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Statement of Academic Integrity

I certify that I am the author of the work contained in this dissertation and that it represents my original research and conclusions. I pledge that apart from my committee, faculty, and other authorized support personnel and resources, I have received no assistance in developing the research, analysis, conclusions, or text contained in this document, nor has anyone written or provided any element of this work to me.

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HOOD COLLEGE

Leader Efficacy and Work Engagement: Implications for School Leaders

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Cheryl L. Dyson

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DOCTORAL COMMITTEE

The members of the committee appointed to examine the dissertation of Cheryl L. Dyson find that this dissertation fulfills the requirements and meets the standards of the Hood College Doctoral Program in Organizational Leadership an recommend that it be approved.

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DEDICATION

This dissertation study is dedicated to every school leader who fights daily on behalf of all students and the many educators and families who make public education great. To my parents who taught me the value of hard work, respect, and commitment – I will love you forever. Finally, to my husband, Charles Dyson, and children, Teresa, Trevor, Tyler, and Ashley – I hope that my perseverance serves as a model for you. Thank you for your unconditional love and support.

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Leader Efficacy and Work Engagement: Implications for School Leaders

Cheryl L. Dyson

Committee Chair: Jennifer Locraft Cuddapah, Ed.D.

ABSTRACT

School leaders play a significant role in cultivating the right conditions for teaching and learning. The current educational landscape requires 21st century leaders to continually adapt to changing federal, state, and local school district expectations and accountability measures in order to be effective. Simultaneously, the needs of staff and students present complexities that compound the responsibility of school leaders. Managing the various tasks on a daily basis while remaining focused on instruction requires fortitude. It is essential that school leaders possess the knowledge, skills, and abilities necessary to build strong organizational cultures that result in favorable outcomes for students. This quantitative study is grounded in Bandura's social cognitive theory which focuses on efficacy and human agency including individual cognition, behavior, and context. In this study, leader cognition is defined as leader efficacy to perform a task and engage in the leadership environment. The purpose of this study was to examine the relationship between leader efficacy and work engagement. This study involves an analysis of secondary data from a national sample of 5,620 public-school principals who completed the National Teacher and Principal Survey Principal Questionnaire in 2015-2016. The chi-square test of independence was used to test the independent and dependent variables in the study. The results showed a relationship between leader efficacy and work engagement (phi = .106). Logistic regression determined that race was a significant predictor in determining work engagement (p = .039). The findings notably highlight low work engagement due to school

leaders' work conditions and stress. The implications for practice include enhancing work engagement through wellbeing activities such as mindfulness, reflection, and physical activity. Additional implications for district leaders include creating sustainable learning communities that promote networking, professional learning, mentorship, and leadership development. The study's findings generated further implications for policy, leadership practice, and future research.

CHAPTER 1: INTRODUCTION

> Thinking about leadership as a particular kind of human functioning, Bandura's social cognitive model implies that to fully understand the leadership process three categories of leadership variables must be considered. They are leader cognitions, leader behaviors, and the leadership environment. And the most important leader cognition is the individual's self-efficacy for the leadership task." (McCormick, 2001, p. 24)

The theoretical underpinning of this study rests largely on Bandura's social cognitive theory. Formally defined, the social cognitive theory focuses on the interconnectedness between cognition, behaviors, and environment. McCormick (2001) draws on these three aspects of the social cognitive theory from a leadership standpoint with a singular focus on leader cognitions and personal factors, leader behaviors, and the leadership context. According to McCormick, essential to leader knowledge and skills is the leader's sense of efficacy–the belief that the individual has the capability to actually perform the leadership task. McCormick argues that self-efficacy is influential for leaders because of its direct and indirect influence on performance and goal-attainment (p. 26).

This study focuses on the constructs of leader efficacy and work engagement within a school setting. Leader efficacy refers to a leader's belief and perceived ability to accomplish difficult tasks and achieve performance outcomes (Hannah et al., 2008). Work engagement captures individual psychological and physical connection to work through work engagement dimensions: vigor, dedication, and absorption (Bakker et al., 2011). These constructs are particularly important within the context of the school setting given the demands and complexities associated with 21st century educational leadership and the general education landscape.

Purpose of the Study

The purpose of this study was to examine the relationship between leader efficacy and work engagement. Self-efficacy for school principals is paramount for their success as leaders. The presence of self-efficacy influences a school leader's judgment and ability to perform "cognitive and behavioral functions necessary to regulate group processes in relation to goal achievement" (Tschannen-Moran & Gareis, 2004, p. 573). A leader's perceived confidence and competence is situational or context specific. Self-perceptions of competence for leaders is an important component of leadership effectiveness and a leader's ability to cope successfully given the many tasks, decisions, and additional functions (Federici & Skaalvik, 2011).

The purpose of leadership is to "facilitate group goal attainment by establishing and maintaining an environment favorable to group performance;" self-efficacy is integral to the role of a school leader (Tschannen-Moran & Gareis, 2004, p. 574). School leaders with a strong sense of efficacy tend to meet desired goals, adapt to evolving situations, and manage change using effective strategies (Trepanier et al., 2012). Conversely, school leaders with low efficacy are less resilient and "less likely to identify appropriate strategies or modify unsuccessful ones" (Trepanier et al., p. 574). Inefficacious leaders demonstrate anxiousness, distress, and disengagement when experiencing complex situations where they feel ill-equipped or prepared (Gist, 1987).

The purpose of this study was to examine the relationship between leader efficacy and work engagement given the complexities in the educational setting related to teaching and learning, accountability mandates, and nuances required of educational leaders. This introductory chapter provides background to the study, the research questions guiding the study, and the significance of the study.

Personal Significance of the Study

Over the last 22 years as a school-based and district leader, I had the pleasure of cultivating high-functioning teams and positive work climates. Collectively, my staff and I developed visions and missions focused on teaching and learning. I relied heavily on Koutzes and Posner's (2012) five effective leadership strategies (model the way, inspire a shared vision, challenge the process, encourage the heart, and enable others to act) to transform the capacity of my team to support accelerated outcomes for students. We tackled challenges together and maintained a strong focus on the student experience and achievement.

There were two pivotal moments in recent years when I witnessed the efficacy of school leaders wane. First, the Maryland Department of Education adopted the Common Core State Standards (CCSS) and the local school district decided to write the curriculum instead of adopting the curriculum as written. The district hired teachers and teacher leaders as content experts, which required significant training in curriculum writing. School leaders and teachers began the school year without clear direction along with untimely expectations for implementation. During this time, many school leaders expressed dismay with the lack of timely communication, their inability to effectively monitor implementation, and frustration as they attempted to support teachers.

The second incident that led to decreased efficacy was during the initiation of the Every Student Succeeds Act (ESSA), which is another reauthorization of the Elementary and Secondary Education Act (ESEA). Each local education agency was required to establish related education outcomes and metrices aligned to the state's ESSA plan. The district's performance targets and measures shifted during a critical period of time where most school leadership teams and cluster school leaders were engaged in root cause analysis to plan school improvement goals

aligned to student needs. Professional learning opportunities on the new accountability measures were overwhelming, generating cognitive dissonance and noticeable frustration. My heart broke for all school leaders as they navigated managing change for themselves and their staff. As a district leader, I observed highly effective school leader question their ability to fulfil their roles and responsibilities. These two events in the lives of school leaders drove my interest in focusing on leader efficacy and the manner in which efficacy influences how school leaders engage in the work environment as well as how they feel about the work environment. The results of this study will inform my work as a district leader in supporting school leaders and influencing district practices.

Background

The Importance of School Leaders

The changing role of the school leader influences the approach to the work of teaching and learning and impacts the level of authentic work engagement (Goddard et al., 2017). Competing priorities at the schoolhouse and district level generate cognitive dissonance that directly impacts school leaders (Ross & Gray, 2006). Additionally, leader self-perceptions about their abilities, knowledge, and skills influence performance, followership, and organizational climate. Thus, leader efficacy powerfully predicts leader success, leader impact, and work engagement within an organization (Hannah et al., 2008).

School leaders are responsible for the many facets of school management and operations as well as for the cultivation of positive school climates and, ultimately, acceleration of student achievement (Nasreen, 2019). The role of the school leader is crucial to building the capacity of teachers and parents and necessary for continuous improvement not solely in meeting the needs of the school community now but also in forecasting future needs (Zahed-Babelan et al., 2019).

The Wallace Foundation (2013) concluded that school leadership improvement is among the top priorities in actualizing public school reform efforts and that effective leader characteristics include strategy and vision to create the conditions for student success in schools. The Wallace Foundation report described five essential elements of leadership necessary in order to affect change within the schoolhouse for all stakeholders: students, staff, families, and the leader as well. The five essential elements included vision for the success of all students, climate conductive to learning, empowerment, improved instruction, and management of people, data, structures, and processes that facilitate school improvement (Wallace Foundation).

Demands of the School Leader

According to the Institute for Education Statistics (2018), there are not enough qualified candidates to replace school leaders who retire, transfer schools or school districts, or pursue new opportunities. Additionally, the Institute for Education Statistics reported that by 2022 the demand for elementary and secondary principals will grow by 6% due to growth in the population and create a tremendous burden on school districts nationally. School leadership is essential to improving individual goals and organizational outcomes. Researchers (Louis et al., 2010) concluded that leadership has a significant influence on classroom instruction. The daily complexities of leadership can be overwhelming for veteran leaders, let alone emerging or novice leaders. In short, school leaders are considered the driving catalyst for educational improvement and change management (Federici & Skaalvik, 2011).

From an educational perspective, school leaders need tremendous guidance about the work of school and people improvement as well as relationships with critical thinking-partners to understand the many facets of leadership (Nasreen, 2019). The work of the school leader changes rapidly, which means that leaders need to constantly self-improve and self-reflect in order to

meet the current demands of the role (Levine, 2005). Many decisions are made daily in order to ensure safe, productive, and inclusive learning environments. Job descriptions identify fundamental knowledge, skills, and abilities needed to qualify for a school leader position and additional professional standards to maintain the position (Schrik & Wasonga, 2019). These multi-dimensional expectations elevate the need for leader efficacy in order to sustain organizational climates conductive to productivity, commitment, and positivity (Federici & Skaalvik, 2012).

Statement of the Problem

School leaders today confront many challenges and demands as they lead the school community. The roles and responsibilities of a school leader represent a confluence of instructional, managerial, and operational tasks to ensure favorable outcomes for students and a thriving organizational climate for staff and parents. The educational environment is increasingly complex given the changing needs of students, curricula standards, accountability benchmarks, and policy directives (Tobin, 2014). Davis et al. (2005) support growing evidence that successful school leaders influence academic achievement and organizational outcomes (p. 1). With growing educational expectations and the rapidly changing dynamics of the schoolhouse, efficacy is imperative to tackle the daunting complexities of educational leadership while simultaneously working toward a physical and psychological presence that sustains positivity, momentum, and achievement.

Efficacy

Efficacy studies began many years ago with Bandura, and scholars continue to study the impact of self-efficacy on personal choices, practices of teacher and leader, and performance and achievement of students (Bandura, 1990; Goddard, Skrla, & Salloum, 2017). Consideration is

given to the influences of self-efficacy relative to constructs such as motivation, goal setting, problem-solving, and self-regulation (Pajares, 1996). Bandura defined self-efficacy as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (Bandura, 1994, p. 1). A leader's ability to face adversity and complex situations is highly dependent on self-efficacy (Schrik & Wasonga, 2019).

Self-efficacy fosters intrinsic motivation and deep engagement which benefits the organization as it moves forward in dealing with complex issues. Another characteristic in leaders with high self-efficacy is the ability to rebound after making mistakes or failure. Self-efficacy breeds confidence and commitment despite obstacles that may face the organization. Schools are plagued with various issues and challenges daily. The outcome of those issues is highly dependent on the ability of the school leader to navigate the problem, utilize systemic resources, and respond with an outcome. Confidence, competence, and commitment are required in order to maintain a safe and orderly learning environment.

Sources of Efficacy

According to Bandura (1994), there are four main sources of influence relative to self-efficacy and strengthening personal beliefs: mastery experiences, social models, social persuasion, and physiological care. Mastery experiences do not derive from personal or professional successes but are built solidly by learning from failed experiences. Bandura (1994) posits that failed experiences build character and confidence for the next obstacle or challenge. Social models strengthen self-efficacy through relationships with others – those with similar backgrounds, values, or roles. Modeling, Bandura explains, influences self-efficacy through shared personal and professional social standards while also elevating proficiencies to which one may aspire. Verbal persuasions are essential to affirm individuals that they can accomplish the

task and the emotional arousal attests the strength and stamina to persist until the goal or task is achieved.

Leader Efficacy

These sources play a significant role in leader efficacy. Leader efficacy is a "leaders' belief in the perceived capabilities to organize the positive psychology capabilities, motivation, means, collective resources, and courses of action to attain effective, sustainable performance across their various leadership roles, demands, and contexts" (Johnson et al., 2018, p. 31). A school leader's ability to manage the many facets of the role is widely contingent on a sense of efficacy or agency (Federici & Skaalvic, 2011). Self-efficacy is integral to "adaptive functioning" in the role of school leader and influences "their work effort, work persistence, and resilience" (Federici & Skaalvic, 2011, p. 576). Leader efficacy plays a major role in how one approaches goals, tasks, and challenges. Self-efficacy evolves and grows as one successfully accomplishes difficult tasks (Gist, 1987). As local school leaders create visions and goals to address student achievement and school culture, self-efficacy becomes essential to achieve results for students.

The demands on school leaders to manage daily operations and ensure optimal teaching and learning environments while protecting the safety of students and staff require stamina, resilience, and presence (Nasreen, 2019). The varying nature of school contexts and circumstances elevates the need for school leaders to believe in their abilities to address the needs of the school community while maintaining high levels of active engagement in the work environment (Schaufeli et al., 2008; Scrik & Wasonga, 2019). A leader's sense of efficacy is vital to the school improvement process in that a sense of efficacy "affects the choices principals make about what activities in which to engage" (Schrik & Wasonga, 2019, p. 294), and the level

of efficacy affects their ability to influence others in accomplishing instructional leadership practices, vision, capacity building, and instructional program coherence.

Work Engagement

The concept of work engagement has been deeply studied by researchers (Schaufeli et al., 2002; Schaufeli & Bakker, 2008). Work engagement is strongly associated with personal and organizational outcomes (Schaufeli et al., 2002). The psychological connection leaders have toward their work and organizational development impacts work engagement (Bakker & Schaufeli, 2008). Work engagement is most often defined as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli et al., 2002, p. 74). In order to effectively compete in a global society, organizations need leaders who are inspirational and motivational, effectually helping employees within the organization rise to their fullest potential. Schaufeli (2008) asserts that the affective domain rests largely in the psychological connectedness to an individual's work and role within an organization.

Essentially, work engagement depicts how leaders and staffs experience work relative to vigor, dedication, and absorption. According to Schaufeli (2008), work engagement encompasses the desire to give the time, energy, and effort required to co-exist and achieve desired outcomes (vigor); work and related tasks are perceived as significant and meaningful (dedication) and; work that is all-consuming and requires full concentration (absorption). Research shows that employees who are fully engaged in their respective work are "highly energetic, self-efficacious individuals who exercise influence over events that affect their lives" (Bakker et al., 2011, p. 7).

Accountability

There is an existing nexus between the complexities of leadership and legislative mandates (Schrik & Wasonga, 2019). School leaders are central to understanding the federal,

state, and local accountability measures to effect student achievement outcomes. Leader efficacy is warranted to attain success and meet the educational performance benchmarks while wrestling with the magnitude of other demands (Ingersoll et al., 2018).

A significant reason for educational legislative mandates is to ensure equitable outcomes for all students. Conversations about the achievement gap within the local and national educational community are historic and have been followed by accompanying federal, state, and local accountability measures. The Elementary and Secondary Education Act (ESEA) of 1965 and the many reauthorizations over the years have inspired federal initiatives that trickle down to the states. The state reporting systems that have come about in response to ESEA are tools to determine a school's impact on student achievement (U.S. Department of Education, 2008).

In general, accountability systems are built to signal and assess the values of the federal and state government, to provide information about school performance with respect to specific outcomes, and to prescribe a system of supports and interventions based on performance (Goddard et al., 2017). School leaders must be well-equipped to reflect on the state and local accountability measures and the impact on their schools. Goldring et al. (2009) pointed to the complexity of school leaders given federal, state, and local mandates and the nuances germane to a leader's specific school community,

> …high academic standards and system performance accountability are critical components of school leadership. Increasingly, principals are being asked to ensure that individual, team, and school goals exist for rigorous student academic and social learning by aligning schools' activities with local, state, and federal standards. Furthermore, leaders must hold themselves and others responsible for realizing high standards of student performance. (p. 35)

Theoretical Framework

This study is grounded in the theoretical framework of Bandura's (1989) social cognitive theory. A brief summary of social cognitive theory will be discussed in this chapter followed by a comprehensive view in Chapter 2. The social cognitive theory comprises a set of dynamic functions or "proximal determinants" that operate reciprocally to include efficacy, behavior, and organizational resources (Bandura, 1989, p. 1175). The social cognitive theory elevates an integrated approach of social influences and self-processes resulting in a set of actions (McCormick, 2001). Self-efficacy is a component of the social cognitive theory which primarily focuses on the evolution and exercise of human agency and suggests that humans acquire learning through dynamic social contexts (Li, 2019). The social cognitive theory asserts that "people interpret social information from the environment and their personal experience to make sense of themselves and others, and this guides their decisions and actions" (Tu, 2016, p. 132).

Manifested leadership behaviors under the social cognitive theory largely rests in social influence processes in order to "organize, direct, and motivate the actions of others" (McCormick, 2001, p. 28). McCormick asserted that leadership requires sustainable self-regulation adaptable to the task. Further, McCormick stated that leaders who possess confidence in their abilities will achieve the desired results and set higher goals through cognitive processes and personal resources that determine specific leader behavior.

Leadership Behaviors

Effective leadership requires strategic thinking and a focus on organizational culture (Bass & Avolio, 1993; Yang, 2014). Strategic thinking or visioning is often associated with transformational leadership. In order to realize the school vision and ensure optimal learning for all students, leadership behaviors and practices must align. The characteristics of

transformational leadership closely mirror Bandura's four sources of efficacy. The characteristics, behaviors, and actions of transformational leaders motivate and inspire people within the organization to address inherent challenges with an unwavering belief that people within the organization possess the knowledge, skills, and abilities to tackle the challenge or leverage that knowledge to seek external support (Kouzes & Posner, 2012).

Tactical or planned thinking may be related to transactional leadership (Bass & Avolio, 1993). The strength of transformational leadership lies in the leader's ability to coalesce followers toward a common vision and influence them to achieve seemingly unattainable goals. Contrarily, one could argue that effective leadership requires a balanced approach encompassing transactional and transformational approaches. Transactional leadership behaviors focus on exchanges for a specific purpose or outcome; leaders offer direct or indirect support to employees in exchange for their performance (Bono & Judge, 2004). Transactional leaders are goal-focused, not people-focused. Two leadership factors associated with transactional leadership are contingent reward and management-by-exception. Contingent reward is concerned with the process of exchange between the leader and follower for specified rewards – a conditional relationship. Management-by-exception c active or passive corrective feedback from the leader to the follower.

A transactional leader implements active management-by-exception by observing a staff member and offering corrective feedback proactively. Conversely, a transactional leader demonstrating passive management-by-exception offers feedback reactively (Bono & Judge, 2004). Bass (1993) proffered that leaders flow through a continuum of leadership approaches ranging from transformational, transactional, and laissez-faire. Similarly, Avolio's work (1999) on the full range model of leadership behaviors elevated the idea that leaders engage in a range

of transformational and transactional leadership behaviors. These leadership styles contribute significantly to the ultimate goal of student achievement and creation of a viable organizational culture.

The purpose of this study was to understand the relationship of leader efficacy as it relates to work engagement. Current research examines leader efficacy through the lens of leadership efficacy to engage and motivate followers (Kouzes & Posner, 2012; Li, 2019; Trepanier et al., 2012). This study sought to determine if there is a relationship between leader efficacy and work engagement of the leader.

Overview of Research Methodology

Research Design

This positivist quantitative study used secondary data. Secondary data analysis is a systematic method of research using data collected by another researcher or institution for a different purpose (Johnston, 2014). The proposed study used data from the National Center for Education Statistics (NCES). Results of the 2015-2016 Principal Questionnaire, included in the National Teacher and Principal Survey (NTPS), was used.

There are significant advantages to using public-use data. Accessibility and expediency are two notable advantages of using public-use data from a respected, national organization. Access to the NTPS public use data set maximized efficiency and reduced financial costs necessary to complete the study. The NTPS questionnaire aligns well with the social cognitive theory, which is the theoretical framework for this study (Bandura, 1993). The secondary data analysis offered insight into a wide range of questions not initially considered in the study, especially given the sampling of a population distributed across all 50 United States and the District of Columbia (Nicholson & Bennett, 2008). Finally, data collection from the 2015-2016

NTPS allowed examination of information directly from school principals in a range of school contexts. The large sampling offered an opportunity for the generalizability of the research findings.

Research Questions

The goal of this study was to explore the relationship between self-efficacy and the work engagement of school leaders. The definition of school leaders included individuals who hold Maryland state licensures or endorsements in the category of administration and supervision. The following research question and hypotheses were addressed in this study:

- RQ1: What is the relationship between a school leader's efficacy and work engagement?
  - H_0: There is no relationship between a school leader's efficacy and work engagement.
  - H_1: There is a relationship between a school leader's efficacy and work engagement.
- RQ2: What is the effect of predictors (age, gender, years of experience) on leader efficacy and work engagement?
  - H_0: There is no effect of predictors (age, gender, years of experience) on leader efficacy and work engagement.
  - H_1: There is an effect of predictors (age, gender, years of experience) on leader efficacy and work engagement.

Measures

The NTPS Principal Questionnaire consists of a nationally representative sample survey of public-school principals from kindergarten through grade 12, including public charter schools

from kindergarten through grade 12 (Taie & Goldring, 2017). The 2015-16 survey was administered to public and charter schools separated into four categories: primary, middle, high, and combined schools. An investigation into the items in NTPS related to efficacy and work engagement specifically relate to the research question and hypothesis of the study.

The National Teacher and Principal Survey Principal Questionnaire (NTPS) provides demographic and descriptive data regarding contextual factors at the elementary and secondary levels of schools. The NTPS provides relevant information about the conditions of education across the U.S., which assists policymakers in public school decision-making. The NTPS focuses on four primary areas: analytics regarding principal experience and training; working conditions and principal perceptions; goals and decision-making; and school climate and safety (NCES, 2015). These areas aligned well with the Utrecht Work Engagement Scale (UWES) in measuring the antecedents to work engagement and provided significant, generalizable data in support of the purpose of the study.

Limitations

The first limitation of the proposed study is one of research design. This research utilized an ex post facto study design, using secondary data previously collected by the U.S. Department of Education (DOE), National Center for Education Statistics (NCES). As a result, the researcher had limited control and an inability to manipulate the construct or variables. The second limitation of the proposed study is generalizability. The sample for this study derived from the 2015-2016 Principal Questionnaire, National Teacher and Principal Survey Public Use Data, collected by USDOE, NCES. The Principal Questionnaire is administered to traditional school sectors – public and charter. For the purposes of this study, only public schools, which includes public and charter schools, were considered. Results of this study cannot be generalized to

private, non-traditional schools, or Bureau of Indian Affairs sectors. Another limitation is that the setting for the study is school. The data analyzed may not be generalized to other work settings.

Significance of the Study

The complexities associated with school leadership along with the unprecedented accountability mandates leave school leaders exclusively responsible for student outcomes and the success or failure of their schools (Schrik & Wasonga, 2019). These expectations possibly present challenges that call into question a leader's ability to address student achievement, student safety, and the collective professional learning required to sustain or accelerate achievement. Given the intricacies associated with educational systems and institutions, effective school leaders who possess high efficacy are essential for navigating and fully addressing social, economic, and academic gaps.

This study is significant because it may direct attention to the value of coordinated district support of principals, a balanced approach to accountability, and strategic efforts to evaluate district priorities. Additionally, this study could impact district efforts to attract and retain highly qualified leaders which will stabilize learning environments and, more broadly, learning organizations. Lastly, this study elevates the significant role of school district's leadership development programs and ensures that aspects of leader efficacy are factored into the practices and experiences of aspiring leaders.

Definition of Key Terms

In order to maintain consistency and to ensure a common understanding, the following significant terms are defined.

Leadership – the purpose of leadership is to "facilitate group goal attainment by establishing and maintaining an environment favorable to group performance" (Tschannen-Moran, 2004).

Self-efficacy – refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments (Bandura, 1977). There are three dimensions of self-efficacy: magnitude (level of achievement attainable), strength (strong or weak magnitude), and generality (ability manifested in different contexts) (Gist, 1987). The four sources of self-efficacy are mastery experiences, vicarious experiences, verbal persuasion, and emotional arousal.

Transformational leadership – is described by Bass (1990) as a leader focused on the follower through trusting and dynamic relationships. There are four dimensions of transformational leadership: idealized influence, inspirational motivation, intellectual stimulation, and individual consideration.

Transactional leadership – Bass (1985) and Avolio and Bass (1999) described transactional leadership as behaviors not individualized by the followers, but rather focused on the exchange of things valued by the follower in order to advance the followers' career and satisfy needs of the leader or organization. These exchanges are based on factors such as contingent reward (followers' effort to gain rewards) and management-by-exception (feedback consequence).

Work engagement – is a positive work-related state of fulfillment characterized by vigor, dedication, and absorption (Schaufeli et al., 2006):

- vigor, having a high, energetic approach to work using mental resilience as a strategy for staying engaged,

- Dedication, characterized by strong involvement, sense of pride, enthusiasm and inspiration at work, and
- Absorption, being fully present at work and engrossed in the work.

Summary

The purpose of this study was to determine the relationship between leader efficacy and work engagement using the NTPS principal questionnaire. The essence of the social cognitive theory is efficacy, i.e., the belief that an individual can perform a task, given mastery and vicarious experiences, verbal persuasion, and emotional arousal. Work engagement involves an individual's affective state of fulfillment on the job. The dimensions of work engagement include vigor, dedication, and absorption. Table 1 includes an overview of the research and a summary of this chapter.

Table 1

Research Overview and Chapter 1 Summary

Element	Summary
Purpose of the study	To examine the relationship between leader efficacy and work engagement given the complexities in the educational setting related to teaching and learning, accountability mandates, and nuances required of educational leaders. This study uniquely focused on the agency of the leader and subsequent engagement in work activities.
Justification	Today's school leaders confront many challenges and demands as they lead the school community. The roles and responsibilities of a school leader represent a confluence of instructional, managerial, and operational tasks to ensure student safety and achievement. These multi-dimensional expectations elevate the need for leader efficacy and work engagement
Significance of the study	This study is significant because it may direct attention to the value of coordinated district support of principals, a balanced approach to accountability, and strategic efforts for evaluating district priorities. Additionally, this study could impact district efforts to attract and retain highly qualified leaders which will stabilize learning environments and, more broadly, learning organizations. Lastly, this study elevates the

Element	Summary
	significant role of school district's leadership development programs and ensures that aspects of leader efficacy are factored into the practices and experiences of aspiring leaders.
Theoretical framework	The study is grounded in Bandura's social cognitive theory, which focuses on an integrated approach of social influences and human agency. Self-efficacy is a key aspect of the social cognitive theory suggesting that humans acquire learning through dynamic social contexts.
Methodology	This quantitative study includes data analyses from 5,620 survey respondents.
Limitations	The limitations of this study include: • Use of archived data previously collected by the Department of Education (DOE), National Center for Education Statistics (NCES). As a result, the researcher had limited control and an inability to manipulate the construct or variables. • Limited scope of participants. The Principal Questionnaire is administered to traditional school sectors – public and charter. Results of this study cannot be generalized to private, non-traditional schools, or Bureau of Indian Affairs sectors. • School setting. The data analyzed may not be generalized to other work settings.
Contribution to Practice	This study offers several recommendations for practice to build leader efficacy and promote viable work conditions that lead to increased engagement in the actual work and work environment. • Implement work engagement interventions such as reflection time, mindfulness breaks, and focused wellbeing activities to manage stress. • Amplify district support through the identification of joint work such as school improvement planning, data analysis, and accountability management. Explicitly model effective leadership practices, initiate time with school leaders to ask questions, and protect time for district leaders and school teams to engage in conversations about school improvement. • Develop professional learning communities for school leaders allowing time to coalesce around common issues and share viable solutions. • Offer mentoring opportunities to provide psychologically safe spaces for school leaders to share ideas, challenges, or concerns. • Provide ongoing leadership development opportunities with targeted professional learning.

Organization of the Dissertation

Chapter 2 will present a review of the literature and research on efficacy, evolution of school leadership, types of leadership, and the dimensions of work engagement. An elaboration of the constructs of the social cognitive theory and their relevance to this study will also be presented in Chapter 2. Chapter 3 will describe the methodology used to organize and analyze the data for this research study. A discussion of the research design, a description of the sample and population will be discussed along with a descriptive summary of the demographic information. Reliability and validity of the assessment instrument will also be included in this chapter. Chapter 4 will describe the results of the analysis of the data. Chapter 5 will present a discussion of the findings, conclusions, and recommendations related to leader efficacy and work engagement. The final chapter will also include recommendations for further study and research.

CHAPTER 2: LITERATURE REVIEW

Work is an important aspect of everyday living. Work provides individuals with numerous benefits such as a salary, socialization with others, and opportunities for professional growth, achievement, and development. Work also provides a sense of belonging, pride, and purpose (Andreassen, 2014). The study of work engagement is distinctive in that it reflects the positive and negative aspects of work. Shimazu et al. (2015) refers to work engagement as one of two types of "heavy work investment" explicitly connected to wellbeing and job performance (p. 18). This literature review presents theoretical and empirical research about the work engagement construct and peripheral constructs.

This literature review reflects salient literature and research that contributed historically to the progression of positive psychology. Positive psychology focuses on "human strength and optimal functioning" (Seligman & Csikszentmihalyi, 2000). The literature review documents the progression of extant literature and empirical studies related to positive psychology including work engagement, job burnout, psychological capital, and the job-demands resources model. Additionally, the literature review highlights the changing dynamics of school leadership including factors that impact principals such as accountability and district support. Collectively, these factors may significantly influence leader efficacy and, subsequently, work engagement.

History of Work Engagement

Kahn's Study of Work Engagement

Kahn (1990) initially studied the concept of work engagement. He studied work engagement from a psychological perspective which encompassed employee's demonstration of full engagement physically, cognitively, and emotionally. Kahn conducted two qualitative studies involving summer camp employees and employees from an architect firm to determine

when and how people within organizations decide to engage or disengage in specific work-related tasks. Kahn (1990) hypothesized that specific behavioral variables exist that promote work engagement through organizations that are "emotionally charged and psychologically complex" (p. 694). Subsequently, organizational complexity influences the extent to which people operate and, ultimately, determines the level of engagement or disengagement (p. 695).

Kahn (1990) classified distinct individual roles depending on specific personal behaviors people choose to either emote or suppress while at work. This concept builds on the work of Goffman (1961) who believed that people within organizations have momentary fits of engagement through role engagement and role distance. Similarly, Goffman posited that role engagement and role distance are precipitated by organizational contexts that either improve or diminish engagement, motivation, or self-esteem (Goffman, 1960).

Kahn's Three Dimensions of Psychological Conditions

Meaningfulness

Kahn's two studies (1990) found that there are three psychological conditions that influence work engagement or disengagement. He refers to the three conditions as dimensions of psychological conditions which include meaningfulness, safety, and availability. Kahn identified related experiential components and influencers associated with each dimension. Meaningfulness, Kahn indicated, is a state of performance remuneration or "sense of return on investment of self in role performance" (p. 705). Under this psychological condition, a person feels valued based on the contributions to the work and the reciprocal feedback loop that helps enhance work engagement. The influencers related to meaningfulness include challenging and innovative tasks typically associated with positions of high status and influence.

Safety

The dimension of safety mirrors Maslow's (1943) definition of psychological safety, whereby people demonstrate intellectual freedom to take risks without fear of penalty. Kahn (1990) proffered a unique qualifier in his definition of safety by adding the aspect of self to the safety dimension. His definition alludes to the courageous act of "showing and employing self" as a result of clear organizational expectations and a trusting environment. The epicenter of safety hinges on sustained positive relationships between employees and work groups and leader-follower relationships. Kahn asserted that leadership behavior significantly impacts the organizational dynamics by facilitating the systemic organizational norms by which trusting and productive relationships either thrive or fail.

Availability

Finally, Kahn (1990) defined availability as the culmination of all essential and requisite psychological conditions to ensure complete presence while at work. He believed that, in order to demonstrate full work engagement, employees must experience physical, emotional, and psychological resources. The experiential component in this dimension includes the capacity of the employee to share the energy, passion, and knowledge in the specific role when given the appropriate resources to do so (Kahn, 1990). Self-confidence plays a major role in the employee's availability to perform specific tasks. Specific to the availability dimension are the external influences in an employee's personal life that contribute to self-confidence and, thereby, job performance.

Kahn (1990) believed that the psychological conditions are necessary for positive outcomes and full work engagement to occur. Kahn likened these necessary conditions to Maslow's five-tier model of human needs. Maslow (1943) posited that human needs expose

themselves in a "hierarchical prepotency," which is interpreted to mean that human cravings once satiated generate new desires (pp. 370-371). Maslow categorized human's hierarchical needs in two categories: dependency needs and growth needs. The dependency needs (physiological needs, safety, sense of belonging, and esteem needs) distinctly correlate to Kahn's dimensions of psychological needs in that these basic needs must be met in order to personally thrive or engage. Important considerations from both theorists elevate the interdependency of specific psychological conditions that meet human needs and promote engagement.

Work Engagement

Maslach's (2003) studies on burnout concluded that a positive, antithetical construct of burnout is work engagement, which is characterized by dimensions of involvement, energy, and self-efficacy. Notably, these characteristics represent polar opposites of the burnout dimensions of exhaustion, cynicism, and detachment (Schaufeli et al., 2002). Generally, work engagement deals with the positive aspect of wellbeing. The description of work engagement shifted from a description of psychological presence, namely engagement emotionally, physically, and cognitively (Kahn, 1990) to a more operationalized description that included actionable conditions. Schaufeli et al. (2002) identified singular, direct opposites juxtaposing the multidimensional constructs of burnout and engagement: exhaustion/vigor, cynicism/dedication, and inefficacy/absorption.

The operationalization and measuring of work engagement redefined Kahn's initial definition and psychological conditions. Thus, the prevailing definition of work engagement is: "the positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption" (Bakker et al., 2011; Bakker & Demerouti, 2008; Schaufeli et al., 2002). Vigor, dedication, and absorption represent the dimensions of engagement. Vigor is characterized by

high energy levels and mental stamina during work with full self-investment and professional risk-taking (Bakker et al., 2011; Bakker & Demerouti, 2008; Schaufeli et al., 2002). According to these researchers, dedication refers to individuals' sense of importance, pride, and inspiration about the work as well as the organization. Absorption involves a deep focus on the work, so much so that it is difficult for the individual to detach ((Bakker et al., 2011; Bakker & Demerouti, 2008; Schaufeli et al., 2002).

Work engagement is broader than a singular momentary state. The effects of work engagement are sustained over time and include "more persistent and pervasive affective-cognitive states not focused on any one individual, behavior, object or event" (Schaufeli et al., 2002, p. 74). Quantitative studies conducted using the Utrecht Work Engagement Scale (UWES) with a group of Dutch employees from different occupations revealed that the engaged employees possessed high levels of efficacy and demonstrated significant energy among peers (Bakker & Demerouti, 2008). Work engagement relates specifically to the dyadic relationship between an individual and their respective work (Schaufeli & Bakker, 2010). Work engagement from a business perspective wholly focuses on work productivity, employee retention, and the attainment of organizational results (Schaufeli & Bakker, 2010). Work engagement from an academic perspective is measured by self-identification of feelings of connectedness, efficacy, and focus (Schaufeli & Bakker, 2010).

Key Drivers of Work Engagement

Work engagement describes how individuals experience work from a psychological and physiological standpoint (Bakker et al., 2011). Job and personal resources facilitate work engagement when the job demand is high requiring active learning, exploration, growth and challenge (Bakker et al., 2011). Engaged employees are generally resourceful and passionate

about their work. Additionally, engaged employees are generally well-rounded and involved in social activities outside of work. Pati & Kumar (2011) consider perceived autonomy and perceived trust as antecedents or key drivers of work engagement from a position of motivation and symbols of respect pertaining to the actual role. As a result of trusting, autonomous work environments, work engagement, and commitment of employees increases (Schaufeli., 2012).

Measurements of Work Engagement

The Gallup organization studied multiple aspects of employee engagement and wellbeing across various organizations and educational systems. Gallup^{Q12}, a 12-item questionnaire, is one of the first fully developed instruments to measure employee engagement. Harter et al. (2002) created the Gallup^{Q12} as a management tool to provide actionable results to assist leaders in managing change. The instrument measures employee perspectives of job resources (i.e., *Do you have the materials and equipment you need to do your work right?*) and interpersonal aspects of the organization (i.e., *Do you have a best friend at work?*) (Schaufeli & Bakker, 2010). See Appendix A for the complete Gallup^{Q12} instrument.

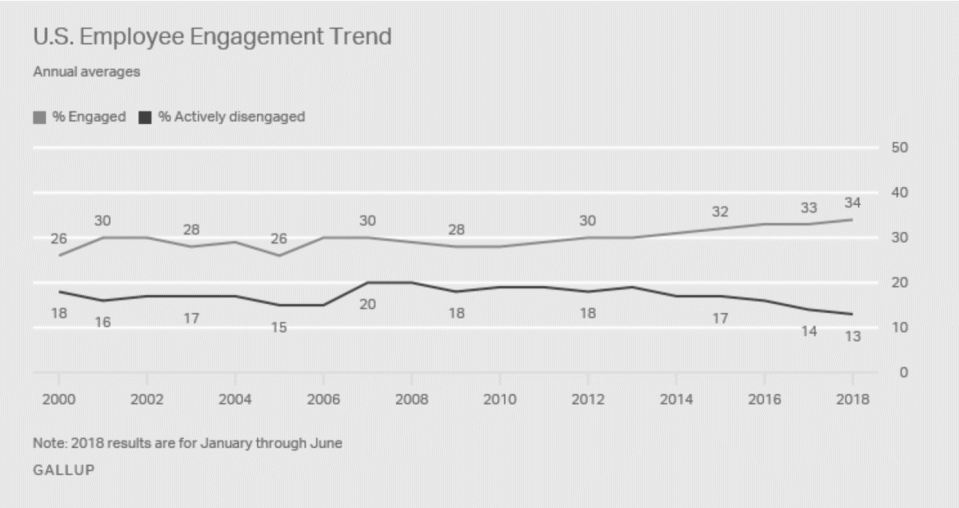
Harter (2018) described work engagement through productive organizational efforts with proven performance outcomes that include opportunities for workers to perform at the highest capacity, avenues to build professional capacity, and work roles best suited for the individuals' talent and skills. Aligned with the research on the impact of work engagement, the Gallup^{Q12} survey results supported a strong correlation between engaged employees and high organizational performance (Bakker et al., 2011). Harter (2018) attributed the increase in work engagement to the low unemployment rates, job satisfaction, and job recognition.

Figure 1 displays the percentage of workers across the United States who are actively involved in and committed to their work and organization (Harter, 2018). The noted increase

represents the highest number of engaged employees since 2000, increasing from 28% to 34%. While the 6% increase of engaged workers is laudable, the data reflects a remaining 53% of workers actively disengaged (not cognitively or emotionally present) in the work role and organizational environment. The survey was administered to a random sample of 30,628 full-time and part-time employees across the U.S. during a six-month period (see Figure 1).

Figure 1

2018 U.S. Employee Engagement Trend in the United States



Note. Figure taken from Harter, 2018.

The Utrecht Work Engagement Scale (UWES) reflects the most common definition of work engagement – a "positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption" (Bakker et al., 2011; Bakker & Demerouti, 2008; Schaufeli et al., 200; Schaufeli et al., 2002). The dimensions of work engagement (vigor, dedication, and absorption) are operationalized in the UWES through 17 items (long version) or nine items (short version); both versions contain items on a 7-point Likert scale. The UWES has internal consistencies ranging from .80 to .90, which exceeded the Cronbach's alpha desired value of .70

(Schaufeli et al., 2006). Items on the UWES are grouped by dimension (vigor, dedication, and absorption). See Appendix B for items on the long version of the UWES.

In a study of approximately 14,000 employees across various occupational groups, the UWES short form was administered. The results indicated that the highest measure for vigor correlated to high energy and feelings of vitality. Results for dedication ranked highest for enthusiasm and inspiration about the job and the highest measure for absorption related to feelings of deep immersion in the work.

Work Engagement and Positive Psychology

Work engagement is a multi-dimensional construct and requires significant discussion about related concepts such as positive psychology, burnout, job demands and resources, and psychological capital. Positive psychology, introduced by Seligman and Csikszentmihalyi (2000), shifted the post-World War II focus of psychology from the pathology of mental health to a positive stance of sustained wellbeing through hope and optimism and happiness and joy. The pathological aspects of psychology helped society tremendously through the identification and increased understanding of the various types of mental illness. The evolution of the field of psychology signified an opportunity to re-examine other concentrations of psychology that focused on the factors that contribute to individual and collective improvement, engagement, and general wellbeing.

Positive psychology balances the full human experience by not focusing solely on the negative, but by giving attention to human optimism, positive emotions, and the foundational supports that facilitate engagement and wellbeing (Seligman, 2011). Simply stated, Kobau et al. (2011) defined positive psychology as studying "what is right about people including their respective psychological assets, attributes, and strengths" (p. 1). This new movement in

psychology reflects an attempt to expand the ideal state of psychological services from addressing mental illness to focusing on mental illness prevention (Seligman & Csikszentmihalyi, 2000). Prevention studies found that beneath human pain lies resiliency and strength, which buffer mental challenges. Psychological assets such as positive emotions, optimism, perseverance, and hope encourages pro-social behavior and improved general health (Kobau et al., 2011).

The application of positive psychology strengthens the human condition and individual happiness and, ultimately, may improve individual performance (Schaufeli & Bakker, 2004). A 6-group, random assignment online study assessing happiness interventions through positive psychological exercises over the short term (1 week) and long term (6 months) found that deliberate attempts to document good things about the day, week, or month showed increased levels of happiness and minimal levels of depression (Seligman et al., 2005). The effects of positive psychology extend beyond the individual to the entire organization. Positive psychology effectually assists people in identifying and pursuing optimal pathways for organizational engagement (Mongrain et al., 2012). Positive interventions may supplement traditional interventions to relieve mental anguish and suffering and may someday be the practical legacy of positive psychology.

Work Engagement and Efficacy

The main sources of efficacy which predict engagement include mastery and experiences, verbal persuasion, and emotional and physical states (Bandura, 1993; Consiglio et al, 2015). Efficacy enables an individual to persist through difficult tasks in order to produce organizational goals. Efficacy, the essence of the social cognitive theory, is the most "pervasive mechanism of human agency" (Bandura, 1990, p. 397). Human agency allows individuals to exert influence

over what they do and support their own development (Federici & Skaalvik, 2012). Bandura refers to efficacious people as individuals who address challenges with a level of confidence versus those who lack efficacy.

Positive self-efficacy is a key variable regarding what they can achieve given the context, role, or responsibility (Federici & Skaalvik, 2012). Positive self-efficacy affects followers' attitudes and performance. Principals with high self-efficacy experience higher levels of work engagement and job satisfaction. Positive self-efficacy also correlates to optimal and adaptive functioning when daunting tasks or challenges arise; persistence is required to manage the change (Federici & Skaalvik, 2012). Feedback is also an integral aspect of efficacy and work engagement and underscores an individuals' capabilities and efficacy (Consiglio et al., 2015). Performance evaluations offer individuals an opportunity to reflect on their levels of strength and personal efficacy to produce change through perseverance, effort, and innovation.

Leader Efficacy

Leader efficacy is germane to the knowledge, skills, and abilities a leader possesses and the related confidence of the leader to demonstrate to other (Hannah et al., 2008). By definition, leader efficacy reflects a "leader's belief in the perceived capabilities to organize the positive psychology capabilities, motivation, means, collective resources, and courses of action to attain effective, sustainable performance across their various leadership roles, demands, and contexts" (Hannah et al., 2008, p. 2). Johnson, et al. abide by the same definition of leader efficacy. Leader efficacy is also characterized as a form of efficacy related to an individual's knowledge, skills, and abilities associated with leading others (Hannah et al., 2008; Johnson et al., 2018). For the purposes of this study leader efficacy will reflect the definition proffered by Johnson and Hannah and their colleagues.

The complexity of leadership requires leaders to possess the requisite agency, confidence, and efficacy to appropriately tackle the myriad of challenges. Efficacy beliefs and perceptions are critically important for all aspects of leadership. These beliefs and perceptions activate cognition, problem-solving, and engagement in performance (Avolio & Hannah, 2008).

Leader efficacy foundationally undergirds other aspects of personal agency and represents an "essential component of leader emergence and effectiveness" (Johnson et al., 2018, p. 30). Similarly, Avolio and Hannah (2012) assert that higher leader efficacy enhances a leader's capacity to develop clear vision and successful outcomes. Similar to efficacy affects, generally, and the impact of the four sources of efficacy previously discussed, leader efficacy is strongly influenced by mastery experiences through the accomplishment of challenging tasks and positive outcomes. The experience of success over time increases leader efficacy and readies the leader for the next challenge (Johnson et al., 2018). Further, the accumulation of successes enhances personal agency and resilience even when negative outcomes occur.

Vicarious experiences and learning build leader efficacy through access to mentorship and opportunities to observe leadership in action (modeling) of individuals who successfully completed difficult tasks or those who experience negative outcomes but, through reflection, make mid-course corrections (Johnson et al., 2018). Leader efficacy is also strengthened through verbal persuasion. Critical feedback balanced with praise and encouragement helps individuals become more efficacious (Hannah et al., 2008). Finally, leaders with high efficacy possess the ability to create organizational cultures and climate that are psychologically safe and emotionally stable. Individuals are likely to experience higher levels of success in calm environments where organizational friction is minimal or explicitly addressed (Consiglio et al., 2015).

Work Engagement and Psychological Capital

McNulty and Fincham (2012) assert that character traits and social contexts interdependently determine people's behavior. Similarly, psychological capital refers to the developmental aspect of an individual's character traits including: (a) self-efficacy and effort given to challenging tasks; (b) optimism in the present and the future; (c) hope and perseverance; and (d) resilience (Sweetman & Luthans, 2010). These traits comprise the psychological capital needed for positive organizational engagement through the presenting or absenting of self while at work (Kahn, 1990). Collective psychological capacities significantly predict work engagement (Li, 2019).

Psychological capital shares a unique connection to personal resources (Bakker, 2011). Bakker observed that positive self-reflections and evaluations are explicitly linked to "an individual's sense of their ability to successfully control and have an impact on their environment" through self-efficacy, organizational-based esteem, and optimism (p. 266). Personal resources directly connect to identification of aspirational goals, drive, and general satisfaction. Albrecht (2010) found that elements of psychological capital (self-efficacy, optimism, hope, resilience) along with activated personal resources (perceptiveness and regulation) are significant predictors of positive work engagement.

Work Engagement and Burnout

Studies about the job burnout began as a grassroot phenomenon grounded in the experiences of people living everyday lives (Leiter & Maslach, 2004). During the 1970s, modern organizations facing increased workloads with minimal human capital and fiscal resources created dismay within the workforce. It resulted in individuals experiencing severe fatigue, stress, and loss of motivation (Maslach, 2003; Maslach et al., 2001). The physical and emotional

conditions described were later defined as burnout. Health practitioners Freudenberger and Maslach pioneered investigations into the new phenomenon from a social context prior to engaging in theoretical aspects. The formal definition of burnout refers to the psychological effects of the stressors within the workplace (Maslach et al, 2001).

Pioneering Phase of Job Burnout

Initial research into the psychological aspects of burnout identified three key dimensions of burnout: exhaustion, cynicism, and detachment from the job due to high demands and workload coupled with feelings of inefficacy and lack of accomplishment (Maslach, 2003). Excessive job demands lead to burnout syndrome, causing individuals to distance themselves cognitively and socially (Maslach et al, 2001). Furthermore, exhaustion leads to self-isolation from the roles and responsibilities of the job and withdrawal from interactions with colleagues (Leiter & Maslach, 2004).

Empirical Phase of Job Burnout

Maslach et al. (2001) developed the Maslach Burnout Inventory (MBI) to quantitatively measure the constructs associated with burnout (exhaustion, cynicism, and detachment) which spawned ineffectiveness and inefficacy (Leiter & Maslach, 2004). According to Leiter and Maslach (2004), inefficacy has a profound impact on work engagement due to feelings of incompetence and failure. The MBI was initially created for human resource personnel and healthcare workers who were originally targeted due to the interpersonal nature of their jobs. Eventually, the MBI audience expanded to other professions, which led to a generalized version of MBI validated across multiple and varied occupations. Maslach (2003) proposed broadening the focus from the individual response to a focus on "situational and organizational factors that play a bigger role in burnout than do individual ones" (p.192).

Another product of the empirical era of burnout research is the concept of poor job-person fit which is the misalignment of job roles (Leiter & Maslach, 2004). Job-person misfit potentially contributes to burnout given that an individual may experience a gradual misfit in the specific job. The gradual job-person misfit occurs for six primary areas: workload, control, reward, community, fairness, and values. The Areas of Worklife Scale assesses these areas to determine specific organizational and individual interventions. The interventions provide opportunities to enhance the organizational environment, minimize burnout, and maximize work engagement (Jimenez & Dunkl, 2017).

Job Demands-Resources Model

The job demands-resources (JD-R) model is a theoretical framework representative of two widely researched constructs of burnout and motivation (Tims et al., 2013). Job demands refers to aspects of actual workload that require generous effort and psychological muscle and that produces significant job stress (Xanthopoulou & Bakker, 2007). Generally, job demands represent negative stressors. According to Tims et al. (2011), the negative stressors relate to aspects of the job that generate persistent individual physiological and psychological costs. Job demands represent two sides of the coin. One side connotes hindrance job demands and the other side refers to challenge job demands. The distinguishing element between hindrance job demands and challenge job demands lies in the outcome of the demand. Hindrance outcomes are associated with negativity (i.e., role overload, role conflict, or role ambiguity). Challenge job demands are psychologically and physically taxing but are accompanied by professional growth and achievement (Bakker & Demerouti, 2016).

Job resources refer to the physical, psychological, social, and organizational aspects of the job that promote professional growth and learning while reducing stress and that allow

individuals/groups to successfully accomplish organizational goals (Demerouti & Bakker, 2011). Job resources reflect intrinsic and extrinsic motivational roles. Intrinsically, job resources provide opportunities for individual growth, learning, and development. Similarly, aspects of extrinsic motivation stems from the achievement of work goals and a resourceful work environment (Bakker, 2011). Ultimately, a resourceful work environment creates a willingness in the individual which drives task completion. A positive work atmosphere and the availability of job resources contribute to organizational growth and work engagement (Bakker, 2011; Demerouti & Bakker, 2011; Tims et al., 2013).

The JD-R plays a significant role in understanding work engagement (Bakker, 2011; Demerouti & Bakker, 2011; Tims et al., 2013). Demerouti and Bakker (2011) posit that studies demonstrated the predictive value of job demands and resource on work engagement acting as an antecedent to work engagement. In a study of burnout and engagement by Xu et al. (2011), 625 Chinese blue-collar workers responded to a survey assessing the JD-R model with a specific focus on wellbeing. It was determined that there was a positive correlation between work engagement and job resources; increased job resources resulted in higher work engagement.

Over Engagement

Thus far, the literature review focused mostly on the positive aspects of work engagement. It is theorized and empirically known that work engagement is the antithesis of burnout (Maslach, 2003; Maslach & Leiter, 2004). Over engagement, most commonly referred to as workaholism, is the antipode of work engagement (Andreassen, 2014; Bakker et al., 2010; Griffiths & Karanika-Murray, 2012). The term workaholic describes an individual driven by excessive forces to work incessantly (Andreassen, 2014). First coined by Oates in 1971, the definition of workaholism varies but generally reflects an excessive, imbalanced approach to

work (Shimazu et al., 2015). Generally, workaholism holds a negative connotation with intended or unintended consequences that create personal health and family challenges.

Shimazu et al. (2012), using a sample of over 1,000 participants in various occupations, found that work engagement and workaholism were explicit predictors of future well-being and performance (Shimazu et al., 2015). After studying participants' pre/post work engagement and their workaholism responses over 7 months, Shimazu et al. found that some participants increased in behaviors associated with workaholism behaviors that led to ill-health and poor life satisfaction. Conversely, some participant responses yielded low ill-health and high-life satisfaction over time. These results are significant and further highlight the detrimental effects of workaholism versus a balanced approach of work engagement through the dimensions of vigor, dedication, and absorption. The study concluded that work engagement and workaholism are opposite constructs that are weakly and positively related to each other. Additionally, the study concluded that participants who were fully engaged in the work environment experienced increases in job performance as well as life satisfaction.

Work Engagement and Leadership Styles

Leadership matters. Leader behavior is an antecedent to work engagement and is studied in "more complex models, which consider dyadic, shared and social relational dynamics" (Rodriquez-Carvajal et al., 2010, p. 238). Leaders influence the behavior of followers which significantly impacts followers' levels of work engagement (Schmitt et al., 2016). The literature reviewed shows a positive correlation between transformational, transactional, and authentic leadership styles and work engagement, concepts discussed in the following sections.

Transformational Leadership

The concept of transformational leadership, developed by Downton (1973) and further refined by Burns (1978), elevates the connection between leaders and followers since the greater good is rested in the reciprocal relationship between the two in contrast to having a myopic focus on leader behaviors solely. Bass (1985, 1993) further studied transformational leadership and its impact on followers and performance. In particular, Bass studied the influence a transformational leader has on its followers. Followers of a transformational leader feel a sense of trust, loyalty, admiration, and a willingness to work. Transformational leaders ripen conditions for positive emotions which results in work engagement.

Schmitt et al. (2016) surveyed 148 employee-colleague dyads from a confluence of employees in health care, hospitality, finance, and local, state, and federal agencies to determine the perceived influence of transformational leadership practices on followers. A hierarchical regression analysis was used to test the hypothesis that transformational leadership is positively related to work engagement. Schmitt et al. administered the UWES to measure transformational leadership and found a positive correlation between perceived transformational leadership and followers' engagement [($\beta = .31$, $t = 3.92$, $p < .01$) (2016, pp. 598-602)].

Similarly, Tims et al. (2011) surveyed consultants in a Netherlands firm to ascertain their perspective of daily transformational leadership practices on followers' affective work engagement. Participants completed the 9-item UWES short form to assess daily engagement levels based on transformative leader practices. Results indicated a positive correlation of .35 (daily transformational practices) and .43 (daily work engagement) ($p < .05$) between transformational leadership and work engagement. Raja (2012) used a regression analysis to analyze the outcomes of transformational leadership on higher levels of employee engagement.

Raja had a specific focus on the traits of transformational leadership: idealized influence, intellectual stimulation, individualized consideration, and inspirational motivation. The regression analysis for the effect of transformational leadership traits on work engagement found high coefficients for idealized influence (.710), intellectual stimulation (.670), individualized consideration (.877), and inspirational motivation (.601), which indicated a positive correlation between a leader's transformative practices and work engagement.

Transactional Leadership

Transactional leadership is based on the contingent rewards and motivation to get the job done or to reach a goal (Bass, 1985). The structure in transactional leadership may lead to organizational results, and a transactional organizational culture focuses primarily on formal and informal negotiated agreements. Motivation in this type of environment is based primarily on extrinsic rewards and outputs. Transactional behaviors applied correctly can produce results by encouraging hard work and minimizing punitive actions (Li, 2019). Two approaches to transactional behaviors are constructive and corrective. Constructive transactions explicitly identify expectations and the associated rewards, while corrective transactions relate to the measures taken to correct, modify, or redirect performance. Transactional leaders identify challenging goals, provide appropriate strategies, and explicitly link performance and rewards while setting clear work expectations; they hold followers accountable for accomplishing the task (Avolio et al., 1999). A 2013 Trogolo et al. study of 125 service workers in Argentina showed that the predictive power of transactional leadership on work engagement is weaker than transformational leadership (.37, $p < .05$).

Authentic Leadership

Authentic leadership, which is value-based, elevates characteristics such as self-reflection and self-awareness (Walumbwa et al., 2008). Authentic leaders possess a healthy sense of self and understand the personal strengths and opportunities to grow, while maintaining balanced confidence, presence, and purpose. Additionally, Walumbwa et al. asserted "personal benefits of authenticity include more optimal levels of self-esteem, higher levels of psychological well-being, enhanced feelings of friendliness, and elevated performance" (p. 91). A random sample study of 395 banking employees conducted by Hassan and Ahmed (2011) revealed that authentic leaders created more trusting relationships which led to increased levels of work engagement. The researchers reported the following correlations between levels of work engagement and vigor (.90), dedication (.85), and absorption levels (.89). In summary, studies demonstrated that leadership styles significantly impacted levels of employee work engagement.

Educational Leadership

The purpose of leadership is to facilitate collective goal attainment through strategic and practical behaviors that "elevate social influences processes to organize, direct, and motivate the actions of others" (Tschannen-Moran & Gareis, 2004, p. 574). The changing roles and responsibilities of school principals from a focus on management to a focus on instructional leadership impact the work engagement of students, staff, and parents (Alvoid & Lesley, 2014). The role of the principal is replete with complexities and challenges. The changing landscape is due in part to the 21st century shift toward accelerated outcomes for students, rightly placing student achievement as a top priority. In order to effectively produce favorable outcomes for students, principals need the requisite skills and resources to recruit and retain high quality teachers (Alvoid & Lesley). The underpinnings of increased accountability for student

achievement birth new, required competencies for teachers and principals centered on fiscal management, data analysis, pedagogy, social work, and human capital. In order to realize the vision of student achievement, principals need professional learning opportunities to refine leadership skills and competencies in order to create optimal conditions for students and teachers to thrive (Alvoid & Lesley, 2014).

Work engagement is essential for school leaders. The constant systemic demands and expectations, the evolving needs of students and families, and the pressure on teachers impact principal efficacy and the dimensions of work engagement including vigor, dedication, and absorption. This may cause some principals to feel inadequate to perform their roles and responsibilities (Nir & Hameiri, 2013). The standards governing principals represent another driver contributing to principal efficacy and work engagement.

Accountability

Since the 1983 report, *A Nation at Risk*, the federal government has constantly sought new educational reforms to promote global competitiveness for American students. With the reauthorization of the Elementary and Secondary Education Act from No Child Left Behind and The Every Student Succeeds Act come increased accountability for school leaders and teachers (Sharp, 2016). The skills students need to compete globally are reflected in local, state, and federal accountability systems. In addition, the shifting demographics compel school leaders to expend inordinate amounts of time building the capacity of teachers (Gonzalez & Firestone, 2013). Despite tremendous effort, the nation's educational system is not keeping pace with these growing demands (U.S. Department of Education, 2008). The *Nation Accountable Report* (2008) supposes that the contentment of political and education officials and the lack of accountability formed a nation in crisis, but further declares that the educational systems remain at risk, "we are

also now a nation informed, a nation accountable, and a nation that recognizes there is much work to be done" (U.S. Department of Education, 2008, p. 3).

Accountability for principals comes in many forms. According to Gonzalez and Firestone (2013) the prevailing achievement gap that exists for students of color forces principals to make difficult decisions that may not be popular or the norm but are made in service to the needs of the students and school community. Gonzalez and Firestone emphasized that principals are accountable not only morally to themselves but also professionally and bureaucratically to the school district, students, families, and teachers. This accountability places tremendous pressure and responsibility solely on the shoulder of the principal. Coordinated and collaborative support for principals is essential to build their capacity and provide coaching on instructional leadership.

District Support

District support is tantamount to principal's levels of work engagement and efficacy. District leadership provides specific pathways for school principals by way of professional learning, clear expectations, performance targets, and resources (Honig, 2012). District leadership has a tremendous responsibility for setting educational outcomes and implementing state and federal mandates (McFarlane, 2010). Another important aspect of district leadership is principal selection and support. Practitioners and researchers document the enormous responsibility district leadership has in indirectly impacting student achievement (Honig & Rainey, 2014, 2019).

One key aspect of district support is defining and modeling instructional leadership for principals. Instructional leadership capacity involves helping principals understand teaching and learning through its presence in the classrooms (Honig & Rainey, 2014). Instructional leadership requires a deep understanding of curriculum and pedagogy in order to provide specific feedback

and support to teachers. The feedback loop builds efficacy via vicarious experiences and gives principals confidence to perform their role-related responsibilities (Honig, 2012).

Another key aspect of district support is professional learning – providing opportunities for principals to engage in job-embedded learning and to act as learning resources for their colleagues. The formulation of these learning communities strengthens principal's instructional leadership practice and builds a common understanding of systemic initiatives, curricula expectations, and accountability measures (Honig & Rainey, 2014). Engaging in learning communities increases efficacy through repeated practice which aids in developing resilience, complex problem-solving, and persistence (Bandura, 1993; Honig & Rainey, 2014).

Ikemoto et al. (2014) posit that effective districts "provide tools, processes, and supports for principals to utilize decision-making effectively" (p. 15). Honig and Rainey (2019) concur and further believe such moves provide reinforcement and sustained principal engagement. Principals and district partners reap substantially from collaboration which creates shared responsibility and cohesion in support of students (Honig & Rainey, 2014, 2016; McFarland, 2010).

Summary

This literature review examined several concepts and relationships related to positive psychology and the conditions that influence work engagement. The literature review began with Kahn's (1990) historical context of work engagement and the conditions of work engagement he deemed essential: meaningfulness (sense of value), safety (sense of belonging), and availability (emotional, cognitive, and physical). Maslow's physiological (deficiency) needs were discussed in the context of the essential conditions for an individual to engage at work.

The next topic included an examination of work engagement which is the antithesis of burnout. A common definition of work engagement by Schaufeli et al. (2010) was shared. Three work engagement dimensions were identified: vigor, dedication, and absorption. This included a discussion of the evolution of work engagement reflected in the work of Schaufeli et al. This included psychological constructs situated in the context of the changing role of the principalship, the impact of accountability, and the role of the school district in supporting principals. This literature review painted a portrait of the multi-faceted nature of work engagement as a construct that began with Kahn (1990) and was further refined by numerous researchers. Work engagement, a positive and fulfilling state of being, was characterized by vigor, dedication, and absorption (Bakker, 2002; Schaufeli et al., 2010).

The literature review offered a summary of the key drivers of work engagement. It also included a review of the instruments used to measure work engagement and a comparative tool, the Gallup^{Q12}. The UWES measures the dimensions of vigor, dedication, and absorption. Gallup^{Q12} measures engagement from an organizational perspective which helps managers adjust the organizational culture.

The literature review presented positive psychology and explained related constructs such as burnout, the job-demands resources model, psychological capital, and efficacy. Positive psychology focuses on well-being, optimism, and hope which strengthen the human condition and promote happiness. Studies were presented identifying predicative drivers of work engagement. The literature review also covered leadership styles that promote work engagement and presented studies that showed the correlation between the four traits of transformational leadership and its considerable influence on work engagement, job satisfaction, and performance.

Finally, the review ended with a description of the changing role of the principal and the accountability measures that increase job demand and affect work engagement. It concluded with a review of literature on the role of the school district in coaching the coach. The research pointed to the importance of districtwide professional learning, clear expectations and targets, and a shared vision for supporting the principal. The concepts presented in this literature review support the purpose of the study in understanding the relationship between leader efficacy and work engagement.

CHAPTER 3: METHODOLOGY

The purpose of this quantitative study was to examine the relationship between leader efficacy and work engagement. There is abundant research on leadership styles and strategies for educational leaders (Alvoid, 2014; Avolio & Hannah, 2008; Bass, 1993). Significant research exists that explores the relationship between the leader and the follower and that focuses mostly on how certain behaviors impact or influence followers. The subsequent actions of the followers highlight prescriptive actions that leaders can use to create prime conditions for positive and productive organizational climates. The end goal is student success. This study uniquely focused on the agency of the leader and subsequent engagement in work activities.

Bandura defined efficacy as the prevailing mechanism of human agency (1993). Human agency, then, influences what individuals do and the means by which self-development emerges (Federici & Skaalvik, 2012). According to Bandura, efficacious people are individuals who address challenges with a level of confidence versus those who lack efficacy (Bandura, 1993). The promotion of leader self-efficacy requires the appropriate skills and adequate extrinsic motivation (Bandura, 1997). Further, Bandura concluded that levels of self-efficacy determine an individual's choice of activities, the amount of effort applied, and the duration of coping with stressful situations. Efficacy may correlate to work engagement given its definition and its interconnectedness to human agency. Work engagement is a positive approach to work activities characterized by vigor, dedication, absorption, and results (Schaufeli & Bakker, 2010). This study seeks to determine if there is a correlation between leader self-efficacy and work engagement.

Chapter 3 focuses on the methodological approaches to this study including the research design (participants and instrument), variables (measurement scales and survey items), and

limitations of the study. This study was conceptually driven; it focused on understanding the relationship between two constructs: leader efficacy and work engagement (Marayuma & Ryan, 2014).

Research Design

This positivist, quantitative study used secondary data developed by the National Center for Education Statistics (NCES): The National Teacher and Principal Survey (NTPS) Principal Questionnaire. The NTPS Principal Questionnaire replaced the widely used Schools and Staffing Survey (SASS), administered from 1987 to 2011. The NTPS questionnaires focus on public schools including public charter schools.

Secondary data analysis is a systematic method of research using data collected by another researcher or institution for a different purpose (Johnston, 2014). There are significant advantages to using public-use data such as the NTPS Principal Questionnaire. Accessibility and expediency are two notable advantages. Having access to the NTPS public-use data set maximizes efficiency and reduces financial costs necessary to complete the study. Secondary data analysis is strengthened by alignment with a theoretical framework (Johnston, 2014). The NTPS Principal Questionnaire aligns well with the social cognitive theory, which is the theoretical framework for this study. The social cognitive theory foundationally incorporates efficacy and the four sources of influences (Bandura, 1993). The secondary data analysis offers insight into a wide range of questions not initially considered in the study, especially given the sampling of a population distributed across all 50 United States and the District of Columbia (Nicholson & Bennett, 2008). Data collection from the 2015-2016 NTPS also allows examination of information directly from school principals functioning in a range of school

contexts. Finally, the large sampling offers an opportunity for the generalizability of the research findings.

Statistical Methods

The NTPS Principal Questionnaire is a 7-item survey with multiple sub-items within larger items. The NTPS Principal Questionnaire measures five dimensions: (a) experience, (b) goals and decision making, (c) school climate and safety, (d) working conditions and principal perceptions, and (e) student growth and teacher evaluation. Items related to the dimensions of goals and decision making and working conditions and principal perceptions were used to determine if a relationship existed between leader efficacy and work engagement. The NTPS Principal Questionnaire also captures the principals' demographic data, which was used for the descriptive statistics. The survey uses various forms of Likert responses ranging from *no influence* to *major influence* and *strongly disagr*ee to *strongly agree*.

The variables in this study are dichotomous categorical variables. To test the independent and dependent variables in this study, a two-way contingency analysis using the phi coefficient (found in the chi square test of independence) examined the relationship between leader efficacy and work engagement. Two-way contingency analyses statistically determine if a relationship exists between two variables (Green & Green, 2003). Additionally, the phi coefficient is a more accurate and stronger indicator of correlation. The phi coefficient ranges between 0 to 1 with the higher value indicating a stronger relationship or association between two variables (Pallant, 2016).

Research Questions

The goal of this study was to explore the relationship between self-efficacy and the work engagement of school leaders. The definition of school leaders includes individuals who hold Maryland state licensures or endorsements in the category of administration and supervision.

The following research question and hypothesis were used to predict the following outcomes for this study's samples:

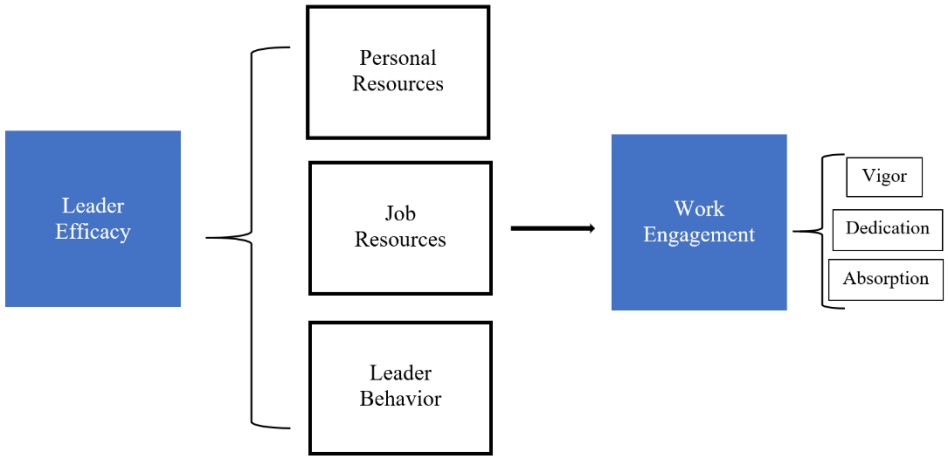
- RQ1: What is the relationship between a school leader's efficacy and work engagement?
  - H_0: There is no relationship between a school leader's efficacy and work engagement.
  - H_1: There is a relationship between a school leader's efficacy and work engagement.
- RQ2: What is the effect of predictors (age, gender, years of experience) on leader efficacy and work engagement?
  - H_0: There is no effect of predictors (age, years of experience, gender) on leader efficacy and work engagement?
  - H_1: There is an effect of predictors (age, years of experience, gender) on leader efficacy and work engagement?

Conceptual Model

Figure 2 displays the conceptual model used in this study. It suggests the direct relationship of school leader self-efficacy with work engagement.

Figure 2

Conceptual Model Used in The Study



Note. This graphic displays the relationship between leader efficacy and work engagement.

Variables

This section describes the variables used in the study and the operationalization of the dependent and independent variables in the survey. The independent variable, leader efficacy, was represented under the NTPS Principal Questionnaire item, goals and decision making, which addresses principals' perceived influence on specific activities. There are seven items within the larger question related to efficacy. These items best reflect Bandura's definition of efficacy and the choice of activities, the amount of effort applied, and the duration of coping with stressful situations (Bandura, 1997). The responses are based on a 5-point Likert scale ranging from *no influence* to *major influence* with a choice for *not applicable*. For the purposes of this study, this item represented leader efficacy.

Work engagement represented the dependent variable in this study. For the purposes of this study, the definition of work engagement aligns with the most accepted definition of work engagement; work engagement is a positive approach to work and fulfilling work-related state of

mind that is characterized by vigor, dedication, and absorption (Bakker & Demerouti, 2008; Bakker et al., 2011; Schaufeli et al., 2002). Vigor is characterized by high energy levels and mental stamina during work along with full self-investment and professional risk-taking (Bakker & Demerouti, 2008; Bakker et al., 2011; Schaufeli et al., 2002). Dedication refers to individuals' sense of importance, pride, and inspiration about the work and the organization (Bakker & Demerouti, 2008; Bakker et al., 2011; Schaufeli et al., 2002). Absorption involves a deep focus on the work, so much so that it is difficult for the individual to detach (Bakker & Demerouti, 2008; Bakker et al., 2011; Schaufeli et al., 2002).

Measures

The NTPS Principal Questionnaire dataset consists of survey responses from a nationally representative sample of public-school principals from kindergarten through grade 12 including public charter schools from kindergarten through grade 12 (Taie & Goldring, 2017). The 2015-16 survey was administered to public and charter schools separated into four categories: primary, middle, high, and combined schools. An investigation into the items in the NTPS Principal Questionnaire related to efficacy and work engagement specifically are applicable to the research question and hypothesis of this study.

The NTPS Principal Questionnaire provided demographic and descriptive data regarding contextual factors at the elementary and secondary levels of schools. The NTPS Principal Questionnaire offers relevant information about the conditions of education across the United States which assists policymakers in public school decision-making. The NTPS focuses on four primary areas: analytics regarding principal experience and training; working conditions, and principal perceptions; goals and decision-making; and school climate and safety (NCES, 2015). These areas aligned well with the Utrecht Work Engagement Scale (UWES) in measuring the

antecedents to work engagement and provided significant, generalizable data in support of the purpose of the study.

To address the independent variable, leader efficacy, seven items under question 2-2 under the goals and decision-making dimension were used. The question in item 2-2 asks, “How much actual influence do you think you have as a principal on decisions concerning the following activities?” The coding for each item ranges from 1 to 4 (5, which is *nonapplicable*, was not tabulated). For the purposes of this study, efficacy ranges were set for this item at 21 or higher for high leader efficacy and 20 or lower for low leader efficacy (i.e., 20+ = high efficacy; 20- = low efficacy). Table 2 includes the broad survey item, sub-items, Likert responses, and coding value.

Table 2

Leader Efficacy Items: How much ACTUAL influence do you think you have as a principal on decisions concerning the following activities?

Survey Item	Associated Practice	Potential Responses (Value)
0203	Setting performance standards for students of this school.	*No influence* (1)
		Minor influence (2)
		Moderate influence (3)
		Major influence (4)
0204	Establishing curriculum at this school.	*No influence* (1)
		Minor influence (2)
		Moderate influence (3)
		Major influence (4)
0205	Determining the content of in-service professional development programs for teachers of this school.	*No influence* (1)
		Minor influence (2)
		Moderate influence (3)
		Major influence (4)
0206	Evaluating teachers of this school.	*No influence* (1)
		Minor influence (2)
		Moderate influence (3)
		Major influence (4)
0207	Hiring new full-time teachers of this school.	*No influence* (1)
		Minor influence (2)
		Moderate influence (3)
		Major influence (4)
0208	Setting discipline policy at this school.	*No influence* (1)
		Minor influence (2)
		Moderate influence (3)
		Major influence (4)
0209	Deciding how your school budget will be spent.	*No influence* (1)
		Minor influence (2)
		Moderate influence (3)
		Major influence (4)

Note. Items are taken from the NTPS Principal Questionnaire (NTPS, 2015-2016, p. 6). Coding values: High efficacy = ≥21; low efficacy = ≤20.

To address the dependent variable, work engagement, six items under question 4-5 under the working conditions and principal perceptions dimension were explored. The question in item 4-5 asks, “To what extent do you agree or disagree with each of the following statements?” The coding for each item ranges from one to four. For the purposes of this study, the one work engagement item that is stated positively was recoded in reverse order. The items were also categorized based on the dimensions of work engagement as reflected in Table 2: vigor, dedication, and absorption. The high work engagement scores range from 12 points or lower and low work engagement scores range from 13 points or higher. The associated dimensions were determined through a panel-validation process whereby a group of five participants independently read the research abstract and reviewed the key definitions for leader efficacy and work engagement including the dimensions of work engagement. The participants subsequently asked clarifying questions prior to a group discussion related to each subitem within item 4-5. Group members were then asked to record the dimension that best described the item from their perspective. Once all participants completed an item, a group discussion ensued during which individuals shared their rationales. The dimensions identified in Table 3 reflect the consensus of the group for each subitem.

Table 3

Work Engagement Items: To what extent do you agree or disagree with each of the following statements?

Survey Item	Statement	Possible Responses (Coding Value)	Work Engagement Dimension
1408	The stress and disappointments involved in being a principal at this school aren't really worth it.	Strongly Agree (1) Somewhat Agree (2) Somewhat Disagree (3) Strongly Disagree (4)	Dedication
1409	I am generally satisfied with being a principal at this school.	Strongly Agree (4) Somewhat Agree (3) Somewhat Disagree (2) Strongly Disagree (1)	Absorption
1410	If I could get a higher paying job, I'd leave this job as soon as possible.	Strongly Agree (1) Somewhat Agree (2) Somewhat Disagree (3) Strongly Disagree (4)	Dedication
1411	I think about transferring to another school.	Strongly Agree (1) Somewhat Agree (2) Somewhat Disagree (3) Strongly Disagree (4)	Dedication
1412	I don't seem to have as much enthusiasm now as I did when I began this job.	Strongly Agree (1) Somewhat Agree (2) Somewhat Disagree (3) Strongly Disagree (4)	Vigor
1413	I think about staying home from school because I'm just too tired to go.	Strongly Agree (1) Somewhat Agree (2) Somewhat Disagree (3) Strongly Disagree (4)	Vigor

Note. Items are taken from the NTPS Principal Questionnaire (NTPS, 2015-2016, p. 10). Coding values: low work engagement = ≥13; high work engagement = ≤12.

Data Collection Instruments and Procedures

The data collection for the 2015-16 NTPS included mail-based methodology and Internet reporting. Initial invitation letters were distributed through the mail for participating schools in the summer of 2015 to verify correct mailing information and to determine school eligibility. Once this process was completed, full participant information packages were mailed which included a description of the study, the teacher questionnaire, and the principal questionnaire. A survey coordinator was appointed in each school to ensure accurate and timely completion. The survey coordinator also served as a liaison between the school and NCES staff. Subsequent follow up occurred for incomplete or unreturned surveys (Taie & Goldring, 2017).

Reliability and Validity

The NTPS Principal Questionnaire survey items were assessed for validity and reliability using cognitive testing, Cognitive testing is useful in survey item or questionnaire development and provides information on the respondent's conceptual understanding and interpretation of the question (Miller et al, 2014). Internal reliability tests were conducted using Cronbach's alpha to statistically determine the reliability and validity of the two survey items (2-2 and 4-5) on the NCES Principal Questionnaire. The items have an acceptable level of reliability at .6 (.589 and .573, respectively) (Pallant, 2016).

Participants

The sampling frame deployed by the NCES stems from the Common Core of Data (CCD) Non-fiscal School Universe data file, which is housed in the U.S. Department of Education. The CCD identifies schools that are eligible to participate based on the federal definition of a school. The formal definition of a school according to the CCD is:

> …an institution or part of an institution that provides classroom instruction to students, has one or more teachers to provide instruction, serves students in one or more grades 1-12 or possible for two or more schools to share the same building apart from a private home. (Taie & Goldring, 2017, p. 37)

Table 4 includes the 2015-2016 NTPS Principal Questionnaire sample size and total weight response rate.

Table 4

The 2015-2016 NTPS Principal Questionnaire Sample Size and Weighted Response Rate

Participant	Sample Size	Total Weighted Response Rate
Public School Principals	7,130	71.8%
Public Charter School Principals	1,170	

Limitations

The first limitation of the study is the research design. This research used secondary data previously collected by the NCES. As a result, the researcher had limited control and no ability to manipulate the construct or variables. The second limitation of the proposed study was generalizability. The sample for this study derived from the 2015-2016 NTPS Principal Questionnaire and focused only on public school principals in traditional educational settings. The results of this study cannot be generalized to private, parochial, or non-traditional schools. An additional limitation was the singular focus on leader efficacy in explicitly defined educational settings. The results analyzed may not be generalized to other work settings.

Conclusion

The information presented in this chapter provided an overview of the study on leader efficacy and work engagement alone. It included a description of the research design and related statistical tests used to determine if a relationship existed between leader efficacy and work

engagement. Subsequently, the research questions, hypotheses, and conceptual framework were aligned with the theoretical framework of the study, social cognitive theory. The contents of the chapter also included a discussion of the data collection process, variables, measures, and participants. The chapter indicated the intention to run reliability and validity tests as this information was not readily available. Finally, the chapter concluded with potential limitations to the study. Chapter 4 will focus on the results of the data analysis and Chapter 5 will discuss the findings and implications for future research.

CHAPTER 4: RESULTS AND ANALYSIS

The purpose of this quantitative study was to examine the relationship between leader efficacy and work engagement. This study is grounded in the key leadership variables found in Bandura's social cognitive theory. Undergirding these leadership variables is self-efficacy, which is a person's belief about their capability to produce designated levels of performance while exerting influence over events that affect their lives (Bandura, 1994). The research suggests that leader efficacy conjures deep intrinsic and extrinsic motivation that benefits the collective organization as well as individual engagement.

School leaders in the traditional kindergarten through 12th grade educational setting were the focus of this study. Research focuses on the importance of leader efficacy and human agency in successful task completion, organizational coherence, and positive outcomes. Thus, it was prudent to uniquely focus on school leaders' perceptions of self-efficacy in influencing local school decisions juxtaposed to their perceptions about levels of engagement in work activities. The concept of work engagement stems from the area of positive psychology and is coined as the antidote to burnout theories. Work engagement is a positive approach to work activities that is characterized by vigor, dedication, absorption, and results (Schaufeli & Bakker, 2010).

This chapter presents the analysis of archived data from the 2015-2016 administration of the NTPS Principal Questionnaire and presents the results of the study beginning with a summary of methodology and characteristics of the participants followed by a description of the variables used in the study. Subsequent sections explore the assumptions of data eligibility, survey data analysis and associated findings based on the research questions, hypotheses, and conceptual framework. The conceptual framework highlights the anchor elements of the social

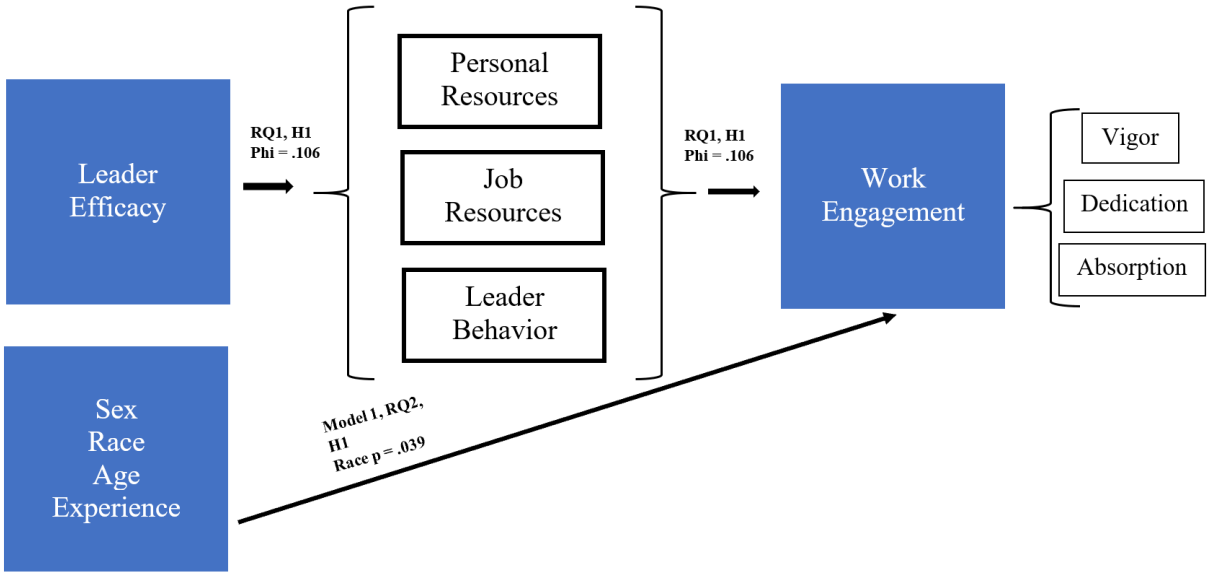
cognitive theory as well as specific aspects of work engagement. The study was guided by the following research questions and related hypotheses.

- RQ1: What is the relationship between a school leader's efficacy and work engagement?
  - H_0: There is no relationship between a school leader's efficacy and work engagement.
  - H_1: There is a relationship between a school leader's efficacy and work engagement.
- RQ2: What is the effect of predictors (age, gender, years of experience) on leader efficacy and work engagement?
  - H_0: There is no effect of predictors (age, years of experience, gender) on leader efficacy and work engagement?
  - H_1: There is an effect of predictors (age, years of experience, gender) on leader efficacy and work engagement?

Figure 3 displays the relationship between leader efficacy and work engagement and the hypotheses.

Figure 3

The Relationship Between Leader Efficacy and Work Engagment



Significance of the Study

The complexity of school leadership requires leaders to possess requisite agency, confidence, and efficacy to appropriately tackle multidimensional tasks. Efficacy beliefs and perceptions are critically important for all aspects of leadership. These beliefs and perceptions activate cognition, problem-solving, and engagement in performance (Avolio & Hannah, 2008; Bandura, 1989, 1990).

Leader efficacy represents an essential aspect of leader presence and success (Johnson et al., 2018). Similarly, Avolio and Hannah (2012) assert that higher leader efficacy enhances a leader's capacity to develop clear vision and meaningful goals. The intricacies associated with school leadership along with the unprecedented accountability mandates leave school leaders exclusively responsible for student outcomes and the success or failure of their schools (Schrik &

Wasonga, 2019). Therefore, educational organizations need efficacious leaders to address existing and future social, economic, and academic gaps comprehensively and effectively.

This study is significant because it will direct attention to the value of a district's coordinated support of principals, balanced approach to accountability, and strategic efforts to evaluate its priorities. Additionally, the results of this study could impact a district's efforts to attract and retain highly qualified leaders which will stabilize learning environments and, more broadly, learning organizations. Lastly, the findings have the potential to elevate the significant role of school district leadership development programs and ensure that aspects of leader efficacy are factored into the practices, professional learning, and experiences of school leaders.

Summary of Methodology

The NTPS Principal Questionnaire data file provided demographic and descriptive data regarding contextual factors at the elementary and secondary levels of schools. The NTPS focuses on four primary areas: analytics regarding principal experience and training; working conditions and principal perceptions; goals and decision-making; and school climate and safety (NCES, 2015). I adhered to the application process to gain access to the public data use restricted file through the Institute of Education Sciences (IES), National Center for Educational Statistics (NCES). As part of the process, select members of the dissertation committee were required to complete a user module and sign an affidavit agreeing to abide by the policies set forth by IES. Hood College executive leadership supported this process and were valuable partners in securing the full data licenses, technology, and a secure office for me to work.

In this non-experimental study, the independent variable, leader efficacy, was addressed using the seven items listed in question 2-2 in the goals and decision-making section. The question in item 2-2 asks, *How much actual influence do you think you have as a principal on*

decisions concerning the following activities? To address the dependent variable, work engagement, six items listed in question 4-5 under the working conditions and principal perceptions dimension were explored. The question in item 4-5 asks, *To what extent do you agree or disagree with each of the following statements?* The independent and dependent variables are categorical. The independent variable value, leader efficacy, was reflected by a high efficacy score of ≥21 or a low efficacy score of ≤20. The dependent variable, work engagement, was captured as high work engagement with score ranges from 12 points or lower and low work engagement scores ranging from 13 points or higher.

The data needed to address the research questions were obtained through the IES. A restricted-use data license (RUDL) application was completed and submitted by members of the dissertation committee with support from the Hood College chief technology officer and chief financial officer. All participants included in the license completed a mandatory module and signed an affidavit regarding adherence to license restrictions. The RUDL was officially approved on January 28, 2021.

The chi-square test for independence was used to explore the relationship between leader efficacy and work engagement (RQ1) using SPSS. Prior to running the statistical tests, the overall points for each item were tabulated for each the two levels of leader efficacy (21 or higher = 1 and 20 or lower = 0) followed by the same process for work engagement. Such calculations were required to accurately run the 2x2 table and compute the chi-square test for independence.

The chi-square test for independence is an appropriate test for dichotomous variables and focuses primarily on the frequencies or proportions within each of the categorical variables to determine association between those variables. The crosstabulation report provided a summary

of the categorical variables (the number of low/high efficacy and low/high engagement), and the Pearson chi-square tests, including the Yates continuity correction. The report also provided important information on the statistical significance value of the association between the two dichotomous variables. Finally, the phi coefficient, a correlation coefficient, provided the effect size statistics. The phi coefficient ranges between 0 to 1, moving along the continuum of weak to stronger association. A logistic regression was used to capture predictability based on the control variables, sex, race, age, and years of experience (RQ2). Two models of logistic regression were run to test the categorical variables (sex, race) and the continuous variables (age, years) on the dependent variable, work engagement.

Institutional Review Board

This study required approval by the Hood College Institutional Review Board (IRB). The Hood College IRB formally approved this study on October 26, 2020. A copy of the IRB approval letter is included as Appendix C.

Characteristics of the Participants

The NTPS Principal Questionnaire consists of a nationally representative sample survey of public-school principals from kindergarten through grade 12, including public charter schools from kindergarten through grade 12 (Taie & Goldring, 2017). The 2015-16 survey was administered to public and charter schools in four categories: primary, middle, high, and combined schools.

The NCES Common Core of Data (CCD) Non-fiscal School Universe data file, which is housed in the U.S. Department of Education. Schools were eligible to participate based on the federal definition of a school, which is "an institution or part of an institution that provides classroom instruction to students, has one or more teachers to provide instruction, serves students

in one or more grades 1-12" (Taie & Goldring, 2017, p. 37). Public school principals made up over 70% of the respondents with the remaining participants public charter school principals (~30%).

Variable Descriptive Statistics

The NTPS Principal Questionnaire dataset included demographic information from respondents including gender, race, age, and years of experience. There were approximately 2,830 females (~50%) and 2,790 males (50%) in the sample, giving a total of approximately 5,620 respondents. The race category was truncated to non-Hispanic White and all other race groups. The output indicated there were approximately 4,480 non-Hispanic Whites (~80%%) and 1,140 in all other race groups (~20%). The descriptive statistics for age and experience were calculated using the SPSS compare means analysis. The mean age was 47 with the lowest age range being 25-29 years old and the highest age range between 39-47 years. The years of experience mean was 6.5 with the lowest years of experience ranging from 1-4 and the highest between 39-47 years. The descriptive statistics are displayed in Table 5.

Table 5

Respondent Gender and Race

Question	Frequency	Percent	Valid Percent	Cumulative Percent
Are you male or female? (Item 6-1)				
Female	2830	50	50	50
Male	2790	50	50	50
What is your race? (Item 6-3)				
Non-Hispanic White	4480	80	80	30
All others	1140	20	20	20

Note. Details may not sum to total because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Institute of Education Sciences, "National Teacher Principal Survey Principal Questionnaire," 2015-2016.

Data Eligibility

There are three assumptions associated with the chi-square test for independence. The first assumption was the inclusion of two categorical or nominal variables. The categorical variables in this study were leader efficacy and work engagement. The second assumption was that the participants have no relationship with each other or the group. Lastly, the cell count for all entries has to be greater than five (Pallant, 2016).

The appropriate data eligibility tests included crosstabulation, chi-square tests, and symmetric measures. The crosstabulation captured the percentage value of the categorical variables in relation to the respondents. The series of chi-square tests include the Pearson chi-square, the Yates Continuity Correction, Likelihood ratio, and linear-by-linear association. The primary value of the chi-square test is the Pearson chi-square or the Yates Continuity Correction when using a 2X2 table along with the asymptotic significance value, which determines if the result is significant. Finally, the symmetric measures output provides the phi coefficient. The phi coefficient value represents the effect size and strength of the association between the two categorical variables.

There are seven assumptions of the logistic regression: (a) a dichotomous dependent variable, (b) one or more independent variable, (c) independence between the observations and categories of the dependent variable, (d) a minimum of 15 cases per independent variable, (e) the sample size and number of predictors should be balanced or in proportion to the dependent variable, (f) there should be no multicollinearity, and, (g) no outliers (Laerd Statistics, n.d.). The second research question met these assumptions.

There are 10 data eligibility tests for logistic regression that fall into five primary categories: data coding, baseline analysis, logistic regression results, category prediction, and

variables in the equation. The primary tests that determine a statistical or predictive value include the Omnibus test of coefficients, model summary, classification table, and the variables in the equation. The full description of the data eligibility tests is listed in Table 6.

Table 6

Logistical Regression Data Eligibility Tests

Category	Data Eligibility Test	Value
Data coding	Case processing summary Dependent variable encoding Categorical variable codings	Check for missing cases Verification of dependent variable coding Determine if any low counts exist in independent variables
Baseline analysis	Classification table Variables in the equation Variables not in the equation	No independent variables included, only the constant dependent variable
Logistic regression analysis	Hosmer and Lemeshow Goodness of Fit Cox & Snell R square, Nagelkerke R square	Adequacy of the model Measures variation explained by the model
Category predictor variables in the equation	Classification table[a] Variables in the Equation	Probability an event will occur Odds ratio, significance level of each variable

Note. Taken from Laerd Statistics, n.d.

Statistical Analysis

The data analysis models presented below represent the chi-square test of independence. Based on the last assumption, 94 cases were removed from the sample size due to fewer than five cells. For the purposes of the statistical tests and analysis, the respondent count is approximately 5,620 respondents. The case processing table provides a summary of the active and missing participants (see Table 7).

Table 7

Number of Participants

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
Engagement * Efficacy	5620	100.0%	0	0.0%	5620	100.0%

SOURCE: U.S. Department of Education, National Center for Education Statistics, Institute of Education Sciences, "Teacher Principal Survey Principal Questionnaire," 2015-2016.

Table 8, the crosstabulation table, displays the high/low leader efficacy responses as well as the high/low work engagement responses. The results indicate more than 96% (5,165) respondents reported high efficacy and low engagement, while 4.7% (229) have high efficacy and high engagement. Based on the results, less than 1% of the respondents have low efficacy and high engagement. The data shows that approximately 3.4% possess low efficacy and low engagement.

Table 8

Leader Efficacy and Engagement Responses

		Efficacy		Total
		Low	High	Number
Engagement	High	35	229	264
	Low	188	5165	5353
Total		220	5400	5620

Note. Details may not sum to total because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Institute of Education Sciences, "National Teacher Principal Survey Principal Questionnaire," 2015-2016.

The chi-square test outputs provide insight into whether there is a statistically significant association between two categorical variables. The continuity correction is important when using a 2X2 table as it compensates for a larger Pearson chi-square value (Pallant, 2016). The association is statistically significant when there is an asymptotic significance value of .05 or

smaller. The phi coefficient or correlation coefficient represents the effect size (Laerd Statistics, n.d.). Phi coefficient values range between 0 and 1. The higher the numeric value, the stronger the association between two categorical variables (Pallant, 2016). Cohen's (Cohen, 1988) criteria for effect sizes ranges from .10 (small), .30 (medium), and .50 (large). The results of the chi-square test for this study indicated an effect size of .106 indicating a small effect or association between the two variables. The chi-square test for independence (with Yates' continuity correction) suggests there is an association between efficacy and work engagement, albeit weak given the phi coefficient [$\chi^2(1, n = 5{,}620) = 60.15$, $p = .000$, phi = .106]. Table 9 displays the results of the chi-square test and Table 10 displays the statistics for symmetric measure statistics.

Table 9

Statistical Significance between Efficacy and Engagement

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	62.676[a]	1	.000		
Continuity Correction[b]	60.146	1	.000		
Likelihood Ratio	40.880	1	.000		
Fisher's Exact Test				.000	.000
N of Valid Cases	5620				

Note. a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.48.
b. Computed only for a 2x2 table.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Institute of Education Sciences, "National Teacher Principal Survey Principal Questionnaire," 2015-2016

Table 10

Strength of the Relationship between Efficacy and Engagement

		Value	Approximate Significance
Nominal by Nominal	Phi	.106	.000
	Cramer's V	.106	.000
	Contingency Coefficient	.105	.000
N of Valid Cases		5620	

SOURCE: U.S. Department of Education, National Center for Education Statistics, Institute of Education Sciences, "National Teacher Principal Survey Principal Questionnaire," 2015-2016.

The purpose of a logistic regression was to evaluate the potential impact of independent variables on the dependent variable (Pallant, 2016). Two models of logistic regression were run to address research question two. Model 1 included the variables age, sex, and race while Model 2 included the variables experience, sex, and race. The two models were used to assess if age and experience were significant.

The logistic regression for Model 1was performed to determine the impact of age, sex, and race on work engagement. The full model containing all three variables was statistically significant based on the Omnibus Tests of Model Coefficients [χ^2 (4, N + 5,620) = 46.80, p = <.000] indicating that the model was able to distinguish among respondents who reported various levels of work engagement. Holistically, the model explained minimal variance for age, sex, and race with an outcome of 0.8% (Cox and Snell R squared) and 29% (Nagelkerke R squared) of the variance in work engagement. The model accurately classified 96% of respondents. As shown in Table 11, only one of the variables, race (p = .039), made a statistically significant contribution to the model. The strongest predictor of work engagement was sex (female, male) which had an odds ratio of 1.19. This outcome indicated that a little over 1% of

female and male respondents were likely to respond to work engagement questions opposed to respondents of varying age. There is little variance in the odds ratio between age and sex.

Table 11

Model 1: Impact of Predictors (Age, Sex, and Race) on Work Engagement

	Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Engagement(1)	-1.436	.196	53.441	1	.000	.238
	Age	-.009	.008	1.190	1	.275	.991
	Sex(1)	.171	.139	1.511	1	.219	1.187
	Race(1)	-.326	.158	4.275	1	.039	.722
	Constant	3.725	.396	88.560	1	.000	41.468

SOURCE: U.S. Department of Education, National Center for Education Statistics, Institute of Education Sciences, "National Teacher Principal Survey Principal Questionnaire," 2015-2016.

The logistic regression for Model 2 was performed to determine the impact of experience, sex, and race on work engagement. The full model containing all three variables was statistically significant based on the Omnibus tests of model coefficients [χ^2 (4, N + 5,620) = 47.367, p = <.000] indicating that the model was able to distinguish among respondents who reported levels of work engagement. The model showed minimal variance between experience, sex, and race with an outcome of 0.8% (Cox and Snell R square) and 3.0% (Nagelkerke R squared) of the variance in work engagement and accurately classified 96% of respondents. As shown in Table 12, none of the control variables made a statistically significant contribution to the model. Similar to Model 1, the strongest predictor of work engagement was sex (female, male), recording an odds ratio of 1.18, followed by experience with an odds ratio of 1.02%. This outcome indicated that a little over 1% of female and male respondents were likely to respond to work engagement questions opposed to respondents of varying experience or race. There is significant variance in the odds ratio for sex and experience compared to race.

Table 12

Model 2: Impact of Predictors (Experience, Sex, and Race) on Work Engagement

	Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Engagement(1)	-1.436	.196	53.440	1	.000	.238
	Experience	.016	.012	1.689	1	.194	1.016
	Sex(1)	.167	.139	1.449	1	.229	1.182
	Race(1)	-.301	.158	3.642	1	.056	.740
	Constant	3.203	.132	592.146	1	.000	24.610

SOURCE: U.S. Department of Education, National Center for Education Statistics, Institute of Education Sciences, "National Teacher Principal Survey Principal Questionnaire," 2015-2016.

Summary

The study examined the relationship between leader efficacy and work engagement using archival data from the Institute for Education Statistics, the NTPS Principal Questionnaire 2015-2016. The independent control variables age, experience, sex, and race were assessed to determine if predictive value existed on the dependent variable, work engagement. The sample size for this study was approximately 5,620. Data eligibility testing was conducted to ensure appropriate data to conduct the analyses and draw conclusions.

The chi-square test for independence (with Yates' continuity correction) suggests there is an association between efficacy and work engagement, albeit weak given the phi coefficient [$\chi^2(1, n = 5{,}620) = 60.146$, $p = .000$, phi = .106]. The logistic regression models showed no predictive value for age, experience, or sex for the dependent variable, work engagement. Model 1revealed a slight statistical significance for the variable race. Race and sex increased in significance levels minimally in Model 2.

These data generated more questions regarding the conditions that promote leader efficacy and work engagement. Although a relationship between the variables was hypothesized,

a large proportion of school leaders (96%, n=5,165) who demonstrated high efficacy also had significantly low work engagement.

The findings were unexpected, but theoretically consistent with the positive psychology literature on the stressors that challenge the dimensions of work engagement (Schaufeli & Bakker, 2004). The concept of burnout and the impact on psychological well-being may also play a significant factor (Maslach et al., 2001). Additionally, low work engagement was prevalent. Nearly 200 respondents were low efficacy and low work engagement. The research questions, hypothesis, and findings are summarized in Table 13. Chapter 5 includes a discussion of these findings, future areas of research, and implications for district leaders.

Table 13

Summary of Findings

Research Question	Hypothesis	Finding
What is the relationship between leader efficacy and work engagement?	H_0: There is no relationship between a school leader's efficacy and work engagement. H_1: There is a relationship between a school leader's efficacy and work engagement.	Reject the null hypothesis. There is a relationship between efficacy and engagement.
What is the effect of predictors (age, gender, years of experience) between leader efficacy and work engagement?	H_0: There is no effect of predictors (age, years of experience, gender) on leader efficacy and work engagement? H_1: There is an effect of predictors (age, years of experience, gender) on leader efficacy and work engagement?	Model 1: There is a statistical significance of race as a predictor on the dependent variable. All other factors had no statistical significance. Model 2: Accept the null hypothesis.

CHAPTER 5: DISCUSSION

School leaders play a significant role in student achievement, second only to classroom teachers (Wahlstrom et al., 2010). Effective school leadership provides a strong foundation for academic opportunities and improved outcomes for students. The education landscape rapidly changes to reflect the latest federal and state accountability measures alongside the growing social, emotional, and economic challenges that influence student learning experiences. This study explored the relationship between leader efficacy and work engagement within the context of kindergarten through 12th grade school settings. Focusing specifically on a national representative of school leaders provided an anchor for unpacking the complexities of public education and school leaders' perceptions of their ability to influence decisions and cope with working conditions as identified in the NTPS Principal Questionnaire. The study also assessed the predictive impact of age, race, experience, and gender on work engagement. To address the research questions, I used a quantitative research method and the chi-square test for independence and logistic regression to determine the predictive value of the independent control variables. The results of this study confirmed that there was a relationship between leader efficacy and work engagement.

Studies examined for the literature review focused on efficacy and the social cognitive theory (SCT) as defined by Bandura (1977). The literature review also included an extensive discussion about positive psychology constructs focused primarily on work engagement. Further research examined included education accountability, leadership styles, and literature on a school district's role in supporting school leaders.

This chapter provides an overview of the study, a discussion of the findings along with implications for school districts and future research considerations. A summary of the

hypotheses and analysis of the findings are addressed in this chapter followed by a discussion of the limitations of the study. Finally, the chapter concludes with recommendations for further research.

Overview of the Study

Theoretically grounded in the SCT, this study examined the shared influences of leader efficacy and work engagement. The SCT consists of interconnected influences (personal resources, job resources, and leader behaviors) that directly affect human agency and efficacy. The SCT posits that efficacy is an integral variable in leader functioning (Bandura, 1989, 1990; McCormick, 2001). Subsequently, the presence of human agency creates the necessary conditions for leaders to exert influence over what they do and the manner in which personal and professional growth occurs (Federici & Skaalvik, 2012). Human agency within the context of this study is essential given the challenges facing school leaders. The leader's individual knowledge and behavior in any given context require a strong sense of self in order to address the needs of the school community.

The SCT dimensions include personal resources, job resources, and behavior. Personal resources, the internal and external motivation a leader possesses, provided the foundational anchor to begin problem-solving, prioritizing, and reflecting on organizational issues. Job resources for the purpose of this study refers to the district's allocations of resources to support school leaders. Leaders who possess personal resources believe in their ability to problem-solve organizational challenges and collaborate with others to achieve the intended outcome. Leaders rely on job resources and specific tools and strategies to operationalize systemic initiatives, targets, and goals. Personal and job resources influence leader behavior. The behavior of school leaders impacts the organizational culture, followership, and goal attainment.

This study used recoding to convert leader efficacy items in the NTPS Principal Questionnaire from Likert/continous variables to categorical/nominal variables in order to determine an efficacy score (high/low) for each respondent. The results indicated that 96% of the respondents reported they had high efficacy relative to their ability to exert influence over decisions related to budget, curriculum, hiring, discipline, and evaluations. Similarly, items related to work engagement were recoded to categorical/nominal variables in order to assess the levels of engagement (high/low).

The conceptual framework reflects the common influences identified in the social cognitive theory as well as the key drivers of work engagement (i.e., personal resources, job resources, and leader behavior).

Research Questions

The conceptual framework aligns to the research questions and related hypotheses:

- RQ1: What is the relationship between a school leader's efficacy and work engagement?
    - H_0: There is no relationship between a school leader's efficacy and work engagement.
    - H_1: There is a relationship between a school leader's efficacy and work engagement.
- RQ2: What is the effect of predictors (age, gender, years of experience) between leader efficacy and work engagement?
    - H_0: There is no effect of predictors (age, years of experience, gender) on leader efficacy and work engagement?

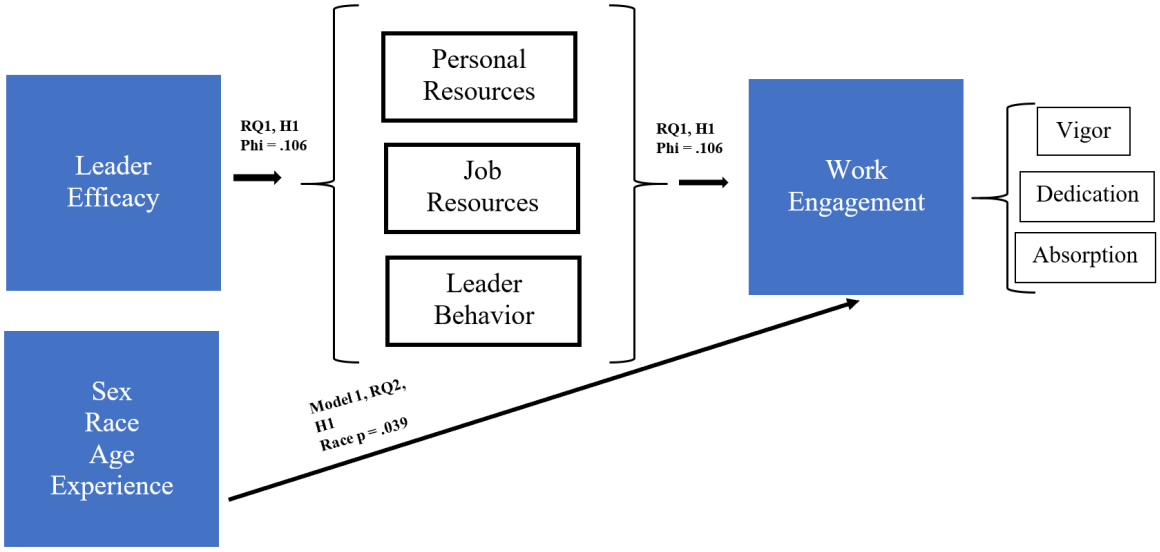
- H_1: There is an effect of predictors (age, years of experience, gender) on leader efficacy and work engagement?

Discussion of the Findings

Based on the results of the data analysis, there was a relationship between leader efficacy and work engagement (phi = .106) and race (p = .039) is a significant predictor in work engagement. Figure 4 graphically depicts this relationship between leader efficacy and work engagement as well as the impact of race as a predictor of work engagement.

Figure 4

The Relationship Between Leader Efficacy and Work Engagement



Leader Efficacy

Efficacy determines a leader's response to challenging tasks and the ways in which a leader rebounds from mistakes. Similar to the broad definition of efficacy, leader efficacy refers to the knowledge, skills, and abilities a leader has as well as the confidence the leader conveys to others (Johnson et al., 2018). Further, Johnson et al. suggested that highly effacacious leaders

firmly believes in their personal ability to coalesce resources, motivate others and identify courses of action to sustain performance across the organization.

The multi-faceted role of a school leader requires stedfast agency in order to establish the shared vision and mission needed to deliver favorable organizational goals. The school leader is responsible for setting the direction for a strong organizational environment focused on learning, well-being, and continuous improvement. Further, school leaders need personal agency to build the capacity of staff by empowering them to make data-driven decisions in pursuit of student achievement. The role of the school leader fundamentally undergirds instructional coherence given the rigorous academic standards and the complexities associated with managing school operations.

Work Engagement

Rooted in positive psychology, work engagement is defined as a physiological and emotional connection to work that is evident through feelings of vigor, dedication, and absorption (Schaufeli & Bakker, 2010). Work engagement influences the time, energy, and effort required to collaboratively achieve challenging outcomes. Bakker (2011) posited that individuals who are fully engaged in their work are highly effacacious and they manage the events that happen in their lives. Drivers of work engagement include job resources and personal resources which aredirectly correlated with influences of leader efficacy. These drivers are directly connected to leader behavior. The theoretical nexus between efficacy and work engagement was tested and analyzed in this study.

The results of the chi-square test of independence assessing the relationship between efficacy and work engagement revealed that a relationship existed between leader efficacy and work engagement. Despite a positive, but weak association, the results suggested that more than

96% of responding leaders reported high efficacy and low engagement. The results also indicated that very few respondents had both high efficacy and high engagement. Overwhelmingly, leader efficacy was high and work engagement remained low. The logistic regression models were used to determine if race, age, experience, and sex impacted the dependent variable. Race was the only predictor that minimally impacted levels of work engagement with a significant level of .039, such that the null hypothesis is rejected and the alternative hypothesis is accepted. Race is a significant predictor of high or low work engagement given that non-Hispanic White respondents accounted for 70% of the participants. Age, experience, and gender did not conclusively impact work engagement.

The low engagement of leaders was a significant finding of this study. The findings concur with national principal attrition statistics from 2017 indicating that 18-21% of school leaders left the position at the end of the year (Levin et al. , 2017). According to the researchers work conditions played a major factor in increased attrition. The poor working conditions contributed to personal well-being and often hindered problem-solving (Levin et al.).

Studies indicate that work engagement elevates the importance of individuals' connections to their work. Schaufeli (2012) points to the fact that engaged workers perform well and are able to innovate and solve complex problems (p. 5). Further, Schaufeli posited that supportive interactions with colleagues and superiors, autonomy, and positive feedback fundamentally promotes deeper work engagement.

Implications for Practice

This study is important when considering the specific implications for practice to retain strong instructional leaders capable of solving complex problems in a positive learning environment. The roles and responsibilities of the school leader are significant given the

expectations that all students achieve at high levels in optimal learning environments. The ideal school environment involves leaders creating the conditions for authentic engagement, collaboration, and problem-solving. The responsibility lies primarily with the school leader. Given the prediction of a national shortage on school leaders, the time is now for school districts to give considerable and earnest attention to the cultivation of efficacious and engaged leaders.

The findings of this study align with the challenges facing school leaders today. The results underscore the significance of leader efficacy and work engagement necessary to accomplish school improvement goals and manage the daily complexities associated with school leadership. The key dimensions of leader efficacy - personal resources, job resources, and leader behavior - also serve as antecedents of work engagement. Fundamentally, school leaders must believe that they can do hard things and that they have the personal stamina to accomplish daunting tasks. While school leadership may be isolating, personal resolve coupled with job resources and support undergird self-efficacy beliefs. An unfortunate truth identified in this study is that efficacy alone does not equate to a positive attitude towards work.

Study results also confirm that there is a positive relationship between efficacy and work engagement. Nearly all participants in this study reported low work engagement (96%). Invariably, low work engagement was associated with feelings of stress regarding working conditions and workload. Circumstances within the educational setting generate extraordinary feelings of stress due to immediate demands and constant changes. School leaders are required to maintain a positive school culture and high academic performance while simultaneously managing serious incidents, child abuse and neglect cases, custody issues, and accountability for federal, state, and local mandates. These situations often take precedence during the school day leaving the instructional components of the role of school leader in the background.

School leaders face the additional stressor resulting from the realignment of district funding to support new initiatives. District allocations originally designated to support school leaders are sometimes dismantled and reabsorbed into the establishment of new offices, identification of new curricula, or operational expenses. Although unintentional, these actions further exacerbate the job resources necessary for leaders to continuously improve their capacity. Required district mandates pile on more expectations without additional resources, which leave school leaders with increased tasks. These circumstances diminish leader efficacy and negatively impact work engagement.

District offices exist to support school leaders in service of student success. The direct connection to student achievement, from a central office perspective, flows through the material and human resources deployed to schools. School districts must consistently build the capacity of school leaders to ensure every school has a highly qualified school leader with an instructional leadership vision that accelerates learning for all students. Simultaneously, school districts should balance expectations of school leaders by providing them time to network, collaborate with others, and reflect on their own practice. The implications for practice identified in this section offer evidence-based strategies to continuously build leader efficacy and enhance work engagement.

Work Engagement

The NTPS Principal Questionnaire items related to work engagement focus on stress and disappointments, job satisfaction, higher compensation, lack of enthusiasm, motivation, and attrition. Antecedents and drivers of work engagement address low engagement. Personal resources are foundational to an individual's engagement at work. These resources are the self-efficacy beliefs that an individual possesses agency to manipulate their environment to exert

some sense of control over their lives or workplace (Schaufeli, 2012). These personal resources spark motivation and inspiration to fully participate in the work setting. Systemic efforts by district leaders to program for continued professional learning opportunities, planned feedback cycles, and bounded autonomy deepen leader efficacy while simultaneously promoting increased levels of work engagement.

Job resources involve the physical, social, and organizational aspects of the workplace that support the leader. Similar to personal resources, job resources target a specific aspect of work engagement that includes opportunities to strategically address leader workloads, recognize the physical and psychological costs to leaders and staff in achieving organizational goals and stimulate personal development (Bakker et al., 2011). Job resources and job demands are antecedents to work engagement (Demerouti & Bakker, 2011). Therefore, to combat low work engagement, targeted interventions are necessary. Work engagement interventions offer viable solutions to addressing the perceived lack of psychological and physiological connections to work.

Work Engagement Interventions

Work engagement interventions are dubbed as amplition which is defined as positive interventions toward improving employees' overall health and well-being (Schaufeli & Salanova, 2010). Rather than approaching interventions from a medical perspective, Schaufeli and Salanova offer an approach grounded in holistic well-being characterized for the entire workforce beginning with the leader. This concept operates on the premise that an individual does not have to be sick to get better. Positive interventions begin at the individual level and flow throughout the organization.

The goal of amplition is to differentiate the intervention focusing on individual behaviors and beliefs. The authors posit that this work begins and ends with a strategic focus on individual purpose, engagement in meaningful work, and access to mindfulness activities. Cognitive strategies and time for personal reflection are also viable work engagement interventions. Engagement in mindfulness and reflection breaks by school leaders and participation in programs or activities that promote physical and emotional well-being are great strategies for decreasing stress.

District Supports

The goal of district offices should be to support teaching and learning in schools. A partnership between district administrators and school-based staff is essential to identifying key leadership and instructional practices that accelerate learning for all students. Honig (2012) asserted that the central office exists to teach school leaders and to engage them in deeper learning through assistance relationships. In order to build leader efficacy and increase work engagement, there are specific actions district leaders can implement to support school leaders.

First, district leaders should amplify partnerships with school leaders through the identification of specific joint work such as school improvement planning, data analysis, and accountability management. Doing so creates deeper learning for school leaders as well as opportunities for them to ask clarifying questions, hear new ideas from colleagues, and set shared agreements regarding the next professional steps. Second, modeling for school leaders provides a powerful learning resource for them and clarifies expectations related to district initiatives, accountability measures, and instructional leadership. Third, district leaders must initiate opportunities to engage school leaders in discourse rather than monitor the implementation of district priorities and student performance results. Fourth, district leaders should strive to

maximize school leaders' time with their school teams, colleagues, and district partners. This allows for individualized queries with the district partner or time with staff and colleagues. District leaders' partnership with school leaders create mutual accountability and shifts the role of district support from management to teaching agents (Honig, 2012).

Networking Opportunities

The role of a school leader can be isolating given the tremendous responsibilities. The data analysis conducted suggested that more than 96% of school leaders experienced low engagement and work-related stress. Professional learning communities (PLCs) were originally designed for school improvement through shared vision, mission, and goals (DuFour & Eaker, 2009). A school leader PLC offers opportunities for school leaders to coalesce around common issues, shared problems of practice, and identification of viable solutions. Fahey (2011) reasoned that school leader PLCs broaden leaders' knowledge of instructional leadership and promotes reflection on individual leadership practice (Strand & Emstad, 2020). The collegial discourse and reflection in the PLCs increase efficacy, confidence, and work engagement of school leaders.

Coaching and Mentoring

Leadership is cultivated through dynamic social contexts (Li, 2019). The concept of coaching and mentoring provides sustainable support for school leaders. Coaching through principals' supervisors provides formal and supervisory feedback. Mentoring, however, for school leaders provides a more sustained interpersonal relationship between the mentor and mentee. The latter offers psychologically safe spaces for school leaders to share professional dilemmas. Formal coaching and mentorship are proven strategies for increasing leader efficacy and productivity (Sutcher et al., 2017).

Ongoing Leadership Development

Leadership development efforts in education focus primarily on the courses and formal programs necessary for state licensure. The role of an aspiring administrator, once obtaining licensure, pivots to candidacy within a local school district. Leadership development within the education arena and in the context of work engagement involves formalized programming or scholarly preparation of individuals prior to their being in the actual role of the school leader (Taylor-Backor & Gordon, 2015). According to the business perspective that leadership development is an ongoing process (The Center for Creative Leadership, 2020), leadership development opportunities within the education field should follow a similar path that business organizations have.

School leaders need continuous opportunities for development to build their individual capacity to address current educational challenges. Organizations across all fields desire competent leaders. Historically, leadership development was viewed as a means to retain human capital through intentional organizational efforts to build capacity (Day et al., 2014). Leadership development emphasizes the social capital component that builds on individual learning toward more interconnected relationships that increase collaboration, communication, and coordination in service of the organization.

Leadership experiences exist within specific contexts: the need to learn, actual learning activities, and social relationships. While the principal preparation programs of universities provide the technical knowledge and skills related to administration and supervision, school leaders need leadership development and ongoing learning opportunities to manage the adaptive challenges that ensue on a daily basis. School districts must prioritize leadership development for emerging and current leaders as a strategy for maintaining a robust learning organization. The

creation of annual leadership learning academies offers school leaders consistent avenues to acquire new knowledge and strengthen existing skills. Collectively, these learning experiences increase self-efficacy and work engagement through intentional learning opportunities.

Implications for Policy

Accountability

Accountability measures significantly impact the efficacy and work engagement of school leaders. An essential aspect of a school leaders' job is understanding various forms of data based on the most recent federal, state, and local accountability mandates. School leaders are then required to interrogate that data by conducting root cause analyses and developing school improvement goals collectively with school staff. The latest reauthorization of the Elementary and Secondary Education Act of 1965, the Every Student Succeeds Act (ESSA), provides for local school district investment in the preparation, training, and professional learning for school leaders.

The ESSA law permits states and local education agencies to allocate three to seven percent of their Title I and II, parts A and B funds for strategic investment in recruiting, developing, and enhancing leadership (Sharp, 2016). Title 1, Part A funding allocations focus on addressing school improvement goals in low-performing schools. These funds are designed to provide evidence-based intervention training to school leaders. The Title 11(a) specifically focuses on funds for teacher development and emerging teacher leaders. These funds may be used for district leadership preparation programs, coaches, or mentors. Finally, state and local school districts may apply for competitive federal grants to develop highly effective school leaders in areas such as recruitment and retention program, educator development, and the teacher and school leader incentive program.

These opportunities must be leveraged, and school districts are held accountable for offering professional opportunities to school leaders and emerging leaders. State educational agencies metrics for ESSA should include innovation toward leadership development. Building the capacity of school leaders demonstrates promising actions toward improving leader efficacy and work engagement. The purposeful investment in school leaders yields strong leadership, improves teaching and learning, and creates positive working conditions (Sutcher et al., 2017).

A focus on mental and physical wellness to promote healthy work environments is a national trend across educational institutions and business organizations (Rocco & Shuck, 2019). The U.S. Department of Agriculture requires state and local education agencies who participate in the national lunch program to have wellness policies. These policies focus primarily on students to promote healthy eating habits and physical activity. Such wellness policies should extend to the adults serving students, especially school leaders.

Wellness Initiatives

The conceptual definition of work engagement foundationally includes physiological and affective connections to work. Efforts to increase and sustain wellness initiatives, such as exercise, health screenings, and mental health activities and resources within the work environment, provide an anchor for staff to experience vigor, dedication, and absorption. Access to and opportunities for school leaders and staff to engage in individual and collective wellbeing activities build cohesiveness and, thereby, work productivity (Schaufeli & Salanova, 2010). School districts should formalize, prioritize, and monitor wellness initiatives for staff alongside teaching and learning to ensure a balanced approach to building capacity and achieving organizational performance goals.

Limitations

A significant limitation of this study is the focus on school principals in the public-school setting. The random sampling methodology of the NTPS Principal Questionnaire included distribution of surveys to school leaders in federally defined educational systems. Therefore, independent, parochial, and private school leaders were not included in the study. Additionally, participant subjectivity created a limitation in that the conditions of each state and local school district was subject to varying working conditions, accountability mandates, and governing expectations. The responses were contingent on the lens of the participant at a moment in time.

The inability to modify the NTPS Principal Questionnaire survey items also presented a limitation in this study. The efficacy items focused on general roles and responsibilities of school leaders based on the Professional Standards for Educational Leaders (PSEL), the national administrative standards. Specifically, the efficacy items in the NTPS Principal Questionnaire related to actual influence on student performance standards, curriculum, professional development, supervision and evaluation of teachers, hiring, discipline, and budget. Naturally, these areas are explicitly stated in the PSEL as essential functions of school leaders. However, the survey items do not address serious incidences, crisis management, social issues, or equity which are daily challenges facing school leaders.

Finally, using archival data was a limitation in this study. The data from the NTPS Principal Questionnaire was captured in the 2015-2016 school year. The current self-reporting responses may differ based on educational trends. The opportunity to compare the study results to more recent administrations of the NTPS Principal Questionnaire may yield different results and findings.

Implications for Further Research

The analyses used to address this study's research questions clearly revealed a relationship between leader efficacy and work engagement and identified race as a significant factor in determining work engagement. Future research should focus on efficacy and work engagement as singular leadership concepts to determine antecedents and barriers relative to actualized leader behavior. Leader behavior, one of the processes in the social cognitive theory and an antecedent to work engagement, was not evident in the quantitative analyses for this study. Future research should address the leadership style in relationship to work engagement to determine whether leadership behavior determines work engagement levels. Finally, this study would benefit from further analysis by deploying different cut scores for efficacy and work engagement to determine if their results are similar or different to the findings of the present study. Similarly, data analysis to determine efficacy and work engagement by school level (elementary, middle, high) and across school types (impacted by poverty) may yield different results and should be considered for future research. Additional research should focus on the implications of race as a predictor of work engagement. Approximately 80% of the NTPS Principal Questionnaire respondents identified as non-Hispanic White which elevates the need for further study into equitable district supports and leadership development of minority school leaders.

Conclusion

"Self-efficacy fuels engagement, which, in turn, increases efficacy beliefs" (Schaufeli & Salanova, 2010, p.386). The results of this study proved not only the relationship between leader efficacy and work engagement, but also the power of appropriate personal and job resources that undergird continuous improvement for leaders. Continuous learning opportunities coupled with

personal resolve contribute to increased levels of physical and psychological connections to work. These actions increase likelihood for optimal learning environments, accomplishment of school improvement goals, and, ultimately, favorable student outcomes.

The purpose of this study was to explore the relationship between leader efficacy and work engagement in the context of an educational setting. The results add to the body of work regarding efficacy and the power of human agency while further exposing the positive psychology concept of work engagement. This study elevates the shared attributes of efficacy and engagement through the channeling of intrinsic and extrinsic motivation, job resources, and leader behaviors. Findings indicate there was a relationship between the two constructs of leader efficacy and work engagement. The results provide insight to district leaders about the benefits of cultivating leader efficacy and work engagement to accomplish organizational goals. Further, the study provides guidance on strategies for enhancing leader efficacy and work engagement through positive interventions and differentiated approaches to building leader capacity and organizational commitment.

Afterword

Foundationally, this study emerged from a place of care and concern about the efficacy of school leaders after experiencing significant changes with curriculum implementation and accountability measures. The study examined the influence of school leaders' efficacy levels and the influence they have over curricula, budget, supervision, and hiring practices within the context of the work environment. The constructs in this study were strikingly appropriate as leaders grappled with an unprecedented COVID-19 pandemic. The efficacy and human agency required to support students and families was overwhelming as school and district leaders tried to understand the current reality. School and district leaders everywhere questioned their self-efficacy and ability to develop a path forward to support and sustain organizational coherence while dealing with the daily educational challenges and COVID-19 updates. Simultaneously, leaders were dealing with personal and professional fear, grief, and loss. Conducting this study during a global pandemic was challenging from the standpoint of the intense work involved to design an entirely virtual instructional program while building leader capacity to effectively do something they have never done. However, the study provided an opportunity for me to reflect on and apply research strategies as I supported school leaders and my district team during the pandemic.

The pandemic also presented technical challenges due to the closure or remote work status of many federal agencies. I was thrilled to successfully defend my proposal in the summer of 2020 during the pandemic and excited to get started with the data analysis. The application process to gain access to the NTPS Principal Questionnaire (the Restricted Use Data License, RUDL) was intense and time-consuming. The remote work status and office closures further exacerbated the application review and approval process. Generally, correspondence was

intermittent and incomplete. Despite the setbacks, I remained positive and hopeful that the RUDL review process would be approved. While I patiently awaited the RUDL decision, I focused on editing the proposal, reading additional articles, and reviewing statistic tests. Additionally, weekly meetings with the committee member supporting the RUDL process was a source of constant encouragement and a reminder to remain engaged in the dissertation process.

This study was also conducted in the midst of racial tensions arising from the murder of George Floyd. The racial tension in the United States was palpable. George Floyd was among other minorities slain at the hands of the police, which spurred significant emotions across the United States. The issues of racism were further compounded by the tumultuous attack on the United States Capital. The marches and protests created optimal moments to reflect, engage in mindful activities, and to lament the quandary of grappling with feelings while trying to lead others. Here, again, was a series of events that tested the efficacy and fortitude of school leaders. One of the structures I created for leaders during this time was a monthly chat which facilitated discussion of the topics and issues at the forefront of their mind. Many of the school leaders commented that the chat time was beneficial because it allowed them to listen to others and process the race and hate bias happening in the world. We also used the time to discuss change management strategies and crisis leadership. The sessions proved cathartic for the school leaders and elevated the importance of efficacy in managing complex situations. Further, the positive relationship between efficacy and work engagement optimally impacted the vision needed to serve the school community.

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APPENDIX A GALLUP^{Q12} ASSESSMENT ITEMS

The following items comprise the Gallup^{Q12} Assessment Items *(Harter, Schmidt, & Hayes, 2002)*:

1. Do you know what is expected of you at work?
2. Do you have the materials and equipment you need to do your work right?
3. At work, do you have the opportunity to do what you do best every day?
4. In the last seven days, have you received recognition or praise for doing good work, seem to care about you as a person?
5. Does your supervisor or someone at work, seem to care about you as a person?
6. Is there someone at work who encourages your development?
7. At work, do your opinions seem to count?
8. Does the mission/purpose of your company make you feel your job is important?
9. Are your associates committed to doing quality work?
10. Do you have a best friend at work?
11. In the last six months, has someone at work talked to you about your progress?
12. In the last year, have you had opportunities at work to learn and grow?

APPENDIX B UTRECHT WORK ENGAGEMENT SCALE

The following items comprise the Utrecht Work Engagement Scale (Schaufeli & Bakker, 2003).

1. At my work, I feel that I am bursting with energy. * (vigor)
2. I find the work that I do full of meaning and purpose. (dedication)
3. Time flies when I'm working. (absorption)
4. At my job I feel strong and vigorous. * (vigor)
5. I am enthusiastic about my job. * (dedication)
6. When I am working, I forget everything else around me. (absorption)
7. My job inspires me. * (dedication)
8. When I get up in the morning, I feel like going to work. * (vigor)
9. I feel happy when I am working intensely. * (absorption)
10. I am proud of the work that I do. * (dedication)
11. I am immersed in my work. * (absorption)
12. I can continue working for very long periods at a time. (vigor)
13. To me, my job is challenging. (dedication)
14. I get carried away when I'm working. * (absorption)
15. At my job, I am very resilient, mentally. (vigor)
16. It is difficult to detach myself from my job. (absorption)
17. At my work I always persevere, even when things do not go well. (vigor)

APPENDIX C INSTITUTIONAL REVIEW BOARD APPROVAL

October 26, 2020

Ms. Cheryl Dyson
401 Rosemont Ave.
Frederick, MD 21701

Dear Ms. Dyson,

The Hood College Institutional Review Board reviewed your proposal for the study entitled *"The Influence of Leader Efficacy on Work Engagement: Implications for School Leaders"* (Proposal Number 2021-2). The committee determined that this study merits EXEMPT status as you are using archival data with all identifying information removed. We approve this study for a period of 12 months. This approval is limited to the activities described in the procedure narrative and extends to the performance of these activities identified in the IRB research proposal.

All individuals engaged in human subjects research are responsible for compliance with all applicable Hood Research Policies:
https://www.hood.edu/sites/default/files/Hood%20IRB%20Policy%20revised%20September%202013.pdf.

The Lead Researcher of the study is ultimately responsible for assuring all study team members review and adhere to applicable policies for the conduct of human sciences research.

The Hood College IRB approval expiration date is October 26th, 2021. As a courtesy, approximately 30-60 days prior to expiration of this approval, it is your responsibility to apply for continuing review and receive continuing approval for the duration of the study as applicable. Lapses in approval should be avoided to protect the safety and welfare of enrolled participants.

No substantive changes are to be made to the approved protocol or the approved consent and assent forms without the prior review and approval of the Hood IRB. All substantive changes (e.g. change in procedure, number of subjects, personnel, study locations, study instruments, etc.) must be prospectively reviewed and approved by the IRB before they are implemented.

Sincerely,

Diane R. Graves, PhD
Chair, Hood College Institutional Review Board