THE PREDICTIVE RELATIONSHIP BETWEEN GRIT, SERVANT LEADERSHIP, AND GROWTH MINDSET IN PUBLIC SCHOOL ADMINISTRATORS

by

Dawn E. Lyons

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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ABSTRACT

Research on grit, growth mindset, and servant leadership theories has found that implementing these theories in school settings can positively impact student achievement. However, a study has not been conducted investigating the combined effects of the three theories. The purpose of this study was to examine the predictive linear relationship of grit (criterion variable), growth mindset (predictor variable), and servant leadership (predictor variable) with school administrators. This study used a quantitative prediction design utilizing the self-report measures of the Grit-S Scale, the Growth Mindset Scale, and the SL-7. Thirty-four principals, 25 assistant principals, and nine elementary interns in a school district in Utah participated in the study for a total of 68 participants. Results from a multiple regression analysis suggested a statistically significant predictive relationship between the variables. Future research recommendations included replicating this study with participants from multiple school districts, using the longer versions of the instruments, and investigating using the mixed-method design with leaders who are self-reported gritty, growth-minded, servant leaders.

Keywords: grit, mindset, servant leadership, school administrators, principal, assistant principal, public school

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Dedication

This dissertation is dedicated to my husband, soulmate, and best friend, Brad. He kept telling me I could make it until I started believing it. It is his grit, growth mindset, and servant leadership that inspire me every day. I am forever grateful for his love and support. This dissertation is also dedicated to my son, Jack, who continues to be my pride and joy. It has been my pleasure seeing you go through life's ups and downs with such resiliency, and I know wherever God takes you, you will be highly successful. Most importantly, I dedicate this work to my Lord and Savior, Jesus Christ. He is the ultimate gritty, growth-minded, servant leader, and I am thankful for the doors that He closed so that I could go on this journey of discovery. The Apostle Paul wrote, "Therefore since we are surrounded by a great cloud of witnesses, let us throw off everything that hinders and the sin that so easily entangles. And let us run with perseverance the race marked out for us, fixing our eyes on Jesus, the pioneer and perfecter of faith" (*New International Version,* 2011, Heb. 12:1-3).

Acknowledgments

I am so very appreciative of having a supportive family and friends who have encouraged me along the way. I want to especially thank my parents, Don and Jeanine, for their constant encouragement. You both are great examples of living a life of service to others, and I am thankful that I grew up in a family that values grit, a growth mindset, and servant leadership.

A big thank you goes to my colleagues in Utah, they have been in the trenches these last two years, and I appreciate them taking the time out of their busy days to participate in my study.

Finally, I am also thankful for my dissertation committee. My dissertation chair, Dr. Rich Jensen, was patient, reassuring, and helpful. His guidance made me a better writer and researcher. I would also like to thank Dr. Michelle Barthlow for serving on my committee. Her passion and commitment to research were evident in the class I was able to take from her, and I am thankful for the mentorship she provided in that class and as my committee member.

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List of Abbreviations

Comparative Fit Index (CFI)

Consistency of interest (CI)

Counterproductive Behavior (CPB)

Leader-Member Exchange (LMX)

Perseverance of effort (PE)

Organizational Citizenship Behaviors (OCB)

Root Mean Square Error of Approximation (RMSEA)

Servant leadership (SL)

Servant Leadership-7 (SL-7)

Servant Leadership Behavior Scale (SLBS)

Servant Leadership Questionnaire (SLQ)

Servant Leadership Survey (SLS)

Statistical Package for Social Sciences (SPSS)

Variance Inflation Factor (VIF)

CHAPTER ONE: INTRODUCTION

Overview

The purpose of this quantitative, predictive, correlational study was to investigate the predictive relationship between grit, mindset, and servant leadership in public school administrators. This chapter gives the foundation for this study by briefly discussing the background of grit, mindset, and servant leadership from a social, historical, and theoretical context. Next, the problem statement provides an overview of current literature and leads to the purpose of the study. Following the purpose, the study's significance is explained, and the guiding research question is given. Finally, the chapter concludes with a list of definitions developed to provide a common understanding of this study's concepts.

Background

Schools across the United States need highly effective leaders to mitigate the effects of COVID-19 shutdowns. Grit, mindset, and servant leadership are theories that could provide administrators theoretical and practical applications to help them become more effective school leaders (Caza & Posner, 2019; Hitt & Tucker, 2016; Kouzes & Posner, 2019; Zhang et al., 2021). Recent research began to investigate the relationship between grit, mindset, and leadership (Caza & Posner, 2019; Kouzes & Posner, 2019). These studies revealed that gritty and growth minded leaders tended to live their values and address challenges within their organizations which led to similar behaviors by their employees (Caza & Posner, 2019; Kouzes & Posner, 2019). Therefore, gritty leaders who possess a growth mindset and are servant leaders could help diminish the potential loss of learning due to COVID-19 school closures. The following sections will discuss the social, historical, and theoretical contexts of grit, mindset, and servant leadership to lay the foundation for this study.

Social Context

Leaders across the world were forced to make difficult decisions as COVID-19 disrupted all aspects of life (Beauchamp et al., 2021; Dirani et al., 2020; Henderson et al., 2021). In school systems, superintendents, teachers, parents, and students were among those who had difficult decisions to make regarding learning during the pandemic (Bansak & Starr, 2021; Henderson et al., 2021; Pokhrel & Chhetri, 2021). Superintendents had to decide how instruction would be delivered during the pandemic shutdowns (Henderson et al., 2021). Some school systems conducted only virtual learning, while others attempted hybrid versions, which included face-to-face and virtual learning (Henderson et al., 2021). Other systems chose to stay open and allow parents and guardians to decide about their children's schooling (Henderson et al., 2021). As a result of these decisions, many teachers had to transition to online learning with minimal time to prepare (Pokhrel & Chhetri, 2021).

According to Bansak and Starr's (2021) study, this disruption and sudden shift in educational instruction resulted in families across America having to make difficult decisions about their children's education. Their study revealed that parents across socio-economic status were concerned about their children's educational progress and they tried their best to mitigate the potential downward spiral. Their analysis also found that when school systems communicated effectively with parents, households spent more time focused on educational tasks and learning. Crises like COVID-19 force leaders and their people to respond and adjust to overcome circumstances.

Regardless of the academic setting during the pandemic, scholars expect that the COVID-19 shutdowns will significantly impact the educational progress of millions of students (Anderson, 2020; Kuhfeld et al., 2020; Middleton, 2020). A primary concern for educators is the

potential for an even broader achievement gap than before the pandemic (Anderson, 2020; Middleton, 2020). For example, Kuhfeld et al. (2020) forecasted students could have lost a whole year in math and reading, resulting in classroom teachers needing to differentiate instruction more than before COVID-19 shut down schools. Yet, despite the negative impact, they were hopeful because, based on previous studies, students were resilient and able to overcome summer and weather related learning loss (Kuhfeld et al., 2020). Ultimately, the COVID-19 shutdowns and disruption to learning will require types of leaders who are passionate, perseverant, serving, and growth-minded.

Historical Context

Grit, mindset, and servant leadership theories followed a predictable developmental process from observations to defining each observed variable, to testing, replicating, and establishing valid and reliable instruments (Gall et al., 2007). Duckworth (2016) and Dweck (1975) are psychologists who began their theory development journeys with an observation of human nature grounded in established theory. Dweck (1975) cited the foundation for her original research on learned helplessness came from an interest in the combination of contingency learning, attribution theory, and cognitive therapy. Duckworth et al.'s (2007) original work on grit named James' (1907) work on energy and Bandura's (1986) self-efficacy theory as sources of inspiration for the development of grit theory. From these beginning observations, Duckworth (2016) developed the definition of grit which consisted of two components: a person's passion or consistency of interest and perseverance of effort.

Unlike Dweck and Duckworth, Greenleaf's (1977) servant leadership theory developed from his experience in the corporate world. Still, like Duckworth and Dweck, his theory began with observations about organizations and developed into a theory focused on building better

organizations by serving the people within them (Greenleaf, 1977). Also, his upbringing in the Quaker religion made him well-versed in the Roman concept of "primus inter pares – first among equals" (p. 61). This Roman concept became one of the foundational tenants of the theory of servant leadership (Greenleaf, 1977). Thus, grit, mindset, and servant leadership followed well-documented paths towards what are now established theories.

Theoretical Context

This study is grounded in the theories of grit (Duckworth, 2016), mindset (Dweck, 2008), and servant leadership (Greenleaf, 1977). Each of these theories grew from an interest in a topic which led each theorist to go through the vetting process of developing a theory. When researchers ground their studies in theory and empirical investigations, it allows them to describe the relationship of variables by degrees and directions, which is the intent of the current study (Gall et al., 2007). This section will provide an overview of the theoretical context of grit, mindset, and servant leadership.

Grit

James (1907) and Bandura (1986) influenced the research on grit conducted by Duckworth et al. (2007). James (1907) is known as the father of functional psychology. He questioned why some people seemed to continue to complete tasks despite being fatigued, and others stopped short of achieving success. He believed that if humans understood their energy reserves, they could tap into them and move past fatigue to be successful. James (1907) explicitly stated, "The human individual lives usually far within his limits; he possesses powers of various sorts that he habitually fails to use. He energizes below his maximum, and he behaves below his optimum" (p. 331). Like James' (1907) research, Bandura's (1986) social cognitive theory focused on how and why people continue to work hard despite obstacles in their paths to

success. Specifically, Bandura's (1986) theory focused on self-efficacy, which he defined as peoples' beliefs in their own capability to overcome obstacles and persevere. He believed that people with high self-efficacy consistently chose to continue towards achieving their goals despite failure. It seems fitting that Duckworth et al. (2007) would use James' (1907) and Bandura's (1986) research and theories as a foundation for the work, which led to the development of grit theory.

Duckworth et al. (2007) continued James' (1907) and Bandura's (1986) research by investigating whether grit was the reason top-performing leaders pursue long-term goals and persevere despite obstacles. Duckworth et al.'s (2007) seminal study distinguished grit from talent and personality. While the word grit was already a part of everyday vernacular when Duckworth et al. (2007) published their research, the word took on a new meaning as they created a scale to measure a person's grit. This grit scale has become the standard test used to measure a person's consistency of interest (CI) and perseverance of effort (PE) (Caza & Posner, 2019; Duckworth et al., 2007; Schimschal & Lomas, 2018; Tang et al., 2019).

Mindset

Dweck's (1975) published dissertation investigating learned helplessness began her journey toward creating a theory of intelligence. The study's experimental design consisted of two groups of children, who were either identified as extremely helpless or persistent. The purpose of the study was to determine if participants' perceptions of failure could be changed based on an intervention focused on effort (Dweck, 1975). Although the statistical results from this study were inconclusive, teachers noted that the students who were in the Attribution Retraining Treatment began to develop better work habits and changed their outlook toward failure. These observations led Dweck to continue to investigate people's perceptions and

reactions to various situations and furthered her research on learned helplessness (Dweck, 1975, 2008, 2013).

Dweck's initial research laid a foundation for what eventually morphed into her theory of intelligence based on implicit theory, which represented a person's beliefs about intelligence. Implicit theory, popularly known as mindset theory, began from observing children's helpless and mastery-oriented patterns (Dweck & Leggett, 1988). Elliott and Dweck (1988) conducted a series of experimental tests investigating why children gravitated towards performance goals instead of learning goals and why some focused on their ability or perceived lack of ability. From this research, Dweck (2008) developed the concept of growth and fixed mindsets. She defined a growth mindset as a person's belief that intelligence or an ability to perform a task is pliable, and a fixed mindset as a belief that people are born with a set of talents, skills, or intelligence that cannot be changed. Dweck (2008) found that growth mindset people look at failure as a way to improve themselves, whereas fixed mindset people viewed failure as a confirmation of personality traits that cannot be changed. This view of mindset has continued to be confirmed through research focused on student interventions (Hanson et al., 2016; Paunesku et al., 2015) and research related to organizations and leadership (Caniëls et al., 2018; Han & Stieha, 2020; Kouzes & Posner, 2019).

Servant Leadership

Greenleaf (1977) penned the term servant leadership to describe leaders who make serving their organizations a priority. He opined that servant leaders were naturally inclined to serve others, persevere, and adjust goals based on the needs of those they serve. Servant leaders are often described as follower-oriented as they tend to put their followers' needs in front of their own and focus on their subordinates' professional development (Northouse, 2019). This

description of servant leaders has consistently been reinforced, along with positive relationships between servant leadership, organizational performance, and team function (Lee et al., 2020; Mcquade et al., 2021; Northouse, 2019). Liden et al.'s (2008) definition of servant leadership using the following seven characteristics reinforced many of those positive correlations:

- emotional healing – the act of showing sensitivity to others' personal concerns
- creating value for the community – a conscious, genuine concern for helping the community
- conceptual skills - possessing the knowledge of the organization and tasks at hand so as to be in a position to effectively support and assist others, especially immediate followers
- empowering—encouraging and facilitating others, especially immediate followers, in identifying and solving problems, as well as determining when and how to complete work tasks
- helping subordinates grow and succeed—demonstrating genuine concern for others' career growth and development by providing support and mentoring
- putting subordinates first—using actions and words to make it clear to others (especially immediate followers) that satisfying their work needs is a priority (Supervisors who practice this principle will often break from their own work to assist subordinates with problems they are facing with their assigned duties.)
- behaving ethically—interacting openly, fairly, and honestly with others. (p. 162)

This servant leadership definition encapsulates many aspects of an effective school leader and will provide the foundation for the current study (Hattie & Smith, 2021; Marzano et al., 2018).

Several recent studies investigated servant leadership's application in response to COVID-19 shutdowns (Fernandez & Shaw, 2020; Song, 2020). Fernandez and Shaw (2020)

stated that servant leaders tended to focus on empowering their people through collaboration, which they believed will help educational leaders lead schools through and out of this crisis. Song's (2020) hermeneutic phenomenological study concurred with Fernandez and Shaw's (2020) servant leadership assessment. Song (2020) focused on servant leadership's impact on corporate social responsibility and crisis leadership during the COVID-19 pandemic. Song's (2020) study found several themes supporting the use of servant leadership in response to COVID-19, one of which was that the leaders who were studied were overly concerned with caring for their people during the shutdowns. As schools get back to in-person instruction, a study focused on grit, growth mindset, and servant leadership might help school leaders mitigate the impact of the lost years due to school shutdowns.

Problem Statement

School principals' impact on their schools has been examined through literature reviews, meta-analyses, and empirical research (Hattie & Smith, 2021; Liebowitz & Porter, 2019; Schrik & Wasonga, 2019). Hattie and Smith (2021) continued to implement Hattie's (2008) meta-analysis of the effect size roadmap of influences on student achievement. They annotated that school leaders' impact on student achievement had an effect size of 0.37 (Hattie & Smith, 2021). According to Hattie and Smith (2021), instructional leadership continued to be one of the primary leadership theories investigated in education settings. Since Hattie's seminal work, researchers continued to examine principal behaviors and leadership theories used within education settings (Liebowitz & Porter, 2019; Schrik & Wasonga, 2019).

Investigating leadership theories within education settings often led to frameworks of best practices or lists of behaviors for principals to implement (Gumus et al., 2018; Liebowitz & Porter, 2019; Schrik & Wasonga, 2019). Transformational leadership, according to Gumus et al.

(2018), was still one of the most researched theories behind distributed leadership, instructional leadership, and teacher leadership in education settings. Schrik and Wasonga's (2019) study of elementary school principals also revealed that school leaders who impacted student achievement the most incorporated a combination of instructional and moral leadership while also managing the daily life of the school. In contrast, Liebowitz and Porter's (2019) research suggested that researchers may have overemphasized instructional management in relation to student achievement. Their research found five leadership behaviors critical for student achievement. These leadership behaviors were instructional management, internal relations, organizational management, administration, and external relations (Liebowitz & Porter, 2019).

Along with research on school leader behaviors and best practices, some researchers began to investigate servant leadership in school settings (Cerit, 2009; Eva et al., 2019; Mcquade et al., 2021; Sawan et al., 2020). Sawan et al.'s (2020) literature review found only four out of seventy-one studies were in educational settings and none of the four studied principals. Mcquade et al.'s (2021) systematic review also found a limited amount of servant leadership studies conducted in education settings. Researchers often referred to Cerit's (2009) study of Turkish elementary school principals as support for servant leadership (Eva et al., 2019; Mcquade et al., 2021; Sawan et al., 2020). Cerit's (2009) study revealed a positive correlation between principal servant leadership and teacher job satisfaction. These investigations suggested that researchers continue to search for leadership theories, leadership behaviors, and leadership frameworks that impact student achievement.

Looking closer at studies related to grit (Lam & Zhou, 2019) and mindset (Rege et al., 2021), researchers tended to examine how school-level student interventions impacted achievement. In addition, some researchers studied the combined effect of grit and mindset with

some success on student achievement (Burgoyne et al., 2018; Karlen et al., 2019). Despite this recent research focused on leadership and student interventions, studies have not investigated the relationship between grit, mindset, and servant leadership. The problem is current empirical research does not explore the predictive relationship between grit, mindset, and servant leadership with administrators in public school settings (Sawan et al., 2020).

Purpose Statement

The purpose of this quantitative, predictive, correlational study was to investigate if there is a predictive linear relationship between grit, growth mindset, and servant leadership with school administrators in a large school district in Utah. The two predictor variables were servant leadership and mindset. As was mentioned previously, servant leadership defined by Liden et al. (2008) encompasses seven characteristics: emotional healing, creating value for the community, conceptual skills, empowering, helping subordinates grow and succeed, putting subordinates first, and behaving ethically. Mindset was the second predictor variable, and it was defined as a belief that traits are set (fixed) or malleable (growth) (Dweck, 2008). The criterion variable was grit, described as a person's ability to keep working towards long-term goals (consistency of interest) and perseverance of effort (Duckworth et al., 2007). This study's population was administrators in public schools in a large school district in Utah.

Significance of the Study

The need for effective school leaders is even more vital as schools throughout the United States continue to deal with the long-term effects of COVID-19 school shutdowns (Beauchamp et al., 2021). Research showed that education problems are complex, and it is through effective leadership that problems can be solved (Kouzes & Posner, 2019; Schimschal & Lomas, 2018). Research also indicated that gritty (Schimschal & Lomas, 2018), growth mindset (Kouzes &

Posner, 2019), and servant leaders (Mcquade et al., 2021) created environments where teams thrive. Chan's (2016) conceptual article suggested the combination of servant leadership, grit, and growth mindset in an education setting could have many positive outcomes to include student achievement. While there is abundant research associated with each of these individual theories, there is a distinct lack of studies focused on public school leaders and the relationship between the theories of grit, mindset, and servant leadership (Chan, 2016; Mcquade et al., 2021; Sawan et al., 2020). Investigating whether grit is predicted by mindset and servant leadership with school leaders will add to the body of knowledge about these three theories while also providing practicing educational leaders an additional resource to help them lead their schools more effectively (Chan, 2016).

Grit and mindset research in education settings have been studied extensively. Grit research primarily focused on the relationship between grit and academic achievement (Christopoulou et al., 2018; Credé et al., 2017; Datu et al., 2018; Lam & Zhou, 2019; Usher et al., 2019). In addition, some educational researchers focused their studies around grit and school leaders (Caza & Posner, 2019; Klocko et al., 2019; Schimschal & Lomas, 2018). Researchers of mindset theory studied the correlation between mindset and academic achievement (Sarrasin et al., 2018; Sisk et al., 2018). They, also, tended to conduct studies to investigate the effectiveness of mindset interventions with students (Burgoyne et al., 2018; Paunesku et al., 2015; Yeager et al., 2016, 2019). Some researchers, though, began to investigate a combination of the current studies variables. For instance, Karlen et al. (2019) studied implicit theory (mindset theory), grit, and motivation. Researchers also honed in on the combination of grit, mindset and academic achievement (Park et al., 2020; Tang et al., 2019). Kouzes and Posner (2019) investigated

mindset and leadership behaviors, and they suggested it would be beneficial for researchers to explore other leadership paradigms and mindset theory (Kouzes & Posner, 2019).

Most servant leadership research focused on corporate settings versus educational settings (Eva et al., 2019; Mcquade et al., 2021; Sawan et al., 2020). Sawan et al. (2020) noted that out of the seventy-one studies reviewed, only four were in school settings, thus providing an opportunity for future research. Despite the current interest in grit, mindset, and servant leadership, there has not been a study investigating the predictive value of grit, growth mindset, and servant leadership in a school setting. This study will contribute to the literature of each theory and provide a valid rationale for their uses with school leaders.

Research Question

RQ: How accurately can grit be predicted from a linear combination of servant leadership and growth mindset for administrators in a school district in Utah?

Definitions

1. *Fixed mindset (entity theory of intelligence)* – a belief that traits are set from birth (Dweck, 2008)
2. *Grit* – described as a person's consistency of interest (CI) and perseverance of effort (PE) (Duckworth et al., 2007)
3. *Growth mindset (incremental theory of intelligence)*– a belief that a person's traits are malleable (Dweck, 2008)
4. *Implicit theories* – theories that represent personal beliefs about the ability to complete a task and to set and finish a goal (Schunk, 2020).
5. *Servant leadership* – A leadership theory developed by Greenleaf (1977) which encouraged leaders to serve their people and organizations. Liden et al. (2008) described

servant leadership using the following characteristics: emotional healing, creating value for the community, conceptual skills, empowering, helping subordinates grow and succeed, putting subordinates first, behaving ethically, relationships, servanthood (Liden et al., 2008).

CHAPTER TWO: LITERATURE REVIEW

Overview

Leaders who are gritty (Duckworth, 2016), possess a growth mindset (Dweck, 2008), and are servant leaders (Greenleaf, 1977) might help diminish the impact of COVID-19 school closures on student learning. Research showed that educational leaders impact student learning (Fullan, 2019; Hattie & Smith, 2021). In recent years, scholars began to investigate how established leadership theories could be applied in academic settings (Daniëls et al., 2019; Kwan, 2020; Thomas et al., 2020). A review of the literature was conducted to investigate previous research related to grit, mindset, and servant leadership. The first section provides the theoretical basis for the study by discussing the origins and development of grit, mindset, and servant leadership. From this foundation, the chapter will continue with a review of current literature for each theory and their impact on school performance.

Theoretical Framework

The following theories will provide the theoretical foundation for this study: grit, mindset, and servant leadership. Duckworth's (2016) theory of grit was developed as an answer to why certain people were highly successful with in their fields of study. Mindset theory, developed by Dweck (2008), provided insight into the beliefs people held about their intelligence and their abilities to change and grow. Finally, Greenleaf's (1977) servant leadership shifted the focus from leaders to followers with the purpose of leadership being to serve those within the organization.

Theory of Grit

Most successful individuals can pinpoint people and events that changed the trajectory of their lives. Duckworth's (2016) trajectory shift occurred during a conversation with her graduate

school advisor, Martin Seligman, the founder of positive psychology. He challenged her by accusing her of working without a focus on creating a theory of achievement and success. Thus, Duckworth's (2016) development of grit theory started with a challenge and continued with a drive to discover the connection between passion and perseverance in successful people.

Seligman et al. (2009) and James (1907) represent two people who influenced Duckworth's (2016) theory development. In slightly different ways, these influencers attempted to discover the key to what made highly achieving people successful. Seligman et al.'s (2009) and James' (1907) different ways of addressing achievement and success led Duckworth (2016) to the common denominator of grit. Specifically, Seligman's work on establishing the tenants of positive psychology and James' research on energy levels led to Duckworth's understanding that successful people are both consistent in their interests and perseverant in their pursuits.

Positive Psychology

Seligman's positive psychology concept developed as a counter to the concentration on negative psychology resulting from World War II and the Cold War (Gillham & Seligman, 1999). According to Gillham and Seligman (1999), these events created an environment where American citizens were overly concerned about being safe. This emphasis caused resistance to failure, which caused a fixation on shielding people from adversity, leading to the emergence of the self-esteem movement in the 1960s (Gillham & Seligman, 1999). In addition, negative psychology created a culture that favored not taking responsibility for one's actions and the resulting consequences (Gillham & Seligman, 1999). They thought this culture would eventually lead young adults to be angry, violent, distrusting, and depressed.

In contrast to negative psychology, positive psychology focused on the positive emotions of living a pleasant, engaged, and meaningful life (Seligman et al., 2009). The pleasant life

concentrated on positive emotions like happiness, serenity, and love. The engaged life was defined as a flow that occurred when people were wholly engrossed in the task. Finally, Seligman et al. (2009) believed the meaningful life occurred when one understood and used their strengths to serve something greater than themselves. They thought these three components represented well-being and that teachers could teach these components to students to help students achieve and become academically successful.

While positive psychology was developed primarily as a response to combat negative psychology, the main purpose was to create an avenue through which psychologists could help individuals and communities survive, thrive, and flourish (Seligman & Csikszentmihalyi, 2000). Most likely, this concept of flourishing was what attracted Duckworth to Seligman's research. She had the opportunity to collaborate with him on a longitudinal predictive study investigating self-discipline, IQ, and academic performance (Duckworth & Seligman, 2005). In reference to academic performance, they found self-discipline was more of a predictor of performance than IQ. They concluded that using positive psychology within schools could be the main factor in increasing student achievement. Seligman's positive psychology provided part of the foundation from which Duckworth developed her grit theory (Duckworth & Gross, 2014).

Functionalism

James (1907) also influenced Duckworth's thinking about successful people. According to Schunk (2020), functionalists like James believed that people can adjust and adapt their thinking and behaviors based on their environment. James (1907) concentrated his research on the connection between energy levels and successful people. He believed the most successful people were able to push through their perceived fatigue and persevere. Perseverance of effort is

a component of Duckworth's (2016) grit theory that incorporated James' thoughts on human energy levels and their relationship with success.

Grit Theory Development

Duckworth et al.'s (2007) research began with a review of James' (1907) and Cox's (1926) analyses of distinguished people in multiple fields (Duckworth et al., 2007). Duckworth et al. (2007) noted that Cox's (1926) research connected childhood perseverance behaviors to lifetime achievement. At the time of Duckworth et al.'s (2007) original study, achievement and success research was highly dependent on intelligence quotient measures and personality traits like the Big Five model (extroversion, agreeableness, openness, conscientiousness, and neuroticism). However, during a series of interviews with highly successful people, Duckworth et al. (2007) found that these participants consistently mentioned that grit was a more significant factor in achieving success than intelligence. This common theme from the interviews led Duckworth et al. (2007) to continue to dig into the dynamics of grit through several studies that led to their development of the grit scale, which solidified the definition of grit.

For an idea or concept to develop into a theory, it must be vetted through an extensive research process (Gall et al., 2007). This process includes defining the concept, establishing a form of measurement, and distinguishing the idea from other concepts (Gall et al., 2007). Duckworth's (2016) theory of grit followed this path from observing human nature to a formalized, valid, and reliable scale that measures grit. Duckworth et al.'s (2007) belief that the key to success and achievement was grit created the foundation to define it in terms of passion or consistency of interest and perseverance of effort.

The original grit study determined the definition of grit through an extensive review of literature on intelligence and a series of interviews with people across various career fields

(Duckworth et al., 2007). They found within their review of literature that passion and perseverance were consistently used to define the actions of successful people. These two concepts were also confirmed in a series of interviews where the term grit was consistently used to describe high-performing people. Therefore, they defined perseverance as a character trait that described a person's effort and willingness to continue to work towards a goal despite obstacles in the path. A person's ability to focus on a goal over a long period of time was the definition for passion, as successful people consistently stuck with their goals even when facing obstacles or potential defeat (Duckworth et al., 2007). Grit, defined as perseverance of effort and consistency of interest, has been applied within numerous studies (Caza & Posner, 2019; Park et al., 2020; Rego et al., 2021; Spann et al., 2020; Usher et al., 2019).

Over the course of two years, two instruments were developed to measure grit as a compound of consistency of interest (CI) and perseverance of effort (PE). The original grit scale (Grit-O) consisted of a series of twelve items that measured a person's consistency of interests (CI) and perseverance of effort (PE) (Duckworth et al., 2007). Duckworth and Quinn (2009) created an option for researchers with the creation of a shorter version of the grit scale (Grit-S). The scale still maintained the internal consistency of the two components even though there were only eight items (Duckworth & Quinn, 2009). The development of both the Grit-O and the shorter Grit-S version helped solidify grit theory. Recently, researchers criticized the grit scale for not separately measuring CI and PE (Credé, 2018; Jachimowicz et al., 2018). Duckworth et al. (2021) acknowledged these critiques of their original study. They countered these critiques by explaining that the grit scale was intended to be used as a combination of CI and PE, not as separate components.

As Duckworth et al. (2007) developed the grit theory, they sought to distinguish it from other established theories. One of the distinctions both Duckworth et al. (2007) and Duckworth and Quinn (2009) made was from the Big Five Model. This model measured conscientiousness, extraversion, neuroticism, agreeableness, and openness to experience (Duckworth et al., 2007). In the Grit-O scale (Duckworth et al., 2007) and the Grit-S scale (Duckworth & Quinn, 2009), it was found that grit and conscientiousness were the only traits highly related. This was a relationship confirmed in Christopoulou et al.'s (2018) literature review as they acknowledged a potential overlap between grit and conscientiousness. Other studies distinguished between grit and mindset theory (Duckworth, 2016; Tang et al., 2019). Duckworth (2016) believed, though, that growth mindset and grit were connected. Park et al.'s (2020) study confirmed this connection as a reciprocal relationship between grit and growth mindset. In contrast, Tang et al.'s (2019) study found a weak relationship between the two. Their longitudinal study of Finish adolescents focused on determining a relationship between grit, mindset, and academic achievement. They indicated that growth mindset might predict grit. They also suggested that teaching adolescents the process of setting and achieving goals could develop grit in adolescents (Tang et al., 2019).

Grit theory was conceived and established by allowing for and anticipating the vetting process (Duckworth et al., 2007). Grounded in the theories of Seligman and Csikszentmihalyi's (2000) positive psychology and James' (1907) energy focus, grit theory was established and two instruments were created. From this foundation, grit developed into a theory that describes successful people through their perseverance of effort and their consistency of interest, which is why grit theory will provide a foundation for the current study focused on educational leaders.

Mindset Theory

Dweck (2008) started what would become mindset theory as a fixed mindset person. She believed "human qualities were carved in stone. You either were smart or you weren't, and failure meant you weren't" (Dweck, 2008, p. 4). Fortunately, like Duckworth, Dweck's research led her to shift her thinking about intelligence (Dweck, 1975). Her initial research involved an experiment with children, puzzles, and an overwhelming desire to understand how people dealt with failure. In this first study, she was shocked by the children's ability to look at their failures at completing the puzzle as a learning opportunity. They instinctively knew they could improve through their effort.

Dweck spent over a decade studying and analyzing learned helplessness (Diener & Dweck, 1978; Dweck & Bush, 1976). Ultimately, she wanted to determine why students with similar characteristics would be so different in their thoughts, actions, and reactions (Dweck & Yeager, 2019). It was not until Dweck was a member of Bandura's (1983) dissertation team, though, that she began to find an answer to this question (Dweck & Yeager, 2019). Bandura's (1983) experimental design dissertation found that learning-oriented children tended towards an incremental view of intelligence whereas performance oriented children held an entity view of intelligence. As a result, Dweck began to believe that people were not in tuned to how they viewed intelligence, thus the term implicit theories of intelligence (Dweck & Yeager, 2019). Implicit theories of intelligence were divided into two subcategories: entity and incremental theories (Dweck & Yeager, 2019). Entity theory oriented people believed intelligence was fixed, set, and could not be changed, whereas incremental theory oriented people thought intelligence was malleable (Dweck et al., 1995; Dweck & Yeager, 2019; Erdley & Dweck, 1993).

After the initial research that defined the two components of implicit theories of intelligence, researchers began to investigate implicit theories in relation to goal setting (Elliott

& Dweck, 1988; Erdley et al., 1997) and attribution theory (Hong et al., 1999). Implicit theories research found that people who believed that intelligence was fixed or entity theory gravitated towards performance goals, which allowed them to attribute fixed traits to any failure (Elliott & Dweck, 1988; Erdley et al., 1997). In contrast, people who believed that intelligence was malleable or incremental theory tended to select learning goals because they viewed failure as a way to keep learning (Elliott & Dweck, 1988; Erdley et al., 1997). However, it was not until Hong et al.'s (1999) study that the relationship between implicit theories and effort was investigated. They found that incremental theorists tended to explain their results through their effort, and they were more willing to remediate when faced with failure. Ultimately, Hoch et al. (1999) found that implicit theories played an instrumental part in participants' effort, persistence and ability to remediate after failure. These connections led them to conclude that implicit theories represented a meaning system approach to intelligence, as people tended to attribute their success or failure to effort or ability.

Through a series of studies, thoughts about implicit theories being a meaning system approach to intelligence was supported (Blackwell et al., 2007; Mangels et al., 2006). A study by Mangels et al. (2006) used EEGs to measure brain activity. They found that participants processed information differently based on their implicit theory. This study laid the foundation for the creation of a neurocognitive model that they concluded might be why incremental theorists tended to have significant gains in knowledge (Mangels et al., 2006). Blackwell et al.'s (2007) longitudinal study and intervention also furthered this concept of implicit theories as a meaning system. This study followed a group of seventh-graders over two years. They concluded that students who held an incremental theory of intelligence associated effort to their outcomes, focused on learning, and had less helpless behavior tendencies which impacted their math

achievement. Their intervention study also indicated students who were taught the incremental theory embraced these concepts, put forth more effort, and were more motivated to learn (Blackwell et al., 2007).

This meaning systems approach to intelligence made its way into the mainstream in the form of Dweck's (2008) book *Mindset: The New Psychology of Success*. This book changed implicit theories to mindset theory, entity theory to fixed mindset, and incremental theory to growth mindset. Researchers, though, continued to use these terms interchangeably as they began to further investigate mindset theory (Komarraju & Nadler, 2013; Murphy & Dweck, 2010; Paunesku et al., 2015; Yeager et al., 2016). Mindset theory was described through fixed and growth mindsets (Dweck, 2008). Fixed mindset people believed that their intelligence or personality characteristics could not be changed. Whereas growth mindset people thought they could work through failure and achieve success through effort. Growth mindset people work toward increasing their intelligence and improving their personality characteristics which they believe will eventually lead to achieving their goals (Dweck, 2008).

Researchers also investigated the relationships between mindset and organizations (Murphy & Dweck, 2010), self-efficacy (Komarraju & Nadler, 2013), and the feasibility of creating a universal student intervention (Paunesku et al., 2015; Yeager et al., 2016). Murphy and Dweck's (2010) study represented the first attempt at studying organizational mindset and its impact on individual employees. They found that an organization's mindset shapes employees' thoughts, behaviors, and how they view themselves and others. Komarraju and Nadler's (2013) study of undergraduate psychology students investigated the relationship between mindset, self-efficacy, and student achievement. Their study found a positive correlation between growth mindset, self-efficacy, and student achievement resulting in support for a mindset theory

intervention. Paunesku et al.'s (2015) intervention study found that mindset interventions impacted how students viewed their abilities to improve. After the intervention was administered, students showed improvement in grade point average. The researchers suggested that the intervention might be ready to be scalable to other school systems across America (Paunesku et al., 2015).

Dweck's (2008) mindset theory is a multi-faceted meaning system approach to intelligence. It has been applied to many different settings and populations. Researchers' willingness to venture into locations other than schools and participants other than students represented an advancement of the theory. The current study will support this expansion of research as the combination of grit, mindset, and servant leadership with school administrators has not been investigated.

Servant Leadership Theory

Greenleaf (1977) was inspired by a book character and created a leadership theory that continues to impact multiple industries and individuals today (Lemoine et al., 2019). After Greenleaf (1977) retired from AT& T, he penned the term servant leadership to describe leaders who think first of serving the people in their organizations instead of the organization serving the leader. Greenleaf's (1977) concept of servant leadership developed during the chaotic times of the late 1960s and early 1970s. He stated that the first chapter was written in part as a response to students who seemed hopeless. Greenleaf (1977) intuitively knew that organizations needed to shift from the common leader-first mentalities to servant first to combat the upheaval of the 1970s. According to Lemoine et al. (2019), Greenleaf created servant leadership because there was a need for compassionate leaders who focused not on themselves but on the greater good inside and outside the organization. Servant leadership was not crafted from the normal academic

pathway, but through over forty years of observing people working together (Lemoine et al., 2019). Since the conception of servant leadership, many academic scholars have been inspired to dig deeper and operationalize the conceptual Greenleaf (1977) essays (Barbuto & Wheeler, 2006; Liden et al., 2008; Page & Wong, 2000; Spears & Lawrence, 2002).

Servant Leadership Development

When Greenleaf (1977) answered the question, who is the servant-leader, he wrote, "The servant-leader is servant first…It begins with the natural feeling that one wants to serve, to serve first. Then conscious choice brings one to aspire to lead. That person is sharply different from one who is leader first…" (p. 13). While this definition was conceptually sound, it caused researchers to criticize that it was not comprehensive (Langhof & Guldenberg, 2020), was lacking because of the focus on outcomes rather than behaviors (Lemoine et al., 2019), and was hard to measure (Eva et al., 2019).

As a result of these perceived gaps in the theory, scholars tended to gravitate towards writing conceptual articles instead of empirical research (Barbuto & Wheeler, 2006; Graham, 1991; Page & Wong, 2000; Spears & Lawrence, 2002). Eva et al.'s (2019) review of 270 published articles from 1998 to 2018 argued that the confusion over the definition of servant leadership was because researchers often manipulated the definition to support their claim. It is evident in the research that many researchers choose definitions based on their arguments to include Eva and colleagues (Langhof & Guldenberg, 2020; Lee et al., 2020; Lemoine et al., 2019)). Lemoine et al. (2019) chose to define servant leadership through a moral lens represented in Ehrhart's (2004) definition. Lee et al.'s (2020) systematic review used Eva et al.'s (2019) definition. Whereas, Langhof and Guldenberg (2020) chose Liden et al.'s (2008) description because it was also associated with an instrument measuring servant leadership.

Some researchers defined servant leadership through a religious or moral lens (Barbuto & Wheeler, 2006; Page & Wong, 2000; Spears & Lawrence, 2002). Page and Wong (2000) believed there was a natural connection between servant leadership and the Christian way of life, as Christians learn to serve through their study of Jesus Christ's life. Barbuto and Wheeler (2006) also acknowledged a potential connection between servant leadership and the Bible. Spears and Lawrence (2002) stated that servant leadership provided an opportunity for personal growth in mind, body, and soul. Kimotho (2019) added to the debate with his acknowledgement that Greenleaf's Quaker faith could be a possible source for a Christian worldview (Kimotho, 2019). Kimotho (2019) acknowledged that Christian leaders easily connect the moral tenants of servant leadership and Jesus, who modeled these behaviors. Kimotho argued, though, that Greenleaf's servant leadership theory seemed to encourage leaders to inspire their employees to greater levels of self-actualization not a closer relationship with God. It is this focus that led Kimotho (2019) to believe servant leadership was not for the sole purpose of being a Christian theory of leadership.

Several researchers began to attempt to operationalize the definition of servant leaders with the purpose of creating a measurement instrument (Barbuto & Wheeler, 2006; Page & Wong, 2000). Page and Wong (2000) brought a unique insight into the problem of defining and operationalizing servant leadership. They acknowledged that researchers, early on, were discouraged from defining and creating a measurement for servant leadership because most did not want to trivialize the concept. They opined that the lack of a reliable and valid measure most likely was the reason servant leadership was not initially used as a leadership model within organizations. This lack of a servant leadership instrument, led them to take on the challenge of

creating one along with many other scholars (Barbuto & Wheeler, 2006; Liden et al., 2008; Page & Wong, 2000).

Page and Wong's (2000) instrument was created to measure what they perceived were the four servant leadership orientations: character, people, task, and process. Character, which was a servant heart, was at the center of their definition. Unfortunately, it was difficult for researchers to replicate Page and Wong's results (van Dierendonck, 2011). Barbuto and Wheeler (2006) also tried to create a reliable and valid instrument using Spears and Lawrence's (2002) definition with the addition of calling to the list of characteristics. They defined calling as a leader's "desire to serve and willingness to sacrifice self-interest for the benefit of others" (Barbuto & Wheeler, 2006, p. 305). Unfortunately, this instrument also had replication problems (van Dierendonck, 2011).

Liden et al. (2008) benefited from this servant leadership research, as they also developed a definition of and instrument for servant leadership. Since this is the chosen instrument for this study, its foundation is worth reviewing. Liden et al. (2008) grounded their definition of servant leadership in the research of Page and Wong (2000), Spears and Lawrence (2002), and Barbuto and Wheeler (2006). According to van Dierendonck (2011), Larry Spears led the way in interpreting Greenleaf's ideas, as he created a standard model that illustrates the characteristics of a servant leader. As the Greenleaf Center for Servant Leadership director, Spears' writing was prolific but was conceptual, not empirically oriented (van Dierendonck, 2011). Spears and Lawrence (2002) chose to define servant leadership through ten characteristics: listening, empathy, healing, awareness, persuasion, conceptualization, foresight, stewardship, commitment to the growth of people, and building community. Spears' definition provided the foundation for

the development of many servant leadership instruments (Barbuto & Wheeler, 2006; Liden et al., 2008; Page & Wong, 2000).

Seven leadership actions were incorporated into Liden and colleague's definition of servant leadership. These actions included: emotional healing, creating value, conceptualizing skills, empowering, helping and putting subordinates first, and behaving ethically (Liden et al., 2008). From this definition, they created two instruments: a long version called the SL-28 (Liden et al., 2008) and a short version called the SL-7 (Liden et al., 2015). According to Eva et al. (2019), a concept becomes a theory when it can be operationally defined, measurements are used to test it, and a model is developed. Liden et al.'s (2008, 2015) servant leadership instruments met these criteria and became a contribution which furthered servant leadership theory. The SL-28 and the SL-7 were also reliable, valid, and widely used by researchers (Eva et al., 2019). Eva et al. (2019) opined that 2008 was a crucial moment for servant leadership, as many instruments became available and research began to shift from conceptual to empirical. Liden et al.'s (2008) work was part of this shift within servant leadership research (Eva et al., 2019).

Along with developing a definition and measurement tools, researchers began investigating the theoretical foundation (Eva et al., 2019; Langhof & Guldenberg, 2020; Lemoine et al., 2019; Liden et al., 2014). Some researchers cited social learning theory as a foundation for Greenleaf's servant leadership (Eva et al., 2019; Langhof & Guldenberg, 2020; Lemoine et al., 2019; Liden et al., 2014). For example, Lemoine et al. (2019) stated that social learning theory like servant leadership expects followers to notice and imitate their leaders' behaviors since those are the behaviors that are appreciated, rewarded and reinforced with in the organization. Likewise, Langhof and Guldenberg (2020) believed that social learning theory

explained the cultural impact of servant leadership on an organization and why it has become a popular leadership style.

Early adopters, also, attempted to distinguish servant leadership from other leadership approaches (Graham, 1991; Liden et al., 2008; Sendjaya et al., 2008; Spears & Lawrence, 2002; van Dierendonck, 2011). Transformational leadership, leader-member exchange, and authentic leadership were three approaches to leadership that were widely used within various organizations. Since these leadership approaches were popular, scholars primarily focused on distinguishing servant leadership from these three leadership approaches (Graham, 1991; Liden et al., 2008; Sendjaya et al., 2008; van Dierendonck, 2011).

Transformational leadership's popularity blossomed in the 1980s as a theory focused on the ability of leaders to influence change in their followers (Northouse, 2019). The transformational approach to leadership consisted of six factors: idealized influence (charisma), inspirational motivation, intellectual stimulation, individualized consideration, contingent reward, management-by-exception, and laissez-faire leadership (Avolio et al., 1999). Transformational leaders are often described as charismatic, value intrinsic rewards, and are goal-driven to the point where it is the organization over individual goal achievement (Northouse, 2019). Graham (1991) was one of the first to distinguish servant leadership from transformational leadership. She stated that transformational leadership theory lacked an ethical compass that was reestablished with servant leadership. Building on Graham's initial work, many scholars noted that transformational leaders were more concerned with the organization's goals, whereas servant leaders tended to focus on helping individuals succeed (Liden et al., 2008; Sendjaya et al., 2008; van Dierendonck, 2011). In addition, according to Sendjaya et al. (2008), servant leaders, more so than transformational leaders, tended to help underrepresented people.

Leader-Member Exchange (LMX) was another leadership approach that researchers sought to distinguish from servant leadership. LMX represented one of the first leadership theories that began to focus on the relationship between leader and follower (Northouse, 2019). According to Lunenburg (2010), LMX leaders created inner circles of trusted agents with whom they would give additional responsibilities. As servant leadership scholars began to operationalize the theory, they recognized the need to distinguish servant leadership from LMX (Liden et al., 2008; van Dierendonck & Nuijten, 2011). Liden et al. (2008) acknowledged a small correlation between LMX and servant leadership. Still, they opined that servant leadership was distinct from LMX in that LMX leaders are not encouraged to think about how to give back to the community, whereas servant leaders prioritize this action (Liden et al., 2008). Within van Dierendonck and Nuijten's (2011) instrument development study, they acknowledged overlap between LMX and servant leadership in the categories of empowerment, humility, and stewardship. Despite this overlap, they determined their instrument to be a valid and reliable measurement of servant leadership and distinct from LMX (van Dierendonck & Nuijten, 2011).

Finally, authentic leadership was also an approach from which scholars sought to distinguish from servant leadership. Authentic leadership can be described as a multi-faceted leader focused theory, that demands its leaders be genuine in their thoughts and actions (Northouse, 2019). Sendjaya et al. (2008) acknowledged that servant leadership and authentic leadership are both focused on creating a positive environment where followers are morally developed and encouraged to be aware of their strengths and weaknesses. However, according to Sendjaya et al. (2008), the two leadership philosophies differ in that servant leaders rely on a spiritual orientation. van Dierendonck (2011) added that the primary concern of an authentic

leader is being true to oneself. He suggested that authentic leadership could be incorporated into servant leadership theory since effective servant leaders authentically serve their people.

Impact of Servant Leadership on Organizations

Servant leadership scholars not only wanted to establish a distinction between other leadership theories, but they also began to study the effectiveness of the theory from an individual and organizational perspective (Graham, 1991; Liden et al., 2008, 2014; van Dierendonck & Nuijten, 2011). Graham (1991) led the way by encouraging researchers to investigate servant leadership's impact on organizations. Graham's (1991) model for servant leaders encouraged researchers to begin to examine the correlation between servant leadership job commitment, job performance, and creativity. Many scholars found positive correlations with each these variables (Liden et al., 2008, 2014; van Dierendonck & Nuijten, 2011). Liden et al.'s (2008) study concluded that organizations benefited from servant leadership as they found it predicted subordinate commit to the organization and outside community. Similarly, van Dierendonck and Nuijten (2011) found positive correlations between SL and organizational commitment, performance, and leadership clarity. Greenleaf's (1977) servant leadership essays were the catalyst for many scholars to question the predominant leadership theories of the day. This research further developed servant leadership from Greenleaf's (1977) conceptual idea to a leadership theory with many reliable and valid instruments from which researchers can choose (Eva et al., 2019).

Duckworth's grit, Dweck's mindset, and Greenleaf's servant leadership advanced from observing human nature to well-established theories of intelligence and success. Each theory went through extensive vetting, from creating an operational definition to valid and reliable instruments to measure the theories. Each theory focuses on success in slightly different ways,

which could contribute to student achievement in school. These theories provide a solid foundation for researchers to investigate their collective impact in school settings.

Related Literature

Duckworth (2016), Dweck (2008), and Greenleaf (1977) have inspired many researchers to apply grit, mindset, and servant leadership to support individual and organizational development. Grit researchers began to investigate how passionate and perseverant leaders impact job performance, retention, and work engagement (Choi et al., 2020; Rego et al., 2021; Southwick et al., 2019). Mindset scholars focused on creating student interventions in school settings (Paunesku et al., 2015), and in work environments, they investigated how a growth mindset manager positively impacts subordinates (Kouzes & Posner, 2019). Finally, current servant leader research provided scholars with several meta-analytic and literature reviews to culminate several decades of empirical research (Eva et al., 2019; Kiker et al., 2019; Langhof & Guldenberg, 2020; Lee et al., 2020). Reviewing recent applications and the impact of these theories in school settings is the focus of the remaining portion of this literature review.

Theory of Grit

Application of Theory

Grit research spans several decades with a complement of both quantitative (Park et al., 2020; Schimschal & Lomas, 2018; Spann et al., 2020) and qualitative studies (Datu et al., 2018; Golden, 2017; Klocko et al., 2019). Quantitative researchers chose to study grit from the student perspective (Park et al., 2020; Spann et al., 2020) and the leader perspective (Caza & Posner, 2019; Rego et al., 2021; Schimschal & Lomas, 2018). This focus resulted in several empirical studies (Park et al., 2020; Spann et al., 2020), meta-analyses (Credé et al., 2017; Lam & Zhou, 2019), and literature reviews (Christopoulou et al., 2018; Datu et al., 2017). Quantitative

research consistently revealed a correlation between grittier students being more academically successful in achieving their long-term goals than less gritty students (Lam & Zhou, 2019; Park et al., 2020; Spann et al., 2020). Credé et al.'s (2017) meta-analysis also found a positive relationship between grit, grade point average, retention, and college and work persistence. Research related to leadership and grit had similar results, as gritty leaders tended to help employees prosper (Caza & Posner, 2019; Rego et al., 2021; Schimschal & Lomas, 2018).

Qualitative researchers found both positive outcomes (Datu et al., 2018; Klocko et al., 2019) and a downside of focusing on grit (Golden, 2017). Datu et al.'s (2018) study shared the experiences of Filipino undergraduate students. Their research confirmed Duckworth et al.'s (2007) original research about the relationship between the perseverance of effort and consistency of interests. They also found adaptability to situations was an additional factor, that they suggested needed further studying. On the other hand, Golden's (2017) research shared a narrative case study of Elijah. Through this research, Golden (2017) provided a warning about an overreliance in education to linking academic outcomes to personal effort, especially to the detriment of economically disadvantaged students who experienced inequality in schools. With this recent focus on qualitative grit studies, it seems that grit research is no longer primarily quantitative in nature (Datu et al., 2018; Golden, 2017; Klocko et al., 2019).

School Performance Impact

Educators around the world are focused on how to improve student performance and learning. Grit researchers continued to define grit as a non-cognitive trait that helps students successfully achieve long-term goals (Credé et al., 2017; Duckworth et al., 2007; Usher et al., 2019). Recent grit studies have begun to investigate Bandura's (1986) self-efficacy and social cognitive theory and how these impact schools and student performance (Lam & Zhou, 2019;

Park et al., 2018; Usher et al., 2019). According to Park et al. (2018), students in environments that support mastery goals versus performance goals have higher achievement. Usher et al. (2019) highlighted that their study was the first to focus on early adolescents and the relationship between grit and subject-specific self-efficacy. Their research indicated that a combination of grit and self-efficacy could predict student outcomes and performance (Usher et al., 2019). Finally, Lam and Zhou's (2019) meta-analysis reviewed the past ten years' worth of empirical studies related to grit and student academic achievement. Overall, they found a strong correlation between grit and student achievement, but they also cautioned educators about taking a simplistic view of grit. Lam and Zhou (2019) opined that because academic achievement is complex the association between grit and achievement has multiple underlying layers that need to be investigated.

Grit research predominantly focused on student interventions and outcomes, but researchers recently begun investigating the relationship between grit and leadership (Caza & Posner, 2019; Klocko et al., 2019; Schimschal & Lomas, 2018; Southwick et al., 2019). This research tended to gravitate towards leadership actions (Schimschal & Lomas, 2018) and the leader's impact on organizations (Choi et al., 2020; Southwick et al., 2019) while revolving around a few leadership theories (Klocko et al., 2019; Lee, 2018; Southwick et al., 2019).

The correlation between grit and leadership was studied by many scholars (Caza & Posner, 2019; Klocko et al., 2019; Schimschal & Lomas, 2018; Southwick et al., 2019). Schimschal and Lomas (2018) found that gritty leaders tended to use the following positive leadership strategies: establish and achieve Everest goals, implement positive communication and meaning. Grit-focused leaders, also, often led through modeling the behaviors they expect from their employees and are more likely to challenge behaviors that are not in line with those

expectations (Caza & Posner, 2019). Finally, a qualitative study conducted by Klocko et al. (2019) investigated ten superintendents' beliefs about leading during demanding times found three common themes related to grit. These themes were that experience determines leaders' grit, grit can be developed over time, and those leaders who were perceived to consistently work harder and smarter were viewed as successful (Klocko et al., 2019).

The research highlighted that gritty leaders positively impact their organizations related to retention, job performance, work engagement, and commitment (Choi et al., 2020; Rego et al., 2021; Southwick et al., 2019). Choi et al.'s (2020) research added to the literature related to grit and leadership. They found a positive relationship between grit, corporate social responsibility, and organizational citizenship behavior (Choi et al., 2020). Finally, Rego et al. (2021) found that when leaders are gritty, their employees tend to convey grit in their daily interactions.

Research revolving around the relationship between grit and established leadership theories is in its infancy (Klocko et al., 2019; Lee, 2018; Southwick et al., 2019). Southwick et al. (2019) suggested that transformational leadership and grit are most aligned because of the assertive goal-driven nature of these types of leaders. Klocko et al.'s (2019) qualitative study guided them to believe grit and transformational leadership led to the success of the superintendents within the study. A study investigating the combination of grit and authentic leadership, revealed a significant positive impact on organizational effectiveness (Lee, 2018). This limited amount of empirical research, though, calls for further investigations into the relationship between grit and leadership and established theories, specifically servant leadership.

Mindsets

Application of Theory

Building on the foundation of Murphy and Dweck (2010), researchers used mindset theory to help corporate organizations and leaders become more effective and successful (Caniëls et al., 2018; Canning et al., 2020; Han & Stieha, 2020; Kouzes & Posner, 2019). Scholars conducted studies utilizing research designs from a single case study looking at growth mindset and employee engagement (Caniëls et al., 2018) to a quantitative study with thousands of participants investigating the correlation of managers' mindset and leadership behaviors (Kouzes & Posner, 2019). While each of these studies focused on slightly different growth mindset applications, they each supported the positive impact that a growth mindset can have on an organization. Some of the positive impacts included being more focused, engaged, and enthusiastic (Caniëls et al., 2018; Canning et al., 2020; Han & Stieha, 2020; Kouzes & Posner, 2019).

Caniëls et al. (2018) found that when a manager's mindset matched the employee's mindset, employees were more fully engaged in the task, enthusiastic, and willing to seek out opportunities to continually develop. Kouzes and Posner's (2019) research also studied the relationship between managers' mindset beliefs and leadership behaviors. They found that growth mindset oriented managers were more likely than fixed mindset managers to exhibit leadership behaviors like being clear in their expectations, modeling expected behaviors, creating opportunities for a shared vision, and encouraging and enabling followers to continually develop their own skill-sets. Han and Stieha's (2020) also contributed to the mindset theory with their literature review on the connection between growth mindset and human resource development. They discovered that knowledge of mindset theory contributed to the success of individuals, leaders, and organizations. Finally, Canning et al.'s (2020) study found that organizational mindsets predicted cultural norms, trust, and commitment.

School Performance Impact

Just as in the corporate world, educational researchers continued to explore the possibilities of how mindset theory influenced student performance (Hanson et al., 2016; Sarrasin et al., 2018). This influence came in the form of studies examining the correlation and predictive value of mindsets with students, teachers, and administrators (Burgoyne et al., 2018; Burnette et al., 2020; Hanson et al., 2016; Sarrasin et al., 2018). Researchers, also, continued to explore the efficacy of mindset intervention (Burgoyne et al., 2018; Burnette et al., 2020; Sarrasin et al., 2018). Finally, scholars began to investigate mindset in relation to school leadership (Savvides & Bond, 2021).

Student performance in the form of mindset interventions continued to be a focus within recent studies (Burgoyne et al., 2018; Burnette et al., 2020; Sarrasin et al., 2018). Sarrasin et al.'s (2018) meta-analysis examined the concept of neuroplasticity and a growth mindset intervention. Most of the studies analyzed were experimental design and resulted in students presenting a more growth mindset orientation toward their academic pursuits by the end of the study (Sarrasin et al., 2018). Unfortunately, there was an inconsistency concerning academic achievement. They found that at-risk students seemed to have a more positive effect from growth mindset interventions than non-at-risk students (Sarrasin et al., 2018). Burnette et al.'s (2020) study of university computer science students mimicked Sarrasin et al.'s (2018) results. Participants improved their growth mindset in that they believed that they could continue their computer science degrees, but this improvement did not translate to academic performance (Burnette et al., 2020). This inconsistency seems to be a common assessment of mindset intervention programs. Rege et al.'s (2021) international study also concluded that while the intervention did not translate to academic performance, participants displayed an increased eagerness to accomplish

academic endeavors. They suggested this willingness could be a good measure for future academic efforts.

As mindset theory continued to develop, several studies combined mindset with other variables (Burgoyne et al., 2018; Hanson et al., 2016; Karlen et al., 2019). Burgoyne et al. (2018) investigated whether a mindset intervention could change the participants' mindset and self-determination, which they described as grit. They found that students who participated in the growth mindset intervention experienced a significant increase in growth mindset, but the intervention did not impact students' cognitive test scores or their grit score. While this intervention did not produce all the expected results, Burgoyne et al. (2018) suggested the intervention provided a foundation for academic achievement that might be worth the time, even if it only helped one student become more academically successful. Karlen et al. (2019) also contributed to the research by focusing on implicit theories, the two components of grit: perseverance of effort (PE), consistency of interest (CI), achievement goals, learning motivation, and academic achievement with 1,215 Swiss students. They found a positive correlation between incremental theory (growth mindset), PE, and CI. Academic achievement was higher with those students who embraced a growth mindset and had a high PE score. Ultimately, they suggested that students who are growth minded tended to be more focused and persistent about achieving their goals (Karlen et al., 2019).

While the impact of school leadership is well documented (Hattie & Smith, 2021; Marzano et al., 2018), recent research studying the correlation between mindset theory and leadership is limited (Savvides & Bond, 2021). Hanson et al. (2016) found a significant relationship between principals' and teachers' openness to change and school growth mindset. They concluded that their study supported the need for a growth mindset school leader who

could influence this behavior in their teachers and staff. Jeanes' (2021) conceptual article also recommended the need for growth mindset leaders. She opined that instead of leaders focusing on a set of skills, actions, behaviors, and traits, they should be more knowledgeable about how they view the world through mindsets. This understanding of the connection between mindset and school leadership is lacking within the empirical research and represents a gap that potentially will be filled by this current research.

Servant Leadership

The current servant leadership literature represents a mixture of conceptual literature and empirical studies. Several of these studies focused on the application and impact on organizational performance (Lee et al., 2020). Current servant leadership research revealed that it had become a viable option for leaders who want to create highly effective teams (Eva et al., 2019; Langhof & Guldenberg, 2020; Lee et al., 2020; Lemoine et al., 2019; Sawan et al., 2020). Greenleaf's (1977) seminal work started during a tumultuous time in American history. Ironically, within the last few years, as the world has dealt with the uncertainty of COVID-19, there seems to be a resurgence of servant leadership research literature (Eva et al., 2019; Fernandez & Shaw, 2020; Kukendall & Slater, 2020; Song, 2020).

Application of Theory

Several literature reviews (Eva et al., 2019; Lemoine et al., 2019; Sawan et al., 2020) and meta-analyses (Langhof & Guldenberg, 2020; Lee et al., 2020) helped solidify servant leadership as a separate leadership theory. Applying servant leadership within various organizations also contributed to the theory's development (Hoch et al., 2018; Kiker et al., 2019; Langhof & Guldenberg, 2020; Lee et al., 2020; Liao et al., 2020). This research and application provided options for instruments for measuring servant leadership. With these

instruments, SL researchers began to investigate antecedents, mediators, and many outcomes for leaders, organizations, and employees.

Current literature revealed that researchers have at least sixteen different servant leadership instruments from which to choose (Eva et al., 2019; Langhof & Guldenberg, 2020; Lee et al., 2020). Several meta-analytic studies consistently recognized four of these instruments for their precise theoretical foundations, and rigorous methodological processes (Eva et al., 2019; Langhof & Guldenberg, 2020; Lee et al., 2020). These instruments were Ehrhart (2004); Liden et al.'s (2015) Servant Leadership-7 (SL-7); Sendjaya et al.'s (2008) Servant Leadership Behavior Scale-6, (SLBS-6), and van Dierendonck and Nuijten's (2011) Servant Leadership Survey (SLS). While each instrument represented a reliable and valid option for researchers, their purposes and number of items were slightly different. Ehrhart's 14 items (2004) survey concentrated on the procedural justice aspect of servant leadership, focusing on fairness and ethical behaviors. Sendjaya et al.'s (2008) 35 items survey assessed the spiritual elements of servant leadership. van Dierendonck and Nuijten (2011) stated their 30 item survey was the only one that measured both the servant and leader aspects, focusing primarily on accountability, courage, and forgiveness.

Scholars wrote most servant leadership surveys for employees to evaluate their leaders (Ehrhart, 2004; Sendjaya et al., 2008; van Dierendonck & Nuijten, 2011). However, Liden et al. (2008, 2015) wrote their surveys for both leaders and employees. This option allowed researchers to offer a survey to leaders to self-assess which SL traits they possessed while also providing employees the ability to assess their leaders. Liden et al. (2015) also created a short seven-item version from their original 28 items. The combination of a short, reliable and valid measurement for leaders to assess their servant leadership capacity using a global measure made

Liden et al.'s (2015) SL-7 a more effective measurement for the current study. Furthermore, the literature revealed Liden and colleagues' servant leadership instrument was consistently a top contender used by researchers (Eva et al., 2019; Langhof & Guldenberg, 2020; Lee et al., 2020).

Developing instruments measuring servant leadership allowed researchers to investigate the theory's antecedents and mediators (Langhof & Guldenberg, 2020; Lee et al., 2020; Liao et al., 2020; Sawan et al., 2020). Through numerous meta-analyses and literature reviews, researchers investigated servant leadership's antecedents. The research resulted in an extensive list of traits commonly found in leaders who espoused servant leadership (Langhof & Guldenberg, 2020; Lee et al., 2020; Liao et al., 2020; Sawan et al., 2020). Servant leaders tended to be motivated to serve (Sawan et al., 2020), altruistic versus narcissistic (Langhof & Guldenberg, 2020), emotionally intelligent (Langhof & Guldenberg, 2020; Sawan et al., 2020), mindful (Sawan et al., 2020), and self-reflecting (Langhof & Guldenberg, 2020; Liao et al., 2020). Since servant leaders are follower-focused, Lee et al.'s (2020) meta-analysis suggested that leader-member exchange (LMX) might also be an antecedent to servant leadership instead of an outcome.

Along with antecedents, researchers also focused on servant leadership mediators. Lee et al.'s (2020) meta-analysis sought to determine the indirect effects of three mediators: procedural justice, trust in the leader, and leader-member exchange on organizational citizenship behavior (OCB), counterproductive behavior (CPB), creativity, and voice. Their study revealed a positive relationship between the three mediators and OCB, CPB, creativity, and voice (Lee et al., 2020). Researchers also investigated other mediators like goal clarity (Bilal et al., 2021), climate, culture, family involvement, and spirituality in the workplace (Bilal et al., 2021; Langhof & Guldenberg, 2020; Lemoine et al., 2019).

Researchers produced an abundance of meta-analytical studies that compiled a list of outcomes when servant leadership was the primary leadership style within the last few years (Hoch et al., 2018; Kiker et al., 2019; Langhof & Guldenberg, 2020; Lee et al., 2020; Liao et al., 2020). Hoch et al. (2018) created what they claim to be the first comprehensive study of the combination of transformational, authentic, and servant leadership. Their meta-analysis found behavioral, attitudinal, and relational perceptions were the three primary outcome themes. Specifically, they found that servant leadership was positively correlated with job employee engagement, job satisfaction, organizational commitment, and trust in supervisors. Ultimately, Hoch et al. (2018) recognized there was a limited amount of servant leadership research despite the positive outcomes and they encouraged researchers to continue investigating servant leadership. This suggestion led many researchers to decide to use servant leadership with their studies resulting in numerous literature reviews and meta-analytic studies (Eva et al., 2019; Kiker et al., 2019; Langhof & Guldenberg, 2020; Lee et al., 2020; Liao et al., 2020). These studies found servant leadership led to positive outcomes like increased job performance (Langhof & Guldenberg, 2020; Lee et al., 2020), job satisfaction (Eva et al., 2019; Kiker et al., 2019; Langhof & Guldenberg, 2020; Lee et al., 2020), work engagement (Langhof & Guldenberg, 2020; Lee et al., 2020), and a culture and climate of trust (Eva et al., 2019; Langhof & Guldenberg, 2020; Lee et al., 2020).

Empirical research on servant leadership effectiveness was another common topic (Bilal et al., 2021; Liao et al., 2020). Bilal et al.'s (2021) study used goal clarity as a mediator for servant leadership. They claim that their research was the first to identify servant leadership as a project-oriented approach to leadership that enabled team effectiveness (Bilal et al., 2021). However, Liao et al.'s (2020) study investigated the potential downside to servant leadership.

Their study explored the effects of servant leadership on the leader to challenge existing research claiming servant leadership depletes the leader's energy. Their study found a correlation between the servant leader's reflective ability and depletion associated with laissez-faire behaviors. Highly reflective leaders presented low amounts of laissez-faire behaviors the next day. In contrast, those less thoughtful leaders increased laissez-faire behavior the following day. Liao et al. (2020) concluded that teaching leaders to take time to take perspective and be reflective was vital for servant leadership effectiveness.

Researchers in China also found positive results from servant leadership (Lan et al., 2021; Usman et al., 2021). Servant leadership behaviors, according to Lan et al. (2021), are positively related to a leader's sense of accomplishment which can lead to innovative behaviors in the workplace. In addition, Usman et al. (2021) found that servant leadership was positively and significantly related to workplace thriving. They described workplace thriving as centering on the employees' professional development and growth. Overall, the literature review found that many aspects of servant leadership positively impact individuals and organizations.

School Performance Impact

Based on the positive outcomes from servant leadership research in the corporate world, one would think that there would be an abundance of research investigating the impact of servant leadership in school settings. Unfortunately, there has been a limited amount of servant leadership research within a school setting (Khatri et al., 2021; Sawan et al., 2020). Sawan et al.'s (2020) review found only four articles out of 71 related to education; three were located outside the United States. The one article in the United States studied athletic directors, not school administrators. While Cerit's (2009) study of teacher job satisfaction in elementary schools in Turkey is not current literature, it is often cited because the study found a predictive correlation

between servant leadership and teachers' job satisfaction (Eva et al., 2019; Khatri et al., 2021; Van der Hoven et al., 2021).

A couple of qualitative servant leadership studies were in school settings (Chan, 2018; Kukendall & Slater, 2020). A longitudinal study focused on Hong Kong students ages 15-18 who participated in service-oriented extracurricular programs found several positive outcomes (Chan, 2018). For example, the participants exhibited better-listening skills and developed empathy, which led them to be better team players (Chan, 2018). Kukendall and Slater's (2020) study investigated trust and servant leadership between ten teachers with ten or more years of experience teaching in a K-5 setting. They found that trust increased when principals were open, showed they cared, and allowed them to participate in the decision-making process. Conversely, decreased trust occurred when the principal shared private information, did not keep their word, talked negatively about teachers, or were poor communicators. The limited amount of research on servant leadership in school settings revealed a potential gap in literature representing a research opportunity.

COVID-19 Response

Scholars have begun examining the associations of servant leadership (Fernandez & Shaw, 2020; Khatri et al., 2021; Song, 2020), grit, mindset (Mosanya, 2021), and COVID-19 shutdowns. Studies found that servant leaders tended to listen, empathize, and anticipate behavior effectively (Fernandez & Shaw, 2020; Song, 2020). In Khatri et al.'s (2021) conceptual article, they opined that teacher servant leaders are needed as the world comes out of the pandemic because they tend to be empathetic. This empathetic tendency they believed could help students both intellectually and psychologically. The role of grit and mindset as two positive psychology theories that help build resiliency was confirmed in Mosanya's (2021) study of 170

international students in the United Arab Emirates. It was found that grit and growth mindset were predictors of student ability to handle academic stress and loneliness associated with COVID-19 shutdowns. Mosanya (2021) suggested continued usage of grit and growth mindset interventions (Datu et al., 2018; Paunesku et al., 2015) to mitigate residual academic or mental concerns. Research related to COVID-19 shutdowns will continue to be forthcoming. The combination of limited research investigating servant leadership within the school setting and the need for a different type of leader to lead through the aftermath of the COVID-19 pandemic provides the foundation for the current studies investigation of grit, growth mindset, and servant leadership with school administrators.

Summary

Grit (Duckworth, 2016), mindset (Dweck, 2008), and servant leadership (Greenleaf, 1977) theories overcame the scrutiny of extensive research to become well developed. Research related to grit and student achievement (Lam & Zhou, 2019; Park et al., 2018, 2020) and mindset and student achievement (Sarrasin et al., 2018) found promising positive correlations (Lam & Zhou, 2019). It was determined from this literature review that leaders impact organizational performance (Langhof & Guldenberg, 2020). The review of literature found individual studies investigating grit, mindset, and servant leadership. Some studies investigated combinations of the theories (Burgoyne et al., 2018; Tang et al., 2019), but still, there has not been a study to look at all three theories with school administrators. The purpose of the current study is to be the first to investigate the predictive relationship between grit, mindset and servant leadership with school administrators.

CHAPTER THREE: METHODS

Overview

The objective of this study was to investigate the predictive relationship between school administrators' self-reported grit, growth mindset, and servant leadership. Chapter Three offers the foundational pieces of this study and answers the questions: why, what, when, and how. Details about the design provide why it was chosen and most appropriate for this study. The guiding research question, corresponding null hypothesis, and participants and setting provide what and who was studied. Next, a detailed description of the instruments and procedures offer how the study progressed. Finally, this section concludes with a description and analysis of the data collected.

Design

This study used a quantitative, nonexperimental, predictive correlational design. The purpose of this quantitative study was to identify and measure the relationships between the predictor variables of growth mindset and servant leadership and the criterion variable of grit with school administrators. Predictive correlational studies are primarily utilized to determine if the variables within the study can predict a designated outcome (Creswell & Guetterman, 2019; Gall et al., 2007). The purpose of the quantitative, predictive correlational design is to address problems through an objective view of the data collected from participants with the intent to predict future behaviors or outcomes (Creswell & Guetterman, 2019; Gall et al., 2007). The current study intended to objectively contribute to the educational leadership literature and further the understanding of the relationship between grit, mindset, and servant leadership.

Grit, growth mindset, and servant leadership were the three variables studied. The predictor variables were growth mindset and servant leadership. Mindset was measured using

Dweck's (2013) Growth Mindset Scale and can be defined as either fixed, which is a belief that intelligence is stable, or growth, which is a belief that intelligence is malleable. Servant leadership was measured using Liden et al.'s (2015) Servant Leadership-7 (SL-7) survey. Liden et al.'s (2008) servant leadership definition included the following seven characteristics: emotional healing, creating value for the community, conceptual skills, empowering, helping subordinates grow and succeed, putting subordinates first, and behaving ethically. The criterion variable was grit as measured by the Grit-S Scale (Duckworth & Quinn, 2009). Grit was defined as a person's perseverance of effort (PE) and consistency of interest (CI) (Duckworth et al., 2007).

Research Question

RQ: How accurately can grit be predicted from a linear combination of servant leadership and growth mindset for administrators in a school district in Utah?

Hypothesis

H_0: There is no statistically significant predictive relationship between the criterion variable, grit, measured by the Grit-S (Duckworth & Quinn, 2009) and the linear combination of predictor variables, growth mindset, measured by Dweck's (2013) Growth Mindset Scale, and, servant leadership, measured by Liden et al.'s (2015) SL-7 for school administrators in a large school district in Utah.

Participants and Setting

The population of this study included school administrators which included principals, assistant principals, and interns in a school district in Utah. Within the district, there was a total number of 215 administrators. The elementary school level there were 62 principals and 50 interns. The junior high level there were 17 principals and 36 assistant principals. The high

school level there were 8 principals, 29 assistant principals, and 2 interns. At the alternative schools, there were 8 principals, 2 assistant principals, and 2 interns.

This study's participants were drawn from a convenience sample of school administrators located in a Utah school district during the school year 2021-2022. A total of 95 principals, 66 assistant principals, and 54 interns will be contacted using an email invitation through Survey Monkey. For this study, the total number of participants was 68. Gall et al. (2007) stated a total of 66 participants are needed when assuming a medium effect size with a statistical power of 0.7 at an alpha level of 0.05. The demographic data collected in this study included: gender, school setting, current position, and number of years as an administrator. The sample consisted of 36 males and 32 females. Most of the participants identified as elementary administrators (48.5%), principals (50%), and with over ten years of experience (57.3%). There was 39 (57.3%) administrators with over ten years of experience. Twelve (17.6%) of administrators annotated five to nine years of experience. There were 17 (25%) participants with less than five years of experience.

The setting for this study was a large school district in Utah. This school district educates approximately 73,000 students in kindergarten through twelfth grade. There are 95 schools in the district: 62 elementary schools, 17 junior high schools, 1 online K-6 school, 1 online 7-12 school, 9 high schools, and 5 alternative setting schools.

Instrumentation

This study used self-reported, reliable, and valid Likert-scale surveys for each variable. Researchers who choose a predictive design often choose self-reporting measures and it is also common practice to have one reliable and valid instrument per variable (Creswell & Guetterman, 2019; Gall et al., 2007). Each of the following instruments meets the expectation of 0.80 or

higher for the reliability coefficient (Creswell & Guetterman, 2019; Gall et al., 2007). Servant leadership will be measured by Liden et al.'s (2015) SL-7 instrument. Duckworth and Quinn's (2009) Grit-S scale will be used to measure grit. Finally, Dweck's (2013) Growth Mindset Scale will be used to measure mindset.

Grit Scale

The purpose of Duckworth and Quinn's (2009) Grit-S Scale was to measure perseverance of effort (PE) and consistency of interest (CI) using a validated but shorter measure of grit. While Duckworth et al. (2007) found a Cronbach's alpha of 0.85 for the original grit scale (Grit-O), they thought the scale could be susceptible to social desirability bias. This concern for bias, the lack of testing for predictive validity, marginal scores for comparative fit index (CFI) (0.83), and the root mean square error of approximation (RMSEA) (0.11) caused Duckworth and Quinn (2009) to develop an eight-question scale called the Grit-S Scale. They conducted four studies to measure the validity and reliability of the shorter scale. They were able to eliminate two items from each subscale by running a predictive validity test of the original 12 items on the Grit-O. The eight selected items represent the highest predictive validity. Duckworth and Quinn (2009) continued to test the scale through a confirmatory factor analysis which confirmed the two facets of grit as consistency of interest (CI) and perseverance of effort (PE). Across the four studies, they delivered a Cronbach alpha ranging from 0.73 to 0.83, which according to Gall et al. (2007), will be within the acceptable range for instrument internal reliability. Finally, they also determined the Grit-S to be reliable over a period of time by conducting a test-retest.

The Grit-S scale has been used in many peer-reviewed articles as well (Jachimowicz et al., 2018; Lam & Zhou, 2019; Tang et al., 2019; Usher et al., 2019). According to Lam and Zhou's (2019) meta-analysis, researchers consistently reported "Cronbach's α of 0.80 or above

for measuring overall grit" (p. 1660). Tang et al. (2019) reported Cronbach's alpha scores as separated by subcategories: consistency of interest (CI) was 0.70 and perseverance of effort (PE) was 0.78. Within Jachimowicz et al.'s (2018) three studies, they consistently found $\alpha = 0.73$ with the Grit-S. Finally, Rego et al. (2021) also reported Cronbach's α of 0.73 to 0.88.

The Grit-S Scale (Duckworth & Quinn, 2009) requests participants score themselves on each of the eight items. An example of one of the items is "I am a hard worker". Each response for questions 2, 4, 7, and 8 is scored as follows: 5 = very much like me, 4 = mostly like me, 3 = somewhat like me, 2 = not like me, and 1 = not like me at all. For questions 1, 3, 5, and 6, reverse scoring is used as follows: 1 = very much like me, 2 = mostly like me, 3 = somewhat like me, 4 = not much like me, and 5 = not like me at all. The directions for the scale state that the scorer is to find the mean. A score of 5 is the highest score and translates to being extremely gritty, whereas a score of 1 is the lowest score and can be interpreted as having no grit (Duckworth & Quinn, 2009). Gonzalez et al. (2020) suggested researchers use the total score instead of using the subscales of perseverance of effort and consistency of interest.

The survey took less than two minutes to accomplish. It was administered through an online survey. Questions 1, 3, 5, and 6 measure CI and questions 2, 4, 7, 8 measure PE. Written permission was obtained to administer (See Appendix C).

Servant Leadership Scale

Liden et al.'s (2015) Servant Leadership-7 (SL-7) scale was used to measure servant leadership. It was developed by Liden et al. (2015) to provide researchers with the option of a shorter global measure of servant leadership. Eva et al.'s (2019) extensive review of servant leadership literature identified the SL-7 as one of the top three servant leadership surveys based on the following criteria: item generation, content adequacy, questionnaire administration, factor

analysis, internal consistency, construct validity, and replication ability.

Liden et al.'s (2015) SL-7 survey included the following seven dimensions: emotional healing, creating value for the community, conceptual skills, empowering, helping subordinates grow and succeed, putting subordinates first, and behaving ethically. The SL-7 was extensively tested for both validity and reliability and was compared to the longer version SL-28 (Liden et al., 2015). They identified seven items from the SL-28 with the highest exploratory factor analysis loadings to use for the shorter version survey (SL-7). The three separate validation studies for the SL-7 found Cronbach alpha's ranging from .80 to .89 (Liden et al., 2015). Construct validity was determined using confirmatory factor analyses. Convergent validity was determined by comparing the SL-7 with the following servant leadership scales: Liden et al.'s (2008) SL-28 ($\alpha = .97$); Ehrhart (2004) ($\alpha = .96$); and van Dierendonck and Nuijten's (2011) Servant Leadership Survey (SLS) ($\alpha = .95$). Using two structural equation path models, criterion-related validities mirrored the results from the SL-28 (Liden et al., 2015). Researchers have continued to use this instrument and have confirmed the SL-7's validity and reliability as they met the required Cronbach's alpha of 0.70 or higher (Eva et al., 2019; Usman et al., 2021).

The SL-7 has a total of seven items and results are measured as a single global factor (Liden et al., 2015). An example of one of the items is "I put my subordinates' best interests ahead of my own". The instrument uses a seven-point Likert scale with the following meanings: 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neutral, 5 = slightly agree, 6 = agree, and 7 = strongly agree (Liden et al., 2015). The SL-7 uses a global measure of the sum of the scores (Liden et al., 2015).

The instrument can be administered either paper and pen or online. For this study, the survey was administered online and it took less than two minutes to administer. Written

permission was obtained to administer (See Appendix D).

Mindset Scale

Dweck's (2013) Growth Mindset Scale was used for this study. Dweck (2013) stated the purpose of this scale was so that people could self-assess and report their perceptions of their intelligence. According to Dweck (2013), the scale was developed to be "used to predict the person's own self-goals, self-judgments, and helpless vs. mastery-oriented reactions" (p. 175). This scale consists of three items using a 6-point Likert-scale: 1 = strongly agree; 2 = agree; 3 = mostly agree; 4 = mostly disagree; 5 = disagree; and 6 = strongly disagree. An example of one of the items is "You can learn new things, but you can't really change your basic intelligence". Several studies provided initial reliability and validation of the measure with alpha ranges from 0.93 to 0.98. (Dweck et al., 1995; Hong et al., 1999; Levy et al., 1998). Dweck et al. (1995) conducted test-retest for reliability using a two-week window and found an alpha score of 0.82. Dweck et al.'s (1995) series of six studies tested for construct validity. They, also, claimed the measurement had discriminant validity from other measures of cognitive ability like the Scholastic Aptitude Test. Many studies continued to use this scale to measure mindset (Caniëls et al., 2018; Rege et al., 2021; Troche & Kunz, 2020). Troche and Kunz's (2020) recent study confirmed these initial studies as they reported a Cronbach's alpha of about 0.90.

The instrument can be administered either online or pen and paper. It was administered through an online survey and it took participants less than one minute to complete. The researcher found the average of the scores from the three questions. Scores can range from 1 to 6 with the higher score indicating a tendency towards growth mindset (Dweck et al., 1995). A score of three or below indicates a tendency toward fixed mindset (Dweck et al., 1995). Written permission was obtained to administer (See Appendix E).

Procedures

The researcher went through several steps to seek approval for the study. First, the researcher requested permission to use the instrument surveys (See Appendices C-E). A research study request like the paperwork for the International Review Board (IRB) was submitted to the proposed school district and approved through the school district Assessment Director (See Appendix A). Once the proposal was approved by the chair and committee, the researcher submitted to Liberty University the IRB application for approval (See Appendix B).

Survey Monkey was used to create an electronic version of all three surveys. The researcher was told during the approval process with the school district that email addresses would not be provided. Therefore, the researcher compiled a list of email addresses for all district principals, assistant principals, and elementary interns from the district website. The researcher does not currently work for the district and has not been in the district for several years, so the first email to participants re-introduced the researcher and previewed the approved study. After this initial contact, participants received the surveys from Survey Monkey where they were instructed to complete the informed consent form before starting the surveys (Appendix F). Within this survey, participants were asked four demographic questions: (a) gender, (b) school, (c) current position, and (d) number of years as an administrator. The surveys consisted of the following item numbers: Grit-S has seven items, Growth Mindset Scale has three items, and SL-7 has seven items for a total of 18 items. Survey Monkey assessed that it took participants about four minutes total time to complete all three surveys.

Survey Monkey offers an option to disable any IP address tracking, which was selected to ensure anonymity. The surveys were open for three weeks for participants to complete. A reminder email was sent after seven days. Survey Monkey has an option to export data to IBM's

Statistical Package for Social Sciences (SPSS), this was used once the survey window closed. The data from the surveys is stored with file password protection on the researcher's computer. Once the data was collected, it was entered and analyzed using SPSS version 28.

Data Analysis

A multiple linear regression was used to analyze the data to determine if there was a predictive relationship between the criterion variable (grit) and the linear combination of predictor variables (mindset and servant leadership). Gall et al. (2007) stated that it is appropriate to correlate predictor variable scores with the criterion variable scores when conducting a prediction study. As this study consists of three scaled variables, a multiple regression statistic is the appropriate statistic to use to analyze the data (Creswell & Guetterman, 2019; Gall et al., 2007). In this study, the predictor variables (mindset and servant leadership) and the criterion variable (grit) are categorical which is appropriate for a multiple linear regression and a prediction study (Gall et al., 2007). The purpose of the study was to determine if mindset and servant leadership can predict grit. The instruments that were used are reliable and valid as was previously explained.

The first step in analyzing the collected data for a quantitative, predictive correlational study was data screening (Warner, 2013). A visual screening of data was conducted to check for missing data points and inaccuracies within the spreadsheet (Warner, 2013). Data screening also involved examining the scatter plot to identify outliers and to determine if the shape of the data is normally distributed (Warner, 2013). The assumption of bivariate outliers was conducted using a scatter plot to determine if there were extreme bivariate outliers existed (Warner, 2013). The assumption of linearity and assumption of bivariate normality distribution was conducted to look for the linear relationship between the predictor and criterion variables using the scatter plot. The

assumption of non-multicollinearity was conducted to determine if there was a high correlation between variables using a Variance Inflation Factor (VIF) (Warner, 2013). According to Warner (2013), this test is run because if a predictor variable (x) is highly correlated with another predictor variable (x), they essentially provide the same information about the criterion variable. If the VIF is too high (greater than 10), then multicollinearity is present. Acceptable values are between 1 and 5. Descriptive statistics were obtained for all continuous variables. A score from each measure was obtained for each participant. The null hypothesis was rejected at the 95% confidence level. Effect size was computed using. The data was entered and analyzed using IBM SPSS version 28.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this quantitative, predictive correlational study was to determine if servant leadership and growth mindset could predict grit among administrators. The predictor variables were servant leadership and growth mindset. The criterion variable was grit. A multiple linear regression was used to test the hypothesis. The Results section includes the research question, null hypothesis, data screening, descriptive statistics, assumption testing and results.

Research Question

RQ: How accurately can grit be predicted from a linear combination of servant leadership and growth mindset for administrators in a school district in Utah?

Null Hypothesis

H_0: There is no statistically significant predictive relationship between the criterion variable, grit, measured by the Grit-S (Duckworth & Quinn, 2009) and the linear combination of predictor variables, growth mindset, measured by Dweck's (2013) Growth Mindset Scale, and, servant leadership, measured by Liden et al.'s (2015) SL-7 for school administrators in a large school district in Utah.

Data Screening

The researcher sorted the data and scanned for inconsistencies on each variable. Two participants did not complete the SL-7 survey, which resulted in the researcher removing their data from the data set (Gall et al., 2007). Five questions with missing data were also found (2 from the SL-7 and 3 from the Grit-S). The researcher addressed this oversight by finding the mean for the missing data (Gall et al., 2007; Warner, 2013). The mean was then inputted into the empty cells (Gall et al., 2007; Warner, 2013). A matrix scatter plot was used to detect bivariate

outliers between predictor variables and the criterion variable. Figure 1 revealed the potential for bivariate outliers between the predictor and the criterion variables, which led the researcher to analyze the data using the box and whisker plot in Figure 2.

Figure 1

Matrix Scatter Plots with Extreme Outliers Annotated

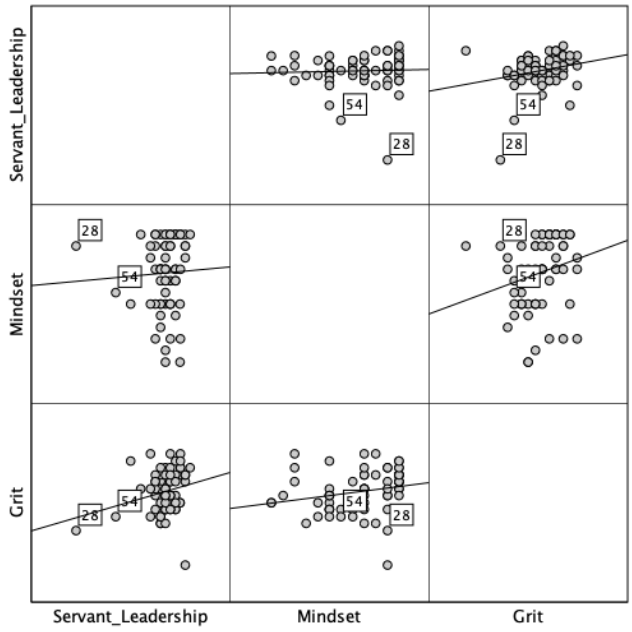
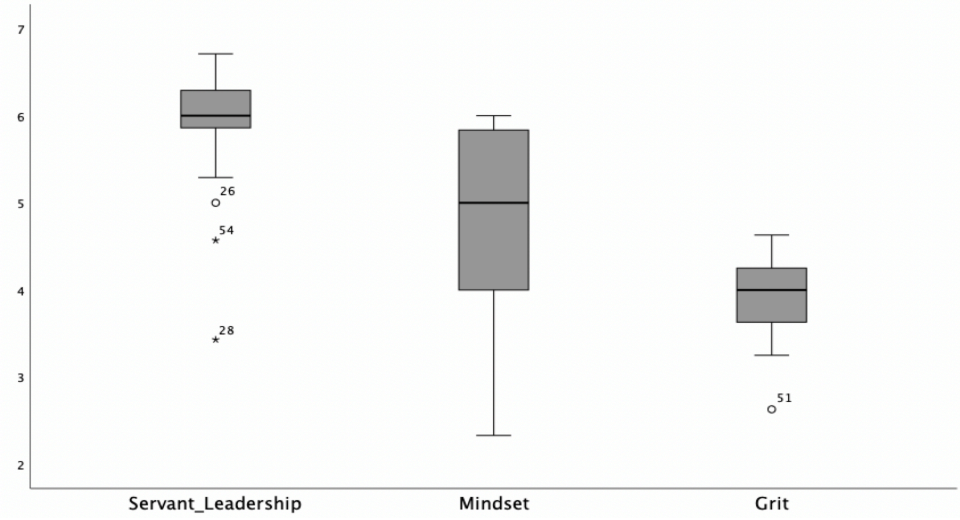


Figure 2

Box and Whisker Plot



Looking at the box and whisker plot in Figure 2, the analysis from SPSS determined there were two extreme outliers and one outlier within the SL-7 data, and one outlier within the Grit-S data. The researcher decided to leave all outliers in the data set, as these responses might occur naturally within the population (Gall et al., 2007; Rovai et al., 2014; Warner, 2013). The location of the extreme outliers in reference to the fit line in Figure 1 also provides support for including the data in the study (Rovai et al., 2014).

Descriptive Statistics

Descriptive statistics were obtained on each of the variables. The sample consisted of 68 participants. Scores on the Grit-S range from 1 to 5 with 5 indicating high levels of self-attributed grit. The Growth Mindset Scale ranges from the lowest score of 1 to the highest score of 6. A score of 6 indicates high levels of growth mindset. Scores on the SL-7 range from 1 to 7. A score of 7 indicates a high level of self-reported servant leadership. Table 1 provides the descriptive statistics for each variable.

Table 1

Descriptive Statistics

Variable	*n*	Min.	Max.	*M*	*SD*
Servant Leadership	68	3.43	6.71	5.99	0.48
Mindset	68	2.33	6.00	4.89	1.02
Grit	68	2.63	4.63	3.95	0.38

Assumption Testing

Assumption of Linearity

The multiple regression requires that the assumption of linearity be met. Linearity was examined using a scatter plot. The assumption of linearity was met. See Figure 1 for the matrix scatter plot.

Assumption of Bivariate Normal Distribution

The multiple regression requires that the assumption of bivariate normal distribution be met. The assumption of bivariate normal distribution was examined using a scatter plot. The assumption of bivariate normal distribution was met. Figure 1 provides the matrix scatter plot.

Assumption of Multicollinearity

A Variance Inflation Factor (VIF) test was conducted to ensure the absence of multicollinearity. This test was run because if a predictor variable (x) is highly correlated with another predictor variable (x), they essentially provide the same information about the criterion variable. If the VIF is too high (greater than 10), then multicollinearity is present. Acceptable values are between 1 and 5. The absence of multicollinearity was met between the variables in this study. Table 2 provides the collinearity statistics.

Table 2

Collinearity Statistics

		Collinearity Statistics	
Model		Tolerance	VIF
1	Servant Leadership	0.998	1.002
	Mindset	0.998	1.002

a. Dependent Variable: Grit

Results

A multiple regression was conducted to see if there was a relationship between grit, growth mindset, and servant leadership of school administrators. The predictor variables were growth mindset and servant leadership self-reported scores. The criterion variable was self-reported scores for grit. The researcher rejected the null hypothesis at the 95% confidence level where $F(2, 65) = 3.53$, $p = 0.035$. Table 3 provides the regression model results.

Table 3

Regression Model Results

Model		*SS*	*df*	*MS*	*F*	Sig.
1	Regression	0.940	2	0.470	3.532	0.035[b]
	Residual	8.653	65	0.133		
	Total	9.594	67			

a. Dependent Variable: Grit
b. Predictors: (Constant), Growth Mindset, Servant Leadership

The model's effect size was large where $R = 0.313$. Furthermore, $R^2 = 0.098$ indicating that approximately 10% of the variance of grit can be explained by the linear combination of growth mindset and servant leadership. Table 4 provides a summary of the model.

Table 4

Model Summary

Model	*R*	R^2	Adjusted R^2	*SEM*
1	0.313	0.098[a]	0.070	0.36487

a. Predicators (Constant), Growth Mindset, Servant Leadership

Because the researcher rejected the null, analysis of the coefficients was required. Based on the coefficients, it was found that servant leadership *(*$p = 0.063$) and growth mindset ($p =$

0.080) by themselves are not statistically significant and do not predict grit. The combination of the two predicator variables, though, predicts grit ($p < 0.001$). Table 5 provides the coefficients.

Table 5

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	*SE*	*β*	*t*	Sig.
1	(Constant)	2.515	0.590		4.260	< 0.001
	SL	0.176	0.093	0.223	1.894	0.063
	Mindset	0.078	0.044	0.210	1.779	0.080

a. Dependent Variable: Grit

CHAPTER FIVE: CONCLUSIONS

Overview

Literature related to the theories of grit, servant leadership, and growth mindset informed the present study. While this review of literature revealed many positive outcomes associated with the usage of the three theories like improved employee performance, engagement, and commitment, there had not been a study investigating all three of the theories involving school administrators. Chapter five provides a discussion which analyzes the results from this study and reveals how the results relate to the current literature. This chapter concludes with the implications of the findings, limitations, and suggestions for future research.

Discussion

This predictive correlation study aimed to investigate how accurately grit could be predicted by a linear combination of servant leadership and growth mindset with school administrators. In this study, the criterion variable was grit, and the predictive variables were servant leadership, and growth mindset. This study represents the first time these variables have been investigated together. To gather data, online surveys were provided to school administrators in a district in Utah. The researcher sent an email to 215 administrators within the designated district. These administrators included principals, assistant principals, and interns working in the district's high schools, junior high schools, elementary schools, and alternate schools. Sixty-eight administrators participated in the study for an overall 32% participation rate. In addition to the three instruments used, participants were asked to provide their gender, school location, current position, and years as an administrator. The sample was almost evenly split between female (n = 32, 47%) and male (n = 36, 53%) participants. A majority of participants were located in the

elementary school setting (n = 33, 49%), identified their position as principal (n = 34, 50%), and annotated ten plus years of administrator experience (n = 39, 57%).

The three instruments used in this study were SL-7 (Liden et al., 2015), Growth Mindset Scale (Dweck, 2013), and Grit-S (Duckworth & Quinn, 2009). The researcher determined the internal reliability of each instrument for this study. Within the current study, the Growth Mindset Scale's Cronbach's alpha score was 0.885, which can be considered in the good reliability range. This score is supported by Troche and Kunz's (2020) study, as they reported a Cronbach's alpha of 0.90. Unfortunately, Cronbach's alpha scores for both the SL-7 and the Grit-S were low and could represent a problem with the internal reliability of the scales.

The SL-7 Cronbach's alpha score for this study was 0.626, indicating questionable internal reliability. Most current research found more acceptable reliability scores for the SL-7. For instance, Usman et al.'s (2021) study of Chinese employees reported a Cronbach's alpha of 0.953. Khan et al.'s (2022) study of employees in Pakistan reported a Cronbach's alpha of 0.921. In the original research by Liden et al. (2015), it was noted that they relied heavily on the rigorous development of the SL-28 for the creation of SL-7. They commented that the small decreases in reliability between the two surveys were negligible. This slight decrease in reliability might have contributed to the current study's lower Cronbach's alpha score.

Finally, Cronbach's alpha score for the Grit-S scale was 0.564, representing poor internal reliability. Current research consistently found internal reliabilities within acceptable Cronbach's alpha ranges from 0.73 (Jachimowicz et al., 2018) to 0.76 (Rego et al., 2021) to 0.816, 0.897 (Gonzalez et al., 2020). Recent psychometric meta-analyses, though, assessed potential problems associated with the internal reliability of the Grit-S (Gonzalez et al., 2020; Rocha & Lenz, 2022). Gonzalez et al. (2020) found good alpha ranges (α = 0.816, 0.897), but they expressed concern

that the scale was unidimensional with an underrepresentation of perseverance of effort within the scale. Rocha and Lenz's (2022) analysis noted they had to eliminate about 17% of studies due to a lack of reporting internal reliability. They concluded that the lack of reporting this score could indicate problems associated with the internal reliability of the Grit-S that researchers were unwilling to report. They noted, though, that those who reported Cronbach's alpha found ranges from 0.68 to 0.73. Based on this recent research, the current study may contribute to the conclusion that there are internal reliability problems associated with the Grit-S.

The null hypothesis stated that there is no statistically significant predictive relationship between grit and the linear combination of growth mindset and servant leadership. This hypothesis was investigated using a multiple linear regression analysis within SPSS software version 28. The researcher rejected the null hypothesis, $F(2,65) = 3.53$, $p = 0.035$, $R^2 = 0.098$. The results suggest a significant statistical predictive relationship between grit and the linear combination of growth mindset and servant leadership. Using the data from the review of coefficients, the researcher found that growth mindset and servant leadership by themselves are not statistically significant. However, these results seem to support that a linear combination of servant leadership and a growth mindset can predict grit.

Previous studies contradict the coefficient results in the current study, as both Burgoyne et al. (2018) and Karlen et al. (2019) found a positive, statistically significant correlation between grit and a growth mindset. According to Burgoyne et al.'s (2018) study, mindset interventions helped participants become slightly grittier, highlighting a positive correlation between grit and growth mindset independently. Karlen et al. (2019) also found positive correlations between grit and growth mindset when focusing on student academic achievement.

While these studies do not fully align with the current study, they show the relationship between grit and growth mindset that was used to create the foundation for the present study.

Additional studies investigating the correlation between leadership, growth mindset (Kouzes & Posner, 2019), and grit (Caza & Posner, 2019; Schimschal & Lomas, 2018) support the current study. Kouzes and Posner (2019) compared fixed mindset managers to growth mindset managers. They found that growth mindset managers engaged in modeling, inspiring, challenging, enabling, and encouraging leadership behaviors more often than fixed mindset managers. Using the same leadership behaviors, Caza and Posner (2019) found that leaders with high levels of grit had a positive relationship with all the leadership behaviors except inspiring a shared vision. Schimschal & Lomas (2018) closely mirror the results of the current study. They found that grit statistically predicted positive leadership, $F(1, 98) = 11.597$, $p < 0.001$, $R^2 =$ 9.7%. They described positive leadership as setting lofty achievable goals, communicating a clear vision, providing actionable feedback, and creating an encouraging culture. These empirical studies consistently concluded that having a gritty, growth mindset, and servant leader within an organization was valuable.

Qualitative research also consistently reported that grit (Choi et al., 2020; Klocko et al., 2019), growth mindset (Jeanes, 2021), and servant leadership (Chan, 2018; Kukendall & Slater, 2020) are valuable leadership traits and approaches specifically for educational leaders to possess. In these qualitative studies, gritty leaders (Choi et al., 2020), growth-minded leaders (Jeanes, 2021), and servant leaders (Kukendall & Slater, 2020) are consistently viewed as making positive impacts on their schools. Gritty leaders are known for their passion and perseverance. Growth-mindset leaders model their belief that one can learn through effort. Finally, servant leaders serve their organizations by empowering their employees and

encouraging connections with the community. Previous research supports the current study, which investigated the collective power of grit, growth mindset, and servant leadership.

Implications

Educators face a post-pandemic environment that continues to force educational leaders to make difficult decisions about the learning within their schools (Huck & Zhang, 2021; Parveen et al., 2022). A passionate, perseverant, lifelong learner who focuses on helping others succeed could be the type of leader needed in the American education system to battle the learning loss associated with COVID-19 shutdowns. This study sought to add to the literature on grit, growth mindset, and servant leadership while providing school administrators with a leadership framework.

This study contributes to the literature as it represents the first investigation into the relationship between grit, growth mindset, and servant leadership with school administrators. It reveals that while grit, growth mindset, and servant leadership are valid theories to apply in a school setting, they are insufficient by themselves. However, they become more through the sum of their parts at the intersection of the three theories. The positive correlation between the collective power of a growth mindset and servant leadership on grit suggests that this could be a viable framework for school leaders.

Educational research and practice have heavily relied on transformational leadership (Gumus et al., 2018). While this form of leadership has positively impacted schools, the current study could be the catalyst to shift thinking in educational leadership research and implementation towards a combination of grit, growth mindset, and servant leadership for school leaders. This proposed leadership framework would use servant leadership as a conduit through which grit and a growth mindset would be encouraged (Chan, 2016). In addition, this framework

could be incorporated into college-level courses and district leadership professional development, thus encouraging future research investigating the collective power of grit, growth mindset, and servant leadership.

Limitations

This study contributes to the research on grit, growth mindset, and servant leadership by providing empirical evidence that supports the relationship between the variables. However, several limitations need to be addressed. The first limitation is the sample population. Using a convenience sample of administrators in one school district in Utah limited the ability to generalize the findings to the population of K-12 administrators. The study was conducted shortly after the conclusion of the school year, which could explain the higher number of principals who participated versus interns. Interns within this district are on a teacher contract and are not required to work during the summer. This study had the minimal number of participants needed to find statistical significance, but the sample size potentially contributed to the lower statistical power (Rovai et al., 2014). A second limitation of this study is the low Cronbach's alpha scores of SL-7 and Grit-S survey. Since the scores in this study were low, the researcher's ability to draw conclusions was restrained. A third limitation, which potentially contributed to the low Cronbach's alpha scores, was the use of the shorter, self-reported versions of the surveys. Shorter version surveys can create a lower statistical significance (Gall et al., 2007; Rovai et al., 2014; Warner, 2013). Self-reported surveys also can experience bias in responses (Gall et al., 2007; Rovai et al., 2014).

Recommendations for Future Research

Grit, growth mindset, and servant leadership are theories focused on success. The researcher believes these theories emphasize leadership traits and actions that can positively

impact students, teachers, and parents. Since this is the first time these theories have been investigated together, there are several recommendations for future research.

The first recommendation is to replicate this study with a different sample population. The purpose of the original theoretical research for all three theories was to discover what makes successful people successful (Duckworth, 2016; Dweck, 2008; Greenleaf, 1977). However, the population for the current study came from the general administration pool in one school district. It might be interesting to explore grit, growth mindset, and servant leadership with award-winning or high-performing administrators or create a more extensive collection of administrators by investigating several school districts within the same state or region.

Secondly, the longer versions of the instruments could increase internal reliability and statistical significance. The researcher chose to use shorter versions for each instrument to minimize the time participants needed to complete the study. Since it took participants approximately four minutes to complete all three instruments, it might be worth using the longer versions of the scales to improve the internal reliability and statistical significance potentially. Since two of the surveys reported low Cronbach's alpha scores, it might also be beneficial to evaluate further the internal reliability of the SL-7 and Grit-S within a K-12 school setting.

Finally, the last suggestion for future research is to investigate grit, growth mindset, and servant leadership using a mixed-method design. Mixed-method designs combine qualitative and quantitative measures. This combination of methods might give researchers a more precise outcome to provide practicing administrators with a leadership framework encompassing all the positive traits of grit, growth mindset, and servant leadership theories.

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APPENDIX A: DISTRICT SITE APPROVAL

July 16, 2021

Dawn Lyons
[redacted]

Dear Ms. Lyons,

The application you submitted has been reviewed by the Research and Assessment Review Committee. The research project entitled "The Predictive Relationship between Grit, Servant Leadership, and Mindset in Public School Administrations" is approved for the 2021-2022 school year.

As a researcher you are responsible for all aspects of the study. District resources may not be used to conduct the study. All costs associated with the study are paid by the researcher. Please request data, as needed, from the [redacted] Assessment Department by submitting a data request [redacted] under "Requests>Custom Data Request" or calling [redacted]

Text

Approval at the district level allows each site to then determine whether to participate in your proposed research study or project. District approval, therefore, is not a guarantee that you will be able to conduct the study at the locations, with the students you wish to include in the study or project.

Please remember that any anticipated changes to the study and approved procedures must be submitted to this office prior to implementation. It is our understanding that you will protect the anonymity of individuals involved in the research.

We hope your research proves insightful and fulfilling.

[redacted]

APPENDIX B: IRB APPROVAL

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

June 6, 2022

Dawn Lyons
Rich Jensen

Re: IRB Exemption - IRB-FY21-22-970 THE PREDICTIVE RELATIONSHIP BETWEEN GRIT, SERVANT LEADERSHIP, AND GROWTH MINDSET IN PUBLIC SCHOOL ADMINISTRATORS

Dear Dawn Lyons, Rich Jensen,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:104(d):

Category 2.(i). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording).
The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects.

Your stamped consent form(s) and final versions of your study documents can be found under the Attachments tab within the Submission Details section of your study on Cayuse IRB. Your stamped consent form(s) should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document(s) should be made available without alteration.

Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this exemption or need assistance in determining whether possible modifications to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,
G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office

APPENDIX C: SURVEY AND PERMISSION FOR GRIT-S

Grit-S 8-item Grit Scale: https://angeladuckworth.com/research/

[External] Re: Grit-S instrument for dissertation

CO Catriona O'Rourke [redacted]
To: Lyons, Dawn Elizabeth
Tue 4/27/2021 4:45 PM

[EXTERNAL EMAIL: Do not click any links or open attachments unless you know the sender and trust the content.]

Hi Dawn,

By way of quick introduction, my name is Cat and I am Angela's executive assistant. I hope you are keeping well! Thank you for your inquiry.

All researchers and educators are welcome to use the scales Dr. Duckworth developed for non-commercial purposes. See her personal website for details.

There are no restrictions for non-commercial uses for research, translation into other languages, or education as long as the work is cited properly. Note that these scales are copyrighted and therefore cannot be published or used for commercial purposes or wide public distribution. Journalists and book authors should not reproduce these scales nor any part of them.

On a cautionary note, these scales were originally designed to assess individual differences rather than subtle within-individual changes in behavior over time. Thus, it's uncertain whether they are valid indicators of pre- to post-change as a consequence of interventions. Generally, she also discourages the use of self-report scales in high-stakes settings where faking is a concern (e.g., admissions or hiring decisions). Please see the article Measurement Matters for more information.

With grit and gratitude,

Cat

Catriona O'Rourke
Executive Assistant
Character Lab
www.characterlab.org

APPENDIX D: PERMISSION FOR SL-7

RL Robert Liden

To: Lyons, Dawn Elizabeth

Sat 3/19/2022 4:39 PM

[redacted]

Subject: [External] Re: Request to use SL-7 for dissertation

[EXTERNAL EMAIL: Do not click any links or open attachments unless you know the sender and trust the content.]

Dear Dawn,
You are welcome to use our scale and it is attached along with a recent article. A note of caution, however. The self-report version did not undergo the same rigorous scale development process. Also, you may experience range restriction problems given that social desirability response bias, common with self-reported leadership measures, may result in a high mean and low variance on the scale.
Best of luck with your research,
Bob Liden

APPENDIX E: MINDSET SCALE PERMISSION

Stanford SPARQ <stanford_sparq@stanford.edu>
Wed 6/9/2021 2:44 PM
To: Lyons, Dawn Elizabeth
[EXTERNAL EMAIL: Do not click any links or open attachments unless you know the sender and trust the content.]

Hi Dawn,

Thank you for your email. SPARQtools offers the 'Kind of Person' Implicit Theory Scale as well as the Growth Mindset Scale; you are welcome to use these two scales. All materials on SPARQtools are free for noncommercial use. We recommend you cite the original study, and we would appreciate you crediting Stanford SPARQ. Let me know if you have further questions.

Best,
Clarissa
Lab Manager

Stanford SPARQ
Jordan Hall, Bldg 420
Stanford, CA 94305
sparq.stanford.edu | 650.723.9765

APPENDIX F: EMAIL TO PARTICIPANTS

Consent

Title of the Project: The Predictive Relationship between Grit, Servant Leadership, and Growth Mindset in Public School Administrators
Principal Investigator: Dawn Lyons, Ph.D., candidate., Liberty University School of Education

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be a school principal, assistant principal, or intern within the Davis School District. Taking part in this research project is voluntary. This study was approved through the district's assessment director.

Please take time to read this entire form and ask questions before deciding whether to take part in this research project.

What is the study about and why is it being done?

The purpose of the study is to determine if servant leadership and growth mindset can predict grit with school administrators. This study is being conducted because these theories are individually powerful, but we live in a time where school administrators are being expected to produce high levels of student achievement. It is the hope of the researcher that there will be a relationship between these theories that can then be developed within school leaders.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following thing:

1. Complete a survey that should take you about 4 minutes or less to take, as there are only 18 questions.

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

There is a societal benefit to participating in this study as your answers will help further our understanding of the dynamics of school leadership. Grit, growth mindset, and servant leadership have not been studied in combination. You could be a part of research that shows the importance of the combination of these leadership traits with educational leaders.

What risks might you experience from being in this study?

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

How will personal information be protected?

The records of this study will be kept private. Research records will be stored securely, and only the researcher will have access to the records

- Participant responses will be anonymous
- 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.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether 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 prior to submitting the survey.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please exit the survey and close your internet browser. Your responses will not be recorded or included in the study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Dawn Lyons. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [redacted] You may also contact the researcher's faculty sponsor, Dr. Rich Jensen, at [redacted]

Whom do you contact if you have questions about your rights as a research participant?

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. 2845, Lynchburg, VA 24515 or email at irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

Before agreeing to be part of the research, please be sure that you understand what the study is about. You can print a copy of the document for your records. If you have any questions about the study later, you can contact the researcher using the information provided above.