to active shooters attempts to merge with mental imagery. Aspects of mental imagery and mental rehearsals have related to preparation for law enforcement officers and athletes as they prepare for stressful events. However, these training techniques have rarely

been disseminated to include novice prevention training programs, such as training teachers to react to active shooter events; therefore, the literature in this area is lacking.

Situation to Self

This study was motivated by this researcher's desire to prepare teachers to respond appropriately to active shooter events. This researcher best fit into this study by first assessing philosophical assumptions, which are rooted in epistemology and are further centered on a pragmatic worldview. Creswell (2007) characterized pragmatism, in part, as real-world-oriented and problem-centered. In the context of this study and this researcher's own experience, this researcher has observed how real-world training is necessary to save lives during violent situations. When real-world training is unavailable, then self-taught protection using mental imagery becomes a beneficial means of learning. This researcher has used mental imagery to train and prepare for tactical situations. During this study, this researcher was employed as a criminal investigator for the federal government specializing in investigations related to the reduction of violent crime in the United States. This career field has influenced this researcher's worldview through witnessing the violent acts perpetrated by criminal elements, increasing the desire to lessen the impact these crimes have on society. This worldview and background have furthered this researcher's desire to protect students and educators from violent encounters.

Problem Statement

The problem is that active shooter training for teachers has not been widely implemented in the way it would benefit teachers the most. Because of a lack of initiative at many levels and a lack of funding at other levels, teachers are forced to draw upon their own cognitive training to prepare for active shooter events as they have self-identified a deficiency in training. This lack of training for teachers has not been addressed properly in the current literature, as the extant

literature has merely focused on training, tactics, and techniques for law enforcement officers and athletes. The one conclusive fact that can be drawn from the literature is that fear is the result of workplace violence (Wilson, Douglas, & Lyon, 2011).

Mental imagery is a widely employed technique used by athletes, police officers, and soldiers to prepare for traumatic events and is a common equipping mechanism used to rehearse for unexpected encounters or events. Colin et al. (2013) demonstrated during their research how the use of mental imagery by police officers assisted them in shot placement and confidence during simulated lethal encounter scenarios. Unfortunately, research such as this could not be directly applied to teachers, as they are not even trained to react in a novice manner, nor are they usually armed. Therefore, the most logical step was to examine the training of novices in performing tasks when exposed to and equipped with mental imagery training.

Frank et al. (2014) conducted a small, but generalizable study when they trained novice golfers using mental imagery. The researchers found mental imagery training did assist the novice participants in performing a task more proficiently (Frank et al., 2014). Neither expansive training budgets nor large-scale exercises are needed to train teachers in the use of mental imagery. As detailed by Greene and Greene (2012); events and thoughts, both real and imagined, can stimulate the body to respond to a stressful event.

This problem is more clearly defined by not simply reviewing the totality of the current research related to school crisis preparedness and mental imagery research, but rather focusing on the lack of connection between these two bodies of research. By establishing a link between these two fields, a further gap in active shooter training was identified, as active shooter training directed toward teachers has not kept pace with the influx of active shooter events. The gap that was identified promotes better training for teachers and law enforcement officers in the future.

Purpose Statement

The purpose of this phenomenological study was to understand the use of mental imagery by elementary teachers when preparing for active shooter events in a school setting. Mental imagery was a theory proposed by Stephen Kosslyn (Kosslyn, Thompson, & Ganis, 2006) in the 1970s based on the premise that an image created in the mind is available for subsequent recall. At this stage in the research, mental imagery was generally defined as the experience of "seeing with the mind's eye," and the creation of a mental image being created when the actual stimulus is not present (Kosslyn et al., 2006, p. 4). The focus of this study was to assess the formation of these images within a teacher's mind.

Significance of the Study

This study was important because it sought to replicate the geography, demographics, and socioeconomic characteristics of many of the schools where shootings have occurred during the last 15 years. Many of the school shootings that have transpired during this period have occurred in suburban or rural, affluent, areas of the country not commonly associated with extreme violence (Blair, Nichols, Burns, & Curnutt, 2013). This aspect of the study was significant, as teachers in this setting should be able to identify with their peers who have faced similar adverse events. Workplace violence has consistently been found to lead to fear, and teachers who are victimized may experience post-traumatic stress disorder (Wilson et al., 2011). Educators who enter the field should be prepared to teach, not engage in combat. Additionally, a teacher's career should not end because of exposure to one stressful event with which they were not appropriately equipped to deal.

This study further sought to gain the insight of teachers whose knowledge of active shooter training was limited or nonexistent. The key component of the study was to see the

thought processes and use of mental imagery by novice participants and teachers who may have received a minimal amount of exposure to this growing epidemic. This study was also significant because it sought to identify the strengths and weaknesses of current active shooter programs while offering insights into correctable deficiencies. The investigation into the school shooting at Virginia Tech revealed failures on many fronts and reshaped many programs and procedures that had gone unchanged since the Columbine school shooting (Virginia Tech Review Panel, 2007). The results of the present study are significant, as the resulting changes could save lives and reduce the stress levels of teachers that may currently feel ill-prepared for an active shooter event.

Research Questions

The current body of literature related to mental imagery is centered upon athletic training and simple task training, which is measurable in a variety of settings. The extant literature supported the effectiveness of using mental rehearsal techniques to prepare for stressful events such as athletic performances and armed encounters by police officers (Frank et al., 2014). However, it was more difficult to measure a cognitive process that is a unique experience individualized by a select population. Therefore, the research questions involved in this study must focus on the usefulness of mental images, a description of the mental images, and the resulting effectiveness of mental imagery in the school setting.

The central question of this study was: How do teachers use aspects of mental imagery as a preparatory stress inoculation tool for confronting an active shooter? The following research subquestions supported the central question and encompassed the aforementioned areas of interest.

Subquestion A: What are the mental imagery rehearsals utilized by teachers when preparing for an active shooter event? This question stems from the self-efficacy theory and dual coding theory. Self-efficacy theory can be more simply defined as confidence in performing a specific task and the self's motivation to develop this confidence beforehand (Bandura, 1999). Teachers need to have self-developed confidence prior to encountering an active shooter. Furthermore, dual coding theory supports this question, as Clark and Pavio (1991) explained that the development of mental images aids in learning. Additionally, a number of studies have focused on the use of mental rehearsals in preparation for athletic performance (Colin et al., 2013).

Subquestion B: What are teachers' emotional responses to mental imagery preparation associated with active shooter events? This question coincides with the anxiety or fear associated with preparation for an active shooter event. As teachers experience fear associated with the creation of mental imagery in their own lives, or the realization they are preparing for a dangerous event, fear and anxiety enter into the experience. As found in the literature, this level of fear and anxiety can be reduced through SIT. Meichenbaum (2007) explained how SIT reduces the arousal levels that are triggered by powerful stressors. By examining and identifying the emotional responses of teachers when preparing for an active shooter event, it is possible to implement SIT tools, which will reduce this level of stress. This research question assisted in determining what these emotional triggers are.

Subquestion C: What background information, personal and professional, influences teachers' use of mental imagery? This question relates to image formation, and the factors that aid in the creation of these images. Research related to expert and novice performance best grounds this question within the research. By factoring in background information, it allowed

this researcher to determine if the participants have external influences that are impacting their image creation. For instance, participants who have previously been involved in a violent event or have prior military or law enforcement experience may have a more extensive imagery database from which to draw. Those participants with extensive backgrounds may have already introduced mental imagery scripts into their minds, which would increase their ability to recall images and create a correct image (Louridas, Bonrath, Sinclair, Dedy, & Grantcharov, 2015).

Subquestion D: What internal and external imagery factors influence teachers' perceptions of violence in their schools? This question further explores the participants' backgrounds from the perspective of internal and external exposures. This type of influence is grounded in dual coding theory, as dual coding theory relies on triggering mechanisms to recall images (Paivio, 1970). External and internal factors may also be the result of the participant previously "practicing" the task prior to being exposed to it in this study. The shooting performance study conducted by Colin et al., (2013) examined the benefits of participants practicing mental imagery before taking part in an experiment.

Subquestion E: What are the teachers' motivational sources for the development of mental imagery and subsequent use? This question examined what motivates participants to develop mental imagery scripts and images related to an active shooter event. This motivation was likely based on Bandura's (1989) self-efficacy theory, as it relates to the participants' desire to survive and have confidence in their own abilities to react in a certain manner.

Definitions

The following terms were pertinent to the study and allow the reader to fully understand this area of research, as many of these terms may be unfamiliar:

- *Active shooter*— "An active shooter event involves one or more persons engaged in killing or attempting to kill multiple people in an area occupied by multiple unrelated individuals. At least one of the victims must be unrelated to the shooter" (Blair et al., 2013, p. 50).
- *Mental imagery scripts*—Instructions used to modify or guide a person's mental images (Lang, 1979).
- *Mental imagery*— "Seeing with the mind's eye" (Kosslyn, Thompson, & Ganis, 2006, p. 4).
- *SIT*—a set of operations that aid in anxiety management (Meichenbaum & Deffenbacher, 1988).

Summary

Protecting teachers and students in the classroom is of paramount importance, as training and preparation in this area of education not only protects those who are directly impacted by an active shooter event, but also lessens the stress for those who perceive this threat will one day impact them. The practicality of training every teacher to be an expert in responding to an active shooter event is not feasible, but preparing teachers to cope with such an event through the use of mental imagery training is a plausible task. By assessing the images currently being used by teachers to prepare for an active shooter event, districts can better train teachers in this area by ensuring teachers are "practicing" with the correct mental image as they prepare.

This chapter provided an overview of why this phenomenon is noteworthy and should be studied. The overview of the background related to school shootings provided the reader information pertaining to the historical significance of this phenomenon. The problem statement, the central questions, the research subquestions, and the research plan outlined in this chapter aid

the reader in Chapter Two as the literature review identifies a gap in the literature and lends further support to the aforementioned central question, research subquestions, and research plan.

CHAPTER TWO: LITERATURE REVIEW

Overview

A review of the literature related to the use of mental imagery by classroom teachers to prepare for traumatic events showed limited research that needs to be explored to identify training deficiencies related to active shooter events. While the lack of exploration in this area of study reveals an expansive gap in the literature related to this phenomenon, the idea of preparation using mental imagery is not a new area of research. However, most research focused on mental imagery has focused on using imagery as a preparatory tool. The use of mental imagery has either focused on training for novice participants performing simplistic tasks or focused on mental imagery used by members of the military, law enforcement, or athletes. The gap in the literature is identified when mental imagery use converges with preparing classroom teachers to adopt a combat mindset for surviving a violent encounter.

The following review of the literature focuses on merging theories, the novice studies associated with mental imagery use, and the studies that have focused on "expert" use of mental imagery in highly stressful events, to comprehensively assess the current state of the literature related to practical applications of mental imagery use. The basis for this rationale is that teachers who are involved in traumatic events are often novice in their training, but will be forced to perform in a situation that would test the mettle of even trained experts such as law enforcement officers or members of the military. The review also highlights studies that have focused on SIT, the use of mental imagery scripts, and performance enhancement related to mental imagery, all of which support the foundational basis for this study.

While this literature review was directed at previous studies related to active shooters and mental imagery, the inclusion of previously documented, yet unexplored, data collected from

various school shootings is necessary to identify the gap in the literature fully. In preparing this literature review, several primary sources were reviewed to identify the actions of those involved in school shootings. Many of these sources fill in the gaps that separate the academic study of this topic and phenomenological research conducted as part of this study. The information extracted from these primary sources is best documented in this chapter as the information gleaned from these interviews, and firsthand accounts fall within the scope of many of the subheadings found in this chapter. It was the intent of the writer to use these interviews to bridge the gap between academics, the phenomenon that was being explored, and the extant academic research.

Without notable and extensive research related to this topic in the realm of education, it was necessary to review the quasi-related research that has been conducted in relation to school shootings in the form of raw data collected during countless interviews that have been conducted in the aftermath of school shootings. Many of these interviews capture insight from teachers, victims, and responding officers that momentarily explored the infancy stages of phenomenological research. While there have been a number of school shootings in the last 15 years, there are 3 events that have intensified the need for further research related to school shootings. Virginia Polytechnic Institute is renowned for experiencing one of the most-deadly school shootings in American history. The Columbine High School shooting is known for changing the way law enforcement officers respond to active shooter events and, at the time, was the most-deadly active shooter event to occur within the confines of a K-12 setting. Finally, the mass shooting at Sandy Hook Elementary School shocked the conscience of the American people and reignited the debate over gun control and making schools safer.

Theoretical Framework

The theoretical framework related to the use of mental imagery is drawn from three interrelated theories: self-efficacy theory, dual coding theory, and mental imagery theory. The first theory explored is self-efficacy theory. Self-efficacy was developed by Albert Bandura (1977) and was derived from Bandura's (1977) early social cognitive theory. The second theory explored is the dual coding theory as outlined by James Clark and Allan Paivio (1991). The final theory explored in this study, mental imagery theory (Kosslyn et al., 2006), offers a direct connection to the present study. All three of these theories add a unique dimension to the present study, as they form the foundation for mental-imagery-based studies and exploration.

Self-Efficacy Theory

Within the context of this study, the instinctive motivation of a teacher to survive in a life or death situation is a key aspect of mental imagery formation. Albert Bandura (1989), the founder of self-efficacy theory, explained that human motivation is a process embedded in the cognitive, and a person's motivation is developed beforehand during cognitive processing. Self-efficacy can be more simply viewed as "a person's estimate of his or her capacity to orchestrate performance on a specific task" (Gist & Mitchell, 1992, p. 183). In reference to this study, a teacher must believe that he or she can survive a violent encounter. To further summarize Bandura, (1989) Gist, and Mitchell (1992), self-efficacy is the confidence people place in their own abilities, which can range from simplistic tasks to complex life and death situations. The present study focused on the latter, and therefore, the confidence teachers have in themselves cannot only help them survive a violent encounter but help others as well.

Bandura (1989) further added that a person's belief in his or her own abilities will directly impact his or her responses to stress. Bandura's theory of self-efficacy theorizes that

people are motivated to complete tasks based on how they view themselves, which reflects the belief they have in their own abilities (Bandura & Locke, 2003). Bandura and Edwin Locke (2003) explained that if people see themselves as successful, then they will be successful. Beyond a theoretical standpoint, studies have indicated that self-efficacy is a predictor for improving work performance (Gist & Mitchell, 1992). Within the context of the present study, self-efficacy theory was viewed as the guiding theory, as it is critical teachers believe in themselves and use imagery that instills a winning spirit in them. Gist and Mitchell (1992) found that cognitive model training enhanced the subject's self-efficacy, as mentally focused training enables one to better believe in one's own abilities.

Bandura and Robert Wood explained (1989) "Perceived self-efficacy influenced performance both directly and through its strong effect on personal goal setting. Personal goals, in turn, enhanced organizational attainments directly and by means of the mediation of analytic strategies" (p. 813). Likewise, in the context of an active shooter situation, victims exposed to violent encounters often explain that they decided they wanted to live so they could see their families again. Creating a goal that helps a person survive is critical, as it allows the person to visualize an outcome. By introducing this goal setting during training, participants begin to self-generate this focus prior to a deadly encounter, thereby, more quickly focusing on their immediate survival goals rather than their immediate fear and incapacitation.

Bandura and Locke (2003) further theorized that self-efficacy is a cognitive process people use to formulate their thoughts based on previous actions and corresponding results. In relation to the use of mental imagery, if teachers and police officers have visualized an active shooter event, and viewed this event as one in which they survive, then they are motivated to survive and win during an actual shooter event. Bandura (1989) supported this notion when he

stated, “A major source of human motivation is rooted in cognitive activity” (p. 729). More simply explained, if people believe in their minds that they can succeed at a task, then they will perform to the degree they believe they are capable. Several key concepts were identified from a review of self-efficacy theory and are critical to understanding mental imagery. First, cognitive motivation in the context of self-efficacy relates to the driving force that guides self-thought and subsequent action, which is based on derived motivation and self-thought (Bandura, 1989). The second concept explained by Bandura (1989) is the concept of visualization, which is described as a cognitive mental process of the mind in which the person focuses on imagining an event before it occurs. This concept is the focal point of this study and demonstrates the theoretical foundation for participants using mental imagery as a preparatory tool for traumatic events.

The final concept derived from self-efficacy theory is the concept of self-appraisal. Bandura (1989) outlined self-appraisal as the act of assessing one’s own abilities, an informal quantitative tool used for assessing one’s abilities before carrying out a task. People must assess their own abilities before they feel comfortable performing a certain task. It is critical that potential victims make this assessment prior to finding themselves in the midst of a violent encounter. Self-assessment prior to an engagement allows a victim to focus on the immediate threat rather than taking time to rationalize the predicament and determine what he or she can do about it.

Dual Coding Theory

The second theory to be examined was the dual coding theory as theorized by Clark and Paivio (1991). While this theory is not as deeply rooted in the present study as self-efficacy theory, dual coding theory more precisely explains the construction of imagery within the mind. Clark and Paivio’s (1991) dual coding theory is based on the premise that the development of

mental images aids in learning. Furthermore, the images created by the cognitive process serve as symbols, which are easier to remember and become available for recall at a later time (Clark & Paivio, 1991). Quick and accurate recall of information is critical during a stressful event. As information is received, both verbal and nonverbal, the cognitive process creates images or symbols that are easier to process (Clark & Paivio, 1991). While the transfer of data differs based on the medium, the recall can either be generated by seeing the image or thinking of the term or concept (Clark & Paivio, 1991). The duality of the concept makes it easier for a person to remember something, as the information is following two separate channels within the schemata (Clark & Paivio, 1991).

Dual coding theory was critical to the present study because it explains the need to ensure the images created by teachers are correct when called upon. The theory further explains how image recall can either be caused by seeing the image, thinking of a term, or a triggering mechanism related to the event (Clark & Paivio, 1991). In the context of this study, this theory was useful, as it connected the need for triggering mechanisms with preconceived images. For instance, based on Clark and Paivio's (1991) theory, a teacher could recall an image based on hearing a lockdown announcement or by seeing an active shooter event take place. Regardless of the point of creation, the teacher is equipped to recall the image based on several cognitive approaches.

Mental Imagery Theory

Mental imagery theory was established and identified as a theory in the 1970s, but failed to receive rapid recognition as a theory. Mental imagery was slow to gain widespread support because of the private nature of the theory, and therefore prevented researchers from understanding something that could not be assessed objectively. Mental imagery could be more precisely defined as "seeing with the mind's eye" (Kosslyn et al., 2006, p. 4). This phenomenon

had been experienced by a large percentage of the population, but researchers were having difficulty studying the physiological aspects of an event that could not be easily described from a structural perspective.

Mental imagery focuses on developing images based on the person's response to a stimulus then using these images at a future time. This "future time" could be seconds after the image is formed, or recalled months or years later. A mental image is formed when the representation or image is present in the mind, but the stimulus that invokes the image is not actually present (Kosslyn et al., 2006). Therefore, mental imagery research involves examining a cognitive process of the mind and subsequent imagery that is dependent on responses from research participants. These images are a continual part of people's lives, as they aid in recalling where one parked a car at a supermarket or being able to rehearse something in one's mind before physically doing it. However, before an image is recalled, it must first be created within the cognitive process. However, once these images have been created within the mind, they are present and preserved for future recall (Kosslyn et al., 2006, p. 4). This ability to recall the image at a future time is the cornerstone of mental imagery theory and the basis for this study.

While mental imagery focuses on the visual interaction with the mental schemata for future recall, it is all the senses that play a role in image development. Kosslyn et al. (2006) further explained, "auditory mental imagery is accompanied by the experience of 'hearing with mind's ear,' and tactile imagery is accompanied by the experience of 'feeling with mind's skin,' and so forth" (p. 4). This concept of not only identifying the eyes as a sensory organ but the understanding that other sensory organs are essential in developing mental imagery provides a greater understanding of how to prepare teachers for an active shooter event. Much like other functions of the human body, imaging requires the generation, formation, maintenance of

images, is dependent on the person's imagery ability, and the performance of these image modifications will vary (Kosslyn, 1994; Williams & Cumming, 2011). The development of a mental image is not limited to vision but utilizes all a person's sensory organs, which is a critical aspect of training subjects that may encounter stressful events.

There are multiple functions within the cognitive process occurring whenever an image is created; Kosslyn et al. (2006) identified and differentiated between two of these key processes of mental imagery, the differences between mental representation and mental process. A "mental representation" is a description at the functional level of analysis of how the brain stores information. Whereas, "a 'mental process' is a description at the functional level of analysis of how the brain interprets or transforms existing mental representations into new mental representations" (Kosslyn et al., 2006, p. 9). There is increasing evidence derived from research that indicates a relationship exists between imagery, behavior, and the cognitive outcome of these two emerging physiological processes. These could be influential in enhancing exercised behavior as the rehearsed image moves to realized behavior (Duncan, Hall, Wilson, & Rodgers, 2012). Therefore, mental imagery moves from the cognitive function and influences behavior modification or physiological responses to the presented stimuli developed because of the imagery.

Geoffrion et al. (2012) described mental imagery as the "cognitive rehearsal of a task in the absence of overt physical movement" (p. 1040). The rehearsal aspect of mental imagery was an essential point of the present study, as the transformation from cognitive rehearsals to physical movement is detailed in many of the related studies reviewed later in this writing. Geoffrion et al. (2012) further explained that when mental imagery techniques are applied to the learning of a motor task, the process activates synaptic connections in the motor frontal cortex of

the brain that are normally activated by actual physical practice (Geoffrion et al., 2012, p. 1040).

Moran, Campbell, Holmes, and MacIntyre (2012) suggested, "According to researchers, mental imagery has at least three key characteristics: it is multi-sensory, can be classified into different types, and shares certain neural substrates and cognitive mechanisms with other mental processes" (p. 96). The multi-sensory aspect of mental imagery is alluding to the fact that while imagery formation is, in fact, a "picture," it is the totality of the person's being that helps to formulate an image that is recallable and functional for the specific person and even that is depicted by the image. Gist et al. (1989) related, "An alternative form of modeling is based on a process of attending (or "listening") to one's thoughts as one performs an activity and utilizing self-instructional thoughts (or "statements") to guide performance" (p. 788). The idea of using mental imagery is taking the concept of modeling behavior one step further, as the subject is modeling a behavior to train himself or herself. However, if this image is incorrect from the onset, then the practiced image will also be incorrect.

One method of developing a correct image is by witnessing an event related to the image for a person to develop the needed mental attributes that assist in forming a correct image. Witnessing an event in the context of active shooter training is often the result of training or exposure to media depictions related to active shooter incidents. As defined by Gist, Schwoerer and Rosen (1989), "Behavior modeling is a process in which a live or videotaped model demonstrates the behaviors required for performance. Trainees then imitate the model's behavior in practice or work situations" (p. 884). It is critical in relation to active shooter training that procedures and techniques be demonstrated or modeled correctly so that subsequent performance accurately replicates the standard presented during training. Incorrect training can result in an ineffective outcome.

Self-efficacy theory, dual coding theory, and mental imagery theory all provided a theoretical foundation for this study and were further demonstrated within the context of the following studies. The selected related literature found in the remaining portion of this chapter further demonstrates the use of mental imagery in a variety of studies. Each of these studies helps to identify the gap in the literature and further explains the need for the current study.

Related Literature

The preceding paragraphs outlined the theories that support this study. The following paragraphs provide a review of the extant literature that aids in the understanding of the current study. It is important to understand how images are selected, the difference in mental imagery used by novice versus experienced participants, and the use of SIT. Furthermore, this section examines the use of mental imagery scripts as a means of preplanning mental rehearsals and cognitive tasks that lead to increased performance enhancement. The final areas of related literature that were reviewed are school safety plans and a review of the Missouri Active Shooter and Intruder Response for Schools Program.

Selection of a Mental Image

The aforementioned theories all influenced early research related to mental imagery. The research also further simplified the explanation of how subjects create the image and how a subject maintains an image. Sackett (1934) utilized a maze experiment to determine the methods by which subjects retained imagery they had created. Sackett (1934) remarked:

> We may conclude that there is a strong tendency for subjects to be less variable in their reproductions of a maze after a week of drawing the pattern than immediately after learning. It seems probable that the drawing rehearsal is accompanied by a settling upon one of the several possible symbolic representations as the most accurate one. (p. 390)

The reliance on a settled upon image is critical to this study, as a teacher's reaction is based on a mental image he or she has created at some point during his or her life. The image is either correct or incorrect and is either based on being properly trained, a lack of training, or an image they have settled upon through the use of these exposures. Paivio (1970) explained, "Images are regarded as symbolic processes which are linked developmentally to associated experiences involving concrete objects and events" (p. 243).

Novice Versus Experienced Participants

The preciseness of the selected image and the reliability of the chosen image are largely dependent on the prior knowledge possessed by the study participant. A review of the literature clearly separates the participants involved in mental imagery studies into one group that could be considered novice and one group that could be considered professional, or at least experienced in the field. An essential aspect of the present study related to differentiating between the levels of expertise, as the teachers would be considered novice participants because of their lack of perceived training in tactical situations.

Novice Participants

Novice participants were examined first as a means of demonstrating the quality of the image associated with the participants' background. The examination of novice participants was an essential aspect of this study, as teachers are experts in the field of education, but novice when involved in an active shooter situation. Realistically, this is what is desired in a learning environment, teachers not warriors. Unfortunately, teachers have become unwilling participants on an ever-evolving battlefield, which cannot be planned for or prepared for in the same manner a teacher prepares a lesson plan. While the argument could be made that some teachers may have gained combative skills and stress-reducing skills as members of the military, as college athletes, or through experience in martial arts; most teachers have not acquired the same skills as

a police officer, soldier, or street combatant. A teacher's exposure to an active shooter is probably the first exposure to a violent event in which he or she is not immediately able to disengage and merely pose as a witness. However, with proper training, teachers can become novice participants that have at least been exposed to a traumatic event they might experience.

Many studies related to mental imagery have focused on the use of mental imagery techniques by athletes. Athletes are often used for studies, as mental imagery can be paired with physical movement to demonstrate mental practice with corresponding physical action. However, many mental imagery studies utilizing athletes do not support the use of novice participants, which was a focal point of this study. Frank et al. (2014) found that early research related to mental imagery determined there are differences in the images used by experts compared to novices. Classroom teachers who are considered novice in relation to the exposure to violent encounters are more closely related to the novice research participant than the trained athlete.

For instance, a study that involved throwing a ball as a task incorporated recreational players from a netball league that presumably had some degree of expertise in throwing a ball and other participants that were identified as having little to no experience (Kremer, Spittle, & Malseed, 2011). The researchers in this skill-based study selected 90 participants from a local recreational league but also included support personnel who were not members of the actual teams. All the participants assigned to the intervention group increased their performance in a simple athletic task while using mental imagery (Kremer et al., 2011). Likewise, these participants could be considered novices, as throwing a ball is a simple skill that is not typically assessed as a "professional sport." While this selection criterion may seem insignificant, it does

point to the novice status of these participants, and the ability of a novice participant to increase his or her skills in a short amount of time using mental imagery (Kremer et al., 2011).

The field of medicine has allowed researchers to move beyond athletic-based mental imagery studies to study how mental imagery is used to prepare medical professionals in preparation to perform medical procedures. For example, researchers used mental imagery techniques to prepare resident surgeons to prepare for an operation and concluded that allowing the intervention group to utilize visualization techniques did not result in increased surgical ability, but did provide students with more confidence (Geoffrion et al., 2012). Geoffrion et al. (2012) added that while the study did not achieve the desired results, it was an effective means of building self-confidence in novice resident doctors (Geoffrion et al., 2012). Geoffrion et al. (2012) determined that the addition of movement to mental imagery greatly enhances the ability of participants to trigger additional body systems when using mental imagery to prepare for a stressful event (Geoffrion et al., 2012).

One aspect of mental imagery that is often overlooked is the influence of mental imagery use in relation to actual or perceived performance. Whiting and Dixon (2013) examined the use of mental imagery among a test group of gamblers. Whiting and Dixon (2013) found the addictive qualities of gambling could be satisfied by having the participants engaging in mental imagery exercises that replicated actual gambling (Whiting & Dixon, 2013). The results indicated mental imagery filled the need for repetitions of an addictive behavior for those who imagined gambling (Whiting & Dixon, 2013). This imagery exercise reduced the actual rate at which subjects gambled when presented with the opportunity (Whiting & Dixon, 2013). The participants used by Whiting and Dixon (2013) were not recruited from gambling-related forums and, therefore, could be considered as novice participants to some degree. To draw a

conclusion between these two studies it should be noted that both sets of participants were considered novice, and in both studies, it was found that adding physical motion to the imagery use increased the potency of the imagery.

To examine the issue of experts versus novices further it is necessary to review a recent study conducted by Frank et al. (2014). The focus of this study was on novice participants. This is a critical bridge to the current study, as the teacher participants would be considered novices. Frank et al. (2014) found novice participants who used mental imagery before attempting a task performed better than those who did not use mental imagery and the added association of physical performance along with the use of mental imagery prepared participants to perform even better. The conclusion that can be drawn from this study is minimal exposure to mental imagery can assist even a novice participant, and enabling the participant to act out the task prepares the participant even more than imagery alone.

Novice Reaction to an Active Shooter

While a few novice studies have been conducted related to athletic events and other skilled activities, none have specifically tested participants outside of the laboratory setting. Therefore, it is necessary to examine real-world events that consider the experiences of actual active shooter events. While a majority of active shooter events occur in primary and secondary schools, some of the most infamous school shootings have taken place in institutions of higher education, such as the Virginia Tech shooting in 2007. Most, if not all, of the students and teachers involved in this event could be considered novice participants. The teachers and students victimized at Virginia Tech had no intention of combating an active shooter when they went to class and were reacting to an unknown set of circumstances when confronting the shooter who entered their classrooms. The tragic benefit of a higher education active shooter

event is the clarity with which victims and witnesses can recount the event. These valuable data can be analyzed to save future lives.

In an interview with Kristina Anderson, a student at Virginia Tech on April 16, 2007, she stated that when the SWAT team first made entry into her room, she recalled the officers saying, "there are a lot of blacks in here," and then realized they were indicating triage codes for assessing the victims (The Koshka Foundation, 2012). Anderson recounted how her teacher went to the door, looked outside, and then shut the door and instructed students to call 911 (The Koshka Foundation, 2012). The reaction by the SWAT team demonstrates a well-rehearsed, planned event, which has been practiced repeatedly, while the reaction by Anderson and her teacher are novice in nature, which should be expected, as that is the training and skills with which they had been provided. Both the SWAT team and the victims responded to the level they had been trained to perform. However, prior interaction between these two communities might have enabled both groups to understand better the roles and responsibilities of the other.

Other students at Virginia Tech, such as Derek O'Dell and Katelyn Carney, used their bodies to keep their classroom door shut, preventing Cho from entering their classroom (Maraniss, 2007). In this situation, a quick response by novice participants in a deadly encounter provided an expert response that saved the lives of others. Since these data were collected from primary sources and to the writer's knowledge have not been further synthesized, it is unknown if O'Dell and Carney had ever anticipated how they would react during a deadly encounter with a shooter. If students could react in this manner with no training, it is foreseeable that students with prior training and subsequent mental rehearsals could also react in this manner.

Experienced Participants

Few of the studies examined as part of this literature review have a direct correlation to the present study; however, the shooting performance study conducted by Colin et al., (2013) demonstrated the positive use of mental imagery and positive benefits of incorporating mental imagery as a training tool. Colin et al. (2013) determined during a pretest/posttest quantitative study how law enforcement officers who practiced mental imagery prior to the posttest performed better on the posttest. The experiment consisted of police officers shooting targets with simulated rounds, and then using mental imagery to visualize correct shot placement, followed by a posttest in which they shot again (Colin et al., 2013). The participants were also exposed to stressors to increase their anxiety during the shooting exercise (Colin et al., 2013). Colin et al. (2013) found the subjects who used mental imagery techniques in between tests and focused on positive goal completion were more likely to be successful and had greater resistance to anxiety impacting their performance (Colin et al., 2013).

While the shooting performance study does offer a positive means of predicting the use of mental imagery use in stressful situations, it also poses the question of whether expert or professional participants perform better than novice participants. In the shooting performance study, the participants were professional law enforcement officers, performing shooting tasks, something they should have some degree of expertise in performing. Police officers who receive standardized training have been able to reduce stressful responses and maintain their overall physical and mental abilities (Arnetz, Arble, Backman, Lynch, & Lublin, 2013). Police firearms training is a skill taught during basic police training and continues throughout an officer's career. This repetitive training increases an officer's confidence but must continue at regular intervals to keep an officer's skills reliable.

Reduction of stress through proper training is the paramount goal of introducing mental imagery techniques to classroom teachers and thereby enabling them to fight through stressors during an actual event to protect their students and overcome an unpredictable situation. A key component of the shooting performance study was that the participants focused on successful task execution (Colin et al., 2013). Mental images that are focused on a successful outcome will reduce the stress felt by teachers and enhance their preparedness if teachers are exposed to an active shooter event. Mental imagery alone enhances one's ability to perform accurately during a stressful event. This was an important aspect of the current study, as it demonstrates how with minimal mental imagery training, a person has the ability to modify performance. Furthermore, it is important to note how task completion, or "outcome" as previously mentioned, is a critical aspect of this study. Persons involved in an active shooter situation need to possess a winning mindset that focuses on surviving the event. While it is difficult to measure the benefits of mental imagery used in a training environment, the assessed qualities can be reviewed when realistic training is conducted.

Arnetz et al. (2013) emphasized the importance of realistic training when stating, "The theoretical underpinning of this training model was to enhance the officers' sense of control over stress-provoking situations by rendering the incidents more predictable and by providing a psychological/tactical repertoire for the officers" (p. 80). The components of the realistic sessions were described and included relaxation training, the use of guided imagery to facilitate imagined exposure to potentially stressful on-the-job incidents, and the mental practice of police tactical skills (Arntez et al., 2013). Realistic training allows participants to develop a more accurate mental image, which can be relied upon during a stressful situation.

The Arnetz et al. (2013) study was significant, as it was the first research that focused on prevention measures for high-risk professions and further analyzed the benefits of training and intervention with this population (Arnetz et al., 2013). Arnetz et al. (2013) found prevention training could benefit participants for as long as two years, which led researchers to believe preventative training that utilized imagery training might enhance the resiliency of first responders for the duration of the benefited period (Arnetz et al., 2013). This research reinforced the point that even limited training could benefit teachers for years to come without taxing the budgets of local school districts. Furthermore, Arnetz et al. (2013) implemented standardized training that would serve as a prevention tool for reducing the negative impact of job-related stress. This conclusion is also critical, as it implies the need for standardization among training programs to achieve the desired results.

SIT

The shooting study introduced the concept of stress-related performance. Further studies have attempted to examine how to inoculate the human body to these stressors. SIT is based on the premise that if a person has been previously exposed to stressful events or training, then he or she is more likely to be conditioned to deal with stressful events in the future. Several of the studies examined as part of this literature review surmised how SIT could be applied in part using mental imagery techniques and training. Meichenbaum (2007) explained how SIT reduces arousal levels, which are triggered by powerful stressors, which can leave a person helpless. However, by participating in SIT, the participants become inoculated from shutting down when exposed to powerful stressors (Meichenbaum, 2007). Tourane et al. (2011) wrote, “SIT enables individuals to manage stressors when they occur at a low level and increases their ability to manage them under more intensive acute, chronic demands” (p. 102). By reducing the body’s

response to a stressor through exposure, it is likely the person will be more apt to be able to transition from a state of shock to a state of reacting to the situation.

SIT seeks to increase the level of anxiety during training to reduce the level of anxiety during an actual event. In early research, Estes and Skinner (1941) explained, "Anxiety has at least two defining characteristics: (1) it is an emotional state, somewhat resembling fear, and (2) the disturbing stimulus which is principally responsible does not precede or accompany the state but is 'anticipated' in the future" (p. 390). Repeated exposure to stressors through training allows confidence to replace fear, and allows teachers to feel less anxiety of "anticipated" events in the future.

Estes and Skinner (1941) concluded it is difficult to account for behavior that is based on a future event or is anticipated, since the potential stimulus has not yet occurred, therefore, cannot be acted upon. Estes and Skinner (1941) explained how a current variable or stimulus must be used to ready the individual to challenge a future event. Estes and Skinner (1941) postulated, "Anxiety is here defined as an emotional state arising in response to some current stimulus which in the past has been followed by a disturbing stimulus which in the past has been followed by a disturbing stimulus" (p. 400). Training that utilizes SIT techniques has shown to be more effective than other types of "academic" training. Szabo and Marian (2012) determined a 10-week training program that utilized SIT training was more effective than classroom-based counseling programs that focused on discussions of stress and means of coping. SIT also proved to be more effective than participants who received no treatment at all (Szabo & Marian, 2012). After the program, SIT students had lower levels of perceived stress and anxiety at statistically significant levels, and the impact on self-esteem was not statistically significant (Szabo & Marian, 2012).

Students who were tested in a flight simulator with stressors applied after using mental imagery were found to perform better despite the added stress when using mental imagery prior to completing the task (McClernon, McCauley, O'Connor, & Warm, 2011). The study confirmed the results of earlier research that contended that simulator-based stress training could aid pilot performance. McClernon et al. (2011) further determined subjects who were exposed to stress-based simulator training performed better during CFI evaluations than subjects assigned to the control group. Furthermore, novice participants' performance benefited from the incongruent stressor when later performing actual flying.

Exposure to stress prior to the stressor being applied is a method of training individuals to deal with stress in an appropriate manner. Such training is often used to prepare members of the military and law enforcement to become better adapted at dealing with stress. A study conducted by Hourani et al. (2011) explored the notion that placing United States Marines into stressful events prior to deploying to war zones would enable the Marines to adapt to the higher stress levels they would encounter when deployed. Hourani et al. (2011) determined pre-deployment SIT training did reduce stress levels when exposed to a multimedia stressor environment (Hourani et al., 2011). However, these results only applied to Marines who had previously deployed. There were no significant predictive variables for Marines who had never deployed (Hourani et al., 2011). This study and corresponding participant group are important, as they aided the present study because the teachers came from various backgrounds. For teachers, preparing for and surviving an active shooter event is not the only relevant task that must be prepared for; the responder and teacher must also be prepared to live their life after the event.

Hourani et al. (2011) explained the development of resilience to stress in the following manner:

> The conceptual basis for using SIT as a preventative approach against developing stress-related symptoms after exposure to trauma is based on studies which have shown that enhanced stress resilience is associated with a protective physiological stress response, stress resilience is associated with a protective physiological stress response. (p. 102)

Mental Imagery Scripts

Mental imagery scripts provide guidance for a participant to maximize training, as the mental steps they take to complete a task are rehearsed and planned prior to participation. The intent of this section was not to broach a sometimes-controversial topic and dwell on hypnosis but rather to review the literature related to the use of mental imagery scripts. More simply put, everyone is capable of creating a mental image and often does so without much thought, but for later useful recall, the image must be correct. Mental imagery scripts are the basis for mental practice, and mental practice has been shown to increase technical abilities while decreasing stress (Louridas et al., 2015). Santarcangelo et al. (2010) examined whether participants had the ability to be involved in their own mental images. If a participant can place himself or herself within the image and manipulate it, then the learned objective is more powerful. Santarcangelo et al. (2010) concluded that imagery, in fact, could become a reality and this is not limited to hypnosis, but imagery of a sensory nature can elicit an involuntary response when stimulated. If one has the ability to be involved in his or her own images without being subjected to hypnosis, then it is viable for a person to engage in an image that is so realistic, it triggers a sensory response. This conclusion supports the idea that images are powerful and trigger powerful physiological responses. The image needs to be correct, or the body and the mind will be left in a state of disorientation, and therefore, the created image must be correct.

Mental imagery scripts have been extensively explored by Peter J. Lang (1979) and were the basis for Santarcangelo et al.'s (2010) experiments involving emotional imagery. Lang

(1979) found that providing participants with explicit instructions that would form the images that the researcher desired could modify imagery. The scripts used by Lang (1979) were crafted in conjunction with the participants and involved the participants creating vivid scenes that included the participants. Lang (1979) concluded from his study that the use of imagery scripts enabled participants to modify unwanted behaviors such as fear or anxiety.

While mental imagery scripts are used in a variety of forums, this section focuses on the use of mental imagery scripts in the context of athletic performance. Richter, Gilbert, and Baldis (2012) studied the use of mental imagery scripts in weightlifters. This study was selected for further analysis, as much like those involved in active shooter events, weightlifters only have one opportunity to perform a stressful and complex task correctly. This study was not experimental in nature, but rather provided coaches with instructions on writing imagery scripts and how to implement the scripts into workout programs. Richter et al. (2012) provided participants with scripts that were tailored to the specific lifting event and noted that the scripts needed to be purposeful and clear in their construction (Richter et al., 2012).

While Richter et al. (2012) did apply experimental measures to their concept of mental imagery scripts, others have conducted experimental research with imagery scripts. Munroe-Chandler, Hall, Fishburne, Murphy, and Hall (2012) found that by using mental imagery scripts as intervention methods, juvenile soccer players were capable of improving athletic performance. Munroe-Chandler et al. (2012) further determined participants who practiced mental imagery scripts on their own time were more likely to continue to use mental imagery scripts (Munroe-Chandler et al., 2012). Subsequently, the participants who continued to use mental imagery improved their athletic performance (Munroe-Chandler et al., 2012).

Performance Enhancement

Regardless of the venue for mental imagery, the one key element that cannot be ignored is that mental imagery must be practiced to be useful. As indicated by Frank et al. (2014) "practice leads to functional adaptions in the representation structure of complex action, and that mental practice supports this adaption, leading to even more elaborate representation" (p. 11). Practice can be in the form of mental exercises or mental exercise combined with physical motion. One essential element of developing mental imagery as detailed in several studies is the need to exercise mental images much like a person physically prepares for an athletic event. Mattie and Munroe-Chandler (2012) explained that working out the mind is similar to working out the body.

Frank et al. (2014) concluded since much of the research related to mental imagery focuses on observable traits such as skill acquisition, the cognitive aspects of mental imagery are largely ignored. While many researchers have ignored observing the cognitive aspects, Frank et al. (2014) indicated by focusing on the cognitive they have shown that repeated mental visualization of movement results in the development of the mental representation structure (p. 11). Furthermore, Whiting and Dixon (2013) further explained, "Although these studies suggest behavior changes can occur using avoidance-based imagery, it may also be possible that by engaging in mental tasks resembling the behavior one wishes to abolish, paradoxically, that behavior may also become avoided" (p. 526). While the intent of the present study is not to abolish behavior, the gambling does emphasize the profound impact mental imagery can have on the mind.

School Safety Plans

A key concept that has continued to emerge from this literature review is the need for preplanning to facilitate a better response to a stressor. School safety plans are one such type of

preplanning that prepares a school for a stressful event. School safety plans are comprised of written documents that are relied upon during an emergency or crisis. Similar plans are developed by corporations and government agencies in the event of an unplanned event and are used to preplan an entity's response to the event. For instance, during the aftermath of the Boston Marathon bombing, the first responders to this incident followed a well-rehearsed response, which was based upon the preplanned response of other cities to mass casualty events (Biddinger et al., 2013).

School safety plans are a critical element of anticipated responses to active shooter events. Plans must be in place, as school violence scenarios cannot be viewed as theoretical events, but as an event that is yet to occur. School safety planning may involve a number of community organizations, but only law enforcement agency involvement has been shown to be a predictable variable in terms of reducing serious school violence (Patton, 2011). A summary of Patton's findings would indicate the involvement of law enforcement outside of the planning phase increases non-serious school violence (Patton, 2011).

Similar research, such as studies conducted by Na and Gottfredson (2011), also indicated an increased police presence increases crime rates at schools. While this research should not be ignored, it should be dismissed to an extent in relation to school safety planning. The increased presence of law enforcement officers in schools tends to increase the referrals for police services, and often for crimes of a non-violent nature (Na & Gottfredson, 2011). School safety planning is a method of preparation for an extreme event, rather than an actionable plan of addressing juvenile delinquency. According to Lindle (2008):

> Community development is not a policy end, but a political process. Community development is not solely a school process; it requires the development of social capital

among neighborhood and throughout the ecological system surrounding students to end the fear of violence and abuse in schools. (p. 39)

A popular argument related to active shooter training is the notion that the active shooter situations within schools will simply be diminished by placing law enforcement officers in the school setting and thereby providing protectors for the unprotected. However, there are numerous problems with these simplified safety plans. First, the presence of additional police officers or security officers within a school has not proven to protect students from an active shooter event. An armed sheriff's deputy was assigned to Columbine High School when the active shooter event happened there in 1999 (Hillbrand, 2014). Jefferson County Sheriff's Deputy Neil Gardner engaged Eric Harris in the parking lot and fired 10 shots. However, Harris continued into the school and began to murder students (Hillbrand, 2014).

The increased number of school shootings has resulted in schools enhancing their physical security to reduce violence in the schools (Na & Gottfredson, 2013). Many of these school safety plans are reliant on placing school resource officers in schools, as they are deemed to be effective in promoting a safe environment for students (Na & Gottfredson, 2013). A survey by the School Safety Network (2013) indicated 66.1% of educators who work in schools with an armed guard believe the guards make their school a safer place. Another survey, which targeted law enforcement executives and principals, indicated the use of school resource officers is the best safety plan for protecting schools (Chrusciel, Wolfe, & Hansen, 2015). However, the same law enforcement officers and principals who believed the implementation of school resources officers made the school safer, also indicated they did not believe the officers would prevent a school shooting (Chrusciel et al., 2015).

School safety plans should be designed to alleviate fear and anxiety exhibited by teachers. School administrators must consider the perceptions and the needs of their teachers when designing school safety plans that are meant to protect the teachers and subsequently protect the students (Ricketts, 2007). Furthermore, teachers should be included in the proposed school safety plan, from the point of initial discussion until full implementation as administrators will count on teachers to carry out these plans. The implementation of school policies ultimately impacts a teacher's level of fear in relation to acts carried out by students (Ricketts, 2007).

Extreme or serious violence should be a focal point of active shooter training to differentiate between crime and an active shooter. Patton (2011) noted that the racial makeup of the school was a predictor of serious violent incidents and determined that schools with a higher number of minorities were more likely to report a higher number of serious violent incidents. While these statistics may be pointing to a greater issue in terms of racial tensions being broadcast throughout the United States, it is an unlikely predictor of active shooters. A majority of school shooters are not part of a minority group and do not come from urban areas. While statistically overall violent encounters may point to urban campuses as having a higher crime rate, this is more likely a result of the surrounding environment which has a higher crime rate, rather than increased levels of violence in the school.

The shootings at Columbine High School, Virginia Tech, and Sandy Hook Elementary School were all located in rural or suburban areas. In a review of school shooter incidents, researchers found many bystanders did not report potential threats, as they did not believe an event would occur (Pollack, Modzeleski, & Rooney, 2008). Such an attitude potentially stems from the lack of exposure many of these bystanders have towards crime. As previously

indicated, many active shooter incidents occur in more affluent, suburban areas, where the everyday exposure to crime is often lower.

Schools are mandated gun-free zones as directed by federal law. The intent of gun-free zones is to prevent firearms in or within one thousand feet of school property. There are mandated laws to punish those who violate these laws (Hetzner, 2011). Gun-free zones have all but promised little resistance for an active shooter entering a public school, as a shooter can be assured that there are no firearms within one thousand feet of the property (Fox & DeLateur, 2013). The intent of this study was not to trigger a debate of the second amendment, but a brief overview of gun-free zones was essential because it points out a critical component of school safety plans. Teachers need to be aware there are no firearms on campus, and in the event of an active shooter, the earliest intervention that would likely occur would be responding police officers.

School safety planning is a critical aspect of active shooter training and is embodied in a school's active shooter response plan. Additionally, a steadfast relationship already exists in the mind of many educators between the school system and the local police department. Based on a survey conducted by the School Safety Network (2011), 66.1% of educators who work in schools that employ armed guards believe that the presence of the armed guards makes their school a safer place.

A recurrent theme throughout this review is the notion that previous exposure through training is an essential aspect of preparing police officers, members of the military, and experimental participants. Likewise, it makes sense to expose teachers to the idea of classroom combatives as early as possible for them to begin to prepare mentally for a potentially violent encounter. Another strategy for preparing teachers to encounter school violence is to educate

teachers on ways to deal with school violence during their teacher education training (Craig, Bell, & Leschied, 2011). The earlier teachers or teachers in training are prepared for an active shooter event, the more confidence they will develop in addressing violence in the workplace (Craig et al., 2011). Additional research has shown many pre-service teachers desire to increase their knowledge of how to address violence better in the classroom (Craig et al., 2011). The earlier teachers are exposed to the need to combat violence in their school, the sooner the teacher or teacher candidates can begin to formulate a mental image that prepares them for the unthinkable. Additionally, if proper training is introduced early on, then the teachers will begin to create a proper image rather than a flawed image.

Missouri Active Shooter and Intruder Response for Schools Program

On August 28, 2014, Missouri legislatures enacted the "Active Shooter and Intruder Response for Schools Program." The law, Missouri Revised Statue 170.315.1, was written to provide and mandate school districts with the necessary training to prepare teachers and staff members to react with confidence to an active shooter. Paragraph one of the law states:

> There is hereby established the Active Shooter and Intruder Response Training for Schools Program (ASIRT). Each school district and charter school may, by July 1, 2014, include in its teacher and school employee training a component on how to properly respond to students who provide them with information about a threatening situation and how to address situations in which there is a potentially dangerous or armed intruder in the school. Training may also include information and techniques on how to address situations where an active shooter is present in the school or on school property. (ASIRT, 2015).

Subsequent paragraphs outline how schools may conduct the training on an annual basis. The initial training is eight hours. The training exercise is a simulated active shooter drill taught

by instructors who are certified police officers (ASIRT, 2015). The final paragraph of the law states, "Public schools shall foster an environment in which students feel comfortable sharing information they have regarding a potentially threatening or dangerous situation with a responsible adult" (ASIRT, 2015).

In the aftermath of the passage of this law, districts throughout the state of Missouri had varying opinions of the necessity and the realism associated with this training.

Rick Montgomery (2015) of the *Kansas City Star*, reporting on the implantation of the Missouri active shooter law noted:

> Not all "active shooter" drills simulate someone firing and people supposedly dying. But lessons are more apt to stick, say many police officials and security consultants, when the real thing can be replicated without anyone getting hurt. The ultimate point is to present human targets with options beyond the traditional response of locking doors, switching off lights and hoping the shooter does not spot them. (p. 1)

While such training may shock the conscience of some outsiders, the teachers and police officers are training for something that is a realistic fear to them.

Many of the complaints and lawsuits related to these exercises are related to participants being injured. However, as indicated by the collective interviews conducted by the *Kansas City Star*, the ultimate goal is to prevent anyone from being injured when an actual event occurs (Montgomery, 2015). This style of training is no different than what law enforcement officers and members of the military engage in on a regular basis. The desired outcome of training military members and law enforcement officers is no different than training teachers, to prevent death and injury during violent encounters. Part of the obstinateness toward this type of training

within the confines of the school setting undoubtedly stems from participants reluctantly believing that deadly combat carried out by students has now arrived in the classroom.

However, the intent of this law is to combine practice with theory and enhance a teacher's ability to formulate a correct mental image of how he or she should respond to an active shooter. Paul Fennewald, director of the Center for Education Safety, remarked, "The thought of encountering an armed intruder and, as a last resort, fighting back isn't in the mindset of the education culture" (Montgomery, 2015, p. 1). Fennewald further stated, "But you look at where we are as a society now, you've got to get your mind around it. . .. You need options. You can't just lay down in a fetal position and die" (Montgomery, 2015, p. 1). Fennewald is opening the door to changing the mindset of teachers in the classroom, and moving them from a novice victim to a barrier separating students from the attacker.

Teacher's Perceptions

A recently published study by Carole Rider (2015) came close to closing the gap in the literature related to the preparedness of teachers to respond to an active shooter. However, the study focused on planning procedures by the district and administrator, participation practice, and teacher perceptions of preparedness to quantifiably analyze a teacher's level of preparedness to respond to an active shooter. Rider (2015) found that a teacher's level of preparedness was based on the planning and implementation of police officers in the school, procedures created by the district, and their level of belief in these systems. This study identified quantifiable revelations rather than qualitative findings that would enhance the shortcomings of training programs and a teacher's individual level of preparedness. Rider (2015) further revealed in her recommendations for future research, that a qualitative study should be conducted, as such research would provide better insight into the training needs of teachers. Rider's (2015) study

was published after this study was formulated, but it demonstrates a further need for a qualitative study related to a teacher's perceptions and preparation related to an active shooter event.

While Rider's (2015) study was recent and geographically limiting to an extent, it did express the need for the qualitative study of teacher preparations for active shooter events. Many of the factors that Rider found to alleviate the anxiety and fears that many teachers experience were expressed by teachers in this study, but allowed research participants to explain why these factors diminished the fears.

Summary

Mental imagery is a proven technique for preparing subjects for many tasks, to include athletic competition and lethal encounters by law enforcement officers (Frank et al., 2014). Current literature supports the notion that the more a participant visualizes a technique before completing the task, the more effective and confident he or she will become (Gottfredson et al., 2012; Kremer et al., 2011). Researchers have conducted mental rehearsal training across a wide spectrum of disciplines such as aviation and medicine and confirmed measurable, positive results (Gottfredson et al., 2012; McCauley et al., 2011). However, none of the literature has examined the use of mental imagery in the context of teacher preparation for an active shooter event.

A majority of the extant literature was based on the theoretical works of Bandura (1989), Paivio (1970), and Kosslyn et al. (2006). Research directly related to the significance of mental imagery is mostly credited to Paivio (1970) as a forerunner in the field, but strongly supported by the ongoing research of Kosslyn et al. (2006) and others. Paivio (1970) surmised and later theorized that mental images are a critical aspect of learning, as the brain can interpret and code verbal or nonverbal data; therefore, significant data could be learned through mental imagery. Bandura (1989) added to the literature through self-efficacy theory, which states that people act

in the way in which they view themselves. Therefore, if people see themselves as successful, they will ultimately be successful (Bandura, 1989). These two principal theorists led the way for future theorists in the field of mental imagery and the subsequent application of their founding theories.

CHAPTER THREE: METHODS

Overview

The purpose of this study was to understand the use of mental imagery by elementary teachers when preparing for active shooter events in a school. In addition, this study was based on the exploration of the human cognitive ability to assess the images that had been previously created by the participants. The best process for gaining insight into the human mind is through qualitative means. More specifically, in this case, a transcendental phenomenological study was best suited for gaining insight and collecting data from willful participants who have used or are using mental imagery to prepare themselves for an active shooter event.

This chapter focused on the methods that were used to conduct the research and provide justification about why certain methods and steps were employed. This was a qualitative study and used certified teachers and classroom aides from the Truman Elementary School, a pseudonym, to further investigate this phenomenon. Data for this study were collected by gathering site documentation from the school district, interviewing teachers, and conducting a focus group session with the participants. This chapter also explores the researcher's role and the data analysis procedures that were used to identify the themes that became the focal point of the findings of this study.

Design

This investigation was designed as a qualitative study, which used a phenomenological research approach that was designed to gain greater insight into this phenomenon. Moustakas (1994) suggests that phenomenological research is grounded in answering questions that "give a direction and focus to meaning, and in themes that sustain an inquiry, awaken further interest and concern, and account for our passionate involvement with whatever is being experienced" (p.

59). It was necessary for this study that this researcher was involved in the experiences being recalled by the participants and was a part of their journey as they expressed their thoughts, feelings, and emotions related to this topic. Furthermore, it was necessary to awaken a sense of motivation in participants who have not fully experienced this phenomenon or who have not viewed the direct application of this phenomenon in their own lives.

A qualitative approach to this study was appropriate, as the topic cannot be discussed in a quantitative format until after the active shooter event has occurred. For instance, a pretest/posttest design would not accurately reflect a teacher's preparedness for an active shooter event unless he or she was exposed to an active shooter event. Since this study was designed to be a preventative strategy for assisting teachers in responding to an active shooter event, it was necessary to examine the event before it occurred. Likewise, simplistic measurements such as those performed in the literature review were not applicable in this study. The root goal of this study was to determine the mental images that teachers were already using; this realization was not a quantifiable explanation and was explored using a qualitative approach.

Creswell (2013) described qualitative research as "a set of interpretive, material practices that make the work visible" (p. 43). This definition summarizes the nature of this study as this researcher's intent was to bring to life the mental images of teachers stored within their thinking, and bring these images to the written word to assess the preparedness of these participants and to set the stage for future qualitative and quantitative research. Qualitative research is accomplished by utilizing various approaches to examine the questioned phenomenon more closely. Creswell (2013) noted that these five approaches consist of narrative research, phenomenology, grounded theory, ethnography, and case study. This researcher considered the

use of the case study approach but decided the benefits phenomenology made this approach a more appropriate choice for this study.

Phenomenology describes "the common meaning for several individuals of their lived experiences of a concept or a phenomenon" (Creswell, 2013, p. 76). Moustakas (1994) further pointed out that phenomenology focuses on descriptions of acts or events, rather than analyses, which are often seen in quantitative studies. Husserl (1970) focused on the word "act" as the "act" or the "experience" versus the focus on an object. Once again, this study focused on the experiences of the participants and not on an object being investigated. It is essential that these descriptions remain alive in the research, as they provide more meaning for the themes that are identified during the course of the study (Moustakas, 1994). Phenomenological research also helped the researcher understand the lived experiences of the participants, which further vests the researcher into the study, and allows the researcher to gain a deeper understanding of the topic (Schutz, 1970). The focus of phenomenological research was to gain a deeper understanding of the participants' experiences, and interacting with participants in a familiar, intimate context was the best way to gain this understanding.

More specifically, this study used a transcendental phenomenological design to thoroughly explore the described phenomenon. Transcendental phenomenology is a method by which the researcher or investigator must set aside past experiences related to the phenomenon to take a new or fresh look at the data derived from the study (Creswell, 2013). The data are then separated through the process of bracketing during which the researcher brackets out his or her own experiences and instead focuses on the shared experiences of the participants (Creswell, 2013).

Research Questions

How do teachers use aspects of mental imagery as a preparatory stress inoculation tool for confronting an active shooter? The following research subquestions supported the central question and encompassed the aforementioned areas of interest: a) What are the mental imagery rehearsals utilized by teachers when preparing for an active shooter event? b) What are teachers' emotional responses to mental imagery preparation associated with active shooter events? c) What background information, personal and professional, influences teachers' use of mental imagery? d) What internal and external imagery factors influence teachers' perceptions of violence in their schools? e) What are the teachers' motivational sources for the development of mental imagery and subsequent use?

Setting

The setting for this study was an elementary school in Texas and has been identified by the pseudonym Truman Elementary School. Truman Elementary School is a small elementary school and the only elementary school in the school district. Truman Elementary School has approximately 350 students in grades pre-kindergarten through fifth grade. The school is approximately 78% Caucasian, 19% Hispanic, 2% two or more races, 1% American Indian/Alaska Native, 1 % African American, and less than 1% Hawaiian Native/Pacific Islander, Asian.

Participants

This study used criterion sampling to solicit and identify 10-15 teachers to participate in the study. Ultimately, 10 participants, all certified teachers, were selected as participants. Criterion sampling is based on the premise that the participant selection must be selective rather than random volunteers to ensure the participants have experienced the phenomenon that is being

explored (Gall, Gall, & Borg, 2007). The criteria for participating in this study were that the participant was a certified Truman Elementary School teacher and the participant must have previously used mental imagery to prepare for an active shooter event. Prospective participants were provided a screening questionnaire to determine if they had experienced the phenomenon being studied (see Appendix C).

The intended objective was that all the participants selected to participate would complete the entire study. The 10 participants selected for the study was consistent with recommendations for study size made by Morse (2000) when conducting phenomenological research. Morse (2000) contended this range is compatible with phenomenological studies due to the large quantities of data that are derived from interviewing multiple participants and sometimes conducting multiple interviews with each participant. All the teachers were recruited from Truman Elementary School. Table 1 provides a listing of those who participated in this study along with their years of experience in education.

Participants in this study were derived from the ranks of Truman Elementary School. Ten teachers and administrators participated. Prior to being interviewed, each teacher completed a questionnaire that utilized criterion sampling and ensured each participant was suitable for the study. All the participants were presented with a description of mental imagery, and all the participants acknowledged they had used mental imagery to some degree to prepare for an active shooter event and, therefore, had experienced the studied phenomenon. Each of the selected participants was assigned a pseudonym reflective of their gender, age, and race. The pseudonyms were essential to protecting the confidentiality of the participants. Additionally, when describing years of teaching experience, ranges were used rather than specific numbers to further protect the identity of the participants.

Table 1

Participants' General Background Information

Participant	Years of Experience
Julie	5 or more
Amanda	10 or more
Jason	10 or more
Sarah	10 or more
Rachel	10 or more
Megan	5 or less
Emily	5 or more
Brandon	10 or more
Lisa	5 or more
Stacy	15 or more

The participants were representative of most of the grades within the elementary school and all the school administrators who were also certified teachers chose to participate. Most of the teachers had not received any additional active shooter training other than school-wide in-service training, which was restricted to lockdown drills and a one-page document from the school handbook, which explained what teachers were supposed to do during a lockdown drill.

Procedures

This study consisted of several procedural steps necessary to protect the human participants and to ensure the study was completed in a timely manner. The first procedural step was for the researcher to apply for Institutional Review Board (IRB) approval. This step was critical, as no data could be collected until approval was granted. Approval was granted by the

IRB and research commenced. This researcher contacted the principal of Truman Elementary School in writing and requested permission to conduct research at Truman Elementary School. The principal cleared the request with the district's main office. This researcher provided the principal a copy of the recruitment flyer, screening questionnaire, and a copy of the IRB approval for this study. The next step was to solicit participants for the study. Suitable participants were identified through the use of a questionnaire to ensure they had experienced the phenomenon. The third step was collecting and reviewing site documentation from the school to determine previous active shooter training that had taken place that might influence the mental imagery of the participants. The fourth step was conducting interviews with the teachers. Finally, this researcher conducted a focus group session with the participants. After data collection was completed, the data were analyzed, and themes were identified.

A phenomenological study was an appropriate research method for this study, as it allowed the researcher to understand the unique experiences of each of the sample participants. Phenomenologically-based questions allowed for an in-depth understanding of the mental imagery being used by classroom teachers. Phenomenological studies allow the researcher to understand the lived, meaningful, experiences of the participants (Schutz, 1970). The participants who participated in this study consisted of 10 certified teachers in an elementary school who came from various educational backgrounds, life experiences, and classroom experiences. This phenomenological study used a review of site documentation, individual interviews, and a focus group session to collect data. The collected data were then analyzed to understand the use of mental imagery by classroom teachers. The sample population was derived from Truman Elementary School, a pseudonym, and 10 teachers were recruited to participate in the study. The collected data were analyzed using Moustakas' (1994) seven steps.

The Researcher's Role

This researcher conducted the study and personally conducted all the data collection to include the interviews and focus group moderation. This researcher has been employed as a law enforcement officer for approximately 15 years in the military, local law enforcement, and federal law enforcement. This researcher has received training in active shooter response and has expertise in violent crime investigations. More specifically, this researcher's expertise relates to violent crime perpetrated with firearms. At the time of this writing, this researcher was a graduate student completing a Doctor of Education and attempting to pair formalized education in higher education with previous expertise in law enforcement. As a member of the Truman Elementary School community, this researcher had spoken to some of the participants before but did not have a close personal or professional relationship with anyone who taught at Truman Elementary School.

Data Collection

Data collection consisted of three methods. The utilization of a three-tiered collection strategy, or triangulation, is the process of using multiple data collection methods in an effort to support the data analysis to ensure the data collection is not flawed and is confirmed in more than one way to further validate the methods used and the subsequent information gleaned from the data (Patton, 2002). In the case of this study, the interviews only provided for one method of data collection while the focus group session incorporated an additional method of data collection. The data collected from one method should not only provide additional data but should also strengthen the other data that were collected.

This researcher began with a review of the site documentation provided by Truman Elementary School and the school district. This method was critical, as it provided the necessary

background information to interview the teacher participants. Next, the researcher conducted individual interviews with the teacher participants. Each interview was audio recorded and designed to last approximately 20 minutes. The interview questions were open-ended and presented in a semi-structured format. Open-ended questions were used as the structure of these questions to allow the researcher to understand the world of the participants and to allow the researcher to focus on the key points of the participant responses rather than focusing on anticipated responses of the participants (Patton, 2003). After the interviews were completed, this researcher moderated a focus group with the teacher participants. This forum consisted of open-ended questions and was presented in a semi-structured interview format as this researcher provided discussion prompts to the group.

The sequence of the data collection was essential in collecting as much data as possible from the participants. The compilations of site documents, written and verbal, allowed for understanding the level of training that the participants had received, but did not advocate the restructuring of any of the research subquestions. The individual interviews took place next and were the centerpiece of this study. The information gained during the interviews paired well with previously written focus group prompts.

Interviews

It was this researcher's intent to maintain the integrity of the interviews as much as possible to fully capture the thoughts, feelings, and emotions of the participants. Based on the professions of the participants, it was unlikely, due to scheduling conflicts, that this researcher would be able to rapidly interview all the participants. It was the intent that all the interviews would take place in person to identify any nonverbal cues displayed by participants. Two audio recording devices were used to record each interview.

Interviews were conducted with the teachers who had been identified after receiving the flyers that advertised the research study. Some of the participants filled out the consent forms and questionnaires prior to meeting, and some chose to fill these documents out at the time of the interview. The interview questions were open-ended and presented in a semi-structured format to preserve the integrity of the interview. Semi-structured interviews are those that are structured to dictate that certain questions must be asked to keep the study consistent but also allows the researcher flexibility during other parts of the interview (Patton, 2002). The intent of the teacher interviews was to answer the following research subquestions: (a) What are the mental imagery rehearsals utilized and experienced by teachers and law enforcement officers when preparing for an active shooter event? (b) What are teachers' emotional responses to mental imagery preparation associated with active shooter events? These two questions can be adequately answered through interviews with teachers and were revisited during the focus group session.

This researcher utilized two recording devices during each interview. Using audio recorders allowed the researcher to focus on nonverbal cues displayed during the interviews and to analyze them during data analysis. Patton (2002) explained that the benefit of using digital recordings is that it allows data to be collected without interpretation occurring before the data are analyzed, which can happen with traditional note taking. A notepad was available to make important notes, but the researcher refrained from taking written notes as to not stifle the flow of information during the interviews. It was anticipated that the interviews would last for approximately 20 minutes. The times for the interviews ranged from 6 minutes and 56 seconds to 23 minutes and 45 seconds. It was this researcher's intent that in the event a participant would go beyond the 20-minute time limit, then the participant would be asked to return for a second interview. However, the one interview that exceeded 20 minutes would have been severely

hampered had the researcher interrupted the participant and asked for a second interview as they finished the final question.

The interview questions pertaining to the teacher interviews are referenced in Appendix A. The interview questions were designed to support the following research subquestions. The purpose of questions one through three was to assess whether the participant had previously received any active shooter training, which might alter or provide a basis for subsequent questions. Subquestions four through six pertained to events that might have caused the research participants to begin to develop and use mental imagery and to ascertain what mental images they had formed. Subquestions 7 through 12 focused on the use of actual mental imagery by the participants, their thoughts, actions, and levels of confidence that had resulted from mental imagery preparation. Subquestion 12 allowed the interviewee the opportunity to add any comments that he or she thought were important, but the interviewer may have been omitted.

Questionnaires

Prior to conducting any interviews with the participants, the school principal was contacted and provided a copy of the IRB-approved consent form, a copy of the screening questionnaire, and a flyer advertising the study. Each of the participants completed the questionnaire, which identified the respondent as a suitable research participant.

The use of questionnaires in this study was limited to an initial questionnaire used to identify suitable participants for the study (see Appendix C). It was critical that selected participants indicated that they had experienced the phenomenon before they were selected for the study.

Document Analysis

Document analysis was conducted by collecting site documents that were then reviewed prior to conduct the interviews or the focus group. Site documents typically include records and

documents obtained from a fieldwork location that might include data that are not obtainable through observation (Patton, 2002). Site documents allowed the researcher to gain an understanding of past events or programs that might influence current data that were collected (Patton, 2002). Site documents pertaining to lockdown procedures, school crisis management plans, and active shooter plans were reviewed and discussed with the school principal.

Prior to meeting with the participants, this researcher met with the school's principal to obtain any available site documentation and obtain information pertaining to the school's planned response to an active shooter event. Obtaining the site documentation was critical to the participant interaction, as it allowed for a better understanding during the interviews, as the participants often referenced school programs and procedures, which would have become confusing in a structured interview. Each of the participants participated in an interview session that consisted of 12 open-ended questions and a one-hour focus group session. The combination of these three data sources allowed for a plethora of data to be derived and analyzed.

The documents were reviewed prior to the interviews and focus group session to allow the researcher to gain a better understanding of the training that teachers should have previously received. The review also allowed the researcher to understand curriculum and instruction that had been provided and might have subsequently created or altered a teacher's mental images. It was anticipated that site documents would not only prepare the researcher to prepare better for subsequent data collection but also answer the research question related to the influence of a teacher's background on the subsequent use of mental imagery and the resulting images. Site documents aided in supporting research question three, which related to participant background information, and other factors, that have influenced participants' use of mental imagery.

Focus Group

The same teachers who participated in the interviews also participated in the focus group. As described by Patton (2002), focus groups are groups that "involve open-ended interviews with groups of six to eight people on specially targeted or focused issues" (p. 236). Patton (2002) cautioned that focus groups should not be problem-solving or decision-making sessions, but an interview alone. The focus group was moderated by the researcher and was conducted in a semi-structured format. The focus group consisted of 12 prompts, which are discussed below (see Appendix B). The focus group was scheduled to last for approximately one hour and ultimately lasted approximately 45 minutes. Participants did not receive compensation unless they completed the interview and the focus group session. At the conclusion of the focus group session, each participant received a 25-dollar gift card. The focus group allowed for the participants to become more comfortable with their thought processes as they began to realize that the feelings and thoughts they were experiencing and had experienced were not an abnormality. The intent was that as the participants realized they had shared the explored phenomenon with others, they would be more open in their discussions. This sense of openness seemed to hold true during the focus group session.

The following prompts were used during the focus group session:

1. Were you aware that other teachers in your school were using mental images similar to the ones you have experienced when preparing to encounter an active shooter? How does that make you feel?
2. Have you previously discussed what it would be like if an active shooter event occurred at your school? Whom have you told?
3. Now that you have heard from your peers, are you surprised by what they have said and described, or does this help you relate to images you have experienced?

4. What is your source of motivation for surviving an active shooter event?
5. What mental images have you created or used to support this motivation to survive an active shooter event?
6. Have you discussed conducting mental rehearsals with other teachers?
7. When discussing mental imagery formation with other teachers, which of your images seem to align with your fellow teachers?
8. When attending active shooter training, what emotions have you observed in other teachers or have you felt yourself?
9. As you look around the room, how do differences in your backgrounds impact your insight into this subject matter?
10. While everyone here teaches at the same school, what internal and external factors influence your thoughts and feelings related to school violence?
11. How has the discussion of mental imagery in relation to active shooter situations changed your understanding of active shooter events?
12. How have active shooter policies and procedures developed by your school influenced your use or development of mental images?

During the research process, while it was anticipated the prompts would be modified to further exploit the data garnered during the interviews, this researcher did not find it necessary to do so. The purpose of the focus group session was to support the same research subquestions that were supported by the interviews.

Data Analysis

The collected data were analyzed using Moustakas' (1994) seven steps. Moustakas' (1994) seven steps involve the use of the following techniques to analyze data and were a

modification of Van Kaam's method analysis of phenomenological data. To improve the reader's operational understanding of Moustakas' seven steps, the following terms were defined to aid the reader:

- *Clustering* bringing together the same experiences of the participants and organizing these experiences into a theme (Moustakas, 1994).
- *Composite descriptions* are the combination of the identified textural descriptions and the structural descriptions which allow the researcher to identify the "meaning and essence" of the experience (Moustakas, 1994).
- *Reducing* is also referred to as bracketing, as the researcher brings in common responses from participants while eliminating biases possessed by the researcher (Schutz, 1970).
- *Structural descriptions* are "Conscious acts of thinking and judging, imagining, and recollecting, in order to arrive at core structural meanings" (Moustakas, 1994, p. 79). Structural descriptions are all the underlying thoughts, emotions, and interpretations provided by the participants (Moustakas, 1994).
- *Thematizing* is the outcome of clustering together the experiences (Moustakas, 1994).
- *Textural descriptions* are developed using the clustered themes and meanings (Moustakas, 1994). The factual descriptions are derived from the participants' statements based on their experiences (Moustakas, 1994).

The following list reflects Moustaka's seven steps and an explanation of each step:

Step 1: Listing and preliminary grouping involve the researcher listing the expressions from the collected data that are relevant to the experience being studied (Moustakas, 1994).

Step 2: Reduction and elimination seek to determine the invariant constituents, and are accomplished by sorting the expressions by relevance to the phenomenon (Moustakas,

1994). To accomplish this task, the researcher determines if the experience is relevant and then a determination is made to label the expression; non-relevant experiences are eliminated (Moustakas, 1994).

Step 3: Clustering and thematizing the invariant constituents involves clustering the invariant constituents and labeling the themes; the identified themes become the core themes for the experience (Moustakas, 1994).

Step 4: Final identification of the invariant constituents and themes by application encompasses the validation process whereby the researcher confirms the themes that have been identified are compatible with the information known by the researcher and irrelevant themes are deleted (Moustakas, 1994).

Step 5: Construct for each co-researcher an individual textual description that includes developing textural descriptions, which capture the essence of the interview transcript and may include direct quotes to fully grasp the core content of the interview (Moustakas, 1994).

Step 6: Construct for each co-researcher, and individual structural description instructs the researcher to determine in what way the participant experienced the phenomenon (Moustakas, 1994).

Step 7: Construct for each research participant a textural-structural description of the meanings and the essences of the experience is the final step and focuses on compiling the experiences of all the participants to clearly define the meanings and essence of the themes that have been identified (Moustakas, 1994).

This researcher further used memoing during the interviews to capture nonverbal cues exhibited by the participants, as well as coding and bracketing to identify themes that were

identified during the interview process and through subsequent data analysis. Data analysis refers to the process by which data that are collected are interpreted into findings (Patton, 2002). The process of analyzing data utilizes several methods such as memoing, bracketing, and coding.

Memoing is a method of data analysis used to facilitate the identified themes from the collected data (Creswell, 2007). Memoing is a method by which the researcher actively makes notes related to the observations of the researcher (Creswell, 2007). Memoing was advantageous during this study, especially during the human interaction phases of data collection. Because of the emotional nature of the topics being discussed, the nonverbal cues being exhibited by the interviewees and the focus group participants were critical.

Bracketing is a data analysis tool used by the researcher to identify themes within the data, and more specifically, bracketing out biases and bracketing in common responses (Creswell, 2007). Bracketing was an essential component of this study as it was essential that biases did not force desired themes to be identified in anticipation of desired outcomes. Furthermore, it was critical that this researcher captured recurring themes that might be identified in each data collection forum (Creswell, 2007).

Coding allowed the researcher to condense large amounts of written textual data into smaller categories of manageable data (Creswell, 2007). Despite the short time for the interviews conducted in this study, it was likely that these interviews would bourgeon into a significant amount of data. Therefore, coding was utilized to account for and assess these data better, and therefore, streamline the data analysis process.

Trustworthiness

The trustworthiness of the collected data was established through the use of several techniques. Dependability, transferability, credibility, and conformability as defined below, are

criteria used to promote the trustworthiness of a study (Guba, 1981). In the case of this study, each of the criteria was used in an effort to validate the results of the study, and to solidify the methods that were used to achieve the desired results.

Credibility

Credibility is centered upon establishing internal validity to the study and addresses the accuracy of the collected data (Guba, 1981). Credibility was established using member checks after the collection of the data. Member checks are an important component of credibility, as the action allowed for the participants to check the accuracy of the collected data as well as to review the themes identified by the researcher (Guba, 1981). After transcribing and reviewing the audio recordings from the interviews, this researcher shared these transcripts and potential themes with the participants. All the participants confirmed the data as accurate and supporting the themes that had been preliminarily identified.

Dependability and Confirmability

Dependability pertains to the detailed description within the methodological section of the study, which allows the study to be replicated by others (Shenton, 2004). Within the context of this study, the methodology is simplistic and can easily be administered at another site with varying demographics in use.

Confirmability relates to the ability of others to verify the researcher's data and findings to ensure the information is credible (Lincoln & Guba, 1985). Confirmability can be accomplished through peer debriefing and external auditing (Lincoln & Guba, 1985). This researcher used both peer debriefing and external auditing to ensure the thematic interpretations discovered are accurate and agreeable to other experts in the field. Dependability uses auditing techniques to ensure the data, and subsequent results are reliable (Lincoln & Guba, 1985).

Transferability

Transferability is an essential aspect of quality research, as it demonstrates the degree of generalization applicable to the study (Mertens, 2005). A study that indicates significant findings, but is only unique to the current participants, yields little value to the rest of the field. This study demonstrates transferability despite the sampling method used, as the participants were representative of many classroom teachers throughout the United States.

Ethical Considerations

Ethical considerations were a guiding principle of this study. Ethical standards such as confidentiality are paramount in building trust and rapport with the participants. Collected data, stored in paper form, were placed in a secured location when not in use and were not disseminated to unauthorized sources. Digital records pertaining to this study were saved and stored on a local device, which was not susceptible to unauthorized disclosure, and was password protected. Consent forms, located in Appendix D, were completed by all the participants prior to collecting data. This researcher audio recorded the interviews, which were discussed and acknowledged by the participants prior to use. The interviews took place in private to avoid disclosure of personal thoughts and emotions to unauthorized sources. Pseudonyms were used to protect the identity of participants and the school district. Additionally, these procedures were reviewed by the IRB before any data collection occurred.

During the recruitment, selection, and interaction with participants, they were frequently reminded verbally, and in written format, of the voluntary nature of this entire study and right of the participants to withdraw at any time if they did not feel comfortable with the study or have any other reservations. While the redundancy of these reminders may have seemed exhaustive to some of the participants, the hope was that these reminders offered the participants the assurance that their information was important and protected.

Summary

This chapter described the methodology that was used to collect the data presented in Chapter Four. The researcher closely followed the steps described in this chapter to maintain the integrity of the study while also gaining valuable data. The data collection methods used were in line with the best practices in qualitative research and ensured the trustworthiness of the results of this study. The next chapter reveals the results of the collected data and corresponding analysis.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this qualitative, transcendental phenomenological study was to understand how teachers used aspects of mental imagery as a preparatory stress inoculation tool for confronting an active shooter. The central question of the study was supported by five subquestions: (a) What are the mental imagery rehearsals utilized by teachers when preparing for an active shooter event? (b) What are teachers' emotional responses to mental imagery preparation associated with active shooter events? (c) What background information, personal and professional, influences teachers' use of mental imagery? (d) What internal and external imagery factors influence teachers' perceptions of violence in their schools? (e) What are the teachers' motivational sources for the development of mental imagery and subsequent use?

This chapter details the findings of the study and provides the results of the collected data, the analysis of the data, identifies the themes, and answers the aforementioned research questions. Data for the study were collected through three media; review of site documentation, individual interviews, and a focus group session. The collected data are outlined in three sections. Section one includes a review of the site documents reviewed at Truman Elementary School. Section two is a structural and textural description of the interview data collected from the participants. The third section provides a summary of the data collected in the focus group. The data were analyzed using Moustakas' seven steps and through the data analysis process. Five themes were identified: preservation of life, additional training, always prepared, collaboration, and outside influences. These themes are reviewed further, and the research subquestions are answered.

Participants

Because of the sensitive nature of this topic, it was essential to use pseudonyms to protect the identity of the participants. As part of the data analysis process, a rich description of the participant was essential as it influences the participant's response to the interview questions. The participants came from different personal backgrounds, professional backgrounds, and grade levels. In addition to providing a brief biographical sketch of the participant, each participant summary also includes important disclosures made during the interviews. The biographical sketches of each participant were held to a minimum to further protect the identities of the participants, as this study explored many personal thoughts and emotions.

Julie

Julie had been a teacher for almost 10 years, with half of those years at Truman Elementary School. Julie was very energetic during the interview and had obviously spent many hours pondering her response to an active shooter situation. Julie's motivation for preparing an active shooter event was focused on the protection of her students. During the interview, Julie stated her focus was, "How can I protect my babies?" Julie used mental imagery to help prepare herself. Julie then applied her mental imagery by focusing on the setup of her classroom. Julie wanted to make sure her classroom was set up to maximize the limited time she would have during a lockdown scenario. Part of Julie's classroom setup included keeping stuffed animals in her classroom to help keep her students quiet if they were scared.

Julie disclosed during the interview she contemplated not teaching after she learned of the school shooting at Sandy Hook Elementary School. When discussing active shooter events, Julie stated one step she took to prepare was to look at her surroundings and changing her response based on the building she was in. Julie was acknowledging the realization of the impact various locations had on her response. Julie explained if she was on the playground

during an event, it would change her response, and her protocols would subsequently change. Julie provided a detailed explanation of the steps she had taken following her attendance at active shooter training. Julie explained as follows:

> My specific room, I have two windows that are right outside of the back gate that have always been a fearful spot for me, so I put big items in front of that so someone couldn't possibly break into that. I've had a cart blocking it and a bookshelf. For me, it's making my classroom as safe as I could. (Julie, personal communication, April 21, 2017)

Julie reiterated several times during the interview how she often visualized the steps she would take during an active shooter event, her desire to perform rather than freeze during an active shooter event, and her desire to become more prepared through additional training.

Amanda

Amanda has been a teacher for more than five years and was passionate about protecting her students. Amanda sought outside training to increase her confidence to better protect her students in the event of an active shooter event. It was evident during the interview how important this topic was to Amanda; both personally and professionally. Amanda was part of the school Defender Program discussed during the site documentation section of this study. It was obvious how this program had greatly impacted Amanda's knowledge pertaining to active shooter events and her level of confidence as a result of attending this training. This researcher also noted how the terms and level of expertise displayed during the interview were a result of her being a member of the Defender Program and attending this additional training.

Amanda described her feelings during the first day of defender training as being overwhelmed, both emotionally and physically. However, Amanda explained, as the training continued, she began to feel empowered, and she felt if something were to happen, she would know how to react. Amanda stated by the end of training she knew she could make her space

safe for her students. Amanda remarked how knowing the Defender Program was in place in the district made her feel better about having her children in the district rather than a district where they would not have the same level of protection.

Amanda also explained how she did not keep the information to herself. Amanda described her actions at the beginning of each school year. Amanda stated she did not feel the school should wait until a couple of weeks into the school year to practice lockdown drills, as a school shooting could happen the first day of school. Amanda explained how on the first day of school she talked to her students about what they should do in the event of a school shooting and then engaged her students in a discussion to prepare them and answer any questions they might have.

Amanda explained how the Defender Program increased her mental preparation for an active shooter event as the training teaches participants to mentally walk through a scenario. Amanda went on to describe how she would visualize her students in the classroom and would then account for the number of students and how the class size would dictate to her where to hide her students during a crisis situation. It was evident how this training program had increased Amanda's confidence level. Amanda remarked:

> Like I said the first day I was just like, this cannot be the world that our kids are growing up in. It is, so just embrace it, and the third day I was like, if you are going to do it, come to my space because you will be sad that you came to my space. So, I feel like the confidence level has really grown, absolutely. (Amanda, personal communication, January 20, 2017)

The interview with Amanda was very emotional. She had determined the course she would take if anyone ever attempted to harm her students.

Jason

Jason had been teaching for more than 10 years with a majority of those years at Truman Elementary. When interviewing Jason, he was apprehensive in some ways as he was concerned about protecting the integrity of the school safety program. This researcher respected Jason's cautious posture and observed as the interview transpired that Jason became more comfortable with the interview. Jason had appointed himself a protector for the school and his answers further confirmed this role.

Jason had a background in athletics and referenced sports several times during the interview. Jason's classroom was separate from the rest of the school, and there was a sense of individualism in Jason, which was embodied in his mental imagery and actions he planned to take in the event of an active shooter event. Jason was focused on protecting his corner of the school and was ready to attack the shooter and protect his students if anyone ever came to do them harm.

Jason was also realistic. Jason disclosed how after the attack at Sandy Hook Elementary he questioned how someone could attack small children, but also concluded if it could happen at Sandy Hook, it could happen at Truman. Jason also indicated how in a rural community, there are firearms everywhere, as everyone in the community hunts and has access to firearms. Jason shared how he had started to spend more time at the shooting range after the Sandy Hook shooting and disclosed he kept a firearm at home for home protection. However, Jason acknowledged this strategy did not translate to increased safety while at school. While many of the other teachers interviewed disclosed they had increased their readiness by purchasing firearms, Jason was one of few who realized the possession of a firearm at home did not translate to increased protection at school. When Jason was asked what he believed was the source of his mental rehearsals, he responded, "Probably fear and knowing that it can happen. Not being

naïve to the fact that people can be evil and people can have a moment of insanity and do something very horrific" (Jason, personal communication, April 21, 2017).

Sarah

Sarah had been an educator for more than 10 years and had been both a teacher and administrator. At the time of the interview, Sarah was an administrator and was passionate about protecting students and determining what else she could do to protect her students. Sarah wished the Defender Program was more widespread, as she did not think the lockdown drills taught at the school were adequate safeguards for protecting students from a violent encounter.

Sarah believed an active shooter event could happen anywhere at any time and did not want to find herself as a "sitting duck" if anything ever did happen (Sarah, personal communication, April 21, 2017). This researcher took note of Sarah's vocabulary in reference to an intruder when she used the word "blasting" to describe someone shooting (Sarah, personal communication, April 21, 2017). This was unique, as Sarah was responding with a descriptive word, which revealed a realistic outlook on a graphic topic. Many of the interviewees did not use graphic adjectives to describe what might be happening during a violent encounter, but Sarah seemed to focus on this as she explained her point of view.

Sarah had obtained a concealed handgun license after the shooting at Sandy Hook. However, Sarah was displeased that state law prevented her from carrying the firearm on campus. Sarah referenced how in Israel, more people are armed and there are fewer problems with active shooters. Despite this displeasure, Sarah understood she had a role during an active shooting and maintained her focus on her primary goal of keeping the children safe. Concerning her role, during an active shooter event, Sarah remarked, "Because I know there are certain people on campus that could handle that. My job is not one of those people. My job is to get the kids to a safe place" (Sarah, personal communication, April 21, 2017).

Rachel

Rachel was one of the more senior teachers interviewed for the study with more than 10 years of teaching experience with a clear majority of those years at Truman Elementary. Many of Rachel's answers were truncated, and it was difficult to determine if she had actually experienced the phenomenon. However, as the interview continued, it was evident she would protect her students at all cost and had frequently visualized how she would protect her students and shield them from harm. Rachel also expressed how she struggled internally with following protocol while still making sure all the students were able to get to a safe place. Rachel explained this internal conflict when contemplating rescuing a student trapped in the hallway:

> Do you open the door for that kid, or do you leave closed like you are supposed to? I don't know, now in my situation. You have to leave them out there. You have to leave them out there. But that is what we are told to do. You don't open the door for anybody. But, now that I will have my own child, that changes things. I don't know what I would do in that case. (Rachel, personal communication, April 21, 2017)

Rachel had thought long and hard and mentally put herself in a situation trying to determine if her classroom was locked and a child was locked in the hall as a gunman was shooting, what she would do as her training and emotions collided with one another. Rachel reiterated several times during the interview how she sought to keep children safe at all costs.

Megan

Megan was the newest teacher who participated in the study and had less than five years of experience. Megan's answers, however, demonstrated how years of experience in the classroom did not always translate into preparedness for an active shooter event. The entirety of Megan's school-based active shooter training had come from in-service training she had received at Truman Elementary. In addition, Megan disclosed she had obtained her concealed handgun

license while employed at Truman Elementary and referred to this training many times during the interview. The concealed handgun license training had been influential to Megan as she remarked, "That actually opened my mind to a lot of possibilities that I wouldn't have thought of, just like your cell phone vibrating could let someone know you are there" (Megan, personal communication, April 21, 2017).

When questions related to the shooting at Sandy Hook were mentioned, Megan reflected on how the news had deeply saddened her, and she thought had more people on a campus had accessible firearms then some lives may have been spared. She recounted how teachers and the principals had confronted the shooter with absolutely nothing to protect themselves. Megan also expressed her disgust with the training teachers receive in protecting students within the classroom, as she explained how all schools teach the same methods and she feared if an aggressor learned this he or she could virtually go into any school and locate vulnerable students.

Megan also spoke of her use of mental imagery inside of school and outside of school. Megan shared how when she was out in public she would devise an escape plan if a threatening situation ever occurred. Megan mentioned how visualizing was an important aspect of planning for her and how she often used visualization techniques in her classroom to ensure she had a plan to hide her students and physical fortifications in place to protect. Megan also informed that she had family members in law enforcement and feedback and guidance from them had assisted her in being prepared.

Emily

Emily was another senior teacher at Truman Elementary with almost 10 years of experience in education. Emily was a very confident teacher and presented herself as someone poised to protect her children at all cost. Emily had previously taught in another school district and discussed the differences between the lockdown procedures at each school. She was

disturbed that both schools told teachers to line their students up in the same place in the classroom. Emily also liked the strategy being adopted by other districts where teachers and students were being taught to fight back rather than waiting to become a victim. In addition, Emily noted how the images from Sandy Hook ran through her mind every time they had a lockdown drill. For Emily, the lockdown drills were a reminder of how important the drills could be, and she focused on keeping her students quiet and calm.

Emily stated she had utilized mental imagery after attending active shooter training and came back to her room and determined what she could move or change to make her classroom safer if something were to happen. It was evident during the interview based on her remarks how Emily was always looking at ways she could improve and was always making improvements to her classroom. Emily also remarked after seeing media accounts of active shooter events she tried to put herself in the other teacher's shoes as she understood this preparation would help her make split-second decisions. Emily often referenced mental rehearsals she used to prepare for active shooter events. Emily stated, "I think the more you think about and the more you think about what ifs, what if . . . could happen, then you are really going to prepare yourself for what could really happen" (Emily, personal communication, April 21, 2017). This constant state of mental readiness was evident in many of Emily's responses, as she always seemed to be preparing for a crisis situation.

Emily did not look at preparation for an active shooter event as an individual event but as a community event. Emily thought it was important to speak to parents after a lockdown drill so if the parents learned about the practice drill from their child, they would not be caught off guard. Emily believed open communication with parents and students would help everyone be better prepared. Emily was of the mindset of always being prepared because she believed an

active shooter event could happen anywhere at any time. This sense of always being prepared also supported her desire to see lockdown drills happen on a more random basis than an event that is planned on the calendar and executed at a certain time.

Brandon

Brandon was the school principal, and it was the second-time meeting with Brandon. The first time, was to review site documents. Based on the first interview with Brandon, this researcher knew he had strong beliefs about active shooter training and preparedness. Brandon had been an educator for more than 10 years and had been a classroom teacher and an administrator. Without hesitation, Brandon was unequivocally committed to keeping his students, teachers, and staff from harm. The interview with Brandon was heartfelt and demonstrated the quality leader he was for Truman Elementary and the school district.

Brandon was a member of the defender team, and it was evident the training he had received through the Defender Program had greatly influenced his views of active shooter training, preparation, and his own personal quest to become as prepared as possible for a violent encounter. Brandon shared a story from the training that had impacted him and demonstrated the importance of mental rehearsals to him. The scenario during training helped him look outside of his comfort zone concerning what to expect. Brandon recounted the following scenario from training:

> We were working with a neighboring school district in the initial training. And they put us all on a school bus, and we had to play the role of student . . . They didn't tell us how the intruder, how the shooting was going to go down. And we were all students on the bus. And the bus is driving, stops at a stop, pulls up to the stop, and the dad is waiting there. The kid is about to get off, dad and the kid get into an argument. The bus driver

says, “hey, you need to calm down.” The dad comes onto the bus and pulls a gun. (Brandon, personal communication, April 21, 2017)

This training and subsequent reflection seemed to be a defining moment for Brandon as a principal, a teacher, a father, and, for him, morally. This researcher could tell during this time of reflection, the extent of the fear, anxiety, and anger Brandon was feeling during this recollection. Brandon was fearful knowing his students and his children were growing up during a time when the school bus scenario was realistic. Brandon felt the same fear a student would feel as he was on the bus floor. Brandon also realized he had previously focused his attention on his school and had not realized the threat to students extended beyond the school grounds; yet, the bus still fell under his control. Finally, Brandon realized a violent encounter could happen at any moment, and his students might be a collateral target of an event that did not even involve them.

Brandon was also aware that an active shooter could happen anywhere, even at Truman Elementary. Brandon acknowledged how he often practiced with his firearm to keep his skills up to date. Brandon explained how he would often visualize someone coming through the front door of the school office and how he would engage the person, his movements to encounter the intruder, and his actions to stop the intruder. Brandon viewed himself as a protector, the first and perhaps final, line of defense between the evil in the world and his school. Brandon stated, “I couldn’t live with myself if I thought one of these kids got seriously injured or killed up here and I didn’t do anything about it” (Brandon, personal communication, April 21, 2017).

Near the end of the interview, Brandon expressed his level of confidence and explained how he thought he had prepared for an active shooter event:

But I’m not a police officer. I wasn’t in the military. I don’t know . . . cause they live that. That is their life. My life is educating kids. Their life is learning how to protect us.

> So, I'm not going to even pretend. Do I think I could step out and protect kids? I hope I can. I really do. The hardest thing for me Aaron, and you will know this. Or you can probably relate to this a little. It's the whole thou shall not kill piece. And as a Christian, I kind of find that in flux sometimes and I also think. When the time comes to go ahead and do that for these kids, yeah, I am. And I will just have to live with the consequences or die with the consequences. (Brandon, personal communication, April 21, 2017)

Lisa

Lisa had taught at Truman Elementary for more than five years. Lisa was a unique participant, as Truman Elementary was her first school and she disclosed she had not received any other active shooter training other than in-service lockdown training and drills. Lisa used this minimal training to the fullest extent possible by developing mental scenarios for which included her students as part of the mental process. Lisa had acquired her concealed handgun license after Sandy Hook. After learning of the events at Sandy Hook, Lisa said she focused on preparing her students and letting them know what they should do and wanted them to understand what was going on so they would not be scared.

Lisa had taken her mental rehearsals one step further by looking at specific items in her room and how she would use them if she needed to shelter her students in her classroom. Lisa mentioned how the training she had received would be described as average, but she believed her mental preparedness had made her even more prepared. Lisa said after lockdown drills, she would talk to her students about different scenarios so they would understand why they needed to be quiet. Lisa mentioned how mental rehearsals have increased her confidence and explained how she has talked about active shooter situations with the other teachers in her grade level and discussed what they would do if an active shooter event happened at Truman Elementary.

Stacy

Stacy has been an educator for more than 10 years and at the time of this writing was an administrator. Stacy explained how her role as an administrator dictated that she assumed a different role during an active shooter event than when she was a classroom teacher. Stacy detailed how she was responsible for remaining in the school's main office during an active shooter event. This alternate role allowed for a different perspective during the interview. Stacy said as a classroom teacher she was more worried about the students and her responsibility of keeping the students quiet and calm. Stacy shared how she must focus on locating students trapped in the hallway and who did not make it back to a classroom. She must locate these children and bring them to the office.

Other active shooter events had helped Stacy to remain vigilant and seek ways to improve her response to an active shooter event. Stacy also indicated she was not only a teacher from a vocational standpoint, but was always seeking to teach and collaborate with those around her to improve her response to an active shooter event. Stacy was reminded after Sandy Hook how such an event could happen anywhere. Stacy recalled how after receiving active shooter training she always looked for ways to improve for the next time. These self-generated after-action reports allowed her to seek improvement for the next time there was a drill at school. Stacy said she would then get together with the other personnel who worked in the office to collaborate and look at ways they could improve their response as a group.

Stacy said when she was a classroom teacher she would visualize where the safest place was to put her students in the classroom. Stacy suggested the school should have scenario-based training in which more realistic training occurred involving a role player pretending to be an intruder. Stacy explained she thought it would be beneficial to allow teachers to respond when students were not in the building, as the teachers needed to process what was happening and

work on their responses to learn to handle a stressful situation. Stacy noted that one cannot help the children if one is not in a position to take care of oneself.

Results

The results of this study were in line with the expectations developed from the reviewed literature. The data sources proved to aid in the understanding of the phenomenon. Data collected from site documentation, interviews, and the focus group session all led to a plethora of data that were analyzed using Moustaka's seven steps of phenomenological research. Through this process, evidence supporting the central question and the five subquestions was identified and analyzed further.

Site Documentation

Prior to conducting any interviews at Truman Elementary, this researcher met with the school principal, Brandon. Coordination had been made with Brandon to further discuss the study, and obtain any site documentation the school used within the context of the school safety plan. Brandon was reluctant to share any site documents prior to the meeting. This researcher respected this decision because of the fundamental goal of keeping students safe. The goal of collecting site documents pertaining to active shooter training and planning was to establish a knowledge baseline of the interview participants that were to be interviewed later in this study.

Brandon allowed the researcher to look at the school's teacher handbook, which he explained was briefly reviewed at the beginning of each semester during teacher in-service training. Brandon indicated one page that covered lockdown procedures. The one-page document explained what teachers and staff members would do in the event of an active shooter event. In the event of an active shooter, the "lockdown" notification would be made over the school intercom system, and teachers and students would shelter in their classroom with the door locked. Teachers were to hide the students in the classroom keeping them quiet and safe. Any

students located in unsafe locations, such as a bathroom or hallway, were moved to the nearest classroom.

Brandon then explained a unique strategy his school district had adopted known as the Defender Program. The Defender Program was a district-wide program that allowed selected teachers and administrators to be armed on the school property. The program provided the first line of defense against an aggressor on school property. Faculty members who were part of the Defender Program received an initial three days of training and then received one annual day of refresher training. Brandon went on to share how members of the Defender Program met on a monthly basis to review and to refresh their skills.

Following this meeting, the researcher conducted further analysis to better understand the Defender Program and sought open source information to examine this crucial aspect of Truman's program while still protecting their anonymity of their program. It is not the district's policy to openly report on this strategy while other districts have chosen to do so.

This researcher noted the physical security attributes while on the school property not only while collecting site documents and meeting with Brandon, but also when visiting the school to conduct interviews. This researcher observed the school had several fortifications and had developed several layers of protection to authenticate visitors and prevent uninvited or threatening persons from entering the school. The school was also completely enclosed by a series of fences, gates, and other physical barriers. It was important to note these physical security measures, as the defense posturing would potentially influence the data collected from the participants.

An additional area of protection ascertained during an interview was the presence of a resource officer at the school throughout much of the day. While interviewing Sarah, she

explained that having a safety officer nearby made her feel good; she alluded to her uneasiness when the safety officer (a county deputy) was not present at the school.

Sarah explained the officer's daily routine, and while he was not on campus at all times, he was always close by. The resource officer assigned to the school was also responsible for protecting other campuses within the district. The officer focused on being present on the campus when there was the largest influx of parents on campus. Therefore, at the beginning of school, the end of school, and when pre-kindergarten arrived and departed the Truman Elementary campus, the officer would be present. The officer would also come to campus when he was not otherwise engaged at other schools. The officer would check for areas where physical security was compromised such as unlocked doors and holes in the fence. Sarah noted how this close relationship with the officer helped the district avoid a potential active shooter event when the officer identified a student who was posing a threat and immediately went to the student's residence and addressed the threat.

The collection of site documents was an important aspect of the data collection of this study as it allowed a better understanding of the participants' perspectives regarding security within the district, understanding terminology that was presented during interviews, and understanding the standard training that all the teachers had received in the form of lockdown drill training. This knowledge allowed an understanding of the image formation that was deeply rooted in standardized lockdown drill training as well as the image formation described by members of the Defender Program.

Focus Group

The focus group lasted for approximately 45 minutes and took place in a teacher's classroom. All 10 of the participants who had been interviewed attended the focus group session. A significant amount of new data was not generated during the focus group; rather,

many of the thoughts and ideas expressed during the individual interviews were reexamined during the focus group session in a collaborative manner. The focus group was intended to provide for a time of collaboration in response to prompts and allow the participants to gain a sense of comfort knowing their peers had experienced the phenomenon.

During the focus group, it was unmistakable how many of the participants had collaborated with one another and formed informal plans within their grade-level teams to address an active shooter event. This collaboration was further explained during the discussion, as several participants mentioned how they had developed a sense of community when it came to responding to a threat and keeping their children safe. One participant explained how prior to participating in this study they had discussed the mental preparations they had created and shared these preparations with each other. Later in the discussion, they reiterated how the topic of active shooter response was often discussed among the grade-level teams.

One participant indicated she was surprised her peers were discussing various methods for securing the school to prevent an intruder, as she had identified some issues and was glad others were having the same thoughts. A concern about students being trapped outside of their primary classroom or an intruder entering the school when teachers were in a location other than their primary classroom such as the gym or cafeteria was also discussed. This was an area of great concern for many of the teachers and some realized they had only relied on mental rehearsals tied to their classrooms rather than various locations throughout the campus.

There was a consensus among the participants regarding their number one goal of keeping the children safe. Several times during the focus group session, participants indicated their objective was to keep the children safe, and it was obvious this primary goal fueled their passion for determining the best method for accomplishing this goal. This goal of keeping the

children was interconnected with the spirit of collaboration, which was brought up many times during the discussion. Teamwork was a central idea throughout most of the discussion.

The background of the participants was discussed at several points during the discussion and was deemed to be an influencing factor for many of the participants. First and foremost, the age of many of the participants had influenced their mental imagery development, and their understanding of active shooter events, as many of the participants had been in high school or college when the active shooter event at Columbine High School transpired. A number of the participants recounted how their own schools had been subject to lockdowns for a variety of reasons after this tragic event.

Two of the participants mentioned during the focus group session how they had grown up in rough areas; one describing her neighborhood as a "ghetto." She related how they had lockdown drills many times at her high school as she was growing up. The discussion of various participant backgrounds led to a discussion regarding the introduction of lockdown drills into many of the participants' backgrounds. Most of the participants recalled a time when there were not any lockdown drills in schools. The age and time of upbringing of many of the participants had affected their viewpoints on this topic, as it was something that had impacted them their entire lives.

Theme Development

The data analysis process began by transcribing all the interviews and the focus group session. This process was essential to bringing additional life to the words spoken by the participants. Following transcription, this researcher began to read the transcriptions and used bracketing to identify common responses to each question from the participants while bracketing out biases. Handwritten notes and highlighting were used to accomplish this task.

Next, tables consisting of three headers at the top of the table were constructed. An example of one of the tables used is located in Appendix E. The three headers were: interview questions/participants, summary of response, and clustered response. A table was completed for each interview question. By scanning the "summary of response" column, this researcher could identify a brief summary based on the summary of response. The clustered response represented the commonalities that were identified in the summary of response column.

After identifying the clustered responses, they were paired from the individual interview questions with similar clustered responses from the other interview questions. Then the transcript from the focus group session were reviewed where bracketing was utilized. The bracketed transcript were reviewed to identify data that fit into the clustered responses. No significant themes were identified from the focus group session that were contrary to the clusters identified from the interviews. This researcher then reviewed the site documents in the context of the clustered responses that had been verified from the focus group data and finalized the themes in conjunction with the data garnered from the site documents.

After clustering the data and comparing it with the data from the other data sources, five themes were identified: preservation of life, additional training, always prepared, collaboration, and outside influences. Through comparing the data across all three data sources, the legitimacy of the themes was verified. Potential themes that were not fully supported across all three data sources were dismissed as lacking compatibility.

After the themes were identified, rich textural descriptions were constructed for each participant in the narrative, integrating direct quotations as well as analyzed data that were derived from all three data sources. Creating a rich textural description of each participant interview allowed full understanding of the participants' perspectives, but to also understand

their lived experiences better. After gaining a better understanding of the participants' lived experiences, this researcher could conclude they had experienced the phenomenon.

While each participant had indicated he or she had experienced the phenomenon during the screening process for participation, it became evident when constructing the textural and structural descriptions for each participant the depth to which he or she had experienced the phenomenon. During the construction of the textural and structural descriptions and formation of a composite description for each participant, direct quotations from the interviews were used to articulate the meanings and the very essence of the experiences as described by the participants. The five themes identified are discussed in the following paragraphs.

Theme one, preservation of life, was the need to preserve life, especially the lives of their students. This was the first theme identified as referenced by all 10 participants. This theme is rooted in self-efficacy theory and is characterized by the participants' desire to survive, win, and the preservation of innocent lives. The need to preserve life was the participants' resounding motivation, which led to imagery formation and subsequent physical planning within the classroom. The need to protect their students was mentioned and expounded upon in every interview and was brought up in the focus group session as well. The need to preserve life was the foundation of many of the mental images that were shared and was the basis for participants seeking to gain additional training and was the source of raw emotions observed during data collection.

While this theme was highly anticipated, it was not necessarily expected from novice participants. However, even the participants who described underdeveloped mental images were adamant about their desire to protect their students. This desire left an interesting opening between desire and ability but expressed the participant's desire to win at all cost when dealing

with a violent encounter. Brandon stated, "my job is to keep kids safe" (Brandon, Personal Communication, April 21, 2017). Rachel stated her source of mental rehearsals was, "Trying to keep my kids safe, at all costs, because they are the important part, that's my job" (Rachel, Personal Communication, April 21, 2017). Yet, this is a self-imposed part of a teacher's job and not a contractual part of a teacher's job. Jason mentioned his goal was to make sure he returned the student home at the end of the day in the same condition he or she came to school, safe (Jason, Personal Communication, April 21, 2017). Jason expounded on this notion and revealed he thought that if he kept his students safe, their teachers would do the same for his children (Jason, Personal Communication, April 21, 2017).

Very few of the participants acknowledged preserving their own lives. However, the ones who did mention their own self-preservation prefaced it by indicating the goal was to stay alive to keep their children alive. These confessions of self-preservation often were expressed with a form of regret, as the participants displayed signs of remorse that they were showing care for their own life in the shadow of a child's life. However, these participants had undoubtedly placed their own survival in the mental images they had developed to prepare for an active shooter event.

When exploring this theme, I questioned whether this was valid data or a predictable and interpreted appropriate response from the participants, as no teacher wants to confess that protecting a child during a violent encounter is not their priority. However, these responses were tied to a great deal of emotion and were genuine during the interviews and the focus group. Furthermore, the data derived from the site document collection further expressed the districts desire to protect students at all cost as they have chosen to transform a traditional defensive posture into an offensive posture where teachers are taking the place of first responders. For

these defenders to make this transformation, they had further demonstrated their desire to put the lives of others ahead of their own.

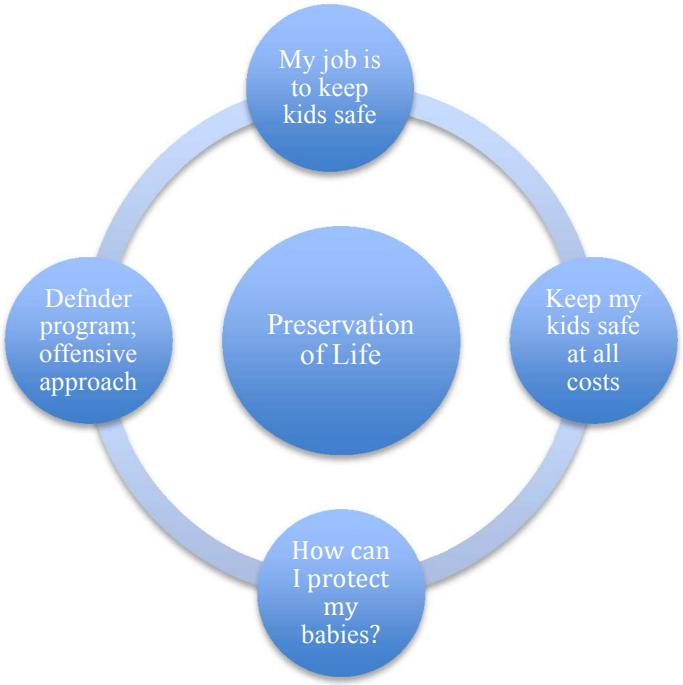

Figure 1. Theme 1.

Theme two, additional training, was the second theme identified and was the participants' desire to receive additional active shooter training. Based on the information obtained when reviewing site documentation, it was determined that the in-service active shooter training received at the beginning of each academic year was minimal. None of the interview questions or focus group prompts specifically asked if the participant wished to receive additional training, but many of the participants mentioned this as something they desired.

Sixty percent (6 of 10) of the participants indicated during the interview that they wished to have additional active shooter training. Additionally, 6 of 10 of the participants had obtained their concealed handgun licenses or increased their firearms training as a means of preparing for an active shooter event. While citing lockdown drills as a source of previous training and exposure to lockdown drills was identified as a source of mental imagery formation by many of

the participants; the need for more training other than the school-sponsored lockdown drills was identified as a theme. This desire for additional training was voiced in a variety of ways during data collection. Some participants disavowed the current lockdown training; others described how they sought out training on their own, some asked for additional training in a straightforward manner. The only participants who did not request additional training were the two participants who had received defender training. It was manifest through their comments they felt confident and well prepared having received the initial three days of defender training followed by annual one-day renewal training.

There were strong similarities between the participants who did not believe they had been properly trained and their desire to gain training and knowledge outside of the school setting. It was evident that the teachers who desired additional training were doing so in hopes of increasing their confidence level. Even the participants who admitted to being confident in their abilities to react appropriately to an active shooter event requested additional training.

Furthermore, the baseline for training that had been established was minimal, and any additional training seemed to assist the participants' increased use of mental rehearsals, even if the training they sought did not have direct application to their security at school. Three levels of training were identified during the study and were then broken down into school-based training and outside training.

Four of 10 participants had only participated in the school lockdown drills and received a review of lockdown procedures during in-service training. Four of 10 participants had received lockdown drill training and concealed handgun license training or other firearms training which they had attended outside of school. The third group, which consisted of two out of ten

participants had received lockdown drill training, concealed handgun license training, and Defender Program training.

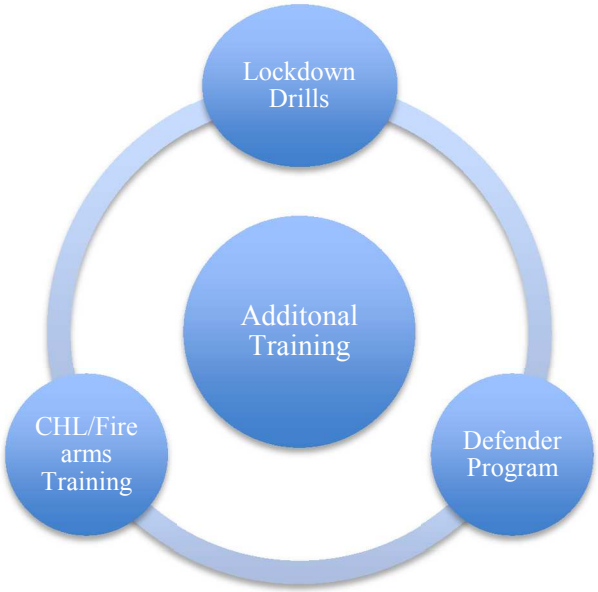

Figure 2 Theme 2.

Theme three, always prepared, was the third theme that was identified was the participants' shared statements regarding always being prepared as many noted it could happen at any time during the school year and the acknowledgment that an active shooter event could happen at their school. These statements were made when discussing why the participants used mental imagery, why they wanted additional training, and when they discussed preparing on their own for an active shooter event with fellow teachers.

"It could happen here," was a common statement throughout the interviews and the focus group. Furthermore, the site documents that were reviewed supported this notion as Truman Elementary falls within the 10% of Texas school districts that have adopted the Defender Program as a means of preparing for an active shooter. Lockdown drills are also presented at the beginning of the year during which time lockdown procedures are reviewed. A few weeks later the first lockdown drill is held. Amanda and Sarah mentioned how the lockdown drills brought

back memories of the atomic bomb drills of the 1960s. During the Cold War, these drills were practiced because of the impending threat of a nuclear war. Lockdown drills were being practiced at Truman Elementary because they viewed an active shooter event as a pending threat for which they always needed to be prepared.

The day the focus group session had occurred, there had been a lockdown drill at the school after a criminal suspect fled from the police and abandoned the vehicle near the school. This was not the first time an event had happened at Truman Elementary, and the teachers were continually reminded how they could shift to a lockdown status at any time and it might not be during an active shooter. Many of the participants also thought they should always be ready for an active shooter, as they knew there were a number of accessible firearms in the community because of the large hunting population in the area.

Many participants mentioned they were always seeking ways to improve their classrooms to respond better to an active shooter event. Some participants mentioned keeping stuffed animals or extra snacks in their classrooms as means of comforting their students. These actions are similar to residents who live in hurricane zones and the preparedness they practice by keeping tarps, bottled water, and plywood on hand to respond to a hurricane and the aftermath. Participants in this study were not only acknowledging their belief in impending violence but were following it up with actions and planning.

The participants' responses of always being prepared often led to discussions of the mental rehearsals they used, which included visualizing actions in their classrooms and visualizing improvements they could make to better equip their classrooms as a defensible safe haven. The act of preparing and a state of constant readiness are largely supported by mental imagery, as these images motivate a person's preparations. For instance, people preparing for a

hurricane are doing so because of the knowledge of past natural disasters and then are reintroduced to this threat during weather forecasts. People who live near hurricane-prone areas are always in a state of readiness knowing a hurricane could happen at almost any time during hurricane season. Likewise, the teachers at Truman Elementary School were always prepared for an active shooter event, as they knew it could happen at any time and this belief was reinforced by news reports of active shooter events happening on a seemingly routine basis.

Figure 3. Theme 3.

Theme four, collaboration, was the fourth theme focused on the participants' collaboration with other stakeholders. While the intent of the focus group session was to allow teachers to learn of the mental images used by other participants and feel more comfortable sharing their own use of mental rehearsals, responses indicated participants were already using collaboration. While education is a profession that often uses collaboration as multiple employees are teaching the same thing across a grade level, and often work together to achieve a common goal, it was not known it would be used to discuss active shooter events.

One of the main foci, and perhaps biases by the researcher, was to ascertain whether the mental images used by teachers were adequate in addressing an active shooter threat or if the mental images they were utilizing were skewed in a manner that was not functional during an active shooter event. For instance, if a teacher was planning to barricade the door with a heavy bookcase that required several persons to move, then this would not be a realistic mental image during an active shooter event. This shortcoming could eventually lead to additional stresses during a crisis, as their mental script would be disrupted. Rather, many of the participants indicated during the interviews and the focus group session how they had discussed their plans of action among their teams and had even collaborated on actions outside of the classroom.

It was also apparent during data collection that teachers had taken it upon themselves to address issues outside of the classroom. While the standard lockdown protocol had indicated a teacher's actions inside of the classroom, many teachers had examined their responses outside of the classroom, such as being in the gym or cafeteria. Many of the teachers discussed the mental rehearsals they had utilized outside of the classroom and the reduced stress they felt, as they had developed plans to encounter a threat in an alternative environment.

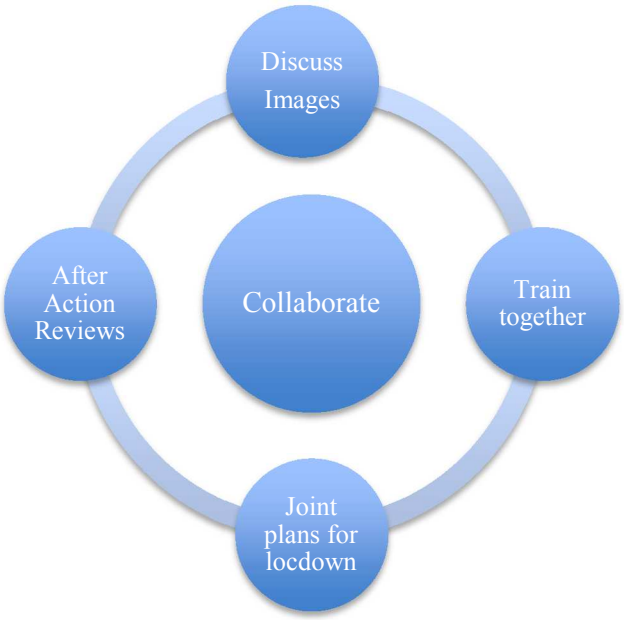

Figure 4. Theme 4.

Theme five, outside influences, was the fifth theme identified. Aspects of the fifth theme have been identified within the context of other themes, but the manner in which outside influences aid in mental imagery formation was also identified as a theme. Participants relied on their own personal backgrounds, additional outside training, and family involved in law enforcement were all influential to participant image formation. While enumeration of these shared influences was less apparent than other themes identified, the overall credit given to these outside influences could not be ignored.

During the focus group session, the prompt regarding the influence of participants' background on this subject matter triggered many of the participants to begin discussing their individual backgrounds, both geographically and generationally. Many of the participants had been in high school during the shooting at Columbine and lockdown drills had become standard practice as they moved through school. One participant shared how she had grown up in the "ghetto" and violence and was more of a norm for her. Likewise, one participant shared that

even though she had grown up in a more rural area, bomb threats had become a more routine threat eventually leading to school being canceled the last two weeks of the school year.

As mentioned in the discussion of the previous theme, the somewhat common response of obtaining a concealed handgun license after the active shooter event at Sandy Hook, was also a reflection of the changes in society and the threat these participants felt everywhere they went. These participants had obtained firearms and began to carry them legally, but were prevented from doing so in school. The pro-firearms culture in which many of these participants had grown up yielded a response in which they gained access to their own firearms. Many of the participants revealed they had grown up around hunting, therefore, had been introduced to firearms at an early age. Furthermore, many of the participants had obtained concealed handgun licenses as a method of countering the fears and anxiety they experienced after the shooting at Sandy Hook. While these positive responses toward firearms might not be as prevalent in other parts of the country, this was a normalized response for these participants.

Two of the participants, Stacy and Megan, explained how they were influenced by their family members who were involved with or who had previously studied in the criminal justice field. Stacy and Megan both credited this influence as a reason why they had an increased state of situational awareness and applied this awareness when out in public. Law enforcement officers are trained to always be vigilant and aware of their surroundings. In the case of these two participants, their law-enforcement-trained spouses had passed on these traits. In turn, Stacy and Megan had applied this to the school setting as well.

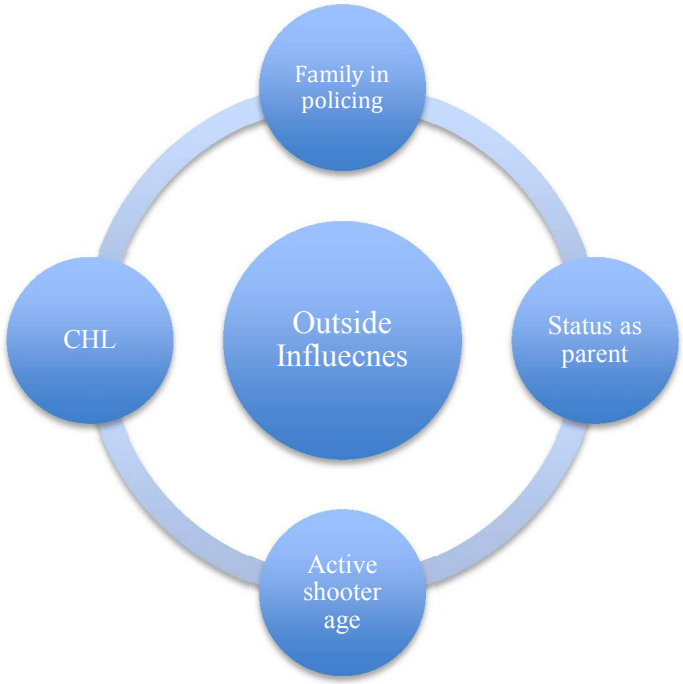

Figure 5. Theme 5.

Research Question Responses

The study was designed to answer one central question supported by five subquestions. The research questions were the foundation of this study, as the questions were the basis for the interview questions, focus group prompts, and documents collected from Truman Elementary. After the data were collected and the data were subsequently analyzed, evidence supporting the answers to the central question and the subquestions were identified. The following paragraphs describe how the central question and subquestions were answered along with supporting evidence.

The central question of this study pertaining to how teachers used aspects of mental imagery as a preparatory stress inoculation tool for confronting an active shooter was fully supported by the research subquestions. Pertaining specifically to the central question, all the participants indicated they had used mental imagery to prepare themselves for an active shooter event and indicated they felt less stressed because of preparing beforehand for an active shooter.

The reduced stress levels were expressed in several ways. The most prolific word used to describe this feeling was the word "confidence." The use of mental imagery as a stress inoculation tool was most evident with the participants who were members of the Defender Program. This was most likely due to those participants being exposed to realistic, stressful training, which increased their anxiety level during training, but subsequently led to a lower stress level when preparing their response for an actual active shooter event.

Research subquestion A: What are the mental imagery rehearsals utilized by teachers when preparing for an active shooter event?

The study confirmed the participants used mental rehearsals to prepare for active shooter events. Several of the participants described the mental rehearsals they used when preparing for an active shooter event in great detail. Many of the other participants did not directly describe the event when asked but would disclose these responses throughout the interview. It was evident that the descriptions provided by the participants fell along a spectrum from minimal descriptive details to extremely descriptive mental imagery rehearsal scripts. Where a teacher fell on the spectrum was almost always reflective of the participant's level of training.

The teachers who had attended additional training, especially the teachers involved in the Defender Program, provided the most vivid accounts of the mental imagery rehearsals. The second group, which provided the most descriptive accounts, were the participants who had obtained the concealed handgun licenses. The remainder of the participants fell into a group where their level of training was restricted to in-service training.

There were two participants in the study, Brandon and Amanda, who had attended defender training. The mental rehearsals used by Brandon and Amanda were much more tactical in nature and provided plans for attack and survival. Both participants credited the Defender

Program with helping them develop more complex mental images they could use in the event of an active shooter. Brandon mentioned, "as the training has evolved. It is set up now where we are actually looking; go seek out where the shooter is" (Brandon, personal communication, April 21, 2017). Brandon further discussed looking at angles of approach when attacking a shooter and being cognizant of cover and barriers that would protect him from an attacker's bullets. Brandon and Amanda both described the act of killing an intruder in their own words. Acknowledging this level of commitment was only evident in the participants who attended the defender training.

Lisa, Jason, Sarah, and Megan all mentioned they had obtained a concealed handgun license or a firearm when discussing how they responded after the active shooter at Sandy Hook. Only Jason, who indicated he kept a firearm at home for protection, acknowledged that the possession of a firearm outside of school would do very little to make the school safer. However, it was evident that attending firearms training had increased the confidence level of all the participants who had attended firearms training. Megan remarked, "The CHL class, that actually opened my mind to a lot of possibilities that I wouldn't have thought of, just like your cell phone vibrating could let someone know you are there so when I am in class, if this were ever going to happen, I set it, so it is on silent so it doesn't vibrate" (Megan, personal communication, April 21, 2017). Megan also described how she developed a mental escape plan when out in public in case a violent encounter was to occur.

Sarah used the term "blasting" when describing someone coming into the school shooting. "Blasting" is a much more graphic word to describe a shooting and pinpoints the intensity of the action. Sarah further described in detail how she would mentally work through different scenarios when she was a classroom teacher; seeking to identify vantage points of an

intruder, how she would respond emotionally to an event, and then how she would counter any panic with calm.

Julie, Stacy, Rachel, and Emily had not attended any active shooter training or any additional weapons training that they could credit with their development of mental imagery rehearsals. All four of the participants who had not attended additional training had focused their mental rehearsals on thoughts derived from yearly in-service training that consisted of a review of lockdown procedures. The mental rehearsals of these participants were limited to physical changes they could make to their rooms and concerns with limited physical fortifications at the schools such as low fences or doors they did not think were secured properly.

Research subquestion B: What are teachers' emotional responses to mental imagery preparation associated with active shooter events?

This question examined the emotional responses teachers feel when mentally preparing for an active shooter event. The literature, including the SIT research conducted by Meichenbaum (2007) had supported the idea that SIT reduces arousal levels during stressful events. Based on the accounts of the defender training shared by Amanda and Brandon, this training had included SIT training and subsequently increased their confidence levels. The training also decreased their fear and anxiety, as they both commented they believed they could engage an intruder and successfully end a violent encounter.

Not only were Amanda and Brandon the most confident participants, they also provided the most descriptive mental scripts. Amanda and Brandon were the only two participants who had attended defender training. The defender training participants were also the most emotional during the interviews, as they had mentally on their own and physically during training, taken

their minds, bodies, and the depths of their souls to a place their fellow participants had not gone, as they had not been trained to do so.

An analysis of the collected data revealed two generalized categories for better grouping responses and from where these thoughts flowed. Responses to many of the interview questions and focus group prompts were either the result of training or driven by emotion. The persistent emotional response presented by every participant was the desire to protect his or her students. Even when a participant's training or expertise in confronting an intruder was very novice, each participant exhibited an attitude of protecting students at all costs.

For all the participants who disclosed they had school-aged children, the protection of their own children translated to the protection of their students. Jason noted:

> I know as a parent when I leave in the morning, and I kiss them goodbye, and they go to (school) my expectation is that they are safe. . .. When I come here, I am going to treat them just like they are home, because I want them to be safe. I want them coming home. They are my kids." (Jason, personal communication, April 21, 2017)

When Brandon was interviewed, it was evident he had mentally taken himself to some dark places that were mentally taxing on him. Brandon acknowledged his moral struggle between his Christian beliefs of not killing and his role in protecting his students from harm. Brandon also mentioned how he thought these intruders were sick individuals and he attempted to ascertain how these sick individuals could be violent toward other human beings.

Amanda answered several questions with raw emotion as she processed the emotional role mental imagery played in preparing for an active shooter event. Amanda had embraced the idea that her students were attending school in an age when violent people might come and take advantage of their innocence. Amanda thought if such a person ever came to Truman

Elementary she wanted the intruder to come to her classroom so she could deal with him or her. Amanda also echoed Jason's comment and stated, "They (parents) are entrusting me with their lives. I need to think about that because I need to send them back home the same way they got to me" (Jason, personal communication, April 21, 2017).

Some of the emotional responses were embedded in the language choices participants used to describe their students and were representative of the strong bond that exists between a student and a teacher. Several participants referred to their students as their "babies." These participants were acknowledging the defenseless nature of children and the desire for these participants to protect them regardless of the personal injuries they might endure. Rachel stated, "It's hard keeping your room of small children quiet, that scares me, should it be the real thing. To keep them quiet" (Rachel, personal communication, April 21, 2017). When asked to describe her emotions following active shooter training, Julie replied, "Mine is always, 'How can I protect my babies?" (Julie, personal communication, April 21, 2017).

Research subquestion C: What background information, personal, and professional, influences teachers' use of mental imagery?

Influential background information was addressed during all three phases of data collection, and several categories of pertinent information were identified as most influential in the participant's formation of mental imagery. Outside firearms training and professional school-sponsored Defender Program training were both cited as outside influences that impacted a teacher's use of mental imagery. As previously mentioned, the unexpected revelation that many of the participants had obtained firearms as a coping and preparation mechanism for confronting and preparing for an active shooter event led to enhanced training for many of the participants. Firearms training was credited with enhanced readiness by 6 of the 10 participants.

During the focus group, many of the participants argued that more people within the school should be armed as the first line of defense against an intruder.

The Defender Program has been discussed several times throughout this chapter, and it is imperative to discuss it in the context of research subquestion C. Many of the teachers not involved in the Defender Program referenced the program as one of the safety measures that had been implemented at the school. It seemed many of the teachers to comfort knowing this extra level of protection had been implemented at their school. The participants were also protective of the Defender Program when discussing it, as they knew the details of the program must be protected to ensure the integrity of the program.

A final area of influence that was brought up during a one-on-one interview was the participant's previous work history in the financial sector. The participant is not identified in this section even by pseudonym to protect their confidentiality. The participant explained during a previous career while working at a bank he or she had received training on confronting someone with a gun or a note demanding money. The participant expressed how this training had carried over into the classroom and provided additional training that was applicable in a classroom environment.

Research subquestion D: What internal and external imagery factors influence teachers' perceptions of violence in their schools?

This question examined the internal and external exposures that predisposed or aided participants in anticipating violence occurring at their school. Rooted in dual coding theory, these external and internal exposures would trigger image recall in the participants. During data collection, all the participants revealed their belief that an active shooter event could happen at Truman Elementary School. Further analysis revealed this anticipation was the result of

previous exposure to active shooter training, ingestion of media reports, social media interaction, knowledge of sport hunting, and having family associated with law enforcement.

This perspective of impending violence was important to all the participants, and many of them recognized this looming threat as their reason not to grow complacent and to receive more training. Several of the participants indicated they had been influenced by media reports, social media influence, outside training, and family members employed in law enforcement as internal and external factors that had influenced their use and formation of mental imagery in preparation of an active shooter event.

Hunting was brought up by Jason and Brandon as a pastime that had made them comfortable around firearms and a tool they had used to hone their shooting skills. Brandon explained how he would shoot small varmints in the country as a way of keeping his shooting skills sharp. Jason expressed that when he was growing up in a rural area everyone had firearms and everyone respected one another's firearms. He recalled how late in the fall everyone would bring their hunting rifles with them in their trucks and no one bothered them.

Many participants pointed to the rural environment of Truman Elementary as a reason why they believed a number of people in the community could have access to firearms, as there were many hunters within the community. This belief reinforced the participants' beliefs that they should always be prepared for an active shooter event because they believed with easy access to firearms, anyone could potentially gain access to a firearm and threaten the school.

Two of the participants revealed they had a family member employed in law enforcement or who had studied criminal justice during college. These participants mentioned situational awareness was a trait they had developed from their spouses. Stacy used her knowledge of law

enforcement to explain the long amount of time it would take for a law enforcement response to get to the school during an active shooter event since Truman Elementary is a rural school.

Research subquestion E: What are the teachers' motivational sources for the development of mental imagery and subsequent use?

The participants in this study drew their motivation from a variety of sources and used this motivation to develop more concrete mental images. Each of the participants had a variety of reasons why he or she desired to be prepared for an active shooter event, but the main motivation was the protection of the students. The preservation of life has been identified as a theme but is also the driving motivation for why the participants prepared and enhanced their skills to be prepared for an active shooter event. The participants were also motivated by their own survival and deemed this as necessary to protect the students.

Many of the participants also referenced the heroics of the teachers at Sandy Hook Elementary and how they had confronted the shooter while unarmed. Other participants questioned what it would have been like to have been in the "shoes" of one of those teachers. The participants had used these real-life accounts of heroism to shape their own mental images. Some of the participants were motivated by the legacy they hoped to leave if one day they sacrificed for their students. This should not be viewed as a selfish ambition to be honored as a hero, but rather a lasting legacy to set an example for their students, families, and others in the profession.

Summary

The purpose of this qualitative, transcendental phenomenological study was to understand how teachers use aspects of mental imagery as a preparatory stress inoculation tool for confronting an active shooter. This chapter detailed the data collected in this study, answered

the central question, and provided data that supported the five subquestions: (a) What are the mental imagery rehearsals utilized by teachers when preparing for an active shooter event? (b) What are teachers' emotional responses to mental imagery preparation associated with active shooter events? (c) What background information, personal and professional, influences teachers' use of mental imagery? (d) What internal and external imagery factors influence teachers' perceptions of violence in their schools? (e) What are the teachers' motivational sources for the development of mental imagery and subsequent use? Each of these research subquestions was answered based on the data that were generated as a result of this study.

The collected data were outlined in three sections. Site documents reviewed from Truman Elementary School were summarized, and section two provided structural and textural descriptions of the interview data collected from the participants. The third section described and reviewed the data derived from the focus group session. The data were analyzed using Moustakas' seven steps as explained in Chapter Three, and through the data analysis process, five themes were identified. The five identified themes: preservation of life, additional training, always prepared, collaboration, and outside influences, were examined and supporting data were provided to indicate the data that were analyzed to identify these themes. Further discussion and conclusions that can be drawn from these data and data analysis are reviewed further in Chapter Five.

CAPTER FIVE: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Overview

The purpose of this phenomenological study was to understand the use of mental imagery by elementary school teachers when preparing for active shooter events in a school. A total of 10 volunteer participants from Truman Elementary School participated in the study. The data collected during this study were threefold and consisted of a review of site documents, individual interviews, and a focus group session. The data were further analyzed using Moustakas' (1994) seven steps and five themes were identified because of the data analysis.

This chapter provides a conclusion for the study as well as summarizing the findings of the study. The chapter is divided into five sections to allow the reader to fully understand the results of the study as well as understanding the benefits of the findings derived from the study. This chapter also includes a discussion of the findings and implications associated with the pertinent literature and theories as discussed in Chapter Two. This chapter also examines the implications of this study, reviews the limitations of the study, and provides several recommendations for further research.

Summary of Findings

The phenomenological basis for this study provided for an adequate amount of data, which resulted in further data analysis using Moustakas' (1994) seven steps. Through the data analysis process, five themes related to the use of mental imagery as a preparatory stress inoculation tool for confronting an active shooter were identified. The identified themes: preservation of life, additional training, always prepared, collaboration, and outside influences; were the architectural building blocks used by the participants to develop the mental images they used to prepare themselves for an active shooter event.

Five research subquestions were introduced in Chapter One, and data collection that provided support for these subquestions was further examined in Chapter Four. Briefly answered here are the five research subquestions: (a) What are the mental imagery rehearsals utilized by teachers when preparing for an active shooter event? (b) What are teachers' emotional responses to mental imagery preparation associated with active shooter events? (c) What background information, personal and professional, influences teachers' use of mental imagery? (d) What internal and external imagery factors influence teachers' perceptions of violence in their schools? (e) What are the teachers' motivational sources for the development of mental imagery and subsequent use?

Subquestion A explored what the mental rehearsals utilized by teachers were when preparing for an active shooter event. The data related to this question were not conclusive, as it was found that the mental rehearsals utilized differed greatly between the participants and were often related to the amount of active shooter training a participant had attended. Participants with a basic level of active shooter training revealed they would visualize inside of their room the best places to hide their children and focused on keeping their children quiet. Participants who had received additional training provided more realistic and vivid descriptions of their mental rehearsals ranging from silencing their cell phones and locking exterior doors to searching out the intruder and killing them. These mental imagery rehearsals, no matter how insignificant, seemed to reduce the stress levels of the participants while increasing their confidence levels.

Subquestion B examined what a teachers' emotional responses were to mental imagery preparation associated with preparation for an active shooter event. The associated interview questions and focus group prompts related to this subquestion sought to solicit the feelings and

emotions related to the mental anguish associated with image formation, which is used to prepare for encountering an act of violence. The data collected associated with this subquestion were often revealed in the participants' words, as they described their emotions in the aftermath of such events as the shooting at Sandy Hook Elementary or Columbine High School. Participants applied these stimuli to their own mental rehearsals. However, the emotional responses associated with mental imagery preparation were most significantly described by the participants who had received training as part of the Defender Program. These participants described their emotional, physical, and moral struggles with the training, and further described the mental rehearsals they continued to go through as they sharpened their skills for dealing with an intruder. The data collected and analyzed in conjunction with this subquestion revealed the more intense the training and preparation endured by the participant; the more the participant seemed to further inoculate himself or herself from stressors while progressed through the training, and eventually overcame the taxing emotional strain he or she was experiencing.

Subquestion C explored the personal and professional background information that influenced a teacher's use of mental imagery. While as expected, the influential background information of the participants varied greatly, the results of this subquestion could be categorized into three categories: outside firearms training, school-sponsored Defender Program training, and previous career-based training. Six of 10 of the participants credited firearms training as a tool they had utilized to prepare themselves for an active shooter event. Two of these participants had additionally attended Defender Program training after receiving their concealed handgun licenses. While the practicality of the non-Defender Program participants increasing their firearms training after events such as the shooting at Sandy Hook Elementary, as they could not

carry their firearms at school, still revealed the desire for the participants to feel more secure outside of school and to feel prepared when not at school.

The third background category involved a participant who had previously worked in a bank. She credited her training for a bank robbery with preparing her to mentally deal with an active shooter. The data and analysis garnered from this subquestion indicated the participants used their background information to influence mental imagery formation, as the background influence was often the result of outside training or interest such as handgun proficiency. While, as previously mentioned, the transferability of these skills is limited in the school environment, these skills were acquired because of induced stress after hearing of other shooting school events. Therefore, the background information shared by the participants influenced a reduction in their stress, anxiety, and fear related to active shooter events.

Subquestion D surveyed the internal and external imagery factors that influenced teachers' perceptions of violence in their schools. These imagery factors were influenced by participants' previous exposure to active shooter training, ingestion of media reports, social media interaction, knowledge of sport hunting, and having family associated with law enforcement. The only external factor consistent with all participant responses related to previous exposure to active shooter training. However, it was evident during data collection how each of the factors played a role in image formation on an individual basis and the participants relied on these influences in becoming more confident in their responses to active shooter events, thereby reducing the stress they experienced in anticipation of an active shooter event occurring at their school.

Subquestion E assessed the teachers' motivational sources for the development of mental imagery and subsequent use of these images. While several sources of motivation were

identified during this study, the one resounding response for why the participants used mental imagery to prepare for an active shooter event was the preservation of life, and more specifically the lives of the participants' students. Lesser motivational sources mentioned by teachers both explicitly and deciphered from their statements was the desire to survive themselves, letting their legacy of sacrifice live on if they perished in defense of their students, and that by protecting their students, they believed their own children would be protected by their teachers. This question supported the central question by means of a double negative, as the motivational influences increased the participants' stress and anxiety associated with mental imagery formation and potential use, but also fueled their internal drive to navigate a violent encounter.

Discussion

This section discusses the study findings in relation to the theoretical and empirical literature examined in Chapter Two and integrated into aspects of Chapters Four and Five. The theoretical and empirical literature was confirmed in this study and aspects of the study findings further corroborate the results of previous empirical studies discussed in Chapter Two.

Theoretical Literature

The theoretical framework utilized in this study was derived from three interconnected theories: self-efficacy theory, dual coding theory, and mental imagery theory. These theories were represented to some degree in all three data collection sources and further corroborated in the results of the data analysis. While the intensity of the theories varied, all three played a critical role in the phenomenon explored in this study.

Self-efficacy theory. Self-efficacy theory emerged as the cornerstone of this study, as it strongly supported the most prevalent theme, preservation of life. Bandura (1989), and Gist and Mitchell (1992) viewed self-efficacy as the confidence people place in their own abilities to accomplish a task. Bandura (1989) further explained how a person's motivation is a process

embedded in the cognitive process and developed before it is utilized. The participants' focus on preservation of life was a resounding source of motivation and reasonable explanation why they sought to be successful in their response to an active shooter event. As the participants exploited their motivation, it resulted in increased use of mental imagery and increased confidence; the focal point of self-efficacy theory.

Bandura (1989) explained that a person's belief in his or her own abilities would directly impact responses under stress, which was emphatically exhibited in this study by most of the participants. The participants' belief in the abilities originated prior to their participation in the study and the participants with the greatest confidence in their abilities were the participants with the most training. In the context of this study, the most trained participants were the two participants who had participated in the Defender Program. The key attributes of the Defender Program, the gradual increase of induction to stress, gradually empowers the participants to survive due to their increased confidence in their own abilities. Self-efficacy was not only reflected in the participants' statements during the interviews and focus groups but was established within the data collected from the site documentation.

Dual Coding Theory. The theoretical value of dual coding theory was demonstrated and confirmed in this study and reflected the theory as proposed by Clark and Paivio (1991). Dual coding theory describes how the development of mental images aids in learning and the development of images created in the mind serves as a symbol that allows for recall at a later time (Clark & Paivio, 1991). For example, Brandon recalled his training, and thought about the consequences of his potential actions when placing his firearm in his biometric safe every morning, hoping it would not be brought out until the end of the day, but cognizant if he did, he

was prepared to use it. The act of placing the firearm in the safe was a stimulus for Brandon, triggering imagery recall and preparing him for a stressful event.

A key aspect of dual coding theory is the accuracy and promptness in which images must be recalled to aid the user. Within the context of this study, participants used a number of symbols to enhance their recall. The two primary symbols that served as triggering mechanism were the auditory lockdown command and the teacher viewing the spaces within the teachers' classrooms, which assisted them in visualizing their actions. It was evident during the interviews that the auditory triggering mechanism was not a prerequisite for all mental recall, but when presented, always resulted in an action. However, many of the participants indicated while in their rooms they would look at various spaces and objects and be reminded of what they needed to do during an active shooter event. This study showed that dual coding theory is a valuable aspect of preparing teachers for an active shooter event, as it allows them to process information rapidly and respond when time is critical for the safety of the teachers and students.

Mental Imagery Theory. Mental imagery theory as proposed by Kosslyn et al. (2006) describes how a person is "seeing with the mind's eye" (p. 4). Just as Kosslyn et al. (2006) explored the difficulties of ascertaining the private nature of a participants' thoughts, it was difficult at times during this study for the participants to completely reveal the mental images they utilized and to verbally describe the images and their formation. However, there was evidence of stimuli that aided the participants as a recall tool by how they responded to active shooter drills or as they prepared for an active shooter event. Within the context of this study, mental imagery theory was prevalent in all the participants as they described the mental images they had created based on exposure to active shooter training and subsequently how these images

were further developed as they looked around their classrooms, the school gymnasium, or playground.

Many of the participants also described how the lockdown drills conducted twice a year at the school trigger their previously developed mental images to begin to play out in their minds and they immediately begin the tasks they had to perform; locking doors, hiding students, calming students, and waiting for an outcome or further direction. However, just as the participants explained their tasks when carrying out a drill, they also explained how they reviewed spaces within their classrooms prior to a drill or event ensuring the classroom was set up in a manner that would support their proposed imagery. For instance, Megan mentioned how she would frequently check her classroom closet to ensure there was adequate space for all her students to fit. The importance of mental imagery theory was confirmed within the context of this study.

Empirical Literature

Many of the empirical studies and the results of that research reviewed in Chapter Two were present in this investigation and corroborated the findings of the related literature. While this section is not a comprehensive listing of all the studies contained within Chapter Two, it is a summary of the relationship between the Chapter Two literature and the findings of this study. Empirical literature presented in Chapter Two consisted of the selection of mental images, novice versus experienced participants, novice reactions to an active shooter, responses by experienced participants, SIT, mental imagery scripts, and performance enhancement.

The selection of mental images is an important aspect of mental imagery development and subsequent use. Sackett (1934) examined how participants settled on selecting an image after they had previously been exposed to the image. During the subsequent recall of the image,

participants chose the image to which they had previously committed. During the present study, the participants often referred to an image they had developed as the result of training. The more training they had received, the more detailed the image was. Additionally, participants seemed to recall the image details more quickly during the individual interview as a result of these images being readily available for recall.

Several of the empirical studies presented in the content of Chapter Two looked at the difference in performance levels between novice participants and experienced participants. Many of these studies, such as the netball experiment conducted by Kremer et al. (2011) determined novice participants who used mental imagery prior to conducting a task, in this case throwing a ball, increased their performance. Within the context of the present study, the difference between novice participants versus experienced participants must be more closely viewed as minimally trained versus highly trained. The minimally trained in the present study would be the teachers who had only received lockdown drill training and the highly trained would be the Defender-Program-trained participants. While the Defender-Program-trained participants described more detailed mental images, the lockdown drill only trained participants had used mental imagery developed from their basic level of training to increase their preparedness and increase their confidence.

The literature in Chapter Two that examined the reactions novice participants and experienced participants have to an active shooter was derived from actual events rather than laboratory setting research. The participant in this quasi-case-study was a student at Virginia Tech in 2007 when dozens of students were shot in an active shooter event. The student recalled hearing a SWAT operator state, “there are a lot of blacks in here” (The Koshka Foundation, 2012). While the student was confused by the remarks, the SWAT operator was referencing

medical trauma codes for victims in the room rather than the race of the students within the room. Likewise, the mental images and anticipated actions presented by the Defender Program participants in the present study differed from those of the minimally trained participants. The Defender Program participants had developed a skill set based on their training that was indicative of an offensive posture rather than a defensive posture within the school. With this increased state of readiness, they began to expand their mental imagery rehearsals to work in conjunction with their skill set to perform under stress and interact within the process, rather than merely function and observe the process.

SIT refers to the idea that if a person has been previously exposed to stressful events in training, they become more inoculated from mentally and physically shutting down when exposed to an actual stressful event (Meichenbaum, 2007). All the participants from the present study credited their training with inoculating them to some degree. This was evident in their descriptions of the mental imagery they used as they often followed up with their descriptions with a statement regarding their focus on performing their job or protocol. By predisposing themselves through training and mental rehearsals, the participants were able to block out many of the stressors that might interrupt their mental scripts, allowing them to focus on the task at hand.

Mental imagery scripts as described in a study by Louridas et al. (2015) examined the use of mental scripts as the basis for mental practice, drawing the conclusion that such a practice increased technical abilities while decreasing stress. The participants in the present study had developed mental imagery scripts as a means of walking through their actions when planning for an active shooter event. Many of the participants mentioned visualizing their actions within their

room and their means of egressing through the building to attack an intruder or move to a safe location.

The ability to insert oneself in one's own mental imagery also corroborates the study by Santarcangelo et al. (2010) in which they examined whether participants could place themselves within the image and then manipulate the image. Many of the participants in the present study described how they would look at the setup of their classroom, conduct a mental rehearsal, and then rearrange the room to support the mental rehearsal. When Stacy was interviewed, she explained her actions when asked about the mental process she goes through when preparing for an active shooter event after receiving training or hearing news accounts of active shooter events. Stacy said:

> I go through the steps in my mind. I like to visualize in my classroom where the safest place is for my kids. And make sure they can all fit in there so even if it wasn't a drill, I would say 'let's see if we could fit over here,' especially if I have moved the room around, which I was known to do quite frequently. So, we would practice getting in our area so that they couldn't be seen from the big window at the back of the room or the little window at the front of our room. (Stacy, personal communication, April 21, 2017)

The findings of the present study corroborate the findings empirical literature related to mental imagery scripts and the importance of this process in developing and maintaining accurate images.

Implications

The purpose of this section is to discuss the theoretical, empirical, and practical implications of this study. Furthermore, this section addresses recommendations for impacted stakeholders that include teachers, administrators, members of the community, and politicians.

All phases of this study were supported by literature related to the studied phenomenon; therefore, the subsequent collected data and data analysis reflect the theoretical and empirical literature reviewed in Chapter Two. The results of this study, while insignificant on an expansive scale, included several theoretical and empirical literature implications that could assist this body of literature.

Theoretical Implications

The three theories examined in support of this study were self-efficacy theory, dual coding theory, and mental imagery theory. All three theories were evident in the results of this study and indicated further implications in this area of research. First, self-efficacy was defined in Chapter Two as "a person's estimate of his or her capacity to orchestrate performance on a specific task" (Gist & Mitchell, 1992, p. 183). Data collected during the study pointed to participants' confidence levels and how they increased their level of confidence. Many of the participants indicated they used mental rehearsals to increase their confidence levels. Research conducted by Bandura and Locke (2003) supported the use of cognitive processing in formulating their self-efficacy thoughts. The confidence expressed by the participants was a mental process that resulted in better images and more confidence.

The greatest levels of confidence were reported by the participants who were also members of the Defender Program. These members expressed how they had grown in their confidence because of attending the Defender Program. The implication, which can be derived from this theory and the results of this study, is that the more training a teacher has pertaining to active shooter training, the more confident they will be. Furthermore, the more realistic the training, the more confident the teacher will be.

The second theoretical implication in this study pertains to the results associated with dual coding theory. Clark and Paivio's (1991) dual coding theory is based on the premise that the development of mental images aid in learning. The participants in this study began to develop mental images and perform mental rehearsals based on the training that they had received. Participants in this study utilized basic levels of training to begin practicing their mental rehearsals and modifying their classrooms to match their mental images with the environment around them. The implications from this theory and the current study are that teachers need to be supplied with a basic level of correctly presented active shooter training to develop correct images that can then be used to increase cognitive training and preparedness. The need for correct image formation is important, as dual coding theory is reliant on rapid recall of images, as the mind is using verbal and nonverbal information to create images (Clark & Paivio, 1991). Emily, for instance, mentioned how she would visualize and assess her room so she could plan and be capable of making split-second decisions. Continued maintenance of the formed image is critical for future success, and school districts must continue to train their teachers properly to ensure the mental images created by teachers do not become stagnant or forgotten.

The third set of theoretical implications that can be drawn from this study relates to mental imagery theory. Mental imagery theory is more simply defined as "seeing with the mind's eye" (Kosslyn et al., 2006, p. 4). Many of the participants recounted how they "visualized" the steps they would take within their classroom when responding to an active shooter event. "Visualizing" and addressing problems within their classroom that could impede them from properly protecting their students. Much like the continued training that is necessary to keep images intact, as was discussed in relation to dual coding theory, continued training is

critical in the context of this theory as well. Geoffrion et al. (2012) viewed mental imagery as a rehearsal for a task. Many of the participants expressed this concept. Brandon described how he would visualize and walk through encountering an active shooter in the main office and described his movements during the interview.

Furthermore, many of the participants indicated their concerns with responding to an active shooter event that might occur when they were outside of their classroom. The possibility of differing locations might fit the image formation they are using inside of their classroom. School districts need to be cognizant of this and implement lockdown drill training to take place in the cafeteria, library, and at recess to prepare their teachers better for responding in any situation.

Empirical Implications

A plethora of empirical studies was explored in Chapter Two, and several implications can be drawn from these empirical studies considering the results from the present study. The empirical studies with the greatest implications related to the results of this study are increased stress inoculation because of attending Defender Program training, the use of mental scripts as described by participants, and the transformation of participants moving from purely novice to more expert because of increased training. These studies and the results of this study will be further examined to understand the implications that can be used to prepare teachers further for active shooter events.

SIT is focused on reducing stress during an actual event through the repeated exposure to stressors prior to a stressful event occurring. The results of this study indicated the teachers who felt the most confident and who felt the most prepared were the teachers who had attended Defender Program training. The two participants who had attended Defender Program training described the steps they had emotionally and physically gone through to go from being untrained

to develop a level of confidence where they could defend their school. While it may not be practical to arm and train every teacher within a school, for a variety of reasons, the realism of the Defender Program training is more in line with the ASIRT training also discussed in Chapter Two. The more realistic the training, the more prepared a teacher will be because he or she has been exposed to more training stressors than teachers who have only received in-service lockdown drill training. Increasing training and making it more realistic is an implication of this study.

Many of the participants described the steps they would take when using mental rehearsals or the protocol they would follow when responding to an event. These participants were describing mental scripts without necessarily realizing it. None of the participants in this study described a faulty script, but there is the potential for teachers to develop faulty mental scripts as the result of not receiving training or having poor procedures. It is essential that school districts train their teachers properly and provide quality refresher training to ensure the mental scripts developed by their teachers are consistent with the school's lockdown training. The lockdown drill should not be evaluated solely on teachers successfully getting their students out of the hallway, but must also focus on actions within the classroom and the response of the students.

Several empirical studies examined in Chapter Two discussed the differences between novice participants and experts. The implications of these empirical studies and the results in this study are twofold. First, it is essential that even if participants are trained at a novice level, the corresponding level of preparedness is sufficient for protecting the teacher and the students. Second, if a teacher receives increased levels of training similar to the Defender Program, then those teachers may have achieved a level of training that would make them more experts than

novices, and the district needs to maintain this level of expertise and utilize these teachers to assist others within the school in understanding their response to an active shooter event. It is not practical for everyone in a given school to be an expert, as budgets may not support this approach, nor is everyone mentally and physically equipped to assume this role. However, the teachers who do become experts must share their expertise to prepare their peers better for a violent encounter.

Practical Implications

There are two primary practical implications that can be gleaned from this study. First, a teacher will do whatever he or she can to protect the lives of students; regardless of the resources available or the level of training received. A majority of the teachers indicated the only active shooter training they had received was related to lockdown training. However, many of these participants then sought out additional training in the form of concealed handgun license classes or another firearms training. Most of the studies examined in Chapter Two were laboratory-based studies and did not allow for additional training to be assessed. However, a connection could be made between the novice participants and the expert participants in a number of the studies discussed in Chapter Two. Frank et al. (2014) found that novice participants who used mental imagery before attempting a task performed better than those who did not. The results of the present study in conjunction with the study conducted by Frank et al. (2014) indicate even a small amount of training can benefit a participant.

The second practical implication from this study is any training a teacher receives related to active shooter preparedness will aid in responding to an active shooter event. Many of the teachers involved in this study had received a minimal amount of training. Those teachers used the small amount of training they did receive in the development of mental images to visualize

the resources they would use in their classrooms and to collaborate with their fellow educators to create a plan of action.

Stakeholders

There are a number of stakeholders involved in this topic of research who would benefit from the results, and they are necessary change agents for allowing this area of research to grow, be challenged, and lend support for additional training and resources for school districts. Teachers, administrators, the community, and politicians are all stakeholders involved in this area of research and could benefit from better understanding the results of this study.

Teachers. Teachers outside of Truman Elementary could benefit the same as the teachers who participated in the study. A teacher who has experienced the studied phenomenon could better understand the usefulness of using mental imagery to prepare for an active shooter event and understand that their peers have experienced this same phenomenon. Additionally, teachers could understand the increased preparedness experienced by the participants in this study, which was the result of minimal use of mental rehearsals. Teachers should seek out their own training as many of these participants did to increase their confidence levels. In this study, many of the teachers obtained their concealed handgun licenses to increase their confidence. However, teachers may increase their confidence through study, through physical fitness to decrease stress levels, or seeking out their own tactical training. Finally, this study serves as a reminder to teachers of how active shooter events could happen anywhere, including their own school.

Administrators. Many of the participants in this study asked for additional training to prepare themselves better for an active shooter. It was also evident in the teachers who had received additional training how they enhanced their confidence level and their use of mental imagery as a way of reducing their stress in dealing with an active shooter. School

administrators such as principals and superintendents are responsible for making active shooter training more available to their teachers and students. School administrators must collaborate with other administrators as well as review the best practices that are being used throughout the country to prepare their schools for an active shooter event. Furthermore, school administrators should review their school safety plans and adjust the plans to current trends in active shooter situations, rather than relying on prefabricated school safety plans passed down by the state or an administrator's predecessor. Administrators also need to be aware if they design their schools to optimize the learning environment, such as an open classroom concept, then teachers must devise their own methods for locking down a structure that is not meant to be locked down.

Community Engagement. The largest contingent of stakeholders involved in this study are the community members who make up the parents, students, and law enforcement officers within a district's local community. Parents need to understand the threats facing their children and be supportive of the teachers who are charged with protecting their children. Parents are also voters who limit or increase the resources available to teachers in the form or increased training or programs such as the Defender Program. Community stakeholders must remain vigilant and keep their district's administrators accountable for protecting their schools, but must also support their administrators in providing them with the right tools to protect their schools.

Politicians. Politicians at the local level, state lawmakers, and congressional lawmakers are all responsible for aspects of implementing the findings of this study or pushing for additional research. First, the increased confidence and overall heightened posture that were gained by Truman Elementary School's involvement in the Defender Program was evident. However, the Defender Program had to be supported initially by the state legislature to protect the defenders from liability and then approved by the local school board to support the program.

Politicians need to understand in the light of many active shooter events that these horrendous acts are becoming increasingly violent, as the death toll of many recent active shooter events are growing rapidly. Politicians need to move swiftly to provide school districts with increased funding and legal assets to prepare for an active shooter event.

The results of the study were in line with the literature reviewed in Chapter Two. The main discernible difference between the studies examined in the literature review and the present study was drawing context from quantitative studies in conducting a qualitative study. While the quantitative studies indicated how the participants might respond, the human spirit of innovation could not be accounted for prior to the study. The fact that many of the participants had sought their own training was surprising, as there was not a direct outlet for the concealed handgun license credentials. However, this desire to defend themselves and others could be an indication for the district and other districts to implement more participants in the Defender Program.

Delimitations and Limitations

Outlining delimitations and limitations of the study were essential in assuring the study remained focused, and the desired phenomenon was the focus of the study rather than outliers that would have potentially clouded the study. Delimitations refer to choices made in that this researcher knowingly had limited the scope of the study. Limitations referred to the disadvantages of the study that were uncontrollable and reflected the shortcomings of the chosen design or the experimental process altogether.

Delimitations

The key delimitation to be addressed in this study was the decision to select a phenomenological study as opposed to a case study. A case study would have addressed and studied actual events versus perceived events. However, using a case study would not have aided in understanding stress inoculation, as the event would have already occurred.

Furthermore, a case study design would not address this phenomenon effectively, as the potential sample population would be extremely small if it even existed. This phenomenon was difficult to study, as the data were predominately being collected from the mind of the participants. There were several delimitations that can be identified in this investigation that might have impacted the results of the study. This study was written as a phenomenological investigation that resulted in the identification of teachers who have used mental imagery to prepare for an active shooter event. However, it is unknown how frequently this mechanism is used by teachers to prepare for an active shooter event. The site location chosen for this study was adequate, but was limiting in terms of generalization to the rest of the country as the site location for this study was a rural school in a conservative state.

The results of the study indicate that mental imagery does enhance a teacher's confidence level and increases preparedness without he or she receiving additional training. However, it is difficult to determine how many teachers only maintain a base level understanding of active shooter responses as directed by lockdown drills and district policy. Therefore, while most of the teachers who participated in this study seemed poised to attend or were at least receptive to additional training, teachers who have not experienced the studied phenomenon may not be mentally equipped to participate in training that takes them to a more engaged level of response.

Limitations

The limitations of the study relate to the sample population. The sample population for this study was derived from elementary teachers in Texas at Truman Elementary School. Most of the teachers had many years of experience and undoubtedly had been influenced by a number of sources. Furthermore, this limited population size may have limited the generalizability to other populations, but is an appropriate starting point for this study. Furthermore, due to the chosen research method for this study, the number of research participants was deemed not to

exceed 15. The small sample size was conducive to a phenomenological study and allowed me to gain a deeper understanding of the phenomenon, but the small sample size also weakens the generalization of the results.

Many of the participants in this study were influenced by the local communities and state in which they live. Being a rural area in Texas, a conservative state, many of the participants had grown up around firearms and their response after Sandy Hook to feel more prepared and secure was to purchase firearms. The familiarity of the participants with firearms may have influenced their responses to some of the questions. It is unlikely in more urban areas where handgun laws are stricter that participants in those areas would respond in the same manner.

Another limitation that should be considered is the phenomenon itself. The collected data were based on the participant's response to something they had experienced within their own mind. It is difficult to fully understand what someone has experienced in his or her mind and is equally difficult to measure the degree to which the participant has experienced the phenomenon because the description of the phenomenon may be limited by his or her verbal aptitude and ability to explain the phenomenon experienced.

Recommendations for Future Research

The goal of this study was to understand how teachers use mental imagery as a stress inoculation tool for dealing with and confronting an active shooter. This study garnered data that were useful in examining this phenomenon but were purposefully kept small due to the qualitative nature of the study. Further analysis, which would enhance this body of research, should focus on recruiting participants who teach middle school and high school, recruiting participants from different regions of the country, and interviewing participants who do not have

a Defender Program or similar program for an armed teacher response to an active shooter, and using a larger sample size.

Interviewing participants who teach older students would provide additional data, as the conversations that can take place with older students can change a teacher's preparation as to the actions of their students during an active shooter event. Additionally, older students can become an extra resource, as they can be used to hold a door, assist in moving furniture to barricade a door, and using their cellular telephones to alert authorities. Furthermore, middle school and high school teachers have fewer concerns about keeping students quiet or occupied as was a concern expressed by the elementary school teachers.

Conducting the same study in other areas of the country might also alter the data that are collected. Truman Elementary School is located in a rural area in a conservative state. By soliciting volunteers from a variety of schools located in a region that includes rural, urban, and suburban communities would garner a different data set and involve participants with varied backgrounds.

The presence of the Defender Program in Truman Elementary also added an unforeseen dimension to this study, as all the teachers were aware of the Defender Program, and two of the participants were active members of the Defender Program. The two participants who participated in the Defender Program had received additional active shooter training that influenced their mental imagery formation. Likewise, districts that do not have the Defender Program or districts that have more teachers participating in the Defender Program would offer a different view of this phenomenon.

Additionally, differing qualitative and quantitative designs could be attempted in future research. For instance, a pretest mental imagery exposure followed by a posttest situational

shooting simulation would allow for quantifiable results when accounting for no exposure to imagery, exposure to imagery, and a control group. Additional, quantitative research could measure biological and physiological responses to stress to better measure stress inoculation during a stress-induced shooting simulation. A case study could also be conducted in districts where teachers have received actual active shooter training, and then were exposed to an actual lockdown drill. A case study would allow the researcher to compare the perceived actions with the actions actually carried out.

Summary

The purpose of this qualitative, transcendental phenomenological study was to understand how teachers use aspects of mental imagery as a preparatory stress inoculation tool for confronting an active shooter. Through the data collection process and subsequent data analysis, five themes were identified: preservation of life, additional training, always prepared, collaboration, and outside influences. Each of these themes was identified as factors that influenced how teachers developed and used mental imagery to prepare themselves for an active shooter event. Furthermore, the more training a teacher received, the more confident he or she was in the ability to react to an active shooter event. The teachers further increased their use of mental imagery as they received additional training. The teachers who had received the most training had learned to work through the stress imposed on them by the situation and emerged prepared to encounter an active shooter situation.

There are three main concepts that have been identified in this study and coincide with one another. First, teachers will do whatever is necessary to protect their students. Second, any additional training a teacher receives regarding the safety of their students will be used as a platform to enhance his or her own abilities to respond to an active shooter. Finally, the training

the teachers receive should be as realistic as possible to aid them in image formation and confidence that will ultimately reduce stress levels when reacting to a shooter event. Through proper exposure to training, a teacher can use mental imagery to prepare for an event.

A final closing thought that demonstrates the power and usefulness of this study and paints a picture of how this study could change how children and teachers are protected in schools. Imagine it is a Tuesday, at 8:32 am, on a perfect fall day in an elementary school outside of Kansas City, Missouri. Parents have just dropped off their innocent children at school and have gone about their day. Suddenly, while drinking a warm cup of coffee at a local diner, a group of parents see a number of police cars rushing past the front of the diner, the police are rapidly descending on the local elementary school. The parents are in shock and quickly look at their phones. The parents have received a text message that the school is locked down after an angry parent entered the school with a firearm. However, a second text message indicates the shooter is no longer a threat, and everyone in the school is uninjured. The parents quickly seek answers.

As the local police begin their investigation and clear the building that still smells of expended ammunition, they find classroom after classroom locked and barricaded with teacher and students safe inside. They find the school principal is a bit shaken, but find he or she stopped the intruder with a baseball bat kept in the office from his or her days as a baseball coach at the local high school. The principal described how he or she had kept the bat to remember being a baseball coach but also to defend the main entry point of the school. Firearms are not allowed on the school campus, and the school resource officer was sick and did not come to school.

The principal described mentally preparing to attack an intruder so many times, that it was second nature, and despite the additional stressors experienced, the principal was unfazed when it came time to perform his or her duties. Several of the teachers who were interviewed indicated they were able to lock down their classrooms and barricade their doors in a matter of mere seconds, as they had discussed the plan with their students, explained what needed to happen beforehand, and had mentally walked through their classroom procedures dozens of times. Many of the teachers remarked they felt as if they had encountered this threat many times before. An interview with the local police chief indicated this was the first active shooter event to ever occur in the county.

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APPENDIX A

Interview Questions

Standardized Open-Ended Interview Questions

Active shooter training

1. Please describe any active shooter training you have received while employed with the school district.
2. Please describe any active shooter training you had prior to coming to your current school.
3. Please describe your thoughts, emotions, and actions following the active shooter training you participated in with your school.

Thoughts concerning the likelihood of an active shooter event

4. Please describe your thoughts, emotions, and actions following the shooting at Sandy Hook Elementary School, Newtown, Connecticut.
5. After you have heard news stories pertaining to active shooter events such as Sandy Hook, what steps did you take on your own to prepare for an active shooter event?
6. After you received active shooter training at your school, what steps did you take on your own to prepare for an active shooter event?

Mental Rehearsals

7. Would you describe your preparations after receiving training or hearing news accounts of active shooter events as a mental process?
8. Describe to me any mental rehearsals you have conducted to prepare for an active shooter event?

9. What do you believe is the source of the mental rehearsals you have exercised pertaining to active shooter events?
10. Do you think the training you have received has enabled you to respond appropriately during an active shooter event? Why or why not?
11. Has the use of mental rehearsals increased or decreased your confidence in preparing for an active shooter event? Why or why not?
12. Is there anything else you would like to mention about active shooter events, mental rehearsals for active shooter events, or any other preparedness training for active shooter events?

APPENDIX B

Focus Group Prompts

1. Were you aware that other teachers in your school were using mental images similar to the ones you have experienced when preparing to encounter an active shooter, how does that make you feel?

2. Have you previously discussed what it would be like if an active shooter event occurred at your school; whom have you told?

3. Now that you have heard from your peers, are you surprised by what they have said and described, or does this help you relate to images you have experienced?

4. What is your source of motivation for surviving an active shooter event?

5. What mental images have you created or used to support this motivation to survive an active shooter event?

6. Have you discussed conducting mental rehearsals with other teachers?

7. When discussing mental imagery formation with other teachers, which of your images seem to align with your fellow teachers?

8. When attending active shooter training, what emotions have you observed in other teachers or have you felt yourself?

9. As you look around the room, how do differences in your background impact your insight into this subject matter?

10. While everyone here teaches at the same school, what internal and external factors influence your thoughts and feelings related to school violence?

11. How has the discussion of mental imagery in relation to active shooter situations changed your understandings of active shooter events?

12. How have active shooter policies and procedures developed by your school influenced your use or development of mental images?

APPENDIX C

Screening Questionnaire

The study you are being recruited to participate in is a qualitative study that seeks to better understand how teachers use mental imagery to prepare for an active shooter event. The study, "The Mind as a Weapon: A Phenomenological Exploration of How Elementary Teachers use Mental Imagery to Prepare for Active Shooter Events," necessitates the need to recruit research participants that have used mental imagery or mental rehearsals to prepare for active shooter events. For the purposes of this study, mental imagery is defined as "seeing with the mind's eye" (Kosslyn, Thompson, & Ganis, 2006, p. 4). To expand on the definition, mental imagery is the process by which humans rehearse doing something in their mind before attempting the task. Mental imagery is often used in sports, before making a stressful presentation, or performing any difficult task.

This study explores the mental imagery rehearsals that teachers have used to prepare for an active shooter event. Any mental rehearsals that you may have used to prepare for an active shooter event will provide valuable data for this study. To qualify for this study, you must have used mental imagery or mental rehearsals at some time in the past.

If you are selected to participate in this study and consent to a 20-minute interview and a one-hour focus group session, you will be compensated with a $25 gift card.

1. **Name:_____**
2. **Phone number:_____**
3. **Email Address:_____**
4. **Are you a certified teacher or teacher's aide? _____**
5. **Do you understand how mental imagery is being used in this study_____?**
6. **Have you ever used mental imagery to prepare for how you would respond to an active shooter event in your school?_____**
7. **Do you feel comfortable sharing these experiences in an interview?_____**
8. **Do you feel comfortable sharing these experiences in a focus group setting?_____**

APPENDIX D

Consent Form

Study: The mind as a weapon: A phenomenological exploration of how teachers use mental imagery to prepare for active shooter events

Principal investigator: Aaron Wheeler

Liberty University
School of Education

You are invited to be in a research study of mental imagery used by teachers to prepare for active shooter events. You were selected as a possible participant because you indicated on a previously distributed questionnaire that you had previously used mental imagery to prepare yourself for an active shooter event. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

Aaron Wheeler, a doctoral candidate in the School of Education at Liberty University, is conducting this study.
Background Information:
The purpose of this study is understand how teachers use mental rehearsals to train themselves to respond to active shooter events.

Procedures:

If you agree to be in this study, I would ask you to do the following things:
-Participate in a 15-20-minute interview at your school
-Participate in a *one-hour-long focus group session with other teachers*
Risks and Benefits of being in the Study:
The study has minimal risk to the research participants.

The benefits of participation are protecting teachers and students from harm during an active shooter event. Each participant will also receive a $25 gift card for their participation in the focus group and interview session.

Injury or Illness: There is no risk of injury or illness as a result of participation in interviews or focus group sessions.

Liberty University will not provide medical treatment or financial compensation if you are injured or become ill as a result of participating in this research project. This does not waive any of your legal rights nor release any claim you might have based on negligence

Compensation:

You will not receive payment for participation in this study.

Confidentiality:

The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

Contacts and Questions:

The researcher conducting this study is Aaron Wheeler. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact him at [redacted]

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd, Suite 1837, Lynchburg, VA 24515 or email at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information to keep for your records.

Statement of Consent:

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

☐ The researcher has my permission to audio-record me as part of my participation in this study.

Signature:_____ Date: _____

Signature of Investigator: _____Date: _____

APPENDIX E

Example Clustering Chart

Question 8: Describe to me any mental rehearsals you have conducted to prepare for an active shooter event?

Interview Question/Participant	Summary of Response	Clustered response
8 Julie	Steps and protocol, step by step, movement of students to a safe place	Breaking down rehearsals into mental scripts, protecting the children
8 Amanda	Visualizing my students in classroom, explaining things to students	
8 Jason	Visualizing steps that he needs to take	
8 Sarah	Visualizing different responses to different actions from the bad guy	
8 Rachel	Thinking about different scenarios, what do I do if there is a kid locked out of the classroom	

8 Megan	Steps to securing the classroom, different locations in the school	
8 Emily	Already covered in previous responses	
8 Brandon	Stay calm and protect kids, walk through of what might happen	
8 Lisa	Situational awareness based on being married to a law enforcement officer	
8 Stacy	Lockdown drills in my mind After action report to see what could be done better the next time	