MINDFULNESS MEDITATION AND SELF-REGULATION ON SMARTPHONE APPLICATION BY EDUCATORS: A QUALITATIVE CASE STUDY

by

Jason Boyle

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

Liberty University

2019

MINDFULNESS MEDITATION AND SELF-REGULATION ON SMARTPHONE APPLICATION BY EDUCATORS: A QUALITATIVE CASE STUDY

by Jason Boyle

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

Liberty University, Lynchburg, VA

2019

APPROVED BY:

Chris Taylor, Ph. D., Committee Chair

Janet Richards, Ed.D., Committee Member

Ron Lupori, Ed.D., Committee Member

ABSTRACT

The purpose of the instrumental case study was to explore how educators use a mindfulness meditation application called *Calm* on their smartphones. The self-regulation theory, as viewed from the perspective of Roy Baumeister, guides this study in exploring educators' self-regulation using a smartphone application. The study answers the central question and four research questions: CQ) How do educators use a mindfulness meditation application called Calm on their smartphone? RQ1) How do individuals seeking to modify their behavior use the mindfulness meditation smartphone application? RQ2) How does an individual's motivation to attain a goal shape one's use of the mindful meditation smartphone application? RQ3) How does mindful meditation guide individuals in monitoring thoughts and actions that precede the dismantling of one's goal? RQ4) How does mindfulness meditation cultivate willpower while building one's inner capacity to control mind wandering? The study will also show how educators choose to use their smartphone when it is equipped with a mindfulness meditation application. Studies have shown that educators are more stressed today than they have been in the past and have less free time because of additional educational duties. Mindfulness mediation is proven to reduce stress and create awareness. Ten educators in the Washington, D.C. area participated in the study. Data was collected and analyzed through weekly journal submissions, a focus group, and interviews. The four themes of the study were time management, life commitments, overcome distractions, and the benefits from meditation application.

Keywords: mindfulness meditation, smartphone, educators, self-regulation theory

Dedication

I dedicate this dissertation to those who are relentlessly striving to "find the time" to accomplish their endeavors. To the individuals whose dreams have been inhibited by a perpetual rut, and to those that have found a way to regulate their thoughts through being present, this is for you.

Acknowledgement

This dissertation would not have been possible without the loving support and encouragement of my family. My loving wife and long-time educator, Sylvia, spurred me on in my pursuit of attaining my doctoral degree. Her unwavering support encouraged me to move forward and confront the challenging obstacles I encountered along the way. Not only has she been a consistent affirmer of my work, but a wonderful thought partner and loving companion. She is truly a special somebody and I'm reminded to practice mindfulness because of her. I would also like to acknowledge my son, Gavin, who had to forgo some of our afternoon walks as I completed my research and writing. I will be forever grateful for my family.

Finally, I would like to acknowledge my Lord and savior Jesus Christ. One of the biggest reasons I decided to use the topic of mindfulness and self-regulation was to discover why I did not read the Bible more. The Bible offers an abundance of guidance and wisdom on how I should approach life, but I always made excuses for not reading it. If I truly believed the Bible is the Word of God, I should read, study, and meditate on it daily. If I use the restroom when I have to go, eat when I am hungry; how am I missing out on my spiritual growth which is paramount? I worship you, Lord Jesus Christ, and will strive daily to allow you to take center stage in my life.

Table of Contents

List of Tables

CHAPTER ONE: INTRODUCTION

Overview

This chapter covers the importance of the proposed study as well as the research questions that the study will answer. The background of the problem is discussed in context of recent literature, and the chapter also includes a discussion of how this issue pertains to me. The purpose of the study is clearly identified along with its significance to the literature. In addition, definitions are provided for terms used in the study. The chapter ends with a complete summary of what has been covered.

Background

Buddhist philosophy states that although human beings are stained by much suffering, the suffering can be relieved by considering its cause (Berkovich-Ohana, 2017) through meditation. Mindfulness meditation has been used in studies for many decades, including in hospitals, prisons, corporations, and governments (Farb, 2014). According to Vago and Zeidman (2016), studies that have been conducted are overwhelmingly positive, and science has detected changes in brain waves. Images of the frontal cortex of the brain are different before meditation and after; individuals become more compassionate after meditating (Lim, Condon, & DeSteno, 2015), and stress levels have been shown to decrease in individuals who practice mindfulness meditation (Creswell & Lindsay, 2015; van Hooff & Baas, 2013). But, even though studies on meditation have proven to be positive, only 8% of the U.S. population practices meditation, according to U.S. Department of Health & Human Services (2016).

Mindfulness meditation has cured diseases and mental issues (Creswell & Lindsay, 2015), but how this occurs in the body is not completely understood. The results of mindfulness meditation are outstanding, but how it works is debatable. Even though mindfulness meditation

can be used on smartphones, more individuals are becoming addicted to smartphones (Samasha & Hawi, 2016), which creates another issue. The proposed study focused on individuals who did not practice mindfulness meditation regularly but were willing to try it. These participants were already using their smartphones weekly but did not use a mindfulness meditation smartphone application. Next, the historical aspects of mindfulness meditation will be discussed.

Historical

Educators have been teaching children in and out of the classroom for centuries. Stress is placed on educators in many different areas (Hozo, Sucic, & Zaja, 2015) from teaching to personal life. The lack of balance of personal and professional life along with the pressure of educating and the need for supplies (Wolgast & Fischer, 2017) adds stress to educators' lives. All of these added pressures have made education one of the most stressful professions (Sahbaz & Koyutürk Koçer, 2017), but addressing teacher stress is challenging (Flook, Goldberg, Pinger, Bonus, & Davidson, 2013). According to Chen and Muthitacharoen (2016), prior studies have shown the incorporation of technology has made job professions easier; however, with added technology comes added stress for some people (Chen & Muthitacharoen, 2016). Technology is great to have in the classroom because it helps with active learning (Ben-Av & Ben-Av, 2016) and children can become more engaged. However, educators must continually learn about new technology, the subjects they are teaching, and different teaching methods. Stress is not something that can be eliminated in the profession, but there needs to be a solution for educators to cope with additional stress in a way that does not add more stress and that educators are willing to use. Technology can help limit stress if it is used properly through stress management applications.

Technology has come a long way since its inception. In the beginning of the 1990s, the World Wide Web began to grow exponentially and is expected to grow even more in the future (Donato, Laura, Leonardi, & Millozzi, 2004). Individuals can be on opposite ends of the world and communicate with one another through email and find information in real time. However, despite all the positive aspects of technology, there are some setbacks. People have become injured when using smartphones (Takeuchi, Mori, Suzukamo, Tanaka, & Izumi, 2016) by trying to accomplish other tasks at the same time as talking on the phone. Individuals also seek help from healthcare professionals because of addiction to smartphones (Samasha & Hawi, 2016). Some people become obsessed with social media and use smartphones to feel rewarded when other people agree with them (Zagorski, 2017). Also, a guide to meditation can be used on smartphones, which can assist individuals in meditating.

For thousands of years, mindfulness has been used (Ditrich, 2016) to gain awareness and spiritual enlightenment. There have been many practices of meditation that are currently experienced, but they have similarities and small differences between them. Similar to how technology has changed through the years, meditation has also changed in practice. Meditation is currently used to gain non-judgmental awareness in Western countries and more for spiritual enlightenment in the Eastern countries (Surinrut, Auamnoy, & Sangwatanaroj, 2017).

Social

Stress is seen in all areas of life and is considered to be high in secondary education (Sneha Benedicta, 2014). Time constraints placed on educators (Wolgast & Fischer, 2017) may make them feel as though they do not have time to cope with added stress. According to Addison and Yankyera (2015), female teachers see the most stress, not just from added work, but also from interpersonal relationships they have outside of the profession. The result of the

research shows that stress is not left in the classroom, but educators bring stress home with them. Some people handle stress by watching a television show or browsing their smartphone or other technology, which can lead to procrastination (Reinecke, Hartmann, & Eden, 2014).

Technology is becoming increasingly popular. Biometrics are being used by companies to analyze the faces of employees to ensure they are the individuals they claim to be. Landline telephones are slowly becoming extinct, and the number of individuals with smartphones continues to rise. According to Soukup (2015), over 90% of U.S. households have at least one smartphone in the house. People find it convenient to browse their smartphones and obtain information immediately (Tedder, Shi, Si, Franco, & Chen, 2015). However, not all people believe more technology all the time is better. Steve Jobs, co-founder of Apple Incorporation, limited the amount of technology his children received growing up because of the dangers technology can bring (Bilton, 2014). As the years progress and technology becomes more prevalent in society, people may look more closely to technology to consider the hazards. One way people get away from all the technology is through an expanded meditation retreat.

Meditation has been growing in the social circles for many years. There are retreats that focus on meditation (Surinrut et al., 2017) that allow groups of people from around the world to meditate together. These retreats help individuals learn the proper way to meditate as well as give motivation to people in order to become more aware of the self and gain spiritual enlightenment.

Theoretical

Albert Bandura (1991) discussed self-regulation in social cognitive theory in context of three areas: self-observation, judgment, and self-response. The use of a mindfulness meditation application requires self-observation, judgment, self-response and motivation. Individuals will

observe themselves throughout the day, then judge whether to meditate and self-respond to meditate. Many beginners are not able to wake up and meditate in the moment (Tedder et al., 2015) without being prepared. Educators need self-observation, judgment, self-response and an ability to respond to the stress in a helpful way through mindfulness meditation. Once educators realize what mindfulness meditation takes and what steps to follow to reduce their stress, the next step for them is to meditate.

Situation to Self

For this single case study, I investigated how educators explored a mindfulness meditation smartphone application throughout their daily lives. I had never tried a smartphone meditation application before, but I do meditate while walking. My meditation during walks consisted of listening to my breath as it comes and goes. By focusing on my breath, I am able to see the world in a micro perspective view, which allows me to focus and relax. The micro perspective view allows me to forget about the mundane tasks that I want to accomplish and allows me to be present in the moment with myself. However, I do struggle with phubbing, which is "the act of snubbing others in social interactions and instead focusing on one's smartphone" (Chotpitayasunondh & Douglas, 2016, p. 9); I enjoy reading sports and Google Scholar throughout the day even when I am in the middle of a conversation with someone. Even though I use smartphones and meditation, I sought assistance from colleagues to negate researcher bias (Yin, 2014). The colleagues assisted me in keeping out my biases of phubbing and mind wandering from the research. According to Creswell (2013), the positivism paradigm involves staying distant and independent from the study and objective while reviewing the data. Even though I have my own values and beliefs, they did not control the study and did not play a major role in the discussions. The purpose of this research is to add to the literature. It is

important for a researcher to be independent in thinking and analysis. During the interviews, the participants led the discussion by me asking questions. The participants had their voices heard, and I simply recorded the experiences they shared with me about the mindfulness meditation application that they used during the study.

The philosophical assumptions of this study are ontological, epistemological, and axiological. The ontological assumption made in this study concerns how reality was defined and viewed (Creswell, 2013) from my own perspective. I realized that everyone may not have the same beliefs and realities of the world. To cover for researcher bias, transcripts of participant interviews were reviewed multiple times to understand the participants' perception of the mindfulness meditation application. The epistemological assumption is the relationship between the known and the seeker, or in this case the researcher and participant (Creswell, 2013). I had more knowledge on this topic than the participants, so I worked hard not to add to their statements but to simply seek to understand them. The last philosophical assumption is axiological and deals with the study's values (Creswell, 2013).

Problem Statement

Work-related stress is one of the major underlying causes of teacher dissatisfaction and low morale (Mulholland, McKinlay, & Sproule, 2017). The stress can come from pay cuts, layoffs, and feeling of failure, which can lead to educators feeling depressed (Stern & Brown, 2016). Females in particular are prone to experiencing superfluous amounts of stress (Hallman, Thomsson, Burell, Lisspers, & Setterlind, 2003); however, there have been few strides taken in remedying the issue. Female teachers make up over 67% of the U.S. education workforce (Farinde, LeBlanc, & Otten, 2015) but have not had much support, resources, or time to seek solutions in order to cope with stress within educational arenas (Hallman et al., 2003). Added

stress in the lives of educators is not just a personal problem, but a health concern. There is a link between additional stress and disease (Braun & Foreyt, 2016), so by preventing stress, the possibility of contracting disease can be reduced.

While workplace stress can be found in every profession, those within educational settings face a vigorous and chronic load of stress-inducing issues that are unique to the education profession. Educators working with children and youth tend to take on the problems that their students are facing. It has been reported that 20%-50% of American children suffer pain at the hands of their family; 40% of children reported their life threatened; and, 68% of teenagers experience some form of major suffering in their life (Langley, Santiago, Rodríguez, & Zelaya, 2013). The suffering and pain that the students may endure, manifests itself within the classroom and within the forefront of the teachers' thoughts.

It is extremely common for educators to have additional duties to their primary duty while in a school setting, which places more stress on the educator (Tadic, Bakker, & Oerlemans, 2015). For their students, teachers often become informal counselors, advocates, disciplinarians, and coaches (Richards, Gaudreault, & Templin, 2014). Educators frequently find themselves taking on the pain their students suffer as they attempt to console and remedy the issues at hand (Mishna, Scarcello, Pepler, & Wiener, 2005). Empathetic educators have a difficult time laying those issues to rest at work and find it seeping into their home lives as well (Hydon, Wong, Langley, Stein, & Kataoka, 2015).

Beyond their desire to be the mediators for their dysfunctional home life, teachers also struggle to maintain order within the classroom with these same learners (Gest, Madill, Zadzora, Miller, & Rodkin, 2014). When teachers cannot maintain an orderly classroom, more often than not, they become stressed for their lack of classroom management skills (Gest et al., 2014).

Behavior disruptions induce a greater level of teacher stress as they lose a sense of control while at the helm. Maladaptive behaviors within the classroom cause cyclical stress as it impacts the teacher which impacts the students (Närhi, Kiiski, Peitso, & Savolainen, 2015). According to Calvete (2014), maladaptive behavior can lead to bullying, which causes more issues with educators as well as students.

Bullying is a major issue within school systems and the outcome can be devastating on a micro and macro level. It takes on many forms; it can be direct, such as hitting and slapping students or indirect, spreading rumors about other students (Goryl, Neilsen-Hewett, & Sweller, 2013). When these behaviors occur, educators lose valuable time to teach crucial content while also forfeiting personal time as they must spend that time addressing the issues at hand, including meeting with stakeholders to seek solutions or make referrals (Kochenderfer-Ladd & Pelletier, 2008).

There are occurrences when an overstressed educator will turn a blind eye to students who seem unaffected to being on the receiving end of bullying while focusing their energy to those who are more visibly distressed by it (Whitley, Smith, & Vaillancourt, 2013). However, the earlier an educator intervenes in bullying, the better the results will be in stopping the bully activities (Whitley et al., 2013). The problem is educators are stressed and do not have a reliable stress reducing tool that can be used throughout the day. By having a stress reducing smartphone application, educators may be able to become more aware of their surroundings and feel less stressed.

Purpose Statement

The purpose of the instrumental case study is to explore how educators use a mindfulness meditation application called Calm on their smartphones. At this stage in the research,

mindfulness is generally defined as the art of being unconditionally present in the moment and having non-judgmental awareness (Hölzel et al., 2011). This study is guided by self-regulation theory, with a focus from Roy Baumeister, which addresses the regulation of oneself, makes oneself emotionally stable when experiencing sadness or anger, without any added external assistance (Baumeister & Heatherton, 1996). A three-week study of a mobile application for mindfulness shows that individuals become more compassionate and self-aware in their immediate surroundings (Lim et al., 2015).

Significance of the Study

Recent studies on meditation have shown individuals more sympathetic from meditation (Hallman et al., 2003) and proven to reduce stress in less than four weeks (Baer, Carmody, & Hunsinger, 2012). However, studies have not shown how educators use a meditation application. In controlled studies, individuals have planned time to meditate (Hoff & Bass, 2015) and discuss the implications of the meditation program. For this study, educators were simply given a smartphone application to see how they used the smartphone application. Not only does this study have a theoretical significance, but also practical significance.

Mindfulness meditation can lessen depressive thoughts (Feldman, Greeson, & Senville, 2010) by requiring a practitioner to focus on the present moment, not bringing up past actions or thinking about future disasters (Vago & Zeidan, 2016). According to Kanbayashi (2016), studies conducted from the 1950s to 2000 indicate educators today have experienced increase workloads and stress compared to educators in the past for various reasons that range from disciplinary problems with students to criticism of educators by the public (Sahbaz & Koyutürk Koçer, 2017). The proposed study will add to the literature about educators using a smartphone application for mindfulness meditation to reduce stress. Research does not show whether

educators would use their smartphones for mindfulness meditation, if they know it works, or when they are able to incorporate it into their hectic schedules. Furthermore, research does not take into account educators' ego depletion, a diminished ability to self-regulate a limited resource (Baumeister, 2014) in this case, concentration that may impact educators' desire to meditate. A control study conducted by van Hooff and Baas (2013) shows that a 15-minute mindfulness meditation exercise helps relax stressed individuals. Hanley, Garland, and Black (2014) conducted a study that shows that individuals who practice mindfulness meditation formally are likely to use the meditation techniques in everyday life outside of the formal practice. According to Yu, Dong, Wang, and An (2016), more research is needed to find how teachers manage stress and what personal resources they use.

The proposed research study will add to the current body of literature on practices of self-regulation, mindfulness meditation on a smartphone application at the workplace, and more. School leaders may be encouraged to familiarize themselves with the results of the study in order to install a mindfulness meditation program for their staff to reduce stress (Baer et al., 2012) and keep teachers in the workforce (Sahbaz & Koyutürk Koçer, 2017). If the proposed research shows that the mindfulness meditation application helps educators reduce stress, then schools should want to incorporate the techniques to reduce educator stress and install a mindfulness-based program (Baer et al., 2012) in the classroom. In addition, educators will have an additional tool to use for life that can help them combat stress both inside and outside of the classroom. The mindfulness meditation application can be a tool that educators are looking for to reduce stress since they keep smartphones with them for the majority of the day.

Research Questions

The central question this study aims to answer is, how do educators explore a mindfulness meditation application called Calm on their smartphones?

Educators have various schedules during the workday and chaotic schedules after work that mix interpersonal relationships, family life, and preparation for the next day. The four research questions this study aims to address are:

RQ1: How do individuals seeking to modify their behavior use the mindfulness meditation smartphone application?

RQ2: How does an individual's motivation to attain a goal shape one's use of the mindful meditation smartphone application?

RQ3: How does mindful meditation guide individuals in monitoring thoughts and actions that precede the dismantling of one's goal?

RQ4: How does mindfulness meditation cultivate willpower while building one's inner capacity to control mind wandering?

Central Question

How do educators use a mindfulness meditation application called Calm on their smartphone?

Education is an occupation filled with additional stress due to extra responsibilities, time constraints, and extracurricular activities (Wolgast & Fischer, 2017). Educators are on the move throughout the day and have very little free time with meetings and extra duties. It is useful to understand how educators use the mindfulness meditation application. Do they use it for a few minutes a day, or can they find the time to use it for over 30 minutes a day?

Research Questions

RQ1: How do individuals seeking to modify their behavior use the mindfulness meditation smartphone application?

The first research question is formed around Baumeister's first ingredient in self-regulation: standards (Baumeister & Vohs, 2007). According to Baumeister and Vonasch (2015), the self can be compared against norms, family members, friends, and even the past self. The question is designed to see where participants set their personal standards to achieve what they are looking for.

RQ2: How does an individual's motivation to attain a goal shape one's use of the mindful meditation smartphone application?

The second research question is formed around Baumeister's second ingredient in self-regulation: monitoring (Baumeister & Vohs, 2007). According to Baumeister and Vohs (2007), it is illogical to think that individuals can regulate a behavior without knowing when the behavior is acted; therefore, individuals must understand their behaviors. This question helps understand why participants make the decisions they do.

RQ3: How does mindful meditation guide individuals in monitoring thoughts and actions that precede the dismantling of one's goal?

The third research question is formed around Baumeister's third ingredient in self-regulation: willpower (Baumeister & Vohs, 2007). According to Baumeister and Vonasch (2015), self-regulation sometimes comes from inner conflict, which can lead to a will to use or not to use a desired want. This question is meant to check the willpower used to make changes.

RQ4: How does mindfulness meditation cultivate willpower while building one's inner capacity to control mind wandering?

The fourth research question is formed around Baumeister's fourth ingredient in self-regulation: motivation (Baumeister & Vohs, 2007). According to Baumeister and Vohs (2007), the motivation for individuals to self-regulate is critical for the achievement of self-regulation. Participants must be motivated to self-regulate their behavior on a smartphone and through mindfulness meditation.

Definitions

Some definitions in this study are used interchangeably throughout society. Because this is the case, the definitions listed here define the terms used throughout this research.

1. *Mindfulness* – Mindfulness is generally defined as the art of being unconditionally present in the moment and having non-judgmental awareness (Hölzel et al., 2011).
2. *Mindfulness meditation* – Mindfulness meditation "encompasses various aspects of attention as for instance the ability to focus and sustain one's attention and a reduced proneness to distraction" (Moore & Malinowski, 2009, p.177) at a given point in time and space.
3. *Educators* – Educators are individuals who work in an education setting from pre-kindergarten through post–high school. These individuals work in the education system and are teachers, counselors, teachers' aides, or administrators.
4. *Smartphone* – Smartphone is a technology that "combines telephone services with computer services in a single device" (Soukup, 2015, p. 3).
5. *Teacher-perceived stress* – Teacher-perceived stress is a condition that "results from a relative lack of balance between demands and resources at school" (Wolgast & Fischer, 2017, p. 98).

6. *Smartphone application* – A smartphone application is "a specialized program that can be downloaded onto a mobile device" (Gray, 2014, p. 46).
7. *Coping styles* – Coping styles are "behaviors that determine how well we adapt and move on when confronted with stressful events" (Davies, 2008, p. 32).
8. *Burnout syndrome* – Burnout syndrome is "a state of physical, mental and emotional exhaustion, sense of loss of competence and empathy and mental alienation" (Hallman et al., 2003, p. 435).
9. *Secondary traumatic stress* – Secondary traumatic stress is "the natural consequent behaviors and emotions resulting from knowing about a traumatizing event experienced by a significant other—the stress resulting from helping or wanting to help a traumatized or suffering person" (Hydon et al., 2015, p. 320).
10. *Phubbing* – Phubbing is "the act of snubbing others in social interactions and instead focusing on one's smartphone" (Chotpitayasunondh & Douglas, 2016, p. 9).
11. *Self-regulation* – Self-regulation is the act of "overriding or altering responses, especially as guided by standards of desirable responses" (Baumeister, 2014, p. 313).
12. *Ego depletion* – Ego depletion is "an effort to conserve a resource that is only somewhat diminished" (Baumeister, 2014, p. 314).
13. *Technostress* – Technostress is a "syndrome that occurs when the person, subjected to information overload and continuous contact with most digital devices, develops a state of stress, or an abnormal response characterized by specific symptoms at the cardio circulatory, mental and neurological levels" (Chiappetta, 2017, p. 358).

Summary

An overview of the current literature has been discussed along with a problem statement and purpose statement for the proposed study. The situation to self has been discussed that shows the views I brought to the study and the paradigm that was used. The research questions have been defined, with one central question and four sub-questions that will help this study provide answers. The definitions defined in this chapter carry over to later chapters of this research proposal. The next chapter covers the literature review of the material that will be used in the study.

CHAPTER TWO: LITERATURE REVIEW

Overview

Chapter Two comprises the theoretical framework and information on mindfulness meditation, technology, and educator stress. The theoretical framework covers the self-regulation theory and the components of self-regulation as defined by Baumeister. The section on mindfulness meditation covers the history of meditation, important contributors who brought meditation to the Western world, the benefits of mindfulness meditation, and common misconceptions about meditation. The next section covers important factors related to technology, including the history of the phone from the landline to the smartphone, hindrances of using a smartphone, and phubbing ("the act of snubbing others in social interactions and instead focusing on one's smartphone" (Chotpitayasunondh & Douglas, 2016, p. 9). A section on education follows. The already increased levels of stress on educators are discussed, along with the potential for additional stress through ever-changing technology, which educators already experience and will continue to see as technology transforms in future years. These four areas of research: self-regulation, mindfulness meditation, technology, and educators will provide the foundation of necessary information needed to understand the research study. The research will show how an educator (one of the most stressful career choices) will experience a mindfulness meditation application (stress reducing tool) through self-regulation (decision making process) by using a smartphone. The chapter ends with a summary of Chapter Two.

Theoretical Framework

Mindfulness meditation is a simple act used to become more present in the moment through feelings, openness, and acceptance (Saquib et al., 2011) and is performed by concentrating on a simple object or one's own breath (Davies, 2008). Some critics have claimed

that meditation is difficult to accomplish (Lindahl, Fisher, Cooper, Rosen, & Britton, 2017). However, by practicing and setting aside periods of time throughout the day, mindfulness meditation can help individuals become more mindful (Evans-Chase, 2016; Friese, Messner, & Schaffner, 2012; Golubickis, Tan, Falben, & Macrae, 2015) and understand its benefits.

Social cognitive theory is employed through the exercise of self-influence (Bandura, 1991). The way individuals see themselves influences the change in them. If human behavior were determined only by external factors, humans would be like "weathervanes, constantly shifting direction to conform to whatever momentary social influence happened to impinge upon them" (Bandura, 1991, p. 249). However, human behavior is also determined through several internal factors. One such factor that controls human behavior is the mind and how individuals use their mind.

According to Lindahl et al. (2017), one reason people do not believe that meditation is easy to perform is that they see their minds wander instead of staying focused on the intended object. Mind-wandering is natural and occurs in the majority of people; mindfulness meditation assists with recognizing the randomness and accepting it (Lindahl, 2017). There is a need to assist individuals in recognizing mind-wandering to simplify their lives, while giving more meaning to the thoughts they encounter. Albert Bandura's social cognitive theory is based on individuals observing others and adjusting their own behavior based on what they see (Bandura, 1991). Many other theories are inspired by social cognitive theory; one of these is self-regulation theory. Self-regulation is a process given a formalized structure to make changes to the self (Baumeister & Vonasch, 2015). No one individual has been recognized as the founder of self-regulation theory, but many psychologists have written about it and variously defined its components. Bandura defined a three-step process for self-regulation in social cognitive theory:

self-monitoring, judgment, and self-response (Tougas, Hayden, McGrath, Huguet, & Rozario, 2015). These three steps explain how an individual uses self-regulation to make changes he or she believes are needed. Schunk and Zimmerman (2007) also worked with self-regulation using Zimmerman's model, with four levels of development: observational, emulative, self-controlled, and self-regulated. Baumeister has published the most literature on the theory of self-regulation and listed its four components: standards, monitoring, willpower, and motivation (Baumeister & Vohs, 2007).

Self-regulation occurs before an individual has self-control, or the ability to oppose unwanted desires (Uziel & Baumeister, 2017). To make changes to the self, an individual must first know who the self is and the change the self would like to see. Individuals with low self-regulation tend to be overweight, use alcohol more readily, and are more impulsive (Friese et al., 2012), so they must realize where they are and where they would like to go to see the changes they desire. An individual also needs a plan (Masicampo & Baumeister, 2011) to increase the chances of the change or goal manifesting in a way he or she would like; a plan also helps measure how far a subject has come. Baumeister's four components of self-regulation—standards, monitoring, willpower, and motivation (Baumeister & Vohs, 2007)—are very similar to Bandura's (1991) three-step process of self-observation, judgment, and self-response. The only main difference is motivation. Bandura's self-observation is very similar to Baumeister's standards: individuals need to observe themselves to know their own standards. Baumeister's second component, monitoring, is similar to Bandura's second step, judgment: individuals need to monitor or judge themselves to see where improvement is needed. Finally, Bandura's third step, self-response, addresses making a visible change, which is similar to Baumeister's component of willpower, which is the strength to move on. Baumeister adds a fourth component

of motivation, which Bandura does not have. But, even though Bandura does not mention motivation, he said, "Neither intention nor desire alone has much effect if people lack the capability for exercising influence over their own motivation and behavior" (p. 249); this statement clearly indicates that motivation is important in human behavior. This research focuses on Baumeister's four components—standards, monitoring, willpower, and motivation—to look more deeply at self-regulation and what individuals need to self-regulate their behaviors.

Standards in Self-regulation

Individuals need to know themselves, their actions, and their desired behaviors. By monitoring, one is simply knowing and observing choices and decisions and then realizing the effects of those choices. It is difficult to make changes or attain a desired result without knowing where one is mentally at the present moment. Without a well-defined, specific set of reachable standards or goals, it is extremely difficult for individuals to have self-regulation (Baumeister & Vohs, 2007) or to know whether they achieved their desired results without knowing what the results are.

A desirable behavior is not one that is easily achieved but may take time to fully achieve. One example of a difficult desirable behavior is healthy eating to lose weight, which has shown in studies to be difficult (Henson, Blandon, & Cranfield, 2010). Individuals need to understand their own goals (Baumeister & Vohs, 2007) and must practice a behavior to become aware of progress as well as shortcomings. Individuals tend to follow a specific set of personal or social standards of behavior that directs and regulates them through self-reactive influences (Bandura, 1991). Not all people follow the same set of standards: individuals who have a high level of self-directedness tend to follow through on their set standards, while individuals who do not have a high level of self-directedness are much more pragmatic (Bandura, 1991). It is important to have

a complete, specific outline of a desired goal to determine if the goal has been met without any ambiguity (Baumeister & Vohs, 2007). If the goal is too vague, then there can be a miscalculation about whether the goal was ever achieved, or a lack of motivation can ensue (Baumeister & Vohs, 2007).

Monitoring in Self-regulation

Individuals monitor their thoughts to know where they are mentally. Monitoring thoughts takes time and can deplete energy levels that individuals could use on other activities, but it is important for an individual to realize what he or she is thinking. Mindfulness meditation is monitored through a third-person lens, such as an observer (Golubickis et al., 2015), to see the object or breath that is meditated on in a nonjudgmental manner. Monitoring can be used to develop a plan and follow through with the process, which is looked at from the first-person perspective, by the actor (Golubickis et al., 2015). The first-person perspective is used so individuals can make changes themselves, and the third-person perspective is used to show how individuals see themselves without judgment.

Monitoring is a difficult process and may take more time for one individual than for another. However, it is important to monitor thoughts and actions for adjustments to lead to self-regulation. Individuals need to be specific in their monitoring to reach their desired goals (Baumeister, Muraven, & Tice, 2000) to realize if progress is being made or changes need to be made. If individuals do not properly monitor their behavior and understand their thoughts, then they will have a hard time obtaining their desired goals. Individuals must monitor and adjust their behavior as soon as possible (Baumeister & Heatherton, 1996) before something negative occurs that takes them away from their desired goal. An example Baumeister and Heatherton (1996) used in monitoring behavior is the quest for chastity; an individual should not have

physical contact with another individual for hours, but simply stop after engaging in just one kiss instead of prolonging the intimate activity. By stopping earlier, an intimate kiss becomes manageable, but by accelerating the situation, a person has a higher probability of not reaching his or her goal, in this case chastity, because he or she went too far and it became harder to stop the intimate connection.

Monitoring should be done throughout the day. If an individual has an anger outburst and continues the outburst, monitoring only at the end of the day may help future outbursts (Baumeister & Heatherton, 1996), but it will not slow the current outburst. Individuals should monitor their behavior, thoughts, and environment to avoid certain situations (Baumeister & Heatherton, 1996). For instance, it is easier for an alcoholic to not drink alcohol at a restaurant that does not serve alcohol. Monitoring is not just about watching and listening to one's own thoughts, but taking action to keep undesirable thoughts and actions from occurring. Bandura (1991) said, "People cannot influence their own motivation and actions very well if they do not pay adequate attention to their own performances" (p. 250). Therefore, individuals must understand their own performance by monitoring it to influence and improve it in order to reach their desired goals.

Willpower in Self-regulation

To control actions as well as desires, individuals need strength and willpower, a limited energy (Baumeister et al., 2000) to help guide them through a decision-making process. Since self-regulation depends on limited energy, less willpower will result in unwanted behaviors (Baumeister, 2014) through ego depletion (Baumeister & Vohs, 2007). Self-regulation is determined based on the amount of willpower individuals have and are willing to use on a desired task. When more willpower is used in one area of life, there will then be consequently

less willpower for other areas (Baumeister & Heatherton, 1996). Without willpower, individuals may be more attracted to a mindless wandering activity than their intended desired standard or goal. Willpower can be considered the single step needed to get over an obstacle, but it can also be lost very easily.

According to Baumeister (2014), individuals have stronger desires when they rely on willpower to overcome an obstacle. When individuals are convinced that they have an unlimited amount of willpower, they exhibit stronger self-regulation (Baumeister, 2014). Offering stimulants such as rewards can increase an individual's willpower initially, but in the long run, a reward stimulant is depleted and one's willpower weakens (Baumeister, 2014; Muraven & Slessareva, 2003). Not all individuals have the same amount of willpower for each activity. For instance, Subject A may have more willpower to go to the gym than Subject B; however, Subject B may have more willpower to read a novel than Subject A. Because different amounts of willpower impact people in different activities, the amount of willpower depends on the intended activity for each individual.

Self-regulation is needed to control the desires and behaviors that result from depleted willpower (Baumeister, 2014). When individuals can control their self, willpower slowly wins over the decisions they want to pursue. Without self-regulation, individuals make unwanted decisions (Baumeister, 2014) that impact the way they live in the present. These actions follow them into the future as long as they are not willing to make necessary changes.

Motivation in Self-regulation

Motivation is intertwined with everything people do, the choices they make, and the decisions they do not act upon. According to Baumeister and Vohs (2007), motivation is not appreciated enough in self-regulation theory and many other theories in social psychology.

Motivation can be what causes someone to move forward even when nothing seems to be working for him or her or when all other resources have failed. The clash between selfish ambition and behavior creates motivational conflict, which is the starting point for self-regulation (Baumeister & Vohs, 2007) and makes individuals choose between quitting or having the motivation to move forward to overcome an obstacle. Individuals with low levels of motivation lack the ability to see themselves (Bandura, 1991) from a third-party point of view. These individuals have difficulty with self-regulation because they are not able to make proper judgments about themselves to make change.

Individuals tend to use two types of motivation to perform an activity: intrinsic and extrinsic motivation (Tyler & Blader, 2005). Intrinsic motivation is used when something is naturally fun or enjoyable (Radel et al., 2016). Intrinsic motivation pushes an individual to complete an activity without reward or monetary gain because he or she wants to do it. External motivation is propelled by an outside gain or reward rather than internal enjoyment (Ryan & Deci, 2000). People can see external rewards such as money or free T-shirts for coming early to a basketball game. These external rewards are what motivate someone to go to an activity or complete something he or she would not necessarily want to do.

Extrinsic motivation uses rewards and praise to encourage individuals to try an activity and do it well (Bénabou & Tirole, 2003). Individuals accomplish the activity if they are awarded money, prizes, or anything else they may find valuable and worth the time (Bénabou & Tirole, 2003). If an individual does not believe a task is worth the time or the reward is not good enough (Ryan & Deci, 2000), he or she does not partake in the activity. One downfall to extrinsic motivation is that individuals burn out faster from extrinsic motivation than intrinsic motivation (Davies et al., 2015) because intrinsic motivation is about the task and not focused on

external rewards. External rewards eventually fade away, but the internal enjoyment of a task ensures a person wants to do an activity more.

According to Vansteenkiste, Sierens, Soenens, Luyckx, and Lens (2009), students who have more intrinsic than extrinsic motivation also have more adaptive self-regulation skills. Intrinsic motivation is better than extrinsic due to the creation of a long-lasting pleasure (Davies et al., 2015), which is needed to continue activities and seek benefit from them rather than from an outside influence. Since intrinsic motivation is better for long-term use, it is ideal to encourage others to find intrinsic motivation to continue a desired activity. In addition, intrinsic motivation activates a larger area of the brain compared to extrinsic motivation (Radel et al., 2016; Lee & Reeve, 2013).

One way to get individuals to use intrinsic motivation is by working together even if it is on separate projects. Studies show that by working in a group or one on one with another individual to talk about a project can lead to individual motivation and an increase in intrinsic motivation (Carr & Walton, 2014). When people work together through telephone or Skype, not necessarily physically, they feel they are doing something for the greater good of society, which reinforces the idea that the work is truly meaningful. Carr and Walton (2014) believed that teamwork is not necessarily about two construction workers laying asphalt on a road together, but giving advice to one another through conversations that allow them to believe they are a team. This can even occur among people working in separate rooms and with separate job functions. Teamwork does not necessarily mean that individuals are working on the same task, but simply that both are aware of each other's tasks and can offer insight and advice on the activity (Carr & Walton, 2014). Research has shown that teamwork with people who hold a

special position, such as pastors, motivates individuals to complete an activity (Davies et al., 2015) because they do not want to let the person down.

Individuals tend to exhibit both intrinsic and extrinsic motivation, depending on the activity. According to Corpus and Wormington (2014), the advantages of intrinsic motivation have been verified in countless education studies when students engage in meaningful self-directed learning. Motivation type may come down to the activity and how much an individual wants to complete it. For instance, a study by Mo (2011) shows that voluntary at-home quizzes (intrinsic) are more valuable than in-class quizzes (extrinsic) for which students receive a grade. With a change in environment, the motivation to do well on the quizzes also changes.

The environment associated with meditation is self-directed. Even though meditation is primarily associated with intrinsic motivation (van Hooff & Baas, 2013), individuals who favor extrinsic motivation can still learn to meditate and become intrinsically motivated meditators. If extrinsically motivated people can become excited about meditation through helping others, they can begin to practice meditation with a friend or in groups. An extrinsically motivated person can learn meditation by communicating online with people, asking for advice, or simply talking about their experiences. According to Carr and Walton (2014), individuals who use teamwork, such as discussing an activity before or after the activity, may find an activity to be enjoyable. This one-time enjoyable event can lead to the individual wanting to do the same activity for the next month or for life. Kirk, Brown, and Downar (2015) conducted a study of 78 individuals, 34 meditators and 44 non-meditators, to measure monetary rewards. The individuals participated in a monetary incentive delay task while their brains were being imaged. Even though the groups performed the same task, meditators' brain images for reward were different than non-meditators (Kirk et al., 2015). Simply by meditating, an individual may decrease his or her reliance on

awards. At first, an individual might be extrinsically motivated and not want to meditate, instead simply helping a friend start using meditation. Through various stages of helping a friend, the individual might find the activity enjoyable, which then may lead him or her to approach the activity intrinsically. Depending on the activity, an individual either intrinsically or extrinsically motivated can have their self, ego, depleted if they are thinking about a future activity they are trying to complete.

Ego Depletion

The ego, also known as the "self," develops to intervene between the id, the unconscious part of the individual, and the exterior world (Sletvold, 2013). According to Freud (1923), the ego is "like a man on horseback, who has to hold in check the superior strength of the horse" (p. 15). The man on horseback is controlling the horse to keep the horse under control. The same is true for the ego, which keeps the id or the unconscious part of the individual under control. Problems arise when the ego becomes depleted and has difficulty keeping the id under control, which can lead to ego depletion.

Ego depletion is a belief system in which individuals reduce their self-control resources in a particular area by conserving them for future use (Baumeister & Vohs, 2007; Job, Dweck, & Walton, 2010). By reducing self-control, individuals make different choices about a particular task (Baumeister et al., 2000; Baumeister & Vohs, 2007) than they would have if they had had the same resources prior to depletion. Ego depletion plays an integral role for individuals when they need to make decisions (Baumeister et al., 2000; Baumeister & Vohs, 2007), and the choices from these decisions can play a vital part in their actions. Without proper resources, individuals can fall victim to ego depletion. This leads to people giving up on projects faster or even making impulsive decisions regarding excessive alcohol, drug, and tobacco usage

(Baumeister & Vonasch, 2015); unhealthy food; or thoughts about death (Gailliot, Schmeichel, & Baumeister, 2006). Only having motivation to complete a task may not be enough for some individuals because their ego energy may become depleted before the task is completed, and they may instead choose to do a mindless activity such as watch a television show. Watching television or movies or browsing on a smartphone does not help recover the ego, but simply leads to procrastination (Reinecke et al., 2014) and can ultimately lead to a lack of motivation for an activity such as meditation, which never gets completed.

A lack of motivation can drain an individual of the desire to complete or start the meditation activity. However, there are a group of people classified as action-oriented people that continue performing the initial activity at a high level, and ego depletion does not have an immediate effect on them (Dang, Xiao, Shi, & Mao, 2015), but is delayed. According to Dang et al. (2015), state-oriented people, on the other hand, are indecisive or hesitant and have their ego depleted more quickly. If state-oriented individuals believe that they are performing a task incorrectly, they may give up quickly. The decision to give up may arise from internal self-talk that the task does not work for them based on being indecisive, which drains too much mental energy on a given task. An action-oriented individual concentrates more on the moment (Dang et al., 2015) rather than pondering on a future task. Regardless of whether individuals are state- or action-oriented, they need to recover their egos when they become depleted.

Recovery from ego depletion. Recovery is needed to restore the ego from depletion to return to rational decision-making and choices that were made before the depletion occurred. Hofmann, Vohs, and Baumeister (2012) conducted a study that consisted of 208 participants between ages of 18-55 in Germany. Each day, every participant received seven signals from a Blackberry smartphone that was given to them to find out what their desires were at that time.

The study showed that individuals spend approximately three hours a day applying willpower to not follow their desires, but their goals. By applying willpower, the ego slowly becomes depleted and there is a need to enter a state of recovery. There are several known ways to recover from ego depletion, including glucose (Baumeister, 2014), a positive mood (Tice, Baumeister, Shmueli, & Muraven, 2007), walks in the woods, or just be present in a nature environment (Beute & de Kort, 2014).

Baumeister (2014) believed that glucose is one way to replenish self-regulation. Glucose gives an individual more energy and helps the individual complete a particular task in the moment instead of thinking about future tasks. Hagger and Chatzisarantis (2013) believed that a glucose rinse can aid an individual's self-control. When someone lacks self-control, or feels that his or her ego is becoming depleted, a glucose rinse can provide an extra boost to stay on track.

Tice et al. (2007) found that having a positive mood offsets the depletion of the ego resource. A positive mood cancels out "harmful physiological effects caused by negative emotions" (Tice et al., 2007, p. 381), which is also shown in other studies (Fredrickson, 2001; Fredrickson & Levenson, 1998). Simply having a positive mood helps people overcome ego depletion and accomplish more of the task at hand.

Beute and de Kort (2014) found that after just a few minutes in nature, individuals exhibit an increase in self-control. Part of the reason the natural environment can restore depleted resources is due to nature's ability to encapsulate individuals' attention with ease (Beute & de Kort, 2014; Kaplan, 1995). The natural environment has many beautiful aspects including trees, flowers, and streams that can draw individuals to look, but not deplete energy through intense focus. The serenity of the natural environment may be one of the reasons many people feel comfortable meditating in the outdoors. It may be easier for people to practice mindfulness

meditation while in nature because the mind may de-clutter amid the simple beauty that surrounds the individual.

Related Literature

An extraordinary amount of literature is dedicated to mindfulness meditation (Ditrich, 2016; Kirmayer, 2015; Sharf, 2015) that takes on many different perspectives, from its origin to the many contributions to the field. As mindfulness meditation continues to be studied, more benefits and shortcomings will be noticed. The following section provides an in-depth analysis of mindfulness meditation, its misconceptions, and how meditation has evolved through the years.

Mindfulness Meditation

According to Sethi (2009), three mindful skills are focus, awareness, and living in the moment. Focus will help people learn to listen, awareness will help individuals become cognizant with how others are feeling, and living in the moment will allow people to see where they are at the specific point in time and not thinking of the past or planning for the future (Sethi, 2009). These skills have been taught through a process by Buddhists for over thousands of years (Gray, 2017) by meditation.

Buddhism is a religion consisting of highly literate individuals and traditions that have contributed thousands of volumes of literature (Gray, 2017), including to the field of mindfulness. The Buddhist view of mindfulness dates back over 2,500 years (Ditrich, 2016), even though Buddha did not use the word mindfulness. The Buddhist tradition has three common core teachings: *samatha*, which focuses on concentration, calmness, and stability; *vipassana*, which focuses on insight; and *jhana*, which focuses on absorption (Kirmayer, 2015).

These three traditional teachings encompass the large view of Buddhism and have been carried over to today's practice with some changes.

Mindfulness meditation, as seen in the United States today, was carried over from Mahasi Sayadaw (1904-1982), who was a disciple of Mingun Jetavana Sayadaw (U Narada) (1870-1955), a Burmese teacher who lived in Thailand (Sharf, 2014). Mindfulness meditation falls under the umbrella of the core teaching known as *vipassana* (insight), which focuses on a particular entity or an individual's breath (Kirmayer, 2015). According to Sharf (2014), Mahasi emphasized the importance of sati (moment-moment awareness); his disciple, Theravada monk Nyanaponika Thera (Siegmund Feniger) (1901-1994), invented the phrase "bare attention," which is seen today throughout the world.

Early Buddhists believed that it takes years of practice and acceptance to learn mindfulness meditation practices and would not tell outsiders the method to become mindful (Sharf, 2015) or other inner teachings. Prior to Mahasi teaching individuals outside of Buddhism, only Buddhists learned mindfulness and spent years practicing, but Mahasi taught beginners and non-Buddhists how to focus on an object (Pagis, 2015) to become more mindful in a shorter amount of time instead of going through the customs and rituals that the monks went through. According to Sharf (2015), western Buddhists did not realize how radical Mahasi was in his day, and many people take his struggle for granted today, believing that Buddhists always taught anyone that asked. People were against changing the custom of Buddhist training being only for Buddhists and did not want to extend training to laypeople (Sharf, 2015) as Mahasi did to reach more people outside of Buddhism.

Feldman et al. (2010) believed that individuals who practice mindfulness meditation can reduce stress and even slow the progress of certain diseases. According to White (2012), how

meditation reduces disease is not known; however, individuals who have learned to be mindful have reduced the amount of stress in their bodies. Stress is the cause of unhealthy weight gain, smoking, reduced physical activity (Victorson et al., 2015), alcohol consumption, and many other behaviors that people try to quit daily.

According to Shaner, Kelly, Rockwell and Curtis (2017), individuals who practice mindfulness meditation have been shown to be more compassionate than those who do not. Mindfulness meditation also helps with addictions such as drug abuse (Tang, Tang, & Posner, 2016). According to Lim et al., (2015), individuals who practice mindfulness meditation are more likely than those that have not practiced meditation to give up their seat to someone who has not taken classes or studied mindfulness meditation. Some researchers believe that individuals become more compassionate because they focus on something like an object instead of on themselves (Lim et al., 2015). By shifting the focus, individuals can learn to accept other people with empathy and not judge them for being lazy, uncaring, overweight, or anything else that may normally cross their mind when they interact with someone.

One of the biggest principles of mindfulness meditation is focusing on non-judgmental thoughts (Victorson et al., 2015) and simply acknowledging judgmental ones. Non-judgmental thoughts may seem easy to understand, but there is much to learn when going through the thoughts while meditating. When a thought arises in an individual's head during meditation, it is important not to ignore the thought, but recognize it and address it in a non-judgmental manner (Wilson, Mickes, Stolarz-Fantiono, Evrard, & Fantino, 2015). One should not assume that the thought is good or bad, but simply acknowledge that it entered the mind and will soon leave. But, while the thought is there, one should understand it and how it arrived. Without placing

judgment on the thought or oneself (Wilson et al., 2015), the thought will simply leave the mind and one can continue to focus on the object or breath that started the meditation practice.

Furthermore, Tang, Posner, and Rothbart (2014) believed mindfulness meditation improves self-regulation. By doing so, individuals make better choices by being less impulsive. Their decision-making capability increases and they have longer-lasting regulation ability, which helps them make better decisions, lead more productive lives, and improve social interactions (Beute & de Kort, 2014) and overall happiness. Mindfulness meditation is sometimes preceded by listening to music (Krop, 2004).

One way to help with meditation is by listening to meditation music on a smartphone or other technological device. Meditation music helps the brain settle the clutter in the mind because music resonates in the body and makes it vibrate (Krop, 2004). Meditation music can be classical music, devotional music, or drumming of rhythmic beats (Sussman & Kossak, 2011). According to Innes, Selfe, Khalsa, Kandati and Huysmans (2016), listening to music for as little as 12 minutes a day may be effective for enhancing memory and cognitive function in individuals subject to cognitive decline.

Misconceptions of mindfulness meditation. Mindfulness meditation uses a psychological method to attain thought and alertness (Friese et al., 2012) by concentrating on an object while aware of thoughts that enter the mind. Some people claim that mindfulness meditation is difficult to accomplish (Lindahl et al., 2017; Wright, 2001) and that they cannot do it because of running thoughts or even disabilities such as attention deficit or attention deficit hypersensitivity disorder. However, having running thoughts is not a valid reason to avoid meditation, but a reason to meditate to bring non-judgmental thoughts and observe the thoughts that come to mind. Just like most activities, people experience some sort of difficulty along the

way. For instance, people get bruises or fall down when learning to ride a bicycle. Even though practicing mindfulness meditation does not give people physical bruises, they may experience running and decision-making thoughts (Lindahl et al., 2017). However, people should not think about meditation sessions as being good or bad, because in meditation there is no judgment; mindfulness meditation is simply the act of observing thoughts. By observing thoughts, the meditator is having a great session.

Another misconception about mindfulness meditation is that it causes a practitioner to leave the present moment (Hanley, Abell, Osborn, Roehrig, & Canto, 2016). But, according to Hanley et al. (2016), this is the opposite of mindfulness since mindfulness is about being in the moment. Mindfulness meditation does not take people away from their thoughts, but makes them recognize and become aware of the thoughts they have. These thoughts are important for people to know, because individuals should know the thoughts in their head before passing them along. With increased levels of concentration, fewer thoughts run through one's head (Lindahl et al., 2017).

According to Wright (2001), some people do not meditate because it goes against God. However, meditation is simply the act of experiencing non-judgmental awareness (Hölzel et al., 2011) of the self, others, and the systems (Goleman & Senge, 2014). Meditation does not involve facing the sun, moon, Mars, any specific direction, or object. Meditation is not just for Buddhists either, and can be used by all people, including Christians (Lindahl et al., 2017). Psalms 119:15-16 states, "I meditate on your precepts and consider your ways. I delight in your decrees; I will not neglect your word" (New International Version). The Book of Psalms and many other books of the Bible mention meditation, yet many Christians believe that meditation should not be performed by Christians since meditation is seen in other religions. These

Christians may believe that meditation has changed through the centuries. According to Goleman (1988), early Christian monks' meditation closely resembled that of Buddhist and Hindu meditation. Christian monks would pray in mantras, which is a form of their prayer (Goleman, 1988). Styles of prayer, whether meditation or mantras, have been evolving as well as the current day uses for meditation to include adding technology.

Technology

This concept of technology has been around since the beginning of time, but the fast-paced increase in technology has seen a recent explosion (Chotpitayasunondh & Douglas, 2016). According to Karadag et al. (2015), the technological world is constantly searching for faster data, tools that lead to faster communication and interactions. The history of technology shows that technology may have started slowly, but the momentum going forward is strong. This section covers the history of technology and its inception in the classroom. Then, the transformation from the telephone to the smartphone is discussed. The next section discusses hindrances of the smartphone, such as smartphone addiction, which can distract individuals from living the life they want; social media, which, according to Chotpitayasunondh and Douglas (2016), drives people to look at their phones constantly; and phubbing (Karadag et al., 2015; Wang, Xie, Wang, Wang, & Lei, 2017), which is the act of being more interested in smartphones than people. Discussing the telephone and technology may show any issues that arise by having a smartphone device that contains a mindfulness meditation application that helps with focus, but at the same time the smartphone device can reduce cognitive ability. Ward, Duke, Gneezy and Bos (2017) conducted a study of 520 undergraduate participants with a mean age of 21.2. The participants were randomly assigned to three phone locations: in a pocket/bag, desk, or other room. The participants with a pocket/bag would leave their phone where they naturally would;

participants assigned to desk would leave the majority of their stuff in another room, but take their phone in the testing room; and, the participants in the other room would leave their phones in another room. The results of the study concluded cognitive ability is reduced when a smartphone is within an arm's reach (Ward et al., 2017).

History of the telephone. The history of the telephone started with Alexander Graham Bell's patent in 1876 (Beauchamp, 2010), and the telephone became a useful tool for communicating with people over local distances. According to Beauchamp (2010), in 1915 the first telephone conversation occurred from coast to coast, from San Francisco to New York City. The conversation between two men was successful, and improvements to the telephone would only be seen from there.

The next great improvement to the telephone was seen in the 1970s. In 1973, Martin Cooper, who was working for Motorolla, made the first public call in the United States on a portable cellular phone (Fuentelsaz, Maícas, & Polo, 2008). The mobile phone began to increase in popularity as the years progressed. In 1981, there were over 20,000 mobile phone users in Sweden, which was the highest of any country in Europe at the time; prior to 1985, no individual had access to a mobile phone in Britain (Lacohee, Wakeford, & Pearson, 2003). As technology improved, mobile phones became more prevalent, even though there were still political issues with licensing (Lacohee et al., 2003), which kept some people from entering the market. Digital networks, an increase in mobile phone providers (Lacohee et al., 2003), new network capabilities, the integration of sensors, and more communication interfaces (Daponte, De Vito, Picariello, & Riccio, 2013) that started the surge over the past 20 years. Gains in technology, especially the battery, have helped enhance mobile phone technology (Agar, 2004) and allow more people to own them.

The Apple iPhone launched in 2007 and has been used by approximately 3 billion people worldwide (Cho & Lee, 2017). In the year 2020, it is expected that over 6 billion people will use a smartphone, which is over 70% of the world's population (Cho & Lee, 2017). Smartphones not only overtook landline telephones, but also started replacing some computers (Chotpitayasunondh, & Douglas, 2016); now, smartphones have greater capabilities than some of the early computers (Tang, Zhang, Yan, & Qu, 2017). Smartphones have increased in their memory and data processing abilities throughout the years and have continued to gain popularity and affordability. These computing processing devices bring instant access to information around the world to one's own fingertips in a matter of a few seconds. The speed and memory of these devices continues to increase, and more information is being stored on them (Tang et al., 2017). Now, not only is the smartphone being used for telephone and computer tasks, but also for paying bills and setting alarms in one's house on applications, for example.

Applications, usually referred to as "apps," have less functionality than full websites (Neubeck et al., 2015) but are one of the largest growing smartphone tools. According to Gray (2014), apps can either be static or dynamic; a static app is similar to a manual without interaction, and a dynamic app allows users to be interactive. Smartphone applications are increasing drastically in number to cover all markets of life, including pedometers and other health care uses (Orr et al., 2015). Health care applications assist individuals in everyday life choices and allow them to make better decisions when, for instance, dealing with cardiovascular disease (Neubeck et al., 2015) or making doctor's appointments. However, smartphone applications can also have negative effects on people by distancing them from their immediate surroundings and provoking endless mind wandering.

Common disadvantages of the smartphone. One of the biggest disadvantages to the use of the smartphone is smartphone addiction. Addictions to smartphones can be very similar to any other kind of addiction, which controls an individual's life or plays an important role in changing it (Tang et al., 2017). With smartphone addiction, individuals become so involved with their smartphone that it takes over other aspects of their life and can change their daily activities (Cho & Lee, 2017; Chotpitayasunondh & Douglas, 2016) or limit their opportunity to lead a wonderful life. Smartphone addictions have become more prevalent in the past years, and future research indicates that they will continue to rise (Cho & Lee, 2017) as more smartphones enter households and become more accessible, especially among children and teenagers.

Haug et al. (2015) believed that individuals who suffer from smartphone addiction receive lower grades in school and can be distracted more easily than others students. Smartphone addiction can take many different forms, depending on the individual; some people may be addicted to an application and others may be addicted to social media. Two prominent types of smartphone addiction are seen in email and texting (Marulanda-Carter & Jackson, 2012).

An addiction to email may seem to be just about responding to a simple message, but since a smartphone is always around people, it causes discomfort in an individual's life because the individual is constantly checking email (Marulanda-Carter & Jackson, 2012). Some addicts check their email constantly throughout the day (Marulanda-Carter & Jackson, 2012) and feel grief if they do not do so. Smartphone addiction is becoming more problematic in management positions where individuals get email continuously as well as in education where teachers receive emails from parents and administrators. According to Marulanda-Carter and Jackson

(2012), email communication is a problem within the workplace and organizations need to work out solutions to manage communication and give employees a break.

Texting is also a major problem for people addicted to their smartphones. According to Atchley and Warden (2012), texting while driving is five times more dangerous than drunk driving, and 95% of young drivers admit to texting and driving. Roughly 28% of automobile accidents are related to texting or talking on a smartphone (Atchley & Warden, 2012). A lack of self-control can put someone in a situation where their life can be over instantly, all because they do not have the self-regulation to realize the importance of waiting.

Social media is a growing trend that will continue to grow in the near future, which can cause individuals to lose focus from using a mindfulness meditation application and use a social media application. Facebook has over 800 million users each day (Di Gangi & Wasko, 2016), and with technology becoming more prevalent, these numbers will rise. Social media can take people out of their present surroundings and bring them into a virtual reality where all individuals are living in the same moment. According to Di Gangi and Wasko (2016), 8 of the 10 most visited sites on the Internet rely on user-generated content (information sent and cleared by an individual user). Forbush and Foucault-Welles (2016) used an online questionnaire and administered it to 120 Chinese international students in the United States. The results of the study show that foreign exchange students who have a strong connection to social media are able to learn the language and adapt quicker than foreign exchange students who do not use social media as much (Forbush & Foucault-Welles, 2016; Lim & Pham, 2016). This higher use of social media benefits these students. However, not all research on the use of social media shows that it is beneficial. A national survey of 1,787 young adults were asked to describe their use on 11 known social media sites. The analysis showed individuals that used 7 to 11 different social

media platforms have a rate of depression and anxiety three times higher than individuals who use 0 to 2 forms (Zagorski, 2017).

Social media can also lead individuals into depression (Lin et al., 2016) because they envy the lives they see other people living (Tandoc, Ferruccib, & Duffy, 2015). However, not all pictures or moments expressed on social media are considered authentic, and this can give someone false hope or an inaccurate view of one's own life. An individual who may seem happy and full of life on social media may actually be depressed and living a life of despair. Nonetheless, people use social media on their smartphones and get distracted from the world so much that the term phubbing was created in 2012.

Phubbing involves using a virtual environment such as a smartphone without consideration for people in the immediate surroundings (Karadag et al., 2015). Individuals who are addicted to a smartphone can lose interest in what the real world is about (Haug et al., 2015). They can find it difficult to communicate with other people and find that their real-life connections and feelings of wellbeing are negatively impacted (Chotpitayasunondh & Douglas, 2016). Phubbing can lead people into an artificial reality, make real human connections difficult to achieve, and result in damage to partner relationships (Wang et al., 2017).

In addition, teacher-student relationships can be damaged by phubbing. Students may believe that a teacher is not interested or in the moment when talking with students if he or she is distracted by a smartphone or other forms of technology. Smartphone use during face-to-face interactions can decrease the quality of a conversation (Wang et al., 2017). Educators who focus on technology, whether a computer or smartphone, may lose the intimate connection they have with students (Chotpitayasunondh & Douglas, 2016). Educators need to rely on self-regulation to lead them on a path of teaching and not get distracted by technology.

Educators

Educators have to address many issues, from constant test preparation to fear of losing their jobs (Sahbaz & Koyutürk Koçer, 2017) if students do not do well. The stress placed on educators can cause burnout and lead them to leave the profession altogether. In addition, educators take courses to stay on top of the most recent literature for the classes they teach and the latest technology they can incorporate into the classroom.

Stress in the education field. It has been frequently shown that educators suffer from a higher level of stress than professionals in other fields (Jain, Tyagi, & Kumar, 2015). Stress does not stay with an educator just in the classroom, but can impact his or her life outside of it. Educators deal with stress that occurs for many different reasons, including time constraints, heavy workload, and extracurricular obligations (Wolgast & Fischer, 2017). They must learn to find a way to cope with their stress (Hallman et al., 2003) because a stressful life can lead to disease.

In the 1930s, Hans Seyle, an endocrinologist, first recorded the connection between stress and disease (Dombrowski, 1999). Potential implications of stress include heart disease (Hallman et al., 2003) and depression. Few people seek professional help for stress (Hallman et al., 2003) and instead hope the stress will simply go away on its own. As new technologies are added to classrooms, educators' stress may not go away and can potentially increase with the addition of technostress (Chiappetta, 2017). According to Chiappetta (2017), technostress is a "syndrome that occurs when the person, subjected to information overload and continuous contact with most digital devices, develops a state of stress, or an abnormal response characterized by specific symptoms at the cardio circulatory, mental and neurological levels" (p. 358). Educators who are familiar with current technology might struggle with new technology that comes out in the next

five years and will have to learn it all over again. Educators experience stress from the ever-changing technological world both inside the classroom and at home, when they check work-related emails (Collins, Cox, & Wootton 2015).

Secondary traumatic stress and its effect on educators. Secondary traumatic stress occurs when one individual becomes traumatized from learning about someone else's traumatic event (Beck, 2011). Educators learn about the families of children they interact with every day. These families are an extension to the educator, so when a child's family member gets cancer, for example, the educator feels the child's pain. After Hurricane Katrina, educators assisted children who were displaced by the tragic flooding in New Orleans by listening, counseling, and helping those (Hardy, 2006) who no longer had a home. Hardy (2006) recommended that there be one counselor for every 300 students in a school, but this is not the case, especially after a major disaster. In such situations, with extra students filling up schools, educators can experience compassion fatigue, which is one way to describe what secondary traumatic stress feels like (Beck, 2011).

Secondary traumatic stress can lead to health concerns for educators and issues with the schools (Hydon et al., 2015). Educators who experience secondary traumatic stress are more likely to have a mental health issue (Hydon et al., 2015) that will need to be addressed by a health professional. It is difficult for educators to want to go into their classrooms and focus on children's learning when their thoughts are on a child's difficult situation. Even when educators go home, they deal with personal issues that involve their own family or friends. Educators have a difficult time balancing interpersonal issues related to family, friends (Addison & Yankyera, 2015), and job-related stress. The education field is very stressful from the many issues that educators deal with and can eventually lead to burnout.

Burnout in the education field. According to Bernhard (2016), when an individual's perception is in a continuous downward spiral or causes severe distress, one can experience burnout. Educators' burnout sometimes leads to them leaving their school or the profession altogether. The main reasons for burnout can be linked to both the professional workplace and personal traits (Richardsen & Burke, 1991; Hallman et al., 2003).

In the education workforce, burnout is well-known (Skaalvik & Skaalvik, 2010). Educators become drained in their respective career and lose the motivation they once had (Skaalvik & Skaalvik, 2010). Even though most educators can cope with stress before they burnout (Skaalvik & Skaalvik, 2010), they still need to learn coping skills to stay in the profession. The coping skills can assist with the job stresses that they are going through as well as learning to self-regulate.

The 21st-century classroom. The old days of sharpened pencils and whiteboards are disappearing quickly. Educators' faith in technology and their willingness to learn will ultimately change the technology used in classrooms (Norton, McRobbie, & Cooper, 2000; Palak & Wells, 2009; Salleh, 2016; Williams, Coles, Wilson, Richardson, & Tuson, 2000). A 21st-century classroom has personal digital assistants, laptops (Bang & Luft, 2014), smartphones (Northrop & Killeen, 2013), and other technological breakthroughs.

Educators can have their students master basic computer programs and tools, but that is just the first step (Hatlevika & Christophersenb, 2013) toward competency. Students still need to learn the competency and cognitive skills (Hatlevika & Christophersenb, 2013) that are taught with or without technology. Learning to use technology is similar to learning from a book: it does not necessarily indicate that students are learning critical thinking skills, but simply the material listed. Nonetheless, students can learn critical thinking skills from technologies being

used today. Calculators are a great tool for students to learn how to graph and find derivatives. Another technological tool seen in the classroom is the smartphone (Tossell, Kortum, Shepard, Rahmati, & Zhong, 2015), which can assist students in developing critical thinking skills from the applications on them.

Educators use technological tools based on their personal attitudes about the tools and their uses (Salleh, 2016). When new technologies are added to the mix that educators are not comfortable with, they may not want to use them. However, studies have shown that educators are more likely to use technology if they can troubleshoot it themselves in the classroom (Khokhar, Gulab, & Javaid, 2017; Maddin, 1997). According to Schiler (2003), educators are more willing to use a technology if there is on-site assistance to reduce issues (Khokhar et al., 2017). The technological classroom is here and will only see more technology use in the future.

Summary

This chapter has discussed the theoretical framework of the proposed study by focusing on the self-regulation theory. Baumeister's four components of self-regulation—standards, monitoring, willpower, and motivation—have been covered in depth (Baumeister & Vohs, 2007). Individuals need standards in self-regulation to know where they are mentally and to determine if they are improving; monitoring is used to determine improvement; willpower controls actions; and motivation assists individuals in continuing with a task (Baumeister & Vohs, 2007).

The literature review covered concepts related to mindfulness meditation, technology, and educators. The literature shows that mindfulness meditation is the act of having non-judgmental thoughts (Hölzel et al., 2011; Moore & Malinowski, 2009) through a designated process. Mindfulness meditation is beneficial to individuals who practice it (Davies, 2008) in

many ways, including promoting wellness and preventing chronic disease (Victorson et al., 2015). Some people report mindfulness meditation to be difficult, but this is a misconception. Two other misconceptions about mindfulness meditation are that it goes against God (Wright, 2001) and that it causes a person to leave the moment (Hanley et al., 2016). These misconceptions have been addressed in this chapter, along with ego depletion. According to Baumeister (2014), ego depletion is "an effort to conserve a resource that is only somewhat diminished" (p. 314). When the ego is conserved, it can be used more in another activity. A study conducted by Reinecke et al. (2014) states that watching television or using other technology does not recover the ego, but leads to procrastination, so an activity is delayed. Also, with the addition of new technology some people may suffer from technostress, which is the inability to adapt to the increasing technological demands that are placed on them (Chiappetta, 2017).

The second topic in the literature review was technology, which is becoming more advanced (Karadag et al., 2015) as telephones, computers, and cameras have been combined into a single smartphone. Smartphones are quickly gaining popularity, with over 90% of people owning a smartphone in a United States household in 2014 (Soukup, 2015). These numbers are higher now and will continue to rise. One negative aspect related to having a smartphone is phubbing, which pertains to individuals using technology in the presence of other people instead of having a direct dialogue (Chotpitayasunondh & Douglas, 2016; Karadag et al., 2015; Wang et al., 2017). Phubbing can impact all people that use technology, from businessmen to students to educators.

Educators have seen an increased amount of stress in the past 50 years (Kanbayashi, 2016), and with added technology, stress may continue to increase with technostress. Stress is

caused by many different factors in the education field, from children's discipline (Sahbaz & Koyutürk Koçer 2017) to secondary traumatic stress (Hydon et al., 2015) to extra responsibility, time constraints, and extracurricular activities (Wolgast & Fischer, 2017). In the coming years, educators' stress is not projected to decline, but may increase with new technologies and the expectation of teaching children using the technology.

Educators are one of the most important professions responsible for teaching future scientists, engineers, doctors, farmers, and all occupations that are in need now as well as the future. Educators help build relationships through collaborations by building relationships with students and peers (Brown, 2016). It is imperative that educators are in the right mindset to be able to do their job. At times, educators can become depressed (Stern & Brown, 2016) and stressed (Sahbaz & Koyutürk Koçer, 2017), but addressing teacher stress is challenging (Flook, et al., 2013).

Mindfulness meditation is proven to help stress (Creswell & Lindsay, 2015; van Hooff & Baas, 2013) and depressive thoughts (Feldman et al., 2010) in individuals. Mindfulness meditation has shown even more improvement while mixed with classical music, devotional music, or drumming of rhythmic beats (Sussman & Kossak, 2011) by de-cluttering the mind (Krop, 2004). One tool that can assist with mindfulness meditation and music is a smartphone.

Even though a smartphone is a great tool to listen to music and mindfulness meditation, it can also lead to addiction (Haug et al., 2015). Smartphone addiction can be individuals checking their emails constantly (Marulanda-Carter & Jackson, 2012), addicted to social media (Chotpitayasunondh & Douglas, 2016), and phubbing (Karadag et al., 2015; Wang et al., 2017). Individuals need self-regulation skills to stay away from distractions of social media and emails so they can listen to meditation music and become more mindful. Through practicing

mindfulness meditation, educators will develop mindful skills which will help them teach children more effectively through awareness and a deeper focus of active listening to the children's needs. Also, through mindfulness meditation, educators will be more compassionate (Lim et al., 2015) and have less depressive thoughts (Feldman et al., 2016), which will benefit them on a professional level as well as a personal level.

CHAPTER THREE: METHODS

Overview

Chapter Three covers the research design, research questions, participants, and location for the research. The role of the researcher is discussed along with data collection methods, which include participant journaling, interviews, and a focus group. When all of the data were collected, the results were analyzed. The chapter concludes with trustworthiness, ethical considerations, and a summary of the chapter.

Design

The research explored mindfulness meditation practiced through a smartphone application, with an in-depth look at self-regulation theory. According to Kemparaj and Chavan (2013), qualitative research "requires researchers to become intensely involved, often remaining in field for lengthy periods of time" (p. 89). The more the researcher becomes involved in the study, the better his or her understanding. In this single case study, the social phenomenon of mindfulness meditation on a smartphone was explored from multiple educators' perspective. An educator, for this single case study, is defined as an individual in the Pre-K through 12th grade that works directly with children or in an administrative field that works with children. This research was conducted in a natural setting where the educators could use their mindfulness meditation application wherever they desired. According to Yin (2014), case studies are used when the researcher has no influence over the behavior of the participants in the study. Because of this, this case study is a single case study based on one single issue (Yin, 2014).

A qualitative case study is the most applicable research design due to the exploration (Yin, 2014) of educators' use of the smartphone application. Qualitative researchers ask questions that are significant to the topic, which is one of the reasons why qualitative research

was chosen here over quantitative (Kemparaj & Chavan, 2013). The qualitative questions sought to understand the phenomenon of educators using a mindfulness meditation smartphone application. The answers from the participants about the exploration of the mindfulness meditation application gave a holistic view of how the smartphone and meditation application were used. This is a single case study that is bounded within a system (Stake, 1995) of mindfulness meditation by educators. Creswell (2013) argued it can be difficult to focus on a case because it must be bounded either narrowly or in a broad range. Either way, the case must stay within the system and not go off onto multiple paths. The study is single case due to a representation of a unique circumstance (Yin, 2014) and only one issue, educator's experience. According to Yin (2014), a case study is a practical investigation that makes an in-depth examination into a case within a real-world context, specifically when the limits between the phenomenon and context are not realized. In this research, the limits dealt with the self-regulation of participants, mindfulness meditation, and the use of a smartphone application from a realist perspective. Self-regulation may come from inner conflict, which can lead to a will to use or not to use an individual's desired want (Baumeister & Vonasch, 2015). In this research, the desired want was the mindfulness meditation application on the smartphone. The realist perspective deals with a user's lone experience that is independent from other participants and not conducted in a laboratory.

Yin (2014) described the five components for a research design as "a case study's question; its propositions, if any; its unit of analysis; the logic linking that data to the propositions; and the criteria for interpreting the findings" (p. 29). The first three components cover the collection methods and the last two components show how the analysis was studied. These five components were used in this case study to plan the research and obtain complete

results. Several forms of data were collected: (a) participant journaling, (b) interviews, and (c) a focus group.

According to Yin (2014), boundaries must be identified in a case study. For this research, the boundaries are current educators in the Washington, D.C. region. Furthermore, the educators did not have a mindfulness meditation application on their smartphone and wanted to try a stress reducing tool. The tool that was used is the smartphone application, Calm, and the educators were allowed to explore this tool as they felt needed throughout the day. The specific classes, names of schools, or age of students the educators worked with were not relevant for this research.

Research Questions

CQ: How do educators use a mindfulness meditation application called Calm on their smartphone?

RQ1: How do individuals seeking to modify their behavior use the mindfulness meditation smartphone application?

RQ2: How does an individual's motivation to attain a goal shape one's use of the mindful meditation smartphone application?

RQ3: How does mindful meditation guide individuals in monitoring thoughts and actions that precede the dismantling of one's goal?

RQ4: How does mindfulness meditation cultivate willpower while building one's inner capacity to control mind wandering?

Setting

The setting for this single instrumental case study is the Washington, D.C. area. According to Stake (1995), the setting is a primary component for the researcher to understand

the participants in the research. The Washington, D.C. area is highly populated and focused on inner-city living. The area was not evaluated separately, but in collaboration to provide a full, rich, detailed meaning to the overall study.

Settings for participant interviews should take place in a natural setting (Yin, 2014). The participant interviews took place in an office, school, or through Skype. This natural setting helped the participants recall their exploration of the mindfulness meditation application. Furthermore, the focus group also took place in a natural setting. Three individuals were chosen to participate in the Washington, D.C. metropolitan area for one focus group conducted at a local library. Some of these individuals already knew one another which helped them to share their thoughts with the group to gain a better understanding of their experiences during the study through the experiences of other individuals that were also in the study.

The setting for the participants that used the mindfulness meditation application varied; however, the setting will always be in a natural setting. Some participants decided to explore the mindfulness meditation application during the school day in the classroom, in his or her car, or in the break room. The setting was not the same for each participant and was not the same for the same participant each time. Some participants used the mindfulness meditation application at home before the start of the work day or in the local café before the work day began. The mindfulness meditation application was also used on the weekend where the participant was not thinking of the profession. Even though there was no defined location for the study, there were boundaries. The boundaries were educators that are located in the Washington, D.C. area that had not previously used a mindfulness meditation application.

Participants

The participants were selected based on purposeful convenience. These participants have worked in the Washington, D.C. area. According to Patton (1990), purposeful sampling can be a generalized into 15 categories. Based on these categories, convenience sampling would fall under the broad category of purposeful sampling (Coyne, 1997). According to Suen, Huang, and Lee (2014), convenience sampling usually involves participants that are close to the researcher. Although convenience sampling is used in quantitative studies more often than qualitative studies, convenience sampling is still seen in qualitative studies (Suen et al., 2014). Convenience sampling differs from purposeful sampling in that purposeful sampling is based on carefully selecting a subject (Suen et al., 2014). However, for this research, the participants had to still fall within the defined boundaries. The criteria were that each participant had to be an educator, own or have ready access to a smartphone, and had not had a mindfulness meditation application on their smartphone. The anticipated sample size for the study was between 10 and 15 participants. The participants were all female. The ages of the participants were between 18 and 38 years old. In this study, the educators were located in two separate areas that provided distinct regional differences while exhibiting distinct similarities in the field of education.

Procedure

The first step was to gain approval for this study from the Liberty University Institutional Review Board (see Appendix A). The next step was to contact individuals to see if they were interested in participating (see Appendix D). Once I had a sufficient number of interested participants, I sent a formal email to the administrators of their schools, asking for permission. Participants signed a consent form that they agreed to the terms of the study (see Appendix B). They agreed to write and submit a personal email once a week during the three-week study,

which was their weekly journal. The participants also signed a consent form at the beginning of the focus group to not share any information and to keep the discussion within the group by not discussing any names of the people in the group.

The participants' journals were used to understand how participants used the mindfulness meditation application. By writing down their thoughts and actions during the week, they had an understanding of how they had progressed; this also gave me an internal view of their experiences. The journals were submitted to me on a weekly basis, once before the first week and then at the end of each week of the study. The journals covered how the participants expected to use the mindfulness application in the coming week and how they used it in the week prior. One-on-one interviews were conducted in person or online. These interviews gave me a better understanding of what the participants experienced during the study by giving them a voice. The focus groups met one time to discuss their individual realities of the mindfulness application on a smartphone collectively.

The Researcher's Role

I did not have any experience in formal education and did not know the daily tasks of an educator. I had basic knowledge of smartphones and little knowledge of mindfulness meditation. I ensured that I compiled evidence according to particular themes (Yin, 2014) instead of individuals to keep any bias from being revealed in the research.

I had some assumptions about mindfulness meditation after reading over 50 articles on its benefits. I believed that mindfulness meditation does work for people, but not all people are able to gain benefits from it because they may not be able to self-regulate enough to commit to meditation. I used my own personal journal during the study to keep my thoughts out of the

study, which placed more emphasis on the participants' voices (Yin, 2014). I was not a participant in the study, but simply the human instrument that recorded participants' responses.

Data Collection

For this case study, the data was collected through journals, interviews, and a focus group. The journals were completed by the participants. They emailed me information after each of the three weeks of the study, discussing how they used the mindfulness meditation application, for how long and how they intended to use it in the coming week. Interviews were conducted face-to-face or through Skype. The interviews followed pre-written interview questions and encompassed any additional information the participant or interviewer may have found useful. A focus group is a great way to get participants thinking about the study with others who were involved.

Participant Journaling

Journaling was used by participants to record their weekly activities using the mindfulness meditation application. Reflection is a great practice for people to recall and have a deeper understanding of their experience (Parikh, Janson, & Singleton, 2012), so by writing their reflections down, participants came to better understand their experience with the app. During the week, I sent an email to the participants that asked them to write down information regarding their use of the mindfulness meditation application (see Appendix C). I looked for how long they used the application and what they gained from it. Participants wrote down how many times they used the mindfulness meditation application in the past week, the times of day they used it, the reason they used it, and the location of use. At the end of the week, the participants reflected on their experience of mindfulness meditation with the smartphone app and wrote a

short paragraph about how they felt about it. Reflection can also increase cognitive thinking skills, improve critical thinking skills, and decision making (Kuiper, 2004).

Interviews

Interviews were conducted one-on-one and either face-to-face or online. Face-to-face interviews took place at the local library. The interviewees were notified that their names would not be released and that their responses were completely confidential so they could discuss freely. The interviews were semi-structured and guided by the researcher (Yin, 2014). Castillo-Montoya (2016) stated that interviews provide detailed data that helps comprehend the real-life experience of participants. Castillo-Montoya discussed the four phases of interview protocol refinement: "Phase 1: Ensuring interview questions align with research questions, Phase 2: Constructing an inquiry-based conversation, Phase 3: Receiving feedback on interview protocols Phase 4: Piloting the interview protocol" (p. 812). Researchers should prepare specific interview questions to gain a deeper understanding of participants' experiences (Castillo-Montoya, 2016) to prevent participants from going off topic. The second phase deals with an inquiry-based conversation, which is gathering information in a conversational style and not interrogative style. To direct an interview in the proper direction requires attention and time (Castillo-Montoya, 2016; Rubin & Rubin, 2012). According to Castillo-Montoya (2016), the third phase allows a researcher to see if participants comprehend the questions and what the researcher is seeking. The fourth phase pilots the interview to determine if questions are worded correctly or if any are ambiguous. The interview questions proposed for use in this study are listed below and were recorded during the interview.

Standardized Open-Ended Interview Questions

Icebreaker

1. When you day dream, what do you dream about?

   Application

2. What was your initial reaction to using the mindfulness meditation application?
3. How prepared were you for using the mindfulness meditation application?
4. What factors prevented you from using the mindfulness meditation application?
5. Describe your personal experience of the mindfulness meditation application.
6. How often did other applications on your phone distract you from the mindfulness meditation application?

   Meditation

7. Was there a time when you wish you had used mindfulness meditation, but you didn't get the chance? If so, describe the experience.
8. In what location did you practice mindfulness meditation?
9. Describe the time of day when you decided to practice mindfulness meditation.
10. Was one location better than another to use mindfulness meditation? If so, why?
11. How often did your mind wander while meditating?
12. When your mind wandered, were you able to bring your mind back to what you were paying attention to in the meditation?
13. Describe your personal experience with mindfulness meditation.

    Stress/Social

14. How did your environment affect the choice of whether to use the mindfulness meditation application?
15. What determined the use of the mindfulness meditation application during the day?
16. Describe your stress level before and after using mindfulness meditation.

17. Why will you continue using or not using the mindfulness meditation application?
18. Describe areas of your life where mindfulness meditation helped or did not help you with.
19. How much better is your self-control since beginning to use the mindfulness meditation application?
20. If anything, what did you tell your friends and family about the mindfulness meditation application?
21. Would you like to tell me something more about the mindfulness meditation experience that you encountered in the 3-week study?

These 20 questions were designed to obtain an overview of the mindfulness meditation application experience from participants. The questions attempted to get the participants to think deeply about their experiences during the three weeks, where they were, and where they were going with the mindfulness meditation application. Questions 2-6 were based on the use of the smartphone application and how the participants felt about the application itself. According to Kalonde and Mousa (2016), teachers choose technology because of factors that pertain to them, including perceptions, personal experience, attitude, and environment. These questions were intended to focus on why a participant decided to use or not use the smartphone application and get the participants to remember the actual application on the smartphone. Questions 7-13 were intended for the participants to remember mindfulness meditation and focus on meditating itself. Mindfulness meditation assists individuals with emotional regulation (Tang, Hölzel, & Posner, 2015) and focus. Questions 14-21 focused on the stress and social aspect of mindfulness meditation application. Mindfulness meditation has shown stress levels to decrease in individuals who practice it (Creswell & Lindsay, 2015; van Hooff & Baas, 2013).

Focus Group

After the participant journals were collected and individual interviews conducted, the last data collection method was the focus group. Focus groups allow ideas to be discovered and understood in a group of similar-minded people within a common communicative ground (Lloyd, Watmough, O'Brien, Furlong, & Hardy, 2016). This focus group consisted of three participants that spoke freely about their experience during the three weeks they used the mindfulness meditation application. As the researcher, I played the role of facilitator to explore how the participants used the application. Participants are more likely to discuss their journey as a group (Lloyd et al., 2016) than in a one-on-one interview. The focus group met for approximately one hour. There were seven total questions, and each participant was given approximately 2-4 minutes to speak about each question. The focus group questions were:

1. What factors made the mindfulness meditation application difficult to use during the workday?
2. What distracted you from using the mindfulness meditation application most throughout the day?
3. What is the main reason that you will or will not use the mindfulness meditation application in the future?
4. Why is or why isn't the smartphone a good tool for mindfulness meditation?
5. What is your favorite coping mechanism for dealing with stress? Where would you rank mindfulness meditation?
6. Why do you or why don't you see yourself using the mindfulness meditation application six months down the road?

7. How were you able to balance the mindfulness meditation application with your busy schedule?

Wolgast and Fischer (2017) have found that teachers do not have free time, which in turn adds stress on educators. The first question was designed to see if the educators were stressed or lacked the time to use the mindfulness meditation application. This question was designed to explore the busy schedules of educators. The second question focused on distraction in order to get a better understanding of the educators' self-regulation. According to Baumeister and Heatherton (1996), many issues can cause an affliction or distraction from what someone is doing, including eating and drinking excessively, bad ambitions, or waiting until the last minute to complete a project. The third question is designed to see if the participants believed that the mindfulness meditation application is a good coping strategy. According to Hallman et al. (2003), a coping strategy is a method that is used to manage the demands placed on an individual. The question was designed to see if the participants believed the application assisted them with their high demands of perceived stress or workload placed on them throughout the day. The fourth question was about using the smartphone as a tool for future mindfulness mediation. Smartphones can lead to addiction (Haug et al., 2015), and mindfulness can relieve addiction (Khanna & Greeson, 2013). However, since mindfulness and addiction can be viewed as opposites, they can also work together to get individuals to become more mindful by using a smartphone mindfulness meditation application. The fifth question asked participants to rank mindfulness meditation among stress-relieving tools; this question was to get the participants thinking about other methods they used to relieve stress and to determine if mindfulness meditation might be helpful for them moving forward. This question was not about the application itself or time, but was more focused on understanding participants' views on

mindfulness meditation and whether they felt the moment-to-moment understanding of what was happening around them (Ott, 2004) would help identify if the participants felt present and not mind wandering during the day. The sixth question aimed to understand the standards individuals had for themselves. Standards are the first component of the self-regulation theory (Baumeister & Vohs, 2007). The seventh question dealt with balancing the mindfulness meditation application with the schedules of the educators. Furthermore, it referred to the priority and how individuals monitored themselves while using the smartphone application. According to Baumeister et al. (2000), people need to know where they are and monitor themselves to see if changes are needed. If individuals feel that mindfulness meditation is a priority, then they would practice it more often.

Data Analysis

One of the first steps in an analytic strategy is to "play" with the data by searching for something favorable in their patterns or codes (Yin, 2014). According to Saldaña (2013), researchers should remain flexible in their data analysis so that they do not lock themselves into one particular method that may look promising at first but become unrealistic. The researcher should write notes on the data collecting process to remind him or herself of certain clues that should not be overlooked (Yin, 2014) and draw more data to be analyzed from the clues gathered. One of the most advantageous procedures is to use pattern-matching logic (Yin, 2014), which compares a prediction before data are collected to the actual data after they are collected and compiled. Pattern-matching is just one of many techniques that can be used to bring patterns together before they are coded.

The definition of patterns in case studies varies amongst authors. Almutairi, Gardner, and McCarthy (2014) defined it as, "arrangement of occurrences, incidents, behavioral actions,

or the outcomes of interventions that are apparent in the raw data" (p. 240). According to Almutairi et al. (2014), pattern identification began in the 1960s when patterns were analyzed in the environment where they transpired. The pattern-matching technique evolved through time to where it is found today. Pattern-matching can be seen today when the observed patterns in the data match the predicted patterns, which will strengthen the study (Yin, 2014). The evolving data are compiled and placed in codes (Creswell, 2013) to better understand them.

The participant journals were collected and analyzed for meaning and categorized into themes. The interviews were recorded and transcribed to find meaning of the participants' experience. The focus group was also analyzed to find meaning among the data and information obtained. The data from these multiple sources was collected and used collaboratively to obtain a cohesive finding (Yin, 2014).

Specifically, I listed the 10 individual participants in an Excel spreadsheet by name and age range. After all the names were placed in the spreadsheet, I went through participants' journals looking for key words. These words were placed by the participants' names. For the next step, I added key words used in interviews to the spreadsheet. The same step was taken for the focus group. When I gathered all the data and placed them in the spreadsheets, I organized the spreadsheets according to categories in an easy-to-read format. I then used the formatted version of the spreadsheets to analyze the data derived from the study.

Trustworthiness

According to Lincoln and Guba (1985), there are four criteria used to measure trustworthiness in a qualitative study: credibility, transferability, dependability, and confirmability. Each one of these criteria plays an important role to keep the study honest and repeatable. These four criteria are briefly discussed here.

Credibility

Credibility is based on the precision of the data collected in the study (Lincoln & Guba, 1985) and the methods used (Yin, 2014). For this research, the interviews were transcribed to show that all the words spoken were from the participants. Additionally, the transcriptions were verified.

Dependability and Confirmability

Dependability refers to the consistency and solidity of a researcher's coding process (Lincoln & Guba, 1985). This is a difficult process since coding can vary from researcher to researcher; however, the coding process for this research is shown in Table 1. Confirmability shows how the questions asked have led to the interpretation (Koch, 2006). Confirmability is reached when credibility, transferability, and dependability all have been confirmed (Guba & Lincoln, 1989) in the research.

Transferability

Transferability refers to conducting an identical study by only looking at a written study and not asking questions. A study should have rich descriptions of participants, the environment, and the data collection methods (Creswell, 2013) for other researchers to replicate the study. This process allows other researchers to conduct a similar study on, in this case, mindfulness meditation on a smartphone application by reviewing the process.

Ethical Considerations

This study had some ethical considerations. Data collection had to wait for approval from the Institutional Review Board, and each participant signed a consent form. This study did not deceive any of the participants involved, and all the information was given to the participants. Participants' names were kept anonymous. The only time when individuals knew

the names of others was in the focus group. I asked focus group participants to keep group information confidential, but I cannot guarantee that will be done. The gathered data was reported on a password-protected computer in case the computer is lost or stolen.

Summary

The study was designed as a single case study that explored use of a mindfulness meditation application on a smartphone. The site for this study included the Washington, D.C. area. One focus group met at a local library and consisted of three participants. One-on-one interviews were conducted via Skype or in person at the library, depending on availability and location of the participants and researcher.

CHAPTER FOUR: FINDINGS

Overview

Chapter Four begins with a brief description of each study participant; all are referred to using pseudonyms. All participants worked at schools in the Washington, D.C. area but may have held a different position at the school. Each participant's overall experience with the mindfulness meditation application was the focus of the data used in this qualitative case study. Quotations from participants are used to provide rich descriptions of the study's research questions and support the developing themes. After the participants' experiences are described, the results are discussed to develop the themes and answer the research questions. The chapter concludes with a summary.

Participants

A total of 13 people agreed to participate in the study, but three did not respond to follow-up emails. The 10 participants are identified below using pseudonyms to protect their identities. All participants were women ages 18 to 38, and together they represent a wide range of life and teaching experiences. The participants all agreed to send weekly journal entries and complete interviews; Jenifer, Miley and Francine were part of the focus group.

Ro

The first educator to participate in the study was between ages 22 and 28; she had no previous experience with mindfulness meditation. Some days she felt prepared to meditate, and other days she did not. Ro stated the following in the interview:

> I believe the first week I was kind of prepared; the second week I had my off days. I wasn't necessarily prepared, but when I was prepared, I felt like, okay, I can actually do

> it. When I wasn't prepared, I felt like I'll ease myself into doing it, and once I actually went into doing it and continued with doing it, it was fine.

As the weeks progressed, Ro felt more stressed because of her work and home life. Although the weeks became more difficult, she believed that maneuvering the application became easier. In the third week of the journal, she stated the following:

> I was unable to open the application due to work and school. Although I did not have time to open the application, when I found myself in stressful situations, I found myself using the techniques from the application to calm myself down. I realized that the benefits from the application included: coping/dealing with stress, how to let go of things and fall asleep, and most of all how to reflect on things.

Bridgette

The second educator to participate in the study was between ages 29 and 38. She had no previous experience with meditation and needed a quiet place to meditate. In the interview, she stated the following:

> I used it at home. I think the environment is important because you have to listen to it, not just hear it. I wouldn't be able to meditate and drive or [meditate] in the classroom. It seems that I need to be ready to meditate to concentrate. I can't just go and meditate whenever I want.

Although Bridgette required more concentration to meditate, she was able to find a quiet place to use it. In the first journal she stated, "I was able to use it in bed before falling asleep." She enjoyed listening to the meditation exercises at night. When the study was over, Bridgette planned to meditate using the application because, according to her, "It helped me relax and just stop the hectic schedule."

Marie

The third educator to participate in the study was between ages 22 and 28, and she had no experience with meditation before the study. Marie enjoyed the meditation exercises because she felt they were relaxing. In the interview, she explained,

> I liked it. It helped me relax and forget about all my troubles. Basically, I forgot my worries. I could just sit back, close my eyes and listen. It felt almost like a mini vacation where I could just leave the world and be with myself and listen to myself without saying anything.

Despite feeling as though she was on vacation when using the application, Marie often forgot to meditate. In the interview, she identified remembering to meditate as a setback, explaining, "Basically when I remembered [to use the meditation application]. As long as I wasn't too tired and remembered it was easy to turn on." Later in the interview she said, "I will continue using [the meditation application] as long as I remember to use [it]".

Lynn

The fourth educator to participate in the study was between ages 29 and 38, and she also had no experience with mindfulness meditation. One factor that prevented her from using the application was her busy schedule. In the interview she stated, "It was really just how busy and drained I was from the demands of the start of this school year." As I mentioned in my reflections, "if I had started using it maybe over the summer months when I had a lot of free time and able to establish the habit of it," it may have become more natural for her to use it during times of chaos.

Lynn wished she was able to use the meditation application while at school. She explained, "There were many times and I thought like, I wish I just had a second to breathe, both

literally and figuratively," while she was teaching. However, the dynamics of the classroom made it impossible for Lynn to meditate at school; she planned her days and times to use the meditation application.

Mary

The fifth educator to participate in the study was between ages 22 and 28. She had no experience with meditation prior to joining this study, but she enjoyed listening to the application in her car on the way home from work. In the interview, she said, "I wish I could use this when I was in the classroom. Sometimes the day can be crazy" because of the demands of managing the classroom, deadlines and meetings. Mary also stated that "It was great to sit in the car after work and listen to it on the way home, especially with my long commute."

Mary used the application primarily to relax and reduce stress. When asked about stress in the interview, she confirmed that "It definitely dropped. After work, I do not want to think about work but just relax and give me, me time." In her third weekly journal, she stated, "After a stressful week, the meditation exercises really helped."

Tiffany

The sixth educator to participate in the study was between ages 29 and 38. She had previous experience with meditation but had not used the application. While Tiffany had meditated before, she still had life commitments. "I'm a teacher, wife and a mom. Things can just get crazy," she said in the interview; her favorite time to use the application was at night.

During the second week of the study, Tiffany stated, "I did use mindful meditation mon-thurs [Monday – Thursday] at night before bedtime." Throughout the remaining weeks, Tiffany struggled to use the application because of life issues. During the third week, she wrote in her journal, "This week was harder to meditate than the others during the week due to planning and

trying to catch up. My kid has activities." She still hopes to use the mindfulness meditation application in the future despite the hectic nature of her life.

Jenifer

The seventh educator to participate in the study was between ages 18 and 21, and she had no experience with mindfulness meditation. Jenifer used the meditation application at night but wished she could use it during the day. During the interview she said, "I wish I could call timeout and just meditate, but dealing with the children is hard and I can't just leave." She was not able to use the application during her breaks because she needed a quiet place without any distractions.

During the interview Jenifer also stated, "I need a quiet time and space to meditate so it has to be in bed." In the second week of the study, she primarily listened to music. "It was soothing to just sit there and listen to the music," she stated in her journal. Jenifer hoped to continue using the mindfulness meditation application in the future.

Miley

The eighth educator to participate in the study was between ages 22 and 28, and she had no prior experience with mindfulness meditation. When asked about the application in the interview, Miley said, "It was so easy to use. There were different options like music and stories." Another feature she enjoyed was the pop-up reminders, as she stated, "it had a reminder that would pop up to tell me to meditate."

Miley admitted that even with the reminders, she sometimes forgot to use the application. In the week one journal, she stated, "I forgot about the application until you sent an email reminder [to turn in the week's summary]." During the focus group, she indicated that life is difficult due to busyness, saying, "I am a busy person. I teach, have friends and you know, life."

Francine

The ninth educator to participate in the study was between ages 22 and 28. She had no prior experience with mindfulness meditation but had thought about meditating in the past and daydreamed often. During her interview, she admitted, "I often dream about meeting my future husband." She hoped that, "Mindfulness meditation would help relax me and stop my mind from wandering." She had difficulty remembering to use the mindfulness meditation application at work but was able to remember occasionally.

In her journal, Francine explained, "I would use the application the most during the middle of the day. During the lunch break where I could just put in my headphones and just relax." In the evening, she had too much information in her head and could not think about using the meditation application. "I was busy with friends at night and just too much to think about. Looking back on it, I wished I used the application more," Francine stated during the focus group.

Denise

The tenth educator to participate in the study was between ages 29 and 38. She had no experience with meditation, but she was excited to use the application. Denise stated in her first weekly journal, "I was excited to begin the application and curious about what I'd experience. As I explored the meditation application, I was quickly drawn to the tranquil music and the calming effect it had on me." Throughout the three-week study, Denise tried the meditation application in the morning and at night. Of her experience, she said the following:

> I think it is best to listen to listen at night because there is less noise and I am able to calm myself down. Also, the night time made it easier for me because I could use it with my toddler to get him ready for bed.

While Denise found it best to use the application, she also tried incorporating it into her mornings. During the interview she said, "On the way to school, I would listen to the music. Although I was in horrible rush-hour traffic, I found it was very soothing, and [it] prepared me for my day at work, which can get crazy."

Results

This section is organized thematically according to the four research questions. The four research questions were formed based on Roy Baumeister's four components of self-regulation. The first research question examined how individuals would use the mindfulness meditation application. The second research question explored the motivation aspect of an individual's use of the application. The third research question dealt with guiding individual's thoughts before losing concentration, and the fourth research question explored the willpower of the individuals as it relates to the meditation application.

Theme Development

The data in this study was collected through journals, interviews, and a focus group. Participants wrote in the journals at the end of each of the three weeks of the study, and the interviews and focus group were audio recorded and transcribed. I began transcribing the audio recordings myself, but this effort became time consuming, and I then used Temi, a transcription service, to transcribe the data. When all data was transcribed, I gathered codes from each data collection and reviewed each code alone and in a group. The codes were organized manually through in vivo coding. According to Saldaña (2013), in vivo coding "uses words or short phrases from the participant's own language in the data record as codes" (p. 264). Then, the codes were triangulated in the groupings to find meaning. Afterward, I conducted the coding

exercise using the NVivo software to increase the validity of the results. The coded words, themes and appearances are seen in Table 1.

Table 1

Interview Analysis

In Vivo Codes	In Vivo Code Appearances	Themes
Forgot	19	Time management
Schedule time	4	
Did not have time	7	
Family	22	Life commitments
Friends	7	
Work	19	
Mind wandered	21	Overcoming distractions
Cannot meditate in the classroom	7	
Distracted	9	
Quiet place	14	
Gratitude	6	Benefits of the meditation application
Calm	47	
Happiness	13	
Relax	24	

Time management. For the first theme, the code words "forgot," "schedule time," and "didn't have time" were place in the time management theme. An example of this theme is from Lynn. In her interview, Lynn stated the following:

> I feel like if I had started using it maybe over the summer months when I had a lot, a lot of free time and able to sort of established the habit of it then even in the midst of the beginning of the year, chaos and stress, I might've still been able to, like I would, if it was a habit that was formed, I probably would have just done it anyway.

Cultivating mindfulness meditation as a habit would make it easier for educators to use the application and reduce stress. When discussing stress reduction in the focus group, Jenifer stated the following:

> I like to just watch television. I think meditation reduces stress, but I really need to be in the mood. It is hard to just not begin to meditate, but to remember about meditating. I really need to be ready and have it scheduled.

In the week one journal, Tiffany explained, "I remembered to take quiet time for myself that evening, but I just didn't use the app. I was very busy Thursday and tired." Though she arranged a time for meditation, Tiffany was still unable to form the habit of doing this exercise. The exhaustion of the day depleted the energy she needed to use the mindfulness meditation application.

Life commitments. "Family," "friends," and "work" all relate to the second theme of life commitments. In her interview, Bridgette explained the factors that prevented her from using the mindfulness meditation application:

> I am just busy with stuff. I have work and I'm taking online classes. So, it's been tough. I have so much going on and try to balance everything with life and this study. It's a lot of work. It's a lot to do.

In the focus group, Miley explained the challenges she experienced using the meditation application due to life commitments:

> It was difficult, especially since it was the beginning of the school year. I was constantly running around and talking with parents and trying to balance my personal life and family. It wasn't easy. It's like I am getting ready to start my new routine at school and now I am going to do a study. It sounded great because meditation reduces stress and it does, but I have to learn how to do it. It was hard to balance everything with what I had going on.

Overcome distractions. Another theme that emerged in the coding process was the need to overcome distractions. Participants may have developed objectives that they struggled to reach. In these situations, participants were not completely upset with themselves, but they learned to overcome distractions. Coded words and phrases related to this topic include "mind wandered," "can't meditate in the classroom," "distractions," and "quiet place." In the focus group, Francine stated the following:

> Some days are really hectic at school, and I wanted to go and meditate, but it was too hectic. But, I wished I would remember to use it when I am stressed, but I can't leave the kids in the room and meditate. I have started to pick up some of the exercises though even though I am not thinking about it. I just learn my new expectations of what I should expect and where I can meditate.

Francine was not the only participant who overcame distractions when using the meditation application. In the second week journal exercise, Lynn explained,

> Although I only used the app once [yet again], I was more focused this time and completed the intro to meditation. I used it before I went to bed and particularly latched on to the guidance of thinking about the number one as I inhale and the number two as I exhale. [This is an exercise I repeated independently, in small doses, throughout the

> week.] I've used mantras to breathe in and out in the past, but I found using the numbers to be more helpful in clearing my mind.

The research suggested mindfulness meditation caused participants to overcome distractions through using the mindfulness meditation application over time. While they had designated certain days to use the application, participants realized their limitations and overcame distractions. In her interview, Mary said, "I would listen to the meditation in the car because that is where it was quiet. It is just too loud and busy in the classroom, and I just didn't have the time anywhere else."

Benefits of the meditation application. The fourth theme discovered in the data is when participants realized the benefits of the meditation application, and coded words related to this theme include "gratitude," "calm," "happiness," and "relaxed." Participants would struggle with their mind wandering while meditating at times and they did not want to use the mindfulness meditation application at other times. However, when they used the mindfulness meditation application and received the personal benefits of the application, they would continue to use the application.

The majority of the participants intended to continue using the application because they felt relaxed despite their wandering minds during the activities. In the third journal, Marie wrote the following:

> It was hard since it was my first time ever meditation by keeping my mind focused, but I improved as the weeks went on. I noticed myself feeling more calm, relaxed and stress free. The benefits of using the application were great, and I can definitely see the positive results.

Research Question Responses

The following section provides answers to each of the four research questions introduced in Chapter Three; these responses were developed based on the data collected. Direct quotations from participants collected in the journals, interviews, and focus group are included in the responses. These answers will give specific responses to the research questions to negate any ambiguity.

RQ1: How do individuals seeking to modify their behavior use the mindfulness meditation smartphone application?

Individuals picked a time during the week to use the mindfulness meditation application. Mary said in her interview, "I used it when I remembered in the car. It worked better when I set out a time in the week to use it while driving." In her first journal response, Bridgette explained, "I listened to the meditation at night when I was home alone where it was quiet and I was getting ready to fall asleep." Individuals chose specific times that worked best for them, and these times depended on the environment. In her interview, Ro discussed how she prepared to use the meditation application: "It would always be my bedroom, and I would turn the lights off and either sit up on my bed or lay down on my bed just so I was even and my whole body was even or straight." Most participants reserved time to use the application, and if they did not make this effort, they usually forgot to meditate.

RQ2: How does an individual's motivation to attain a goal shape his or her use of the mindful meditation smartphone application?

Individuals used the mindfulness meditation application when higher priority life commitments were met. In her week two journal, Denise explained,

> I went on a mini family vacation over the weekend and spent my indoor time watching Netflix, playing with my son or chatting with my husband. I didn't think to pick up my phone to use the mindfulness app. I used my time to be with my family and just connect with them more. During the week, I spent time planning and thinking about time with my family. I'll revisit next week.

Denise was not the only participant who prioritized other life commitments. Tiffany focused on her students rather than the mindfulness meditation application; during the interview, she stated the following:

> Usually I [use the meditation application] during my lunch break, which is from one to two but sometimes I just can't get to it. If I had a plan or a meeting or take care of somebody or something, I wasn't always able to get to [the application], but I tried initially when school first started to do it every day during lunch.

In her third journal, Francine said, "I wish I would remember when I was at home, but I was busy this week. I should try it more when I remember. I'll try to use it more." She wanted to use the application more, but her home life was busy, and she had life commitments that kept her from meditating.

RQ3: How does mindfulness meditation guide individuals in monitoring thoughts and actions that precede the dismantling of a goal?

Through meditation, individuals learn to overcome distractions while encouraging themselves to persevere. Participants realized they were unable to stop their minds from wandering, and this revelation helped them refocus and try meditation again. Tiffany said her mind wandered, but the application "even tells you to bring your mind back," and when her mind wandered a few times she "just zoned in." Additionally, participants remembered different

meditation exercises during the day when coping with real world issues. Although they were unable to dedicate time to the application, they persevered and continued to benefit from the exercises. In the third journal response, Ro explained.

> The last week of mindfulness meditation was the hardest. I was unable to open the application due to work and school. Although I did not have time to open the application, when I found myself in stressful situations, I found myself using the techniques from the application to calm myself down. I realized that the benefits from the application included coping/dealing with stress, how to let go of things and fall asleep, and most of all how to reflect on things.

Participants continued to use the mindfulness meditation application even though they had many distractions. The educators worked long hours and had family and friends that they enjoyed life with. In the third journal, Miley wrote:

> I was really busy this week, but I was still able to use the meditation application. I had meetings at school and the overall of stress at the beginning of the school year didn't help. I was able to just sit down and get to the meditation exercises. It was difficult to start it, but I did it.

RQ4: How does mindfulness meditation cultivate willpower while building one's inner capacity to control mind wandering?

Mindfulness meditation cultivates willpower while building a person's inner capacity to control mind wandering through the benefits of the mindfulness meditation application that is seen over time. In the focus group, Francine explained,

> Mindfulness meditation definitely calms me down and helps me relax, especially after a long day of work. Simply just listening to her voice helps me calm down and just forget about the busyness of the day.

The relaxing effect of the mindfulness meditation encourages individuals to continue using the application; committing to meditation enhances the benefits of the practice. In Mary's week three journal, she wrote,

> The third week I was able to adapt to the exercises more. It became more of a routine for me after the previous two weeks. Even though I may not have used the application as much, I was able to go through the application with more ease, and felt more comfortable with the sessions. And it was great to want to use the meditation because of the benefits from it.

Her growing familiarity with the application and meditation sessions encouraged Mary to continue with meditation. It takes time to develop a habit of meditating. When Bridgette was asked in the interview whether her mind wandered, she stated the following:

> It wandered often, but I was able to bring it back. It was difficult to listen to the meditation exercises in the beginning, but the longer I did the meditation exercises I was able to improve my mind from wandering. I just had to stick with it.

Summary

The themes identified in the study were time management, life commitments, overcome distractions, and the benefits seen from the meditation application; and, they helped in answering the four research questions related to self-regulation. In the study, it was found that individuals selected a time every week to use the mindfulness meditation application. Even though they had a time selected to meditate, they only meditated when higher life commitments were met.

Through meditation, individuals learn to accept failure as a result of mind wandering and overcome distractions when encouraging themselves to persevere. Through the benefits of the mindfulness meditation that is seen over time, mindfulness meditation cultivates willpower while building a person's inner capacity to control mind wandering.

CHAPTER FIVE: CONCLUSION

Overview

Chapter Five summarizes the findings by briefly restating the answers to the research questions from Chapter One. The empirical and theoretical discussions are presented and used to identify the theoretical, empirical, and practical implications of the study. The delimitations and limitations of the study are identified, and recommendations for future research are made. Finally, a brief summary reviews the chapter and the study as a whole.

Summary of Findings

The central research question asked how educators use the mindfulness meditation application Calm on their smartphones. Educators used the application in their free time to reduce stress and anxiety caused by the busyness of their days. Educators' occupations typically involve additional stresses such as time constraints (Wolgast & Fischer, 2017). Since educators are constantly busy with work, they used the smartphone application on lunch breaks, in the car while returning from work, and at home after work.

The first research question asked how individuals seeking to modify their behavior use the application. The first research question was formed around Roy Baumeister's first ingredient in self-regulation: standards (Baumeister & Vohs, 2007). According to Baumeister and Vonasch (2015), one's self can be compared to norms, family members, friends, and past selves. The question was designed to identify the personal standards participants set to achieve their goals. It was found that rather than spontaneously using the tool, educators planned time for it at the beginning of the week or day. In the second journal response, Ro said, "I had an alarm set for 5:30 p.m. to open the application and start with the exercises. When I engaged in the exercises, I ended relaxed, and I self-reflected on the day and discussed the positives in my mind."

The second research question asked how an individual's motivation to attain a goal shapes his or her use of the meditation smartphone application. The study found that individuals use the application when higher priority life commitments are met. When I asked Tiffany what factors prevented her from using the application, she responded that "I teach, am a wife and a mom. Things are just crazy." Miley mentioned in the focus group she had to learn how to balance her commitment to online classes, her friends, as well as her family. Denise did not even open her application in the second week of the study because of her family. Tiffany, Miley, Denise, and many other participants had life commitments that prevented them from using the meditation application despite their conscious efforts to set a goal.

The third research question asked how mindfulness meditation guides individuals in monitoring the thoughts and actions that precede the dismantling of goals. Through meditation, individuals learn to accept the failure of mind wandering and overcome distractions while encouraging themselves to persevere. In the third journal response, Mary said, "I used it in the car this week coming home from work for a couple of days. I remember when I got home; I was just sitting in the car without a thought. It was crazy." At the beginning of the study, Mary stated that it was difficult to continue listening, but she was able to listen through the exercises until she arrived home. Simply by listening to the meditation application on the way home, Mary was able to stop her mind from wandering about the day and all the activities she had to complete. The mindfulness meditation application relaxed her mind through the perseverance Mary had by continuing to listen.

The fourth research question asked how mindfulness meditation cultivates willpower while building a person's inner capacity to control mind wandering. Mindfulness meditation cultivates willpower while building a person's inner capacity to control mind wandering through

self-discipline and learning to be calm. In the interview, Denise explained, "the more I meditated, I noticed I became calmer" over three weeks. Denise realized that when she was calmer, her self-discipline increased, and she could meditate for a longer period by stopping her mind from wandering.

Discussion

The theoretical discussion uses the framework of Baumeister's self-regulation theory. The four components of this theory are discussed in relation to this current study. In the empirical discussion data from chapter two is used to illustrate similarities and differences to previous research related to the current study.

Theoretical Discussion

The study was based on Roy Baumeister's four components of self-regulation: standards, willpower, monitoring, and motivation (Baumeister & Vohs, 2007). Participants wanted to reach their desired goal of reduced stress by planning to use the mindfulness meditation application and forming a habit. However, just like all goals, sometimes the participants were not always able to reach their goal because they lacked the motivation.

Baumeister and Vonasch (2015) described willpower as an inner conflict that can have individuals create a conflict to use or not use. For this study, the inner conflict with the participants involved whether they should use the mindfulness meditation application or not use the application and engage in another activity or to allow another thought to enter the mind. One positive result of the meditation practice was that the educators continued using the application throughout the three-week study. Since they did not give up after the second week, this shows that their willpower was still there to continue with the application. Participants' willpower to use the application relates to self-discipline because of the positive benefits that were seen from

meditating. Participants also continued using the application because they felt calmer when they meditated more frequently.

Baumeister and Vohs (2007) stated that it is illogical to believe that an individual can regulate a behavior without knowing when the behavior occurred. In this study, participants monitored their thoughts during meditation, but their minds wandered. However, they were aware that their mind wandered and tried to refocus on the meditation. Participants did not set high expectations at the beginning and soon were able to sustain their meditation periods for a longer period. Additionally, the participants monitored their use of the application to decide when to use the application. This was noticed when the participants set times of day to use the application in order to monitor when they used the application and not just how they used the application.

According to Baumeister and Vohs (2007), individuals' motivation to self-regulate is critical in achieving self-regulation. Participants' motivation to use the application related to their life commitments. Since the study was conducted in a real-world environment rather than a laboratory, participants had to draw on their internal strength to use the application during their free time. They prioritized important life commitments over use of the application, and some days they did not have time to meditate. In one instance, one participant did not even think to use the application because of a family vacation.

Empirical Discussion

The U.S. Department of Health & Human Services (2016) found that 8% of the people in the US practice meditation. Meditation is a proven tool to reduce stress (Baer et al., 2012), and addressing educator stress is challenging (Flook et al., 2013). The current study suggested that

the educators wanted to meditate but were distracted by life commitments such as work. Tiffany explained her use of the meditation application in her interview:

> Usually I [use the application] during my lunch break, which is from one to two but sometimes I just can't get to it. If I had a plan or a meeting or take care of somebody or something, I wasn't always able to get to [using the meditation application].

Tiffany struggled to find time to use the meditation application, but she felt a reduction in her stress level. Later in her interview, she stated the following:

> I will continue to use the app beyond just the window they have allotted or something similar to that, but I definitely like this app better than other things that I have used before. More options for anxiety, stress, so I can tap into whatever. I'm more relaxed and not stressed out.

According to Tiffany, the application reduced stress, but finding time to use it was difficult because of all of the life commitments. This is similar to previous research that also mentioned stress is placed on educators in many different areas of their lives (Hozo et al., 2015). Even by having a stress-reducing tool available to them, educators still struggled to find time to use the tool because of the workload and personal commitments.

Implications

This section outlines the theoretical, empirical, and practical implications of the current study. The theoretical implications relate to the main components of Baumeister's self-regulation theory. The empirical implications relate to the implications of this study in comparison to the self-regulation theory. The practical implications will discuss ways this study can be used to help educators.

Theoretical Implications

The theoretical implications of this study relate to the four main components of self-regulation theory: standards, willpower, monitoring, and motivation (Baumeister & Vohs, 2007). When the four components are viewed in relation to this study, it is revealed that motivation to reach the goal was the greatest factor in failure to reach it. Participants were motivated to meditate, but other life commitments took priority over this practice. Therefore, the overall lack of motivation to meditate in comparison to life commitments was low in comparison to the other three components.

In the study, participants were asked to use a meditation tool over the course of three weeks. Some participants developed more detailed plans in terms of time and place, while others only allotted time in the car after work or before bed. All participants developed some sort of plan. The participants understood the willpower needed to meditate, and even those who had not meditated before gathered the willpower to do so. Some participants did not feel a desire to meditate, but after a few minutes of listening to the narrator's voice, they felt like meditating. Participants wrote one to two paragraphs on a weekly basis to monitor their use of the application. During the interviews, the educators reflected on what they had done and noticed positive changes, even though their lives may have been more difficult during the last week of the study.

Empirical Implications

The empirical implication of the research is that educators felt less stress after the three-week study. Addison and Yankyera (2015) believed that female educators suffer from high amounts of stress. The mindfulness meditation application was found to reduce stress in this study. Denise stated, "I felt less stress after I used the mindfulness meditation application."

Since it is challenging to find a stress-reducing tool for educators (Flook et al., 2013), a meditation smartphone application is an effective solution.

Addison and Yankyera (2015) stated that female educators experience more stress due to their personal lives. In the current study, I was unable to compare the experiences of women and men, though the women did mention their families. Denise mentioned that she went on a family vacation during the second journal response. This finding is similar to what Addison and Yankyera (2015) mentioned in their research. Furthermore, Wolgast and Fischer (2017) also discussed the issue of educators having insufficient time to meditate. The educators in the current study had busy schedules that prevented them from meditating during the day and made it challenging to find time at night.

Practical Implications

A practical implication of this study is that a stress-reducing tool should be used during teacher workshops and professional development activities. In the study, educators enjoyed using the application, but life commitments prevented them from using the tool as often as they wanted. This is similar to previous studies concerning the challenges of addressing educators' stress (Flook et al., 2003). Introducing a stress-reducing tool during professional development activities will familiarize teachers with the tool and help them form a habit to encourage more frequent use. By using the application more, teachers may be able to lead a more stress-free lifestyle than they currently have since educators have added stress outside of their educator profession (Addison & Yankyera, 2015).

Another practical implication of this study is that meditation exercises should be used in the classroom. This approach will build educators' confidence in meditation and extend the stress-reduction to students. When students graduate, they will have a stress reduction tool that

they can use as adults. The third practical implication of the study is that educators should be provided stress reduction time. According to Wolgast and Fischer (2017), educators have time constraints placed on them. Part of an educator's day should include stress reduction to free his or her mind. Incorporating a time for stress reduction into the day increases the likelihood that educators will use this time to learn to cope with the stress of life.

Delimitations and Limitations

The current study included several delimitations, the first of which is the sampling of the participants. All participants were educators over the age of 18, and these restrictions narrowed the study based on age. Another delimitation of the study was the smartphone application Calm, as all participants were required to use this application rather than another mindfulness meditation application. Requiring all participants to use the same application strengthened the study and made it possible to hold a focus group discussion.

Additionally, the study faced certain limitations such as the issue that only women volunteered to participate despite my efforts to recruit people of both genders. Another limitation is that no participants were over the age of 38. Individuals that are over 40 could change the results of the study since they did not use smartphones while they were in their teens. Additionally, males could have different experiences from the mindfulness meditation application compared to females.

Recommendation for Future Research

The current single case study focused on educators' self-regulated use of a meditation smartphone application over a three-week period. All the educators enjoyed the smartphone application and indicated that they would consider using it in the future. I recommend that future research make the following adjustments:

- Examine a different geographic region
- Include participants of different genders
- Follow up after the initial three-week study to determine whether educators are still using the application
- Teach educators to use the meditation application during the summer when they have more time and conduct the study during school year to determine whether participants form a habit due to summer use
- Have teachers use the meditation application in the classroom to determine whether they use it during their personal time
- Have teachers use the meditation application in professional development sessions and interview them after six sessions to determine whether they use the application during their personal time

Summary

This study explored the mindfulness meditation and self-regulation of educators using a smartphone application. The data for the study was collected from weekly journals, interviews, and a focus group. An analysis of the data revealed four themes from the study: time management, life commitments, overcome distractions, and the benefits of the meditation application. During the interviews, participants stated that they enjoyed the application but struggled to use it as often as they wanted due to life commitments.

The results of the study corresponded with previous literature suggesting that participants would have less stress and a greater sense of wellbeing after using the application. Additionally, the theoretical implication is that participants lacked the necessary motivation to use the application. The participants were more motivated to manage prior life commitments than to use

the application. The finding that participants experienced stress reduction is consistent with previous literature. One question that arose from the current study concerns finding a way for educators to use the application despite their busy schedules. This question could be answered in future research that requires educators to use the application during professional development days or includes students in the meditation process. The limitations and delimitations of this study include the all-woman sample and the geographical location.

REFERENCES

Addison, A. K., & Yankyera, G. G. (2015). An investigation into how female teachers manage stress burnout: A case study of West Akim municipality of Ghana. *Journal of Education and Practice, 6*(10), 1-24.

Agar, J. (2004). Learning from the mobile phone. *RSA Journal, 151*(5510), 26-27.

Almutairi, A. F., Gardner, G. E., & McCarthy, A. (2014). Practical guidance for the use of a pattern-matching technique in case study research: A case presentation. *Nursing & Health Sciences, 16(*2), 239-244. doi:10.1111/nhs.12096

Atchley, P., & Warden, A. C. (2012). The need of young adults to text now: Using delay discounting to assess informational choice. *Journal of Applied Research in Memory and Cognition, 1*(4), 229-234.

Baer, R. A., Carmody, J., & Hunsinger, M. (2012). Weekly change in mindfulness and perceived stress in a mindfulness-based stress reduction program. *Journal of Clinical Psychology, 68*(7), 755-765. doi:10.1002/jclp.21865

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes, 50*(2), 248-287. doi:10.1016/0749-5978.

Bang, E., & Luft, J. A. (2014). Secondary science teachers' use of technology in the classroom during their first 5 years. *Journal of Digital Learning in Teacher Education, 29*(4), 118-126.

Baumeister, R. F. (2014). Self-regulation, ego depletion, and inhibition. *Neuropsychologia, 65,* 313-319.

Baumeister, R. F., & Heatherton, T. F. (1996). Self-regulation failure: An overview. *Psychological Inquiry, 7*, 1-15.

Baumeister, R. F., & Vohs, K. D. (2007). Self-Regulation, ego depletion, and motivation. *Social and Personality Psychology Compass, 1*, 115–128. doi:10.1111/j.1751-9004.2007.00001

Baumeister, R. F., & Vonasch, A. J. (2015). Uses of self-regulation to facilitate and restrain addictive behavior. *Addictive Behaviors, 44*, 3-8.

Baumeister, R. F., Muraven, M., & Tice, D. M. (2000). Ego depletion: A resource model of volition, self-regulation, and controlled processing. *Social Cognition, 18*(2), 130-150.

Beauchamp, C. (2010). Who invented the telephone? Lawyers, patents and the judges of history. *Technology and Culture, 51*(4), 854-878.

Beck, C. T. (2011) Secondary traumatic stress in nurses: A systematic review. *Archives of Psychiatric Nursing, 25*(1), 1-10. doi:10.1016/j.apnu.2010.05.005

Bénabou, R., & Tirole, J. (2003). Intrinsic and extrinsic motivation. *The Review of Economic Studies, 70*(3), 489-520.

Ben-Av, M. B., & Ben-Av, R. (2016). Smartphones: From distraction to attraction. *Journal of Educational Technology Systems, 45*(1), 93-102. doi:10.1177/0047239516639720

Berkovich-Ohana, A. (2017). A case study of a meditation-induced altered state: Increased overall gamma synchronization. *Phenomenology and the Cognitive Sciences, 16*(1), 91-106. doi:10.1007/s11097-015-9435-x

Bernhard, H. C. (2016). Investigating burnout among elementary and secondary school music educators: A replication. *Contributions to Music Education, 41*, 145-156.

Beute, F., & de Kort, Y. A. W. (2014). Natural resistance: Exposure to nature and self-regulation, mood, and physiology after ego-depletion. *Journal of Environmental Psychology, 40*, 167-178.

Bilton, N. (2014, September 10). Steve Jobs was a low-tech parent. *New York Times*. Retrieved from https://www.nytimes.com/2014/09/11/fashion/steve-jobs-apple-was-a-low-tech-parent.html?_r=0

Braun, C., & Foreyt, J. P. (2016). Stress: A core lifestyle. *American Journal of Lifestyle Medicine, 10*(4), 235-238.

Brown, D. (2016). Professionalizing the first steps of the teaching journey: educators Rising Standards represent a new vision for the field by mapping the front end of a coherent continuum for the teaching profession. *Phi Delta Kappan, 98*(1), 31-38.

Calvete, E. (2014). Emotional abuse as a predictor of early maladaptive schemas in adolescents: Contributions to the development of depressive and social anxiety symptoms. *Child Abuse & Neglect, 38(*4), 735-746. doi:10.1016/j.chiabu.2013.10.014

Carr, P. B., & Walton, G. M. (2014). Cues of working together fuel intrinsic motivation. *Journal of Experimental Social Psychology, 53*, 169-184.

Castillo-Montoya, M. (2016). Preparing for interview research: The interview protocol refinement framework. *The Qualitative Report, 21*(5), 811-831.

Chen, L., & Muthitacharoen, A. (2016). An empirical investigation of the consequences of technostress: Evidence from China. *Information Resources Management Journal, 29*(2), 14-36. doi:10.4018/IRMJ.2016040102

Cho, K.-S., & Lee, J. M. (2017). Influence of smartphone addiction proneness of young children on problematic behaviors and emotional intelligence: Mediating self-assessment effects of parents using smartphones. *Computers in Human Behavior, 66*, 303-311. doi:10.1016/j.chb.2016.09.063

Chiappetta, M. (2017). The technostress: definition, symptoms and risk prevention. *Senses and Sciences, 4*(1), 358-361. doi:10.14616/sands-2017-1-358361

Chotpitayasunondh, V., & Douglas, K. M. (2016). How "phubbing" becomes the norm: The antecedents and consequences of snubbing via smartphone. *Computers in Human Behavior, 63,* 9-18. doi:10.1016/j.chb.2016.05.018

Collins, E. I. M., Cox, A. L., & Wootton, R. (2015). Out of work, out of mind? Smartphone use and work-life boundaries. *International Journal of Mobile Human Computer Interaction, 7*(3) 67-77.

Corpus, J. H., & Wormington, S. V. (2014). Profiles of intrinsic and extrinsic motivations in elementary school: A longitudinal analysis. *The Journal of Experimental Education, 82*(4), 480-501.

Coyne, I. T. (1997). Sampling in qualitative research. Purposeful and theoretical sampling; merging or clear boundaries? *Journal of Advanced Nursing, 26,* 623–630. doi:10.1046/j.1365-2648.1997.t01-25-00999.x

Creswell, J. D., & Lindsay, E. K. (2015). How does mindfulness training affect health? A mindfulness stress buffering account. *Current Directions in Psychological Science, 23*(6), 401-407. doi:10.1177/0963721414547415

Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Dang, J., Xiao, S., Shi, Y., & Mao, L. (2015). Action orientation overcomes the ego depletion effect. *Scandinavian Journal of Psychology, 56*(2), 223-227. doi:10.1111/sjop.12184

Davies, W. R. (2008). Mindful meditation: Healing burnout in critical care, *Nursing Holistic Nursing Practice, 22*(1). doi:10.1097/01.HNP.0000306326.56955.14

Davies, B., Nambiar, N., Hemphill, C., Devietti, E., Massengale, A., & McCredie, P. (2015). Intrinsic motivation in physical education. *Journal of Physical Education, Recreation & Dance, 86*(8), 8-13. doi:10.1080/07303084.2015.1075922

Daponte, P., De Vito, L Picariello, F., & Riccio, M. (2013). State of the art and future developments of measurement applications on smartphones. *Measurement, 46*(9), 3291-3307.

Di Gangi, P. M., & Wasko, M. (2016). Social media engagement theory: Exploring the influence of user engagement on social media usage. *Journal of Organizational and End User Computing, 28*(2), 53-73. doi:10.4018/JOEUC.2016040104

Ditrich, T. (2016). Buddhism between Asia and Europe: The concept of mindfulness through a historical lens. *Asian Studies, 4*(1), 197-213. doi:10.4312/as.2016.4.1

Dombrowski, M. A. S. (1999). Preventing disease with stress management in elementary schools. *Journal of School Health, 69*(3), 126-127.

Donato, D., Laura, L., Leonardi, S., & Millozzi, S. (2004). Simulating the Webgraph: A comparative analysis of models. *Computing in Science & Engineering, 6*(6), 84-89.

Evans-Chase, M. (2015). If they like it they can take it with them: A mixed methods examination of internet-based mindfulness meditation with incarcerated youth. *Advances in Social Work, 16*(1), 90-106.

Farb, N. A. S. (2014). From retreat center to clinic to boardroom? Perils and promises of the modern mindfulness movement. *Religions, 5*(4), 1062-1086. doi:10.3390/rel5041062

Farinde, A. A., LeBlanc, J. K., & Otten, A. S. (2015). Pathways to teaching: An examination of black females' pursuits of careers as K-12 teachers. *Educational Research Quarterly, 38*(3), 32-51.

Feldman, G., Greeson, J., & Senville, J. (2010). Differential effects of mindful breathing, progressive muscle relaxation, and loving-kindness meditation. *Behaviour Research and Therapy, 48*(10), 1002-1011. doi:10.1016/j.brat.2010.06.006

Flook, L., Goldberg, S. B., Pinger, L., Bonus, K., & Davidson, R. J. (2013). Mindfulness for teachers: A pilot study to assess effects on stress, burnout, and teaching efficacy. *Mind, Brain, and Education, 7,* 182-195.

Forbush, E., & Foucault-Welles, B. (2016). Social media use and adaptation among Chinese students beginning to study in the United States. *International Journal of Intercultural Relations, 50,* 1-12.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: the broaden-and-build theory of positive emotions. *American Psychologist, 56,* 218-226.

Fredrickson, B. L., & Levenson, R. W. (1998). Positive emotions speed recovery from the cardiovascular sequelae of negative emotions. *Cognition and Emotion, 12,* 191-220.

Freud, S. (1923). The ego and the id. *The Standard Edition of the Complete Psychological Works of Sigmund Freud, 19,* 1-59.

Friese, M., Messner, C., & Schaffner, Y. (2012). Mindfulness meditation counteracts self-control depletion. *Consciousness and Cognition, 21*(2), 1016-1022. doi:10.1016/j.concog.2012.01.008

Fuentelsaz, L., Maícas, J. P., & Polo, Y. (2008). The evolution of mobile communications in Europe: The transition from the second to the third generation. *Telecommunications Policy, 32*(6), 436-449. doi:10.1016/j.telpol.2008.04.008

Gailliot, M. T., Schmeichel, B. J., & Baumeister, R. F. (2006). Self-regulatory processes defend against the threat of death: Effects of self-control depletion and trait self-control on

thoughts and fears of dying. *Journal of Personality and Social Psychology, 91*(1), 49-62. doi:10.1037/0022-3514.91.1.49

Gest, S. D., Madill, R. A., Zadzora, K. M., Miller, A. M., & Rodkin, P. C. (2014). Teacher management of elementary classroom social dynamics. *Journal of Emotional and Behavioral Disorders, 22*(2), 107-118. doi:10.1177/1063426613512677

Goleman, D. (1988). *The meditative mind*. New York: Penquin Puntnam Inc.

Goleman, D., & Senge, P. (2014). *The triple focus: A new approach to education*. Florence, MA; More Than Sound, LLC.

Golubickis, M., Tan, L. B. G., Falben, J. K., & Macrae, C. N. (2015). The observing self: Diminishing egocentrism through brief mindfulness meditation. *European Journal of Social Psychology, 46*, 521-527.

Goryl, O., Neilsen-Hewett, C., & Sweller, N. (2013). Teacher education, teaching experience and bullying policies: links with early childhood teachers' perceptions and attitudes to bullying. *Australasian Journal of Early Childhood, 38*(2), 32-40.

Gray, D. (2014). Smartphone apps. *Professional Safety, 59*(6), 46-47.

Gray, D. B. (2017). Buddhism. *Religious Studies Review, 43*(1), 29-32. doi:10.1111/rsr.12783

Guba, E., & Lincoln, Y. (1989). *Fourth generation evaluation.* Newberry Park, CA: Sage Publications.

Hagger, M. S., & Chatzisarantis, N. L. D. (2013). The sweet taste of success: The presence of glucose in the oral cavity moderates the depletion of self-control resources. *Personality and Social Psychology Bulletin, 39*(1), 28-42. doi:10.1177/0146167212459912

Hallman, T., Thomsson, H., Burell, G., Lisspers, J., & Setterlind, S. (2003). Stress, burnout and coping: Differences between women with coronary heart disease and healthy matched women. *Journal of Health Psychology, 8*(4), 433-445. doi:10.1177/13591053030084003

Hanley, A. W., Abell, N., Osborn, D. S., Roehrig, A. D., & Canto, A. I. (2016). Mind the gaps: are conclusions about mindfulness entirely conclusive? *Journal of Counseling and Development, 94*(1), 103-114. doi:10.1002/jcad.12066

Hanley, A., Garland, E. L., & Black, D. S. (2014). Use of mindful reappraisal coping among meditation practitioners. *Journal of Clinical Psychology, 70*(3). doi:10.1002/jclp.22023

Hardy, L. (2006). Educators reach out to Katrina victims. *The Education Digest, 71*(5), 4-7.

Hatlevika, E., & Christophersenb, K. (2013). Digital competence at the beginning of upper secondary school: Identifying factors explaining digital inclusion. *Computers & Education, 63*, 240-247.

Haug, S., Castro, R. P., Kwon, M., Filler, A., Kowatsch, T., & Schaub, M. P. (2015). Smartphone use and smartphone addiction among young people in Switzerland. *Journal of Behavioral Addiction, 4*(4), 299-307. doi:10.1556/2006.4.2015.037

Henson, S., Blandon, J., & Cranfield, J. (2010). Difficulty of healthy eating: A Rasch model approach. *Social Science & Medicine, 70*(10), 1574-1580. doi:10.1016/j.socscimed.2010.01.037

Hofmann, W., Vohs, K. D., & Baumeister, R. F. (2012). What people desire, feel conflicted about, and try to resist in everyday life. *Psychological Science, 23*, 582-588.

Hölzel, B. K., Lazar, S. W., Gard, T., Schuman-Olivier, Z., Vago, D. R., & Ott, U. (2011). How does mindfulness meditation work? Proposing mechanisms of action from a conceptual and neural perspective. *Perspectives on Psychological Science, 6*, 537-559.

Hozo, E. R., Sucic, G., & Zaja, I. (2015). Burnout syndrome among educators in pre-school institutions. *Materia Socio-Medica, 27*(6), 399-403.

Hydon, S., Wong, M., Langley, A. K., Stein, B. D., & Kataoka, S. H. (2015). Preventing secondary traumatic stress in educators. *Child and Adolescent Psychiatric Clinics of North America, 24*(2), 319-333.

Innes, K. E., Selfe, T. K., Khalsa, D. S., Kandati, S., & Huysmans, Z. (2016). Meditation and music listening improve memory and cognitive functions in adults with subjective cognitive decline: A preliminary randomized controlled trial. *Alzheimer's & Dementia, 12*(7), 616-617. doi:10.1016/j.jalz.2016.06.1225

Jain, G., Tyagi, H. K., & Kumar, A. (2015). Psycho-social factors causing stress: A study of teacher educators. *Journal of Education and Practice, 6*(4), 125-132.

Job, V., Dweck, C. S., & Walton, G. M. (2010). Ego depletion – is it all in your head? Implicit theories about willpower affect self-regulation. *Psychological Science, 21*(11), 1686-1693. doi:10.1177/0956797610384745

Kalonde, G., & Mousa, R. (2016). Technology familiarization to preservice teachers. *Journal of Educational Technology Systems, 45*(2), 236-255. doi:10.1177/0047239515616965

Kanbayashi, T. (2016). Increasing teachers' workloads in the form of quantitative expansion in extracurricular activities: Aggregated data analysis of past working hours using a general linear model. *Educational Studies in Japan, 10*, 109-124.

Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *The Journal of Environmental Psychology, 15*, 169-182.

Karadag, E., Tosuntas, S. B., Erzen, E., Duru, P., Bostan, N., Sahin, B. M., … Babadag, B. (2015). Determinants of phubbing, which is the sum of many virtual addictions: A

structural equation model. *Journal of Behavioral Addictions, 4*(2), 60-74. doi:10.1556/2006.4.2015.005

Kemparaj, U., & Chavan, S. (2013). Qualitative research: A brief description. *Indian Journal of Medical Sciences, 67*(3), 89-98. doi:10.4103/0019-5359.121127

Khanna, S., & Greeson, J. M. (2013). A narrative review of yoga and mindfulness as complementary therapies for addiction. *Complementary Therapies in Medicine, 21*(3), 244-52.

Khokhar, A. J., Gulab, F., & Javaid, S. (2017). Information communication technology integration: Trained secondary school teachers' dilemma. *Journal of Research in Social Sciences, 5*(1), 94-102.

Kirk, U., Brown, K. W., & Downar, J. (2015). Adaptive neural reward processing during anticipation and receipt of monetary rewards in mindfulness meditators. *Social Cognitive and Affective Neuroscience, 10*(5), 752-759. doi:10.1093/scan/nsu112

Kirmayer, L. J. (2015). Mindfulness in cultural context. *Transcultural Psychiatry, 52*(4), 447-469. doi:10.1177/1363461515598949

Koch, T. (2006). Establishing rigour in qualitative research: The decision trail. *Journal of Nursing, 53*(1), 91-100. doi:10.1111/j.1365-2648.2006.03681.x

Kochenderfer-Ladd, B., & Pelletier, M. E. (2008). Teachers' views and beliefs about bullying: Influences on classroom management strategies and students' coping with peer victimization. *Journal of School Psychology, 46*(4), 431-453. doi:10.1016/j.jsp.2007.07.005

Krop, J. (2004). Principal themes: Informed practice in the music classroom - playing in the moment: Insights into teaching music from vipassana meditation. *Canadian Music Educator, 45*(3), 28-31.

Kuiper, R. A. (2004). Nursing reflections from journaling during a perioperative internship. *Association of Operating Room Nurses*. *AORN Journal, 79*(1), 195-218.

Lacohee, H., Wakeford, N., & Pearson, I. (2003). A social history of the mobile telephone with a view of its future. *BT Technology Journal, 21*(3), 203-211.

Langley, A., Santiago, C. D., Rodríguez, A., & Zelaya, J. (2013). Improving implementation of mental health services for trauma in multicultural elementary schools: Stakeholder perspectives on parent and educator engagement. *The Journal of Behavioral Health Services & Research, 40*(3), 247-262. doi:10.1007/s11414-013-9330-6

Lee, W., & Reeve, J. (2013). Self-determined, but not non-self-determined, motivation predicts activations in the anterior insular cortex: An fMRI study of personal agency. *Social Cognitive and Affective Neuroscience, 8*, 538–545. doi:10.1093/scan/nss029

Lim, D., Condon, P., & DeSteno, D. (2015). Mindfulness and compassion: An examination of mechanism and scalability. *PLoS One, 10*(2), 1-8. doi:10.1371/journal.pone.0118221

Lim, S. S., & Pham, B. (2016). 'If you are a foreigner in a foreign country, you stick together': Technologically mediated communication and acculturation of migrant students. *New Media & Society, 18*(10), 2171-2188. doi:10.1177/1461444816655612

Lin, L. y., Sidani, J. E., Shensa, A., Radovic, A., Miller, E., Colditz, J. B., … Primack, B. A. (2016). Association between social media use and depression among U.S. young adults. *Depression & Anxiety, 33*(4), 323-331.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage Publications.

Lindahl, J. R., Fisher, N. E., Cooper, D. J., Rosen, R. K., & Britton, W. B. (2017). The varieties of contemplative experience: A mixed-methods study of meditation-related challenges in western Buddhists. *PLoS One, 12*(5). doi:10.1371/journal.pone.0176239

Lloyd, M., Watmough, S. D., O'Brien, S. V., Furlong, N., & Hardy, K (2016). Exploring attitudes and opinions of pharmacists toward delivering prescribing error feedback: A qualitative case study using focus group. *Research in Social and Administrative Pharmacy, 12*(3), 461-474.

Maddin, E. A. (1997). The real learning begins back in the classroom: On-the-job training and support for teachers using technology. *Educational Technology, 37*(5), 56-59.

Marulanda-Carter, L., & Jackson, T. W. (2012). Effects of e-mail addiction and interruptions on employees. *Journal of Systems and Information Technology, 14*(1), 82-94.

Masicampo, E. J., & Baumeister, R. F. (2011). Consider it done! Plan making can eliminate the cognitive effects of unfulfilled goals. *Journal of Personality and Social Psychology, 101*(4), 667-683. doi:10.1037/a0024192

Mishna, F., Scarcello, I., Pepler, D., & Wiener, J. (2005). Teachers' understanding of bullying. *Canadian Journal of Education, 28*(4), 718-738.

Mo, S. (2011). An exploratory study of intrinsic & extrinsic motivators and student performance in an auditing course. *American Journal of Business Education, 4*(2), 19-25.

Moore, A., & Malinowski, P. (2009). Meditation, mindfulness and cognitive flexibility. *Consciousness and Cognition, 18*(1), 176-186. doi:10.1016/j.concog.2008.12.008

Mulholland, R., McKinlay, A., & Sproule, J. (2017). Teachers in need of space: the content and changing context of work. *Educational Review, 69*(2), 181-200. doi:10.1080/00131911.2016.1184131

Muraven, M., & Slessareva, E. (2003). Mechanisms of self-control failure: Motivation and limited resources. *Personality and Social Psychology Bulletin, 29,* 894–906.

Närhi, V., Kiiski, T., Peitso, S., & Savolainen, H. (2015). Reducing disruptive behaviours and improving learning climates with class-wide positive behaviour support in middle schools. European Journal of Special Needs Education, 30(2), 274-285. doi:10.1080/08856257.2014.986913

Neubeck, L., Lowres, N., Benjamin, E. J., Freedman, S. B., Coorey, G., & Redfern, J. (2015). The mobile revolution--using smartphone apps to prevent cardiovascular disease. *Nature Reviews Cardiology, 12*(6), 350-360.

Northrop, L., & Killeen, E. (2013). A framework for using iPads to build early literacy skills. *The Reading Teacher, 66*(7), 531-537.

Norton, S., McRobbie, C. J., & Cooper, T. J. (2000). Exploring secondary mathematics teachers' reasons for not using computers in their teaching: five case studies, *Journal of Research on Computing in Education, 33*(1), 87-109.

Orr, K., Howe, H. S., Omran, J., Smith, K. A., Palmateer, T. M., Ma, A. E., & Faulkner, G. (2015). Validity of smartphone pedometer applications. *BMC Research Notes, 8*, 1-10.

Ott, M. J. (2004). Mindfulness meditation: A path of transformation & healing. *Journal of Psychosocial Nursing & Mental Health Services, 42*(7), 22-9.

Pagis, M. (2015). Evoking equanimity: Silent interaction rituals in vipassana meditation retreats. *Qualitative Sociology, 38*(1), 39-56. doi:10.1007/s11133-014-9295-7

Palak, D., & Wells, R. T. (2009). Teachers' beliefs and technology practices, *Journal of Research on Technology in Education, 41*(4), 417-441.

Parikh, S. B., Janson, C., & Singleton, T. (2012). Video journaling as a method of reflective practice. *Counselor Education and Supervision, 51*(1), 33-49.

Patton M.Q. (1990). *Qualitative Evaluation and Research Methods* (2nd ed.). Newbury Park, CA: Sage.

Radel, R., Pjevac, D., Davranche, K., d'Arripe-Longueville, F., Colson, S. S., Lapole, T., & Gruet, M. (2016). Does intrinsic motivation enhance motor cortex excitability? *Psychophysiology, 53*(11), 1732-1738. doi:10.1111/psyp.12732

Reinecke, L., Hartmann, T., & Eden, A. (2014). The guilty couch potato: The role of ego depletion in reducing recovery through media use. *Journal of Communication, 64*(4), 569-589. doi:10.1111/jcom.12107

Richards, K. A. R., Gaudreault, K. L., & Templin, T. J. (2014). Understanding the realities of teaching: A seminar series focused on induction. *Journal of Physical Education, Recreation and Dance, 85*(9), 28-35. doi:10.1080/07303084.2014.958251

Richardsen, A. M., & Burke, R. J. (1991). Occupational stress and job satisfaction among physicians: Sex differences. *Social Science & Medicine, 33*(10), 1179-1187. doi:10.1016/0277-9536(91)90234-4

Rubin, H. J., & Rubin, I. S. (2012). *Qualitative interviewing: The art of hearing data* (3rd ed.). Los Angeles, CA: Sage Publications.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*(1), 54-67.

Sahbaz, Ü., & Koyutürk Koçer, N. (2017). A comparison of burnout levels of preschool teachers in terms of having integration students in their classes or not. *Educational Research and Reviews, 12*(6), 350-355. doi:10.5897/ERR2016.3099

Saldaña, J. (2013). *The coding manual for qualitative researchers.* Los Angeles, CA: Sage Publications.

Salleh, S. (2016). Examining the influence of teachers ' beliefs towards technology integration in classroom. *The International Journal of Information and Learning Technology, 33*(1), 17-35.

Samasha, M., & Hawi, N. S. (2016). Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. *Computers in Human Behavior, 57*, 321-325.

Saquib, J., Madlensky, L., Kealey, S., Saquib, N., Natarajan, L., Newman, V. A., … Pierce, J. P. (2011). Classification of CAM use and its correlates in patients with early-stage breast cancer. *Integrative Cancer Therapies, 10*(2), 138-147. doi:10.1177/1534735410392578

Schiler, J. (2003). Working with ICT: Perceptions of Australian principals. *Journal of Educational Administration, 41*(3), 171-185.

Schunk, D. H., & Zimmerman, B. J. (2007). Influencing children's self-efficacy and self-regulation of reading and writing through modeling. *Reading & Writing Quarterly*, *23*(1), 7-25. doi:10.1080/10573560600837578

Sethi, D. (2009). Mindful leadership. *Leader to Leader, 51*, 7-11. doi:10.1002/ltl.311

Shaner, L., Kelly, L, Rockwell, D., & Curtis, D. (2017). Calm abiding: The lived experiences of the practice of long term meditation. *Journal of Humanistic Psychology, 57*(1), 98-121. doi:10.1177/0022167815594556

Sharf, R. (2014). Mindfulness and mindlessness in early Chan. *Philosophy East and West, 64*(4), 933-965.

Sharf, R. H. (2015). Is mindfulness Buddhist? (and why it matters). *Transcultural Psychiatry, 52*(4), 470-484. doi:10.1177/1363461514557561

Skaalvik, E. M., & Skaalvik, S. (2010). Teacher self-efficacy and teacher burnout: A study of relations. *Teaching and Teacher Education, 26*(4), 1059-1069. doi:10.1016/j.tate.2009.11.001

Sletvold, J. (2013). The ego and the id revisited Freud and Damasio on the body ego/self. *International Journal of Psychoanalysis, 94*(5), 1019-1032.

Sneha Benedicta, A. (2014). A study of occupational stress and organizational climate of higher secondary teachers. *I-Manager's Journal on School Educational Technology, 9*(3), 12-17.

Soukup, P. A. (2015). Smartphones. *Communication Research Trends, 34*(4), 3-27.

Stake, R. (1995). *The art of case study research.* Thousand Oaks, CA: Sage Publications.

Stern, M., & Brown, A. (2016). "It's 5:30. I'm exhausted. and I have to go all the way to f*%#ing fishtown.": Educator depression, activism, and finding (armed) love in a hopeless (neoliberal) place. *The Urban Review, 48*(2), 333-354. doi:10.1007/s11256-016-0357-x

Suen, L. W., Huang, H., & Lee, H. (2014). A comparison of convenience sampling and purposive sampling. *Hu Li Za Zhi, 61*(3), 105-11.

Surinrut, P., Auamnoy, T., & Sangwatanaroj, S. (2017). Enhanced happiness and stress alleviation upon insight meditation retreat: mindfulness, a part of traditional Buddhist meditation. *Mental Health, Religion & Culture, 19*(7), 1-12. doi:10.1080/13674676.2016.1207618

Sussman, A., & Kossak, M. (2011). The wisdom of the inner life: Meeting oneself through meditation and music. *New Directions for Adult and Continuing Education, 2011*(131), 55-64. doi:10.1002/ace.421

Takeuchi, N., Mori, T., Suzukamo, Y., Tanaka, N., & Izumi, S. (2016). Parallel processing of cognitive and physical demands in left and right prefrontal cortices during smartphone use while walking. *BMC Neuroscience, 17*(9), 1-11. doi:10.1186/s12868-016-0244-0

Tadic, M., Bakker, A. B., & Oerlemans, W. G. M. (2015). Challenge versus hindrance job demands and well-being: a diary study on the moderating role of job resources. *Journal of Occupational and Organizational Psychology, 88*(4), 702-725. doi:10.1111/joop.12094

Tandoc, E. C., Ferruccib, P., & Duffy, M. (2015). Facebook use, envy, and depression among college students: Is facebooking depressing? *Computers in Human Behavior, 43*, 139-146.

Tang, Z., Zhang, H., Yan, A., & Qu, C. (2017). Time is money: The decision making of smartphone high users in gain and loss intertemporal choice. *Frontiers in Psychology*, 1-12. doi:10.3389/fpsyg.2017.00363

Tang, Y., Hölzel, B. K., & Posner, M. I. (2015). The neuroscience of mindfulness meditation. *Nature Reviews. Neuroscience, 16*(4), 213-225.

Tang, Y., Tang, R., & Posner, M. I. (2016). Mindfulness meditation improves emotion regulation and reduces drug abuse. *Drug and Alcohol Dependence, 163*, S13-S18.

Tang, Y., Posner, M. I., & Rothbart, M. K. (2014). Meditation improves self-regulation over the life span. *Annals of the New York Academy of Sciences*, *1307*(1). 104-111. doi:10.1111/nyas.12227

Tedder, M., Shi, L., Si, M., Franco, R., & Chen, L. (2015). Emindfulness therapy – A study on efficacy of blood pressure and stress control using mindful meditation and eating apps

among people with high blood pressure. *Medicines, 2,* 298-309. doi:10.3390/medicines2040298.

Tice, D. M., Baumeister, R. F., Shmueli, D., & Muraven, M. (2007). Restoring the self: Positive affect helps improve self-regulation following ego depletion, *Journal of Experimental Social Psychology, 43,* 379-384.

Tossell, C. C., Kortum, P., Shepard, C., Rahmati, A., & Zhong, L. (2015). You can lead a horse to water but you cannot make him learn: Smartphone use in higher education. *British Journal of Educational Technology, 46*(4), 713–724. doi:10.1111/bjet.12176

Tougas, M. E., Hayden, J. A., McGrath, P. J., Huguet, A., & Rozario, S. (2015). A systematic review exploring the social cognitive theory of self-regulation as a framework for chronic health condition interventions. *PLoS One, 10*(8), 1-19. doi:10.1371/journal.pone.0134977

Tyler, T. R., & Blader, S. L. (2005). Can businesses effectively regulate employee conduct? The antecedents of rule following in work settings, *Academy of Management Journal, 8*(6), 1143-1158.

U.S. Department of Health & Human Services, National Institutes of Health. (2016). *Use of complementary health approaches in the U.S*. Retrieved from https://nccih.nih.gov/research/statistics/NHIS/2012/mind-body/meditation

Uziel, L., & Baumeister, R. F. (2017). The self-control irony: Desire for self-control limits exertion of self-control in demanding settings. *Personality and Social Psychology Bulletin, 43*(5), 693-705. doi:10.1177/0146167217695555

Vago, D. R., & Zeidan, F. (2016). The brain on silent: Mind wandering, mindful awareness, and states of mental tranquility, *Annals of the New York Academy of Sciences, 1373*, 96-113. doi:10.1111/nyas.13171

van Hooff, M. L. M., & Baas, M. (2013). Recovering by means of meditation: The role of recovery experiences and intrinsic motivation. *Applied Psychology, 62*(2), 185-210. doi:10.1111/j.1464-0597.2011.00481.x

Vansteenkiste, M., Sierens, E., Soenens, B., Luyckx, K., & Lens, W. (2009). Motivational profiles from a self-determination perspective: The quality of motivation matters. *Journal of Educational Psychology, 101*(3), 671-688. doi:10.1037/a0015083

Victorson, D., Kentor, M., Maletich, C, Lawton, R. C., Kaufman, V. H., Borrero, … Berkowitz, C. (2015). Mindfulness meditation to promote wellness and manage chronic disease. *American Journal of Lifestyle Medicine, 9*(3), 185-211. doi:10.1177/1559827614537789

Wang, X., Xie, X., Wang, Y., Wang, P., & Lei, L. (2017). Partner phubbing and depression among married Chinese adults: The roles of relationship satisfaction and relationship length, *Personality and Individual Differences, 110,* 12-17. doi:10.1016/j.paid.2017.01.014

Ward, A. F., Duke, K., Gneezy, A., & Bos, M. W. (2017). Brain drain: The mere presence of one's own smartphone reduces available cognitive capacity. *Journal of the Association For Consumer Research, 2*(2), 140-154. doi:10.1086/691462

White, L. S. (2012). Reducing stress in school-age girls through mindful yoga. *Journal of Pediatric Health Care, 26*(1), 45-56. doi:10.1016/j.pedhc.2011.01.002

Whitley, J., Smith, J. D., & Vaillancourt, T. (2013). Promoting mental health literacy among educators: Critical in school-based prevention and intervention. *Canadian Journal of School Psychology, 28*(1), 56-70.

Williams, D., Coles, L., Wilson, K., Richardson, A., & Tuson, J., (2000). Teachers and ICT: current use and future needs. *British Journal of Educational Technology, 31*(4), 307-320.

Wilson, B. M., Mickes, L., Stolarz-Fantino, S. Evrard, M., & Fantino, E. (2015). Increased false-memory susceptibility after mindfulness meditation. *Psychological Science, 26*(10), 1567-1573. doi:10.1177/0956797615593705

Wolgast, A., & Fischer, N. (2017). You are not alone: Colleague support and goal-oriented cooperation as resources to reduce teachers' stress. *Social Psychology of Education, 20*(1), 97-114. doi:10.1007/s11218-017-9366-1

Wright, L. D. (2001). Meditation: Myths and misconceptions. *Alternative Therapies in Health and Medicine, 7*(2), 96-107.

Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Los Angeles, CA: Sage Publications.

Yu, G., Dong, Y., Wang, Q., & An, R. (2016). Reducing teacher stress: improving humanized management of Chinese teachers. *Journal of Chinese Human Resources Management, 7*(2), 82-99.

Zagorski, N. (2017). Using many social media platforms linked with depression, anxiety risk. *Psychiatric News, 52*(2), 1-5.

APPENDIX A: IRB Approval

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

May 29, 2018

Jason Boyle
IRB Approval 3262.052918: Mindfulness Meditation and Self-Regulation on Smartphone Application by Educators: A Qualitative Case Study

Dear Jason Boyle,

We are pleased to inform you that your study has been approved by the Liberty University IRB. This approval is extended to you for one year from the date provided above with your protocol number. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases were attached to your approval email.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,

[redacted]

LIBERTY
UNIVERSITY.
Liberty University | Training Champions for Christ since 1971

APPENDIX B: Consent Form

CONSENT FORM

Mindfulness Meditation and Self-Regulation on Smartphone Application by Educators: A Qualitative Case Study

Jason Boyle
Liberty University
School of Education

You are invited to be in a research study on mindfulness meditation. The study will look into how educators explore a mindfulness meditation application. You were selected as a possible participant because you are currently an educator and have never used the Calm meditation application before. Please read this form and ask any questions you may have before agreeing to be in the study.

Jason Boyle, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

Background Information: The purpose of this study is to explore how educators use a mindfulness meditation application on their smartphones. This study will address one central question and four research questions: **CQ:** How do educators use a mindfulness meditation application called Calm on their smartphone? **RQ1**: How do individuals seeking to modify their behavior use the mindfulness meditation smartphone application? **RQ2**: How does an individual's motivation to attain a goal shape one's use of the mindful meditation smartphone application? **RQ3**: How does mindful meditation guide individuals in monitoring thoughts and actions that precede the dismantling of one's goal? **RQ4**: How does mindfulness meditation cultivate willpower while building one's inner capacity to control mind wandering?

Procedures: If you agree to be in this study, I would ask you to do the following things:

1. Download a smartphone application called Calm on your Smartphone. I will give you access to the site for a free 30-day trial.
2. Explore the mindfulness meditation application throughout the length of the study, 3-weeks. Exploring the application does not have to be done at work. It can be done anywhere that you have time to explore the mindfulness meditation application. There is no time limit for your exploration; it is based solely on when you feel a need to explore it. (Estimated time: 1.25 hours per week)
3. At the end of each week, submit 1-2 paragraphs on how you explored the mindfulness meditation application. (Estimated time: 15 minutes)
4. Participate in an audio-recorded interview via Skype or face-to-face. (Estimated time: 1 hour).
5. 4-6 people will be asked to be in an audio-recorded focus group (Estimated time: 1 hour).
6. Review transcripts from the interviews and focus groups (Estimated time: 30 minutes).

Risks: The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

Benefits: The direct benefits participants should expect to receive from taking part in this study include an understanding about the mindfulness meditation smartphone application.

Compensation: Participants of the focus group will receive a $10 gift card to Chick-fil-a.

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. I may share the data I collect from you for use in future research studies or with other researchers; if I share the data that I collect about you, I will remove any information that could identify you, if applicable, before I share the data.

- Participants will be assigned a pseudonym. I will conduct the interviews in a location where others will not easily overhear the conversation.
- Data will be stored on a password locked computer and may be used in future presentations. After three years, all electronic records will be deleted.
- Interviews will be recorded and transcribed. Recordings will be stored on a password locked computer for three years and then erased. Only the researcher will have access to these recordings.
- I cannot assure participants that other members of the focus group will not share what was discussed with persons outside of the group.

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.

How to Withdraw from the Study: If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you, apart from focus group data, will be destroyed immediately and will not be included in this study. Focus group data will not be destroyed, but your contributions to the focus group will not be included in the study if you choose to withdraw.

Contacts and Questions: The researcher conducting this study is Jason Boyle. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact him at [redacted] You may also contact the researcher's faculty chair, Dr. Chris Taylor, 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., Green Hall Ste. 1887, Lynchburg, VA 24515 or email at [redacted]

Please notify the researcher if you would like a copy of this information 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 of Participant Date

_____

Signature of Investigator Date

APPENDIX C: Weekly Email Reminders

Please submit your 1-2 paragraphs describing your experience exploring the mindfulness meditation application for the week. Some topics you may want to mention are the time of day you used the applications, the days of the week when you preferred to use the application, if you had time to use the application in school, any benefits you felt from the application, or anything that you feel is noteworthy about the mindfulness meditation application. Additionally, you can discuss whether you had difficulty concentrating on mindfulness or pondered other topics instead of meditation. If you did not have time to use the mindfulness meditation application, you can discuss the issues that arose. These issues can simply be not having enough time because of preparation for school or preparation for work, or maybe you just decided to spend the week with your family. These two paragraphs should be about how you explored the application or how you were not able to explore the application.

APPENDIX D: Recruitment Script

Dear Educators:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for an EdD degree. The purpose of my research is to seek understanding about how educators explore a mindfulness meditation application. Studies have shown that mindfulness meditation can increase focus and awareness; however, with the busy schedule of educators, it is unclear whether educators have time for a meditation application, and I am inviting you to participate in my study.

To participate, you must have a smartphone that can download applications and be willing to use the application for three weeks. You will be asked to respond to an email prompt at the end of each week of the study to explain your exploration of the application. Additionally, you must be available for approximately one hour at the end of the study for a one-on-one interview that will be audio recorded. Finally, there will also be an opportunity to participate in a focus group of approximately six individuals that will take roughly one hour. I will prepare transcripts of the interviews for you to review for accuracy. It should take no more than five total hours for you to complete the procedures listed over a five-week timespan; the application exploration will last three weeks, and the interviews and focus group will take place in the two weeks afterwards. Your name and other identifying information will be requested as part of your participation, but the information will remain confidential.

To participate, please let me know or send me an email at [redacted] later if you wish to think it over before agreeing to participate.

If you choose to participate, you will be asked to sign a consent document that contains additional information about my research.

A$10 Chick-fil-a gift card will be given to focus group participants.

Sincerely,

Jason Boyle
Student

APPENDIX E: Interview Questions

1. When you day dream, what do you dream about?
2. What was your initial reaction to using the mindfulness meditation application?
3. How prepared were you for using the mindfulness meditation application?
4. What factors prevented you from using the mindfulness meditation application?
5. Describe your personal experience of the mindfulness meditation application.
6. How often did other applications on your phone distract you from the mindfulness meditation application?
7. Was there a time when you wish you had used mindfulness meditation, but you didn't get the chance? If so, describe the experience.
8. In what location did you practice mindfulness meditation?
9. Describe the time of day when you decided to practice mindfulness meditation.
10. Was one location better than another to use mindfulness meditation? If so, why?
11. How often did your mind wander while meditating?
12. When your mind wandered, were you able to bring your mind back to what you were paying attention to in the meditation?
13. Describe your personal experience with mindfulness meditation.
14. How did your environment affect the choice of whether to use the mindfulness meditation application?
15. What determined the use of the mindfulness meditation application during the day?
16. Describe your stress level before and after using mindfulness meditation.
17. Why will you continue using or not using the mindfulness meditation application?
18. Describe areas of your life where mindfulness meditation helped or did not help you with.
19. How much better is your self-control since beginning to use the mindfulness meditation application?
20. If anything, what did you tell your friends and family about the mindfulness meditation

application?

21. Would you like to tell me something more about the mindfulness meditation experience that you encountered in the 3-week study?

APPENDIX F: Focus Group Questions

1. What factors made the mindfulness meditation application difficult to use during the workday?
2. What distracted you from using the mindfulness meditation application most throughout the day?
3. What is the main reason that you will or will not use the mindfulness meditation application in the future?
4. Why is or why isn't the smartphone a good tool for mindfulness meditation?
5. What is your favorite coping mechanism for dealing with stress? Where would you rank mindfulness meditation?
6. Why do you or why don't you see yourself using the mindfulness meditation application six months down the road?
7. How were you able to balance the mindfulness meditation application with your busy schedule?

APPENDIX G: Recruitment Flyer

Research Participants Needed

Mindfulness Meditation and Self-Regulation Study

- Are you an educator at [redacted]?
- Do you want to learn to connect with people and not just technology?
- Do you find yourself in stressful situations?
- Do you want to change your mind from wandering and learn to focus?

If you answered **yes** to any of these questions, you may be eligible to participate in a mindfulness meditation and self-regulation study.

The purpose of the research is to explore how educators use a mindfulness meditation smartphone application. Participants will be asked to do the following things:

1. Download a smartphone application called Calm on your Smartphone. I will give you access to the site for a free 30-day trial.
2. Explore the mindfulness meditation application throughout the length of the study, 3-weeks. Exploring the application does not have to be done at work. It can be done anywhere that you have time to explore the mindfulness meditation application. There is no time limit for your exploration; it is based solely on when you feel a need to explore it. (Estimated time: 1.25 hours per week)
3. At the end of each week, submit 1-2 paragraphs on how you explored the mindfulness meditation application. (Estimated time: 15 minutes)
4. Participate in an audio-recorded interview via Skype or face-to-face. (Estimated time: 1 hour).
5. 4-6 people will be asked to be in an audio-recorded focus group (Estimated time: 1 hour).
6. Review transcripts from the interviews and focus groups (Estimated time: 30 minutes).

Benefits include learning about mindfulness meditation from one of the top-rated meditation applications. Also, meditation has been shown to reduce impulsiveness and increase focus. The study will only last for 5 weeks.

Please contact Jason Boyle at [redacted] for more information.

APPENDIX H: Pseudonym Form

Mindfulness Meditation and Self-Regulation Study

☐ I would like to be part of the focus group

Sex: ☐ Male ☐ Female Age: ☐ 18-21 ☐ 22-28 ☐ 29-38 ☐ 39-55 ☐ 56-65

Print name of Participant	Email of Participant	Pseudonym