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An investigation of elementary school principals' self-efficacy beliefs, their goal expectations of student achievement, and their impact on student achievement

Paul D. Schrik Sr.

ABSTRACT

AN INVESTIGATION OF ELEMENTARY SCHOOL PRINCIPALS' SELF-EFFICACY BELIEFS, THEIR GOAL EXPECTATIONS OF STUDENT ACHIEVEMENT, AND THEIR IMPACT ON STUDENT ACHIEVEMENT

Paul D. Schrik, Sr., Ed.D.
Department of Leadership, Educational Psychology and Foundations
Northern Illinois University, 2017
Teresa Wasonga, Director

This quantitative study investigated elementary school principals' self-efficacy beliefs, goal expectations of student achievement and their impact on student achievement. To achieve this objective 205, elementary principals completed an electronic survey. The survey consisted of two parts, the Principal Self-Efficacy Survey by Tchannen-Moran & Gareis and a demographic questionnaire.

A modified version of Bandura's social cognitive theory was the lens used to conceptualize this study. In this framework, self-efficacy beliefs and goal expectations were considered to act independently of one another in reference to actual outcomes. Completed data sets were analyzed by descriptive statistics, *t* tests, ANOVA analyses, correlations and regression.

An examination of the principals' composite self-efficacy score alongside the separate subscales of principal self-efficacy (Instructional Leadership, Moral Leadership, and Management) reveals principals use more of the moral dimension of efficacy in their work. Both males and females perceive higher moral leadership than other subscales or composite. With

more experience, principals demonstrate higher levels of self-efficacy. Additional educational attainment also coincides with greater efficacy. Urban principals showed higher levels of self-efficacy while unit school district principals demonstrated higher levels efficacy than elementary school district principals. This study also revealed principals in schools with the lowest free and reduced lunch student population showed the highest averages of self-efficacy. ANOVA analyses and *t* tests revealed a significant difference for gender, school type, level of education, school location, principal-expected PARCC 2016 composite scores, and actual PARCC 2016 composite scores.

Correlation analysis revealed significant relationships among the self-efficacy composite score, all subscale scores, and actual PARCC 2016 composite scores. Stronger correlations exist between principal-expected outcomes of student achievement and actual student achievement than principal self-efficacy expectations and student achievement. Regression analysis revealed principal self-efficacy and expected outcomes contributed to 11% of the variance in actual PARCC 2016 composite scores, but the significant variable was the expected PARCC 2016 composite.

These findings suggest principal self-efficacy and expected outcomes act independently of one another, and a principal's sense of moral leadership influences his or her leadership more so than one's sense of instructional leadership or management. More research in the area of expected outcomes and the influence of moral leadership is recommended as a result of this study.

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Teresa Wasonga

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DEDICATION

In memory of my mother and father, Cecelia and Albert Schrik, with love

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CHAPTER 1

INTRODUCTION

A driving force of the latest movement in education to increase school accountability occurred in 2002 with the passing of No Child Left Behind (NCLB), a recent rendering of the federal Elementary and Secondary Education Act of 1965. This piece of legislation set standards across the country for acceptable yearly progress of student achievement for students through 2014. The accountability requirements of No Child Left Behind included mandates for student achievement along with public reporting of test results, adding new stressors on the role of the principal (Krzemienski, 2012). In Illinois, a stream of directives followed this federal mandate along with further federal authorizations to increase the demands placed upon school districts. One example of this took place in 2010 when the State of Illinois passed legislation requiring that principal evaluations must include data and indicators of student growth as a significant factor (PERA and Senate Bill Seven, n.d.). Additionally, the recent economic downturn has forced Illinois school districts to operate with less federal, state, and local resources to improve student learning and, at the same time, keep pace with the increase in state and federal student achievement requirements. Having access to fewer resources, however, especially in low-income areas, presents challenges to these schools to narrow the achievement gap that exists between low-income and higher income students (Roley, 2009).

As school leaders navigate 21st-century school environments, they are charged with understanding and adapting to the role that recent external influences have placed upon the

internal school environment while at the same time working to improve student achievement. Notably, in Illinois the recent legislation following No Child Left Behind has changed the landscape of school environments and further increased the demands placed upon school principals to improve student learning. Principals are working more, have less time for competing demands, feel less appreciated, are held accountable for the success of their schools, must plan effective professional development, operate as the instructional leader, handle student discipline, attend events, coordinate bussing, work with parents, and deal with the role of supervising a school on a day-to-day basis (Krzemienski, 2012). In reference to the increased pressure felt by principals today, Troutman (2012) contends, "School principals are under extreme pressure to ensure that their schools are experiencing academic success. In order for school improvement to occur the school principal must develop an understanding of the leadership behaviors needed to impact school culture and student achievement" (pp. 5-6). These factors are likely to challenge the strength of the belief (self-efficacy) a school principal may have in his or her ability to lead a school through structuring a learning environment that improves student learning. This study will examine principal self-efficacy and its relationship to student achievement through test scores on state-mandated tests.

Background

As principals coped with NCLB, the pressure of school accountability increased again with President Obama's educational initiative, Race to the Top (RTT), funded by the Education Recovery Act of 2009. Race to the Top, a competitive federal grant program, outlined specific initiatives for states to undergo in return for increased educational funding during an economic

recession (Byun-Kitayama, 2012). With the impact of the recent recession, less funding for public schools, the State of Illinois was heavily influenced to apply for Race to the Top grant money, which came with new legislation and reform. Ultimately, Illinois received $42.8 million in December 2011 and, consequently, wrote legislation outlining several educational reforms (Race to the Top, n.d.). One such educational reform bill that stemmed from Illinois participation in Race to the Top, the Performance Evaluation Reform Act (PERA), passed in January 2010. PERA specified at least thirty percent of performance evaluations must contain data that indicates student academic growth will factor into the evaluations of both teachers and school principals (PERA and Senate Bill Seven, n.d.).

In addition, another Illinois legislative reform bill, Senate Bill 7, emerged in June 2011. Senate Bill 7 was written to address items such as tenure acquisition for teachers, mandatory school board training, layoff structures, reduction-in-force procedures, and the procedures for school districts to use when new or vacant positions become available (PERA and Senate Bill Seven, n.d.).

Race to the Top also required that participating states develop and implement more rigorous standards and assessments of learning. To meet requirements of RTT, during the 2013-14 school year, Illinois adopted the Common Core State Standards, released in June 2010 and written to improve the readiness of high school graduates to either enter the workforce or college. Furthermore, the Partnership for the Assessment of Readiness for College and Careers (PARCC) became Illinois new student learning assessment tool in the spring of 2015, replacing the Illinois Standards Achievement Test (ISAT). The PARCC assessment was designed to assess the readiness of high school graduates to enter college or begin a career College and Career

Readiness, n.d.).

PARCC assessments were designed "to provide evidence to determine whether or not students are on track for college and career readiness. The tests are structured to access the full range of Common Core State Standards and measure the total breadth of student performance" (Pearson, 2017). Students in grades 3-8 took the PARCC 2016 assessment covering the content areas of English language arts (ELA) and mathematics. In 2016 students taking the PARCC assessment either took the test as a paper-based assessment (PBT) or as a computer-based assessment (CBT). PARCC ELA reliability estimates for CBT tests in grades 3-8 range from .91 to .93, and reliability estimates for PBT tests in grades 3-8 range from .89 to .92. PARCC mathematics reliability estimates for CBT tests in grades 3-8 range from .91 to .93 and reliability estimates for PBT tests in grades 3-8 range from .91 to .93.

Finally, in the wake of the recent recession, Illinois proposed further legislation in March 2015, Senate Bill 1, to address concerns of adequate and equitable funding for education. When this last revision to education funding occurred, it replaced the previous model held in place since 1997 (Senate Bill One, n.d.).

Consequently, school principals in Illinois must now adhere to the expectations of all of these aforementioned reforms while they continue to face the challenge of improving student learning in 21st-century school environments. As an example, the work of principals, reflected in recent state-mandated curriculums rooted in national learning standards, ranks schools based upon conditions that principals and the schools they serve have no control over, such as a child's socioeconomic status, and the number of students with special needs, and students' English proficiency (Ferrandino, 2001). Despite limited control over student demographics, "Studies on

school effectiveness, school climate, and student achievement all reveal one commonality, the fact that good happenings in schools depend to a great extent on the quality of school leadership" (Norton, 2002, p. 50).

In the wake of increased school reform legislation, effectiveness of school principal leadership is partly dependent on student achievement in addition to creating a conducive learning environment for staff, students and reform (Fullan, 2001; Johnson, 1998; Smrekar & Mawhinney, 1999) all cited in Sanders, 2014, pp. 233-234). In other words, developing school environments that support reform and continuous school improvement is a complex important task of principals (Sanders, 2014).

In the context of legislation, Goldring et al. (2009) explain the complexity of the role of the school principal:

> As a result of federal legislative mandates such as No Child Left Behind, and ever-looming global competition, high academic standards and systemic 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 school activities with local, state, and federal standards. Furthermore, leaders must hold themselves and others responsible for realizing high standards of student performance. (p. 35)

Other researchers, like Grissom and Loeb (2011), found that effective instructional leadership is a combination of understanding how to align resources to target instructional needs of students. However, despite the best efforts of school principals, the recent economic downturn has forced principals to address instructional needs of students with less funding. Notably, school districts have responded to a lack of funding by lowering compensation, instituting pay freezes and cuts to staff (Krzemienski, 2012). Furthermore, having less funding and less resources does not diminish the pressure that principals have in answering to district superiors as well as to the

community, realtors, parents, and newspaper media regarding their ability to improve publicly available student outcomes. Newer learning standards, more challenging standardized tests and the decision to rate principals' effectiveness utilizing evaluation instruments that include measures of student growth have increased the stress felt by principals (Byun-Kitayama, 2012).

In their research utilizing their newly developed PSES, Tschannen-Moran and Gareis (2004) found, "principals with greater self-efficacy beliefs have been discovered to be more steadfast in pursuing their goals, are more adaptable to their environments, and do not waste time pursuing unsuccessful courses of action. They often remain confident and calm, maintain their sense of humor and do not immediately conclude that their inability to solve a problem as failure. They use their personal power, "such as expert, informational, and referent power" (p. 574), to solve problems.

In contrast, "principals with low self-efficacy have been discovered to have a pervasive attitude of an inability to control their environment and are not as able to identify appropriate strategies or successful ones. Another common characteristic among principals with low self-efficacy is when met with failure they do not alter their original course of action. They blame others when confronted and "are more likely to rely on external and institutional bases of power, such as coercive, positional, and reward power" (Tschannen-Moran & Gareis, 2004, p. 575). Additionally, self-efficacy can predict performance of work-related activity (Gist & Mitchell, 1992). McCormick claims, as cited in Leithwood and Jantzi (2008), that "leadership self-efficacy or confidence is likely the key cognitive variable regulating leader functioning in a dynamic environment" (p. 497).

Understanding principals' belief in their ability to improve student learning in the current

environment is the focus of this study.

Conceptual Framework

Bandura (1977) developed social cognitive theory, originally termed social learning theory. Bandura (1989) explained that the interaction between behavior, personal factors and the environment operate as interacting determinants and influence each other bidirectionally. This means that a person's psychosocial functioning is influenced by three factors, or determinants, and that no single factor is considered more influential over the others. Bandura (1989) explained that the bidirectional relationship between each of the three factors indicates that people are as much producers of behavior as they are products of behavior. Basically, the central tenet of social cognitive theory is that learning occurs in a social context with a reciprocal interaction between the individual, his/her environment and his/her behavior. Ultimately, "what people think, believe, and feel, affects how they behave" (Bandura, 1989, p.3).

From his social cognitive theory, Bandura (1977) developed his theory of self-efficacy, an individual's belief in his/her capacity to execute behaviors necessary to produce specific performance attainments. In his explanation of self-efficacy theory, Bandura (1977) contends that beliefs associated with reinforcement that affect behavior have greater influence on behavior than the reinforcement itself.

An integral component of Bandura's self-efficacy theory centers on expectations shaping behavior, and expectations are differentiated between efficacy expectations and outcome expectations. Outcome expectations, which follow efficacy expectations (Bandura, 1977), are seen as an estimate that certain behaviors lead to certain outcomes. Efficacy expectations center

on the notion that a person's conviction of being able, or not able, to accomplish behavior is necessary to produce outcomes. Basically:

> outcome and efficacy expectations are differentiated, because individuals can believe that a particular course of actions will produce certain outcomes, but if they entertain serious doubts about whether they can perform the necessary activities such information does not influence their behavior. (Bandura, 1977, p. 193)

Outcome expectancy is predicated on the estimate that a person has, whereby engaging in a particular behavior a specific outcome will occur (Bandura, 1977). Given Bandura's theory has outcome expectations preceded by efficacy expectations, Bandura explained outcome expectations are judgments about the outcomes that are likely to occur (Bandura, 2006). Positive expectancies serve as incentives when previous behavior patterns produce positive outcomes. Negative expectancies serve as disincentives when previous behavior patterns produce negative outcomes. As a general rule, through observed consequences when individuals interpret situations as those they have seen previously succeed, they are likely to have an outcome expectation of succeeding. Conversely, people tend to have negative outcome expectations and avoid situations where they have seen failure.

In order to explain the impact of outcome expectation on behavior and the overall outcome, Bandura (1989) declared "Outcomes affect motivation and action largely by creating beliefs about the effects actions are likely to have under different circumstances. Because outcomes exert their influence through forethought, they have little or no impact until people discover how and when actions affect the occurrence of outcomes" (p. 40). Ultimately, "the outcomes people anticipate depend largely on their judgments of how well they will be able to perform in given situations" (Bandura, 2006, p. 309).

Conversely to Bandura, research has shown that expected outcomes causally influence efficacy expectations and some authors have argued that this invalidates Bandura's self-efficacy theory that stipulates efficacy expectations influence outcome expectations (Williams, 2010). Through a contradiction to his own theory, Bandura has challenged these arguments, expressing expected outcomes cannot causally influence self-efficacy, but self-efficacy judgments remain valid when causally influenced by expected outcomes (Williams, 2010). It is important to make clear that outcome expectations are not the same as actual outcomes, just as "self-efficacy is involved with perceived capability rather than actual capability" (Williams, 2010, p. 418). Given that research exists that speaks to how outcome expectations influence self-efficacy and its converse of self-efficacy influencing outcome expectations, further research examining the relationship of outcome expectations and efficacy expectations on behavior and outcomes may prove beneficial.

While outcome expectancy is predicated on the estimate a person has that by engaging in a particular behavior a specific outcome will occur (Bandura, 1977; Bandura, Adams & Beyer, 1977), efficacy expectancy helps determine "how much effort people will expend and how long they will persist in the face of obstacles and aversive experiences" (Bandura, 1977, p. 126). Furthermore, an efficacy expectation is "the conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura, 1977, p. 193). By this definition, it is assumed that a stronger sense of efficacy to execute will produce greater efforts. In fact, if one perseveres in a subjectively difficult activity, it will improve one's self-efficacy and, in turn, the individual learns how to manage those situations and eliminate protective behavior. Conversely, those who do not persevere will keep their self-hampering expectations (Bandura et al., 1977).

Essentially, efficacy expectations are context related and change depending on the environment. They are not seen or easily measured. However, as recent as 2004, reliable and valid efficacy measures have been developed and used to measure principal efficacy in relationship to a variety of variables (Tschannen-Moran & Gareis, 2004).

Efficacy expectations can influence not only the individual but also those around him or her (Santamaria, 2008). Expectations by themselves will not provide desired outcomes if the needed competencies are insufficient. Additionally, there are several things people are capable of performing with an expectation of success that they fail to do since they are not motivated to do so. That said, with ample capabilities and enticements, efficacy expectations are liable to be a significant factor of an individual's choice of activities, how much effort they put forth and how long they persevere in their efforts (Bandura et al., 1977).

In order to reconcile the research supporting efficacy expectations influence and then precede outcome expectations, Williams (2010) declared:

> Either the operational definition of self-efficacy must be modified such that expected outcomes cannot influence self-efficacy (consistent with current conceptualizations of self-efficacy theory) or self-efficacy theory must be modified such that outcome expectancies can influence self-efficacy (consistent with empirical findings using current operationalizations of self-efficacy). (p. 421)

In putting this all together, studying the relationship between efficacy expectations as they relate to student learning has been the focus of much research in education. Yet, research in education has not been found to address the emerging research that contradicts Bandura's self-efficacy theory claiming efficacy expectations influence, or act independently from, outcome expectations.

Principal self-efficacy has been shown to predict performance of work-related activity.

Tschannen-Moran and Gareis (2004) define principal self-efficacy as "a judgement of his or her capabilities to structure a particular course of action in order to produce desired outcomes in the school he or she leads" (p. 573). In reference to self-efficacy and work performance in general, Gist and Mitchell (1992) indicate that increased self-efficacy results in improved work performance. Likewise, when considering challenging environments, McCormick claims (as cited in Leithwood & Jantzi, 2008) that "leadership self-efficacy or confidence is likely the key cognitive variable regulating leader functioning in a dynamic environment" (p. 497).

Furthermore, school principal self-efficacy has been a construct studied to determine its relationship to student achievement (Leithwood & Jantzi, 2008). In their study to examine separate instruments used to measure principal self-efficacy, Tschannen-Moran and Gareis (2004) developed the Principal Self-Efficacy Scale (PSES), "a reasonably valid and reliable measure to capture this promising construct" (p. 575). Three themes as they relate to principal self-efficacy emerged from the PSES: efficacy for management, efficacy for instructional leadership, and efficacy for moral leadership. In their research, Tschannen-Moran and Gareis (2004) concluded "Principals with a strong sense of self-efficacy have been found to be persistent in pursuing their goals, but are also more flexible and more willing to adapt to strategies to meeting contextual conditions" (p. 574).

Gist and Mitchell (1992) postulated further that self-efficacy is formed through information and then the assessment of information. The influence of information on efficacy expectations will be influenced by an evaluation of perceptions. Bandura (1989) proposed that how an event was perceived could be more significant than the actual event. Varied perceptions of internal and external environmental factors, the locus of causality, demonstrate how self-

efficacy and behavior are affected (Bandura, 1977).

Self-efficacy is not the sole factor determining behavior. Expectations by themselves will not lead to a desired outcome. Also, incentives arising from the assessment of a situation increase the capability of an individual to be more self-efficacious. Ultimately, assessment of a situation coupled with an individual's capabilities help to define the choices people make, how hard they will work and how long they will persevere with their behavior (Bandura et al., 1977).

When considering the effect of environment on self-efficacy, Bandura (1977) reasoned, "Efficacy expectations do not operate independently of contextual factors" (p. 138). Similarly, Pajares (1996) suggested, "How individuals interpret the results of their performance attainments informs and alters their environments and their self-beliefs, which in turn inform and alter their subsequent performances" (p. 544). When considering whether or not the environment, or context, in which principals work might affect their self-efficacy in relation to improving student achievement, Pajares (1996) ultimately postulated, "When efficacy assessments are tailored to the criterial task, prediction is enhanced" (p. 557). Given this research, it would appear critical to those who have any control on a principal's work environment to consider that by extending the scope of a principal's responsibilities well beyond instructional management diminishes a principal's self-efficacy expectations and may in turn have a negative impact on improving student achievement. This research study used Albert Bandura's theory of self-efficacy as it relates to performance capability. Explicitly, it examined the possible relationship between self-efficacy of school principals, their outcome expectations of student achievement and actual student achievement given specific attributes of the school and the principal. Figure 1 demonstrates the conceptual framework for this study.

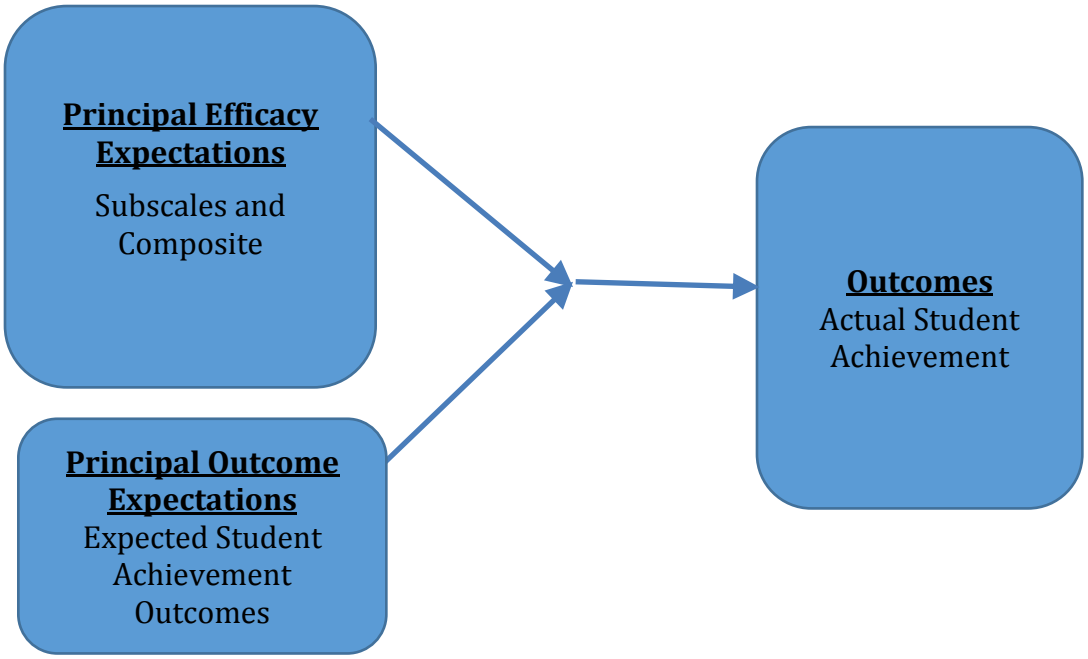

Figure 1. A model to demonstrate the proposed relationship between efficacy expectations, expected outcomes and outcome (Bandura, 1977; Gist & Mitchell, 1992; Tschannen-Moran & Gareis, 2004; Williams, 2010).

This research examined school principal efficacy expectations and outcome expectations as they relate to student achievement. Bandura's (1997) model of efficacy expectations and Williams's (2010) and Pajares's (1996) research on outcome expectations influenced this conceptual framework. This conceptual framework, which includes outcome expectations, does not suggest that outcome expectations are influenced by efficacy expectations, nor does it suggest outcome expectations influence efficacy expectations. It suggests that outcome expectations may in fact act independently of efficacy expectations in reference to their effect on behavior. Consequently, this research study aligns itself to Williams's (2010) and Pajares's (1996) research that suggests outcome expectations and efficacy expectations may act independently of one another. In order to examine the relationship between efficacy expectations

(i.e., self-efficacy of a principal, expected student achievement outcomes and actual student achievement outcomes) the following variables were considered: the level of principal self-efficacy (management, instructional leadership, and moral leadership), the expected percentage of students who meet or exceed the level of achievement on the PARCC assessment and the actual percentage of students who meet or exceed the level of achievement on the PARCC assessment, along with certain principal demographics (gender, years of experience, and level of education) and certain school demographics (location of school, type of elementary school, and level of free/reduced student population).

Statement of the Problem

Contextually, the role of the elementary school principal is more challenging than it has ever been. An unprecedented legislative mandate occurred in Illinois whereby principals' evaluations were mandatorily linked to the academic growth of their students, even though an indirect relationship exists between a principal and student achievement (PEAR and Senate Bill Seven, n.d.). Additionally, the stress placed upon principals to have students succeed has led to the exit of experienced principals, who are leaving the profession at an accelerated rate. Those who remain are forced to survive in an environment that has largely decentralized the traditional district responsibilities of school budgeting and goal setting, leaving principals with less support to navigate school environments and forced to respond to more and more federal mandates (Young & Szachowicz, 2014). In 2014, the National Association of Elementary School Principals declared:

> Current social, economic and political realities require principals to accomplish ever-greater academic goals with ever-shrinking resources, prepare young people

> with higher order thinking skills befitting a global society, analyze and use increasingly complex data and incorporate rapidly changing technology in instruction and learning. (p. 10)

As the role of the elementary school principal falls under more scrutiny, the need to determine what level of control he or she has on improving student learning is more important than ever. Given the high-stakes environment in which Illinois school principals work, research that focuses on their ability to impact student achievement is needed. This need is supported in research. For example Tschannen-Moran and Gareis (2004) indicated, "With the role of the school principal being increasingly defined in terms of academic achievement and success as measured by high-stakes assessment results, a principal's sense of efficacy plays a critical role in meeting the expectations and demands of the position" (p. 582).

Substantial evidence exists about the meaningful contributions that having positive self-efficacy beliefs has upon many individuals in varied roles, including areas such as student achievement (Liethwood & Jantzi, 2008). Wahlstrom, Seashore-Louis, Leithwood and Anderson (2004), as cited in Versland, 2013) suggested:

> Self-efficacy was a necessary component of successful school leadership because it affects choices principals make about what activities in which to engage as well as the coping strategies they employ as challenges emerge. They concluded that principals' sense of efficacy and their ability to influence others was vital to accomplishing instructional leadership practices associated with setting direction, developing people, redesigning the organization and managing the instructional program. (p. 14)

With the recent attention given to challenging Bandura's theory of self-efficacy, it would appear necessary to determine if a relationship also exists between a principal's outcome expectations and level of student achievement in his or her school (Williams, 2012). Therefore, in this study, principal gender, years of experience, level of education, location of school, type of

elementary school, level of free/reduced student population) and actual student achievement levels by types of elementary schools were be examined in relation to principal self-efficacy expectation as measured by the PSES and principal outcome expectation as an expected measure of student achievement.

Significance of the Study

There is a problem in education today. Research has demonstrated principals with given personal and school demographics who possess higher levels of self-efficacy have increased student achievement. However, recent increases in federal and state mandates upon schools may be impacting the ability of principals, regardless of their school and personal demographics, to improve student achievement in their schools despite their level of self-efficacy. Further study, given the context of education in today's heavily mandated school environments as it relates to principal self-efficacy and student achievement, is necessary.

Ultimately, this research examined the relationship between current Illinois elementary school principal outcome expectations, efficacy expectations, and actual student achievement outcomes. As a former elementary school principal for nine years, I have chosen to focus this research at the elementary level. Elementary school, middle school, and high school all have different cultures that may impact efficacy expectations, outcome expectations and behavior of school principals. That said, my familiarity with the elementary school culture helped to provide the focus for this study.

Purpose of the Study

The purpose of this study is to investigate elementary school principals' self-efficacy beliefs and their goal expectations of student achievement and actual student achievement, along with their own demographics, the demographics of the schools where they work and the overall actual student achievement levels in their schools. Elementary school principals completed surveys about their self-efficacy and their outcome expectations in reference to student achievement based upon a tool created by Tschannen-Moran and Gareis (2004). They rated their level of self-efficacy based upon their perceived level of moral leadership, instructional leadership, and management; while their outcome expectation of student achievement was based upon the PARCC assessment. Actual student achievement data was obtained from 2015-16 School Report Card data. Elementary principals of both genders from different district types with different levels of experience were invited to participate in this study.

Limitations

There are a number of limitations to this study:

1. The principal efficacy scores may not be generalized beyond the 2016 Illinois elementary principal population.
2. The PARCC 2016 scores cannot be compared to any other year, as the actual PARCC assessment and implementation procedure has not been constant since its inception.
3. The survey participation rate was limited to Illinois elementary school principals.

Future studies may have the benefit of using longitudinal data comparisons. The results from this study provide direction for research in the future on different types of academic

outcomes and principal-related and school-related demographic variables, along with principal perceptions of efficacy and principal outcome expectations.

Delimitations

The scope of this study was limited by the following factors:

1. The principals, their self-efficacy scores, and their outcome expectation scores are limited to the respondents within the state of Illinois.
2. This study was limited to elementary school principals.
3. The Principal Self-Efficacy Scale (PSES) was chosen over other self-efficacy scales as the means to collect principal self-efficacy expectations.
4. The research design chosen shows strength of relationships that exist between variables, not causation. Therefore, this study cannot determine causality.

Research Questions

The research investigated whether a relationship exists between Illinois elementary school principal personal attributes (level of efficacy for management, level of efficacy for instructional leadership, level of efficacy for moral leadership, gender, years of experience, level of education), characteristics of the schools they serve (location of school, type of elementary school, level of free/reduced student population) and student achievement as measured by the Partnership for Assessment of Readiness for College and Careers (PARCC) assessment. Research questions that guided the study are:

RQ1: What are the levels of self-efficacy (efficacy for management, efficacy for instructional

leadership, efficacy for moral leadership) among elementary school principals and academic achievement levels (expected and actual achievement) in these schools?

RQ2: What are the differences in levels of self-efficacy (efficacy for management, efficacy for instructional leadership, efficacy for moral leadership) by demographics (principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population) and student achievement levels by types of elementary schools?

RQ3: What are the relationships among self-efficacy variables (efficacy for management, efficacy for instructional leadership, efficacy for moral leadership) and student achievement levels (meets and exceeds, does not meet)?

RQ4: What are the impacts of demographics (principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population) on principal self-efficacy (efficacy for management, efficacy for instructional leadership, efficacy for moral leadership) and student academic achievement levels (meets and exceeds, does not meet)?

Definition of Terms

The following definitions and terms are used within the framework of this research:

Achievement: Determined by the Partnership for Assessment of Readiness for College and Careers test scores in reading and mathematics for Illinois students in third grade through eighth grade (College and Career Readiness, n.d.).

Efficacy Expectation: The conviction that one can successfully execute the behavior required to produce the outcomes (Bandura, 1977).

Efficacy for Management: To handle the paperwork required of the job; prioritize among competing demands of the job; shape the operational policies and procedures that are necessary to manage your school (Tschannen-Moran & Gareis, 2004).

Efficacy for Instructional Leadership: To create a positive learning environment in your school; facilitate student learning in your school; generate a shared vision for the school (Tschannen-Moran & Gareis, 2004).

Efficacy for Moral Leadership: To promote ethical behavior among school personnel; promote school spirit among a large majority of the student population; promote a positive image of your school with the media (Tschannen-Moran & Gareis, 2004).

Experience: Length of term for a school principal with a limit of at least two years of experience.

Outcome Expectation: Predicated on the estimate a person has that by engaging in a particular behavior a specific outcome will occur (Bandura, 1977; Bandura, Adams & Beyer, 1977).

School Location: Rural, urban or suburban school location in Illinois.

School Principal: Elementary school leader in Illinois.

Self-Efficacy: The belief in one's capabilities to produce given attainments (Bandura, 2006).

Verbal Persuasion: A weaker source of efficacy information; a nonauthentic experience of suggestion and influence (Bandura, 1977).

Vicarious Experience: A source of efficacy information; an experience of observed modelled behavior and inference (Bandura, 1977).

Overview

Chapter 2 provides an extensive literature review on self-efficacy, school principal leadership and academic achievement, including quantitative research design used in descriptive statistics. Chapter 3 defines the variables and sample for this study.

CHAPTER TWO

REVIEW OF LITERATURE

Introduction

The purpose of this study was to investigate elementary school principals' self-efficacy beliefs and their goal expectations of student achievement, along with their own demographics, the demographics of the schools where they work and the overall actual student achievement levels in their schools. In 2002, a national educational reform law, No Child Left Behind (NCLB) was passed as a bipartisan effort that increased accountability of nationwide public schools, provided more choices for parents and students and offered greater funding flexibility for states and school districts (U.S. Department of Education, 2009). NCLB pressured states to respond by annually assessing and reporting overall student academic achievement of each school district. All public schools were expected to make levels of adequate yearly progress (AYP) or be faced with economic sanctions. Research demonstrates that NCLB placed extraordinary and unprecedented pressure on schools and principals to produce academic results (Daly, 2009; Lyons, 2006; Marks & Nance, 2007; Roellke & Rice, 2008; Santamaria, 2008; Sunderman, Orfield & Kim, 2006; West, Peck & Reitzug, 2010, all cited in Virga, 2012). Principals were under "scrutiny of sanction or reconstitution depending on meeting the accountability goals set by the federal and state government" (Byun-Kitayama, 2012, p. 4).

Illinois responded by further increasing the pressure felt by schools and principals by

aligning federal and state initiatives "to support higher student achievement, stronger public schools and a better-prepared teacher workforce (Race to the Top, n.d.). President Obama also continued to put pressure on schools and principals in 2008 when he enacted his education initiative, Race to the Top (RTT), a competitive federal grant program funded by the Education Recovery Act (Byun-Kitayama, 2012). RTT provided $4.35 billion dollars nationwide to schools at a time when an economic downturn threatened school funding. Illinois applied and received needed 42.8 million dollars in federal grant money in 2011 and subsequently pushed for further educational reform as outlined by RTT. Among other initiatives Illinois adopted more rigorous learning standards known as Common Core Standards, adopted a more rigorous statewide assessment, Partnership for Assessment of Readiness for College and Careers (PARCC); and adopted laws to include student growth as a significant factor of principal and teacher evaluations.

All of this reform has placed tremendous pressure on principals and has changed the way they look at their job. Byun-Kitayama (2012) states:

> The principals are scrutinized by the multi-layered accountability from all stakeholders regardless of their actual performances. Moreover, the state assessment results have become the primary concern for most principals more than any other principal responsibility because the principals are judged by publicly reported API scores and AYP indicators by the media, parents, and districts. (p. 11)

Given all the pressure from federal and state accountability regulations, there is an urgent need for schools to find principals who have the knowledge of leadership ability, the drive, motivation and belief in themselves to overcome this pressure (Santamaria, 2008). Tschannen-Moran and Gareis (2004) stipulate that principals are now being perceived as the foundation of good schools and that effective principal leadership is needed to raise student achievement

levels. Recent research efforts have examined the relationship between principals' self-efficacy, their belief in their ability to perform behaviors needed to produce specific outcomes (Bandura, 1997), and student achievement. Results point towards statistically significant relationships between principal efficacy and student achievement (Domsch, 2009; Lehman, 2007; Lovell, 2009; McCullers, 2009; Paglis & Green, 2002; Roley, 2009; Santamaria, 2008; Tschannen-Moran & Gareis, 2004; Virga, 2012).

An area of research virtually left alone in education relates efficacy expectation, outcome expectations and actual outcomes. Bandura's (1977) theory of self-efficacy supports the notion that knowing a principal feels self-efficacious in his or her ability to improve student achievement causally influences his or her goals in reference to student achievement, and ultimately affects the actual attained levels of student achievement. Through his explanation of self-efficacy theory, Bandura (1977) stipulated that expectations of efficacy precede outcome expectations. This is the basis of how Bandura explains his model of human behavior. Here, an efficacy expectation, the belief that a person can successfully perform the behavior needed to produce an outcome, comes prior to an outcome expectation, the belief that specific behaviors lead to outcomes.

Later, Bandura (2000) further explained that efficacy expectations influence outcome expectations as efficacy beliefs persuade people to determine and work towards those goals. Thus, research in education focused on self-efficacy has left outcome expectations alone. However, the validity of Bandura's theory has been called into question recently as several researchers have shown that outcome expectations have actually influenced self-efficacy judgments (Borkovec, 1978: Corcoan, 1991, 1995; Eastman & Marzillar, 1984; Kazdin, 1978;

Kirsch, 1982, 1985, 1986, 1995; Teasdale, 1978; Wolfe, 1978, all cited in Williams, 2010). Even in Bandura's (2006) rebuttal of these findings, he accepts that self-efficacy judgments remain valid even when influenced by outcome expectations, a contradiction to his own theory. As the need for higher school outcomes defined as student achievement has intensified, the focus for improvement has shifted to the principals. In spite of these developments, research in education has continued to focus on principals' self-efficacy and its relationship to student achievement. Is it possible that outcome expectations are the key to improving student achievement and have been incorrectly excluded from this area of research?

Legislation and the Challenging School Environment

"Federal, state, and local mandates have increased the pressure on school administrators to demonstrate effectiveness" (Lovell, 2009, p. 2). Furthermore, "with increasing sanctions from corrective actions and seemingly insurmountable expectations, many educators within these schools may be experiencing increased levels of pressure and stress" (Daly, 2006; Nichols & Berliner, 2007, both cited in Santamaria, 2008, p.4).

When No Child Left Behind (NCLB) was introduced into law during 2002, states, school districts, teachers, and principals soon realized the enormity of what was at stake. Principals across the country were faced with demonstrating their school's student achievement to be increasing every year, matching adequate yearly progress (AYP) benchmarks such that by 2014 all students would demonstrate 100% proficiency in reading and math (U.S. Department of Education, 2009). As to why 100% proficiency created such stress for local schools and principals, Linn, Baker, and Betebenner (2002) as cited in McCullers, (2009) point out:

> One conceptual and operational problem with this system was the statistical reality that any measure of natural factors such as academic ability and student achievement would fall more or less on a normal distribution curve; and that it was, at best, "extraordinarily ambitious" (Linn, Baker, & Betebenner, 2002, p.12) or, more pointedly, "completely unrealistic" (Linn, 2005, p. 15) to actually have expected that all students in all states could and would have mastered all standards in reading, writing, and mathematics by a certain date. (p. 2)

In his review of the constitutionality of NCLB, Welner (2007) stated that the expectation of reaching 100% proficiency was nonrational and unfounded by any standard of research. In spite of this, states were left with creating their own standards, assessments and proficiency levels, and this produced discrepancies among states and left schools and school leaders the considerable challenge of making sure all students met their annual benchmark of progress (Byun-Kitayama, 2012; McCullers, 2009). The task of the principal was obvious – increase test scores, lower dropout rates and minimize the achievement gap for all types of students (Duke, 2004, as cited in Lehman, 2007). This pressure was compounded by the fact that school progress was annually made public, holding principals accountable to the "community, realtors, parents and newspaper media regarding their ability to improve student outcomes" (Byun-Kitayama, 2012, p.4; Boyland, 2011; Scallion, 2010; White & Agarwal, 2011).

A survey conducted by the Illinois Education Research Council indicates that either principals or policymakers need a paradigm shift in their thinking to address a disconnect between the two in terms of their acceptance of the importance of student test scores and the resulting judgment of schools and teachers (White, Brown, Hunt, & Klostermann, 2011). Either way, the role of the principal changed forever in response to NCLB as principals were publicly scrutinized in reference to their school's ability to reach ever-increasing student achievement targets or face potential sanctions (Santamaria, 2008). A consequence of the pressures associated

with NCLB, principal turnover, in schools not making adequate yearly progress (Byun-Kitayaman, 2012; White & Agarwal, 2011) makes clear that principals and the schools they serve are facing difficult challenges. As a result, the role of the principal to lead and manage change to improve student learning has never been greater in history (Lehman, 2007). Effective leadership was seen as critical to meet the expectations of No Child Left Behind (Leithwood & Jantzi, 2008). In addition to NCLB, principals were observing their roles in other areas increase as the challenges of day-to-day operations in a school were becoming increasingly more complex and difficult (Virga, 2012).

Similarly to No Child Left Behind, Race to the Top (RTT) was a federal educational initiative, but in the form of a competitive grant that was passed into law in 2008. Later, in 2011, an appropriation of 42.8 million dollars was received by the State of Illinois with the expectation of passing legislation to address its core reforms: adopting more rigorous standards and assessments; recruiting, evaluating and retaining highly effective teachers and principals; building data systems to measure student success; and finally, building state capacity and support (Race to the Top, n.d.). Illinois passed its Performance Evaluation Reform Act in 2010 to address the expectation of RTT to increase the rigor of principal and teacher evaluations. Furthermore, Illinois passed its Senate Bill 7 into law in 2011 to address concerns from RTT over recruitment of teachers and principals, as well as tenure acquisition. Finally, Illinois adopted the Common Core State Standards as its new learning standards along with adopting the Partnership for Assessment of Readiness for College and Careers (PARCC) assessment to comply with RTT.

A primary focus of RTT dollars to be addressed comes in the form of "states addressing issues of principal effectiveness, assignment, responsibilities, and preparation (Colvin, 2009, as

cited in DeLucia, 2011). One component of RTT, notably, indicators of student academic growth on principal evaluations, speaks to a void in research on principal evaluations (Byun-Kitayama, 2012). Byun-Kitayama (2012) expressed that principal evaluations traditionally have been performance based and not outcome based as expected by RTT. Second, there are very few empirical, comprehensive and relevant studies done on principal evaluations as compared to teacher evaluations (Davis, 2010, as cited in Byun-Kitayama, 2012). However, research or not, those states receiving RTT grant money must comply with this expectation of the grant. Principals who do not meet the established annual yearly goal of student achievement outlined by RTT are to be removed from their position (Sorapuru, 2012; U.S. Department of Education, 2009). Consequently, principals are feeling the stress to focus their attention on improving student achievement more so than ever before, even though research demonstrates that the effect a principal has on student achievement is indirect, at best (White & Agarwal, 2011).

Increased Stress on the Principal

In her research of principal job stress and coping strategies of the principal, Boyland (2011) describes the current role of the principal as "a culture of stress" (p. 1). She cites "increasing long hours, growing lists of responsibilities, funding difficulties, and rising accountability standards" (p. 1) as the culprit. Smith (2009) refers to the increasing of principal job tasks while not removing any "layering" (p. 66).

In a study examining principal self-efficacy and high-achieving schools, Virga (2012) makes clear the idiosyncratic pressures of the job lead to burnout and possible job abandonment. Further, with work weeks averaging sixty to seventy hours, and principals still not completing

their essential work, he states, “We have reached the point where aggregate expectations for the principal are so exorbitant that they exceed the limits of what might be expected from one person” (p. 30). Boyland’s (2011) research further indicates that although some stress is good to motivate and challenge an individual, she warns that prolonged stress can lead to “exhaustion, burnout, and serious physical or mental illness” (p. 2). Santamaria’s (2008) research of principal self-efficacy and accountability speaks to the seemingly insurmountable task of the principalship:

> Given federal accountability regulations and potential sanctions for schools not achieving at specified levels, there is an increase in the urgency for educational agencies to identify school leaders who not only possess competency in leadership ability, but who also hold the drive and motivation to overcome overwhelming obstacles. (p. 3)

Additionally, in his study of principal perceptions of instructional leadership, Smith (2007) explains increasingly demands are being placed upon principals, causing them to be pulled in different directions and making it a very difficult job to assume. In her research of principals and school climate, Scallion (2010) explains the role of the principal:

> There is a never ending list of responsibilities for a principal to manage, including discipline, meeting the needs of teachers, day-to-day operations, parent contacts, teacher concerns, scheduling issues, staff shortages, employee issues, PTO's, school councils, special education meetings, budgets, facility problems, supervision and evaluation. (p. 4)

Moreover, these demands are unrealistic and are negatively affecting the number of potential candidates of principals among teachers as teachers continue to “witness the intensity of the job of principal” (Scallion, 2010, p.4).

DeLucia’s (2011) study of barriers and supports to implementing principal leadership for school change portrays the current environment of the principal in the context of an instructional

leader under stress to improve student achievement while at the same time dealing with "funding inadequate facilities, student admissions, disciplinary responsibilities and building management" (p. 52). A veteran principal may justifiably be stressed under these conditions, but a new principal may find these stressful working conditions too much to handle and consider leaving the position. A study conducted of new administrators cites the reasons for feeling overwhelmed and being unable to continue in the role of the principal were stress levels related to working in low-performing schools and working with low-income student populations (Sorapuru, 2012).

Ultimately, the stress felt by principals as a result of their "hectic lifestyle, intense pressure, and constant conflict resulting from the inability to please all constituents" has implications beyond their role. Illness due to stress can negatively impact a school by lowering a principal's job performance (Boyland, 2011, p. 4). Furthermore, results from a study of the implications of administrative stress on principals conducted by Okoroma and Robert-Okah (2007) revealed that insufficient funding, inadequate school facilities, insufficiently trained teachers, poor conditions of service, and work overload contribute to principal stress and may contribute to poor school climate.

Principals may feel inadequate in their ability to meet these demands. However, research demonstrates that there is a need for principals to be able to be instructional leaders that can provide for the success of all students (DeLucia, 2011). Ubben, Hughes and Norris (2004) as cited in Boyland (2011), consider the principal role as a vital and important factor in a school's success. Smith (2007) found that principals who take their role of instructional leader seriously are most likely to have a positive impact upon student achievement. Relative to the importance of a principal's ability to be an effective instructional leader in spite of the current demands and

the associated stress, Santamaria (2008) indicated that a principal's "level of self-efficacy or belief in his or her own ability to achieve success" is what "determines whether or not those behaviors will lead to successful outcomes" (p. 3).

Self-Efficacy

Prior to examining self-efficacy and its possible relationship to the principal, self-efficacy theory will be briefly explored. Self-efficacy, an estimate or expectation of one's ability to successfully execute behavior needed to produce desired outcomes, influences decision making and persistence with behavior (Bandura, 1977). Self-efficacy, a construct stemming from Bandura's social cognitive theory (1977), relates an individual to his or her environment and behavior. Here, the level of perceived self-efficacy affects the choice of activities people participate in given their environment and the coping efforts they use in the face of obstacles and aversive experiences (Bandura, 1977). Self-efficacy is also said to affect one's thought patterns and emotional reactions. People with low self-efficacy may believe things are tougher than they are and may develop a narrow vision of how to solve a problem, whereas individuals with high self-efficacy are more likely to be content when approaching difficult tasks (Pajares, 1996, p. 545). Further, in his research, Pajares (1996) reported that self-efficacy is contextual, meaning it is "task and situation-specific" (p. 546).

"Efficacious individuals are motivated, persistent, goal-oriented, resilient, clear thinkers under pressure…highly committed, determined, resilient, goal-focused, resourceful, and effective problem solvers" (Locke, 1991, as cited in McCormick, et al. 2002, p. 36). Ultimately, one's expected level of efficacy, efficacy expectation, has three aspects: magnitude (level of

difficulty), generality (how it is generalized across situations), and its strength (the magnitude of the belief) (Bandura, 1977).

Self-Efficacy and Leadership

Research has established the connection of self-efficacy and leadership (McCormick, Tanguma, & Lopez-Forment, 2002; Mesterova, Prochazka, & Vaculik, 2015). In its relationship to leadership, McCormick et al. (2002) found, "Because of the causal influence of self-efficacy on work performance in general, extending the self-efficacy concept to leadership studies domain appears warranted" (p. 35). Additionally, in their research, Mesterova et al. (2015) explained that what may separate more effective leaders may be their high levels of self-efficacy, their belief in their capacity to perform a job or task. Ultimately, these types of leaders "may be better equipped to handle various situations and may transfer their efficacy to their followers, resulting in superior group performance" (p. 112). Research suggests a highly efficacious leader is needed and more likely to reach established organizational goals through their ability to increase attention by their staff on performance, create common objectives with their staff, collectively set goals, and persevere in their efforts to reach organizational objectives (Lunenburg, 2011; Paglis & Green, 2002; Tschannen-Moran & Gareis, 2004).

Understanding that principals, as organizational leaders of their schools, are under tremendous stress given the current pressures of their jobs, research conducted by Bandura (1989) and Paglis and Green (2002) recommends it takes a strong sense of self-efficacy to use all the resources available and remain task oriented in the face of organizational difficulties, especially when an organization is in crisis and critical goals are at stake. Therefore, a review of

how self-efficacy and the role of principal are related appears warranted.

Self-Efficacy and the Principal

In a general sense, Bandura (1997) explained the relationship between a principal and his or her level of self-efficacy as "a judgement of his or her capabilities to structure a particular course of action in order to produce desired outcomes in the school he or she leads" (Tschannen-Moran & Gareis, 2004, p. 573). Excluding the possible effect on student achievement, which will be examined later in this review of literature, rather limited research has been done describing the relationship between a principal and his or her perceived level of self-efficacy as it relates to the tasks of the job (Hughes, 2010; Pajares, 1996; Tschannen-Moran & Gareis, 2004). Lehman (2007) further emphasizes, "Principal self-efficacy is a relatively new construct and line of research" (p. 43)

Research conducted by Pajares (1996) examined the contribution self-efficacy has made in academic settings. As noted previously, Pajares (1996) found that self-efficacy beliefs are contextual in that they differ given changing environmental conditions. Also, efficacy influences emotional reactions which may cause a principal to have lower self-efficacy over something that causes much stress and higher levels of efficacy in dealing with areas that do not provoke much emotion. Tschannen-Moran and Gareis's (2004) research reinforced these findings by explaining that self-efficacy beliefs are strong predictors of behavior. Furthermore, in relating self-efficacy to the role of the principal, they found:

> Principals with a strong sense of self-efficacy have been found to be persistent in pursuing their goals, but are also more flexible and more willing to adapt strategies to meeting contextual conditions. They view change as a slow process.

> They are steadfast in their efforts to achieve their goals, but they do not persist in unsuccessful strategies (Osterman and Sullivan, 1996). Confronted with problems, high efficacy principals do not interpret their inability to solve the problems immediately as failure. They regulate their personal expectations to correspond to conditions, typically remaining confident and calm and keeping their sense of humor, even in difficult situations…By contrast, low efficacy principals have been found to perceive an inability to control the environment and tend to be less likely to identify appropriate strategies or modify unsuccessful ones. When confronted with failure, they rigidly persist in their original course of action. When challenged, they are more likely to blame others. Low-efficacy principals are unable to see opportunities, to develop support, or to adapt (Osterman and Sullivan, 1996). They are quicker to call themselves failures and demonstrate anxiety, stress, and frustration. (pp. 574-575)

In a quantitative study conducted by Hughes (2010), the relationship between a principal's level of self-efficacy as it relates to management demonstrated a statistical difference as to whether or not he or she attended a preparation program. In reference to instructional leadership, there was no statistical difference. This may suggest that preparation programs are more focused on management as opposed to instructional leadership and, therefore, provide soon-to-be principals with the knowledge they need to feel more capable with managing a school. Conversely, if principals do not feel as capable with instructional leadership, it may have an adverse effect on their students' level of achievement. Several studies have been done that provide mixed results when comparing a principal's level of self-efficacy and its impact on student achievement. More study in this area should provide valuable information that might help increase the efficacy new principals have in reference to raising student achievement.

Principal Self-Efficacy Scale

Having reasoned that the principal was the one individual in a school building most responsible for student achievement, and that the principal's belief in his or her capacity to produce improved student achievement rested in that person's perceived self-efficacy,

Tschannen-Moran and Gareis (2004) researched principal self-efficacy. Specifically, they were interested in finding a reliable means by which to measure principal self-efficacy. At first, they used two previous self-efficacy scales, yet their research revealed issues of validity and reliability with two previous principal self-efficacy measures.

Eventually, they constructed a scale now commonly used to measure principal self-efficacy. The scale they developed, the Principal Self-Efficacy Scale (PSES), was "adapted from a measure of teacher efficacy" (Tschannen-Moran & Gareis, 2004, p. 578). The items on the scale were based upon the professional standards found in the Interstate School Leaders Licensure Consortium (ISLLC). Three subscales on the PSES emerged in their research: Efficacy for Management, Efficacy for Instructional Leadership, and Efficacy for Moral Leadership. Lehman (2007) measured the reliability of the PSES. She reported the reliability of the PSES as .789 for management leadership, .832 for instructional leadership, and .785 for moral leadership. Ultimately, Tschannen-Moran and Gareis (2004) found that the PSES was reasonably valid and reliable and it "provides a promising means to capture what has heretofore been an elusive construct" (p. 583).

Student Achievement and Principal Self-Efficacy

Recognizing self-efficacy plays a role in how a principal leads his or her school and has been captured reliably through a valid survey instrument, this study examined the relationship of principal self-efficacy and student achievement. How well students achieve is a paramount concern of principals in the current high-stakes testing environment in which they work (Scallion, 2010). Similarly, Troutman (2012) describes the principal as the "critical component"

in helping to improve student achievement (p. 2). Several studies done to examine the relationship between a principal's self-efficacy and student achievement have yielded mixed results (Domsch, 2009; Gilmore, 2009; Lehman, 2007; Lovell, 2009; McCullers, 2009; Moak, 2010; Santamaria, 2008), especially, given the relationship between a principal and student achievement is tenuous and indirect at best (Gilmore, 2009).

As far as the specific variables that link principal self-efficacy and student achievement, "the causal direction of the relationship between principals' efficacy and school performance measures is not always clear" (Grissom & Loeb, 2009, p. 18). Studies conducted by Aderhold (2005), Santamaria (2008), and McCullers (2009) do not specifically tie principal self-efficacy to student achievement levels. However, their results do provide insight in reference to the culture of schools in the current high-stakes environment linked to student achievement.

In his study of 241 elementary school principals in South Dakota, Aderhold (2005) researched the relationship between principal self-efficacy and student achievement in reading, along with examining the relationship between principal self-efficacy and instructional leadership and principal self-efficacy and specific personal characteristics and school demographics. Principals' self-efficacy was measured using Tschannen-Moran and Gareis's (2004) Principal Self-Efficacy Scale along with instructional leadership behavior. Ultimately, findings indicated no significant relationship between principal self-efficacy and student reading achievement. Although no significant relationship between principal self-efficacy was found among principals in relation to gender, teaching experience, principal experience, level of college degree, school *SES*, school size and NCLB status.

In a study of 543 principals, Santamaria (2008) researched if a relationship existed

between those working in schools designated as program improvement schools and the principal's self-efficacy. Program improvement schools are schools in California that did not make the adequate yearly progress in student achievement as outlined in No Child Left Behind legislation. Results indicated principal self-efficacy as it relates to the domain of instructional leadership and moral leadership on Tschannen-Moran and Gareis's (2004) Principal Self-Efficacy Scale demonstrated a statistically significant relationship to the principal's enrollment in a school in program improvement status. Additionally, principals less than 50 years old, those with less than six years of experience, male principals, and the percent of English language learners demonstrated statistical significance. Santamaria (2008) noted that age, by far, demonstrated the strongest statistical relationship.

McCullers (2009) studied the self-efficacy level of Florida principals and the extent to which they believed accountability goals as established in No Child Left Behind were attainable. What he found in his quantitative study of 112 principals indicated a statistically significant relationship in the mean score of principals who believed federal goals of NCLB were attainable and their level of self-efficacy. He noted in the implications of his research the principals in his study accepted the validity of NCLB and a local support system as it relates to assisting principals to "use achievement data to predict results of federal and state accountability plans, expand their understanding of what their own leadership responses to achievement gaps might include, and investigate the possible effects of their leadership decisions on student achievement" (p. 111).

In a study conducted by Domsch (2009) the relationship between elementary principals' self-efficacy, teacher self-efficacy, and student achievement was examined. This quantitative

study of 218 principal respondents was determined to bear no significant statistical relationship between their self-efficacy and student achievement regardless of student grade level. Moak's (2010) quantitative study of 123 respondents found that when Tschannen-Moran and Gareis's (2004) Principal Self-Efficacy Scale was broken down into its three domains, instructional leadership, management, and moral leadership, there still existed no statistically significant relationship between principal self-efficacy and student achievement.

Similarly, in an effort to study the relationship between principal self-efficacy and student achievement given the principal's years of experience, Gilmore (2009) also found no significant statistical relationship to exist. This quantitative study of 212 principals utilized the state-mandated standardized test for students in Massachusetts. As part of her recommendations for further research, Gilmore (2009) suggests that a variable worth studying is the role of the principal to attract, hire, and retain highly effective teachers, as this may raise principal self-efficacy and may improve student achievement.

Limited studies have been shown to demonstrate a statistically significant relationship between a principal's perceived level of self-efficacy and student achievement. Lehman (2007) quantitatively examined the relationship between a principal's self-efficacy and student achievement levels in reading in the state of Wisconsin and found a statistically significant relationship existed in a sample of 361 Wisconsin principals and their respective schools between principal levels of self-efficacy and student achievement levels in reading, especially as it related to free and reduced student populations and urban settings.

Another study by Lovell (2009) examined the relationship between principal levels of self-efficacy and student achievement as it relates to several indicators. In this quantitative study

of 387 principals, Lovell found principal levels of self-efficacy as measured on the PSES's subscales not related to elementary student achievement levels in reading. However, middle school students' achievement levels in math were statistically significant in their relationship to their principal's self-efficacy. AYP status, school size and ethnicity did not prove to be related to principal self-efficacy. Lovell (2009) suggests, "Policy and practice can be impacted by providing school administrators with professional development aimed at increasing awareness of self-efficacy. Moreover, research suggests that years of experience in a successful setting can lead to increased sense of efficacy beliefs" (p. 79). As schools move forward with consideration for how to address principal self-efficacy and its relationship with student achievement, Lehman (2007) suggests:

> This understanding of the principal efficacy and student achievement relationship has implications for preparation, practice and policy. As more studies are conducted they can be used in areas such as: identifying principals for employment, guiding principal preparation programming, identifying practical professional development opportunities, and establishing criteria for administrator licensure. (p. 84)

Another study that linked principal self-efficacy as a predictor to student achievement was conducted by Szymendera (2013) utilizing a sample of 207 Pennsylvania principals. In his study, he found:

> Self-efficacy contributed significantly to the criterion set. Principals with stronger beliefs in their capabilities as instructional and moral leaders, as well as in their management, were more likely to behave in ways that could indirectly or directly affect student achievement. (p. 75)

Additionally, Szmendera (2013) found principal gender, school level, student socioeconomic status, perceived parental involvement and time spend on student discipline did not contribute significantly to student achievement.

As it relates to the school environment, Leithwood and Jantzi (2008) found in their study that organizational characteristics such as school district size and school size do make a difference in principal self-efficacy and its effect on student achievement, whereas personal moderators or characteristics, as studied by Leithwood and Jantzi (2008) and Tschannen-Moran and Gareis (2004), did not significantly relate to a principal's self-efficacy. However, in a study conducted by Smith, Guarino, Strom and Adams (2006), female principals scored higher in self-efficacy than did their male counterparts as it relates to their instructional leadership.

This study sought to address principal self-efficacy as it relates to student achievement and principal employment in reference to where principals work (urban, suburban and rural locations), their years of experience, level of education, gender and student free/reduced population.

Expected Outcomes and Efficacy Expectations

Given that research has explored (and will likely continue to explore) the relationship between the principal and student achievement, a sector of that research has been left virtually unchartered. Specifically, when conducting research for this study, no research in the area of outcome expectations and their relationship to principal self-efficacy and/or student achievement was found.

In an effort to provide insight, it is first important to remember self-efficacy theory explains that efficacy expectations precede and influence outcome expectations. Bandura (1977) reasoned, "Efficacy expectation is the conviction that one can successfully execute the behavior required to produce the outcomes" (p. 193). Given that research conducted by Bandura supported

this claim, Bandura's theory continued to build momentum for years after he introduced the theory. In fact, Bandura (1989) further emphasized stronger self-efficacy perceptions lead to people setting higher goals for themselves along with stronger commitments to those goals (p. 366). Moreover, he reasoned that people's choice of activity to perform is made out of motivation and an expectation to obtain a particular outcome in the future. In Figure 2, Bandura's theory outlines this basic relationship of efficacy expectations, outcome expectations, and their relationship to one another, behavior and actual outcomes.

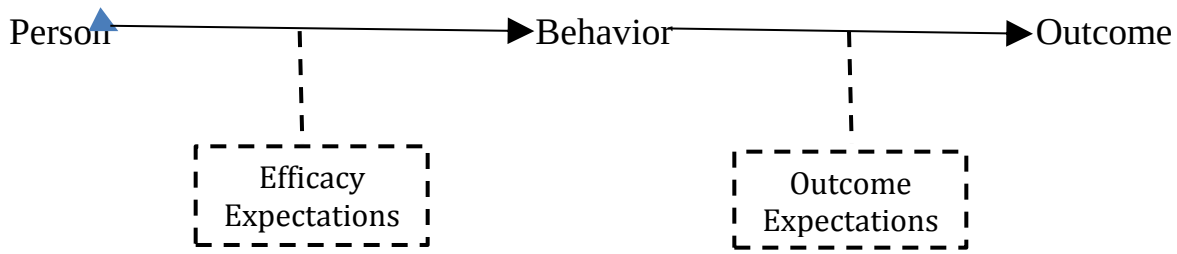

Figure 2. Efficacy expectations precede behavior, whereas outcome expectations follow behavior and precede outcomes (Bandura, 1977).

Figure 2 demonstrates the prevailing mindset among social theorists until researchers came along who questioned whether or not the opposite was in fact true: outcome expectations were influencing efficacy expectations or acting independently of efficacy expectations.

In a study conducted by Pajares (1996), he found the opposite to be true: "Individuals infer their efficacy beliefs from imagined outcomes…an individual's perception of the outcome and his value of the task necessary to achieve that outcome will regulate his behavior as powerfully as his self-efficacy beliefs and independently of them" (p. 559). In this sense, Pajares (1996) makes the claim that outcome expectations come prior to efficacy expectations, opposite

to Bandura's claims. Indeed, Pajares (1996) further argues that outcome expectations may in fact operate independently of efficacy expectations. This poses real concerns for the amount of research conducted on self-efficacy, as the role outcome expectations have played may have been virtually ignored or misinterpreted.

Providing further insight as to the complications that exist in research of efficacy expectations and outcome expectations, Williams (2010) brought this argument back into the research arena with his claim that "this contradiction has not received attention among self-efficacy researchers" (p. 417). Williams's (2010) research was focused on a conceptual contradiction:

> It is argued herein that the inattention to this conceptual contradiction has led to a disproportionate focus on self-efficacy as a causal determinant of behavior at the expense of expected outcomes. It is further argued that the vast literature supporting the predictive power of self-efficacy does not immunize the construct from this conceptual critique. Finally, it is argued that to resolve the contradiction, either (a) the operationalization of self-efficacy must be revised such that self-efficacy judgments are free from the influence of expected outcomes or (b) self-efficacy theory must be revised such that expected outcomes are acknowledged as an important causal determinant of self-efficacy. (p. 418)

Baker and Kirsch (1991), as cited in Williams (2010), conducted research that demonstrated outcome expectancies do, in fact, influence self-efficacy. Furthermore, Williams (2010) explained that expected outcomes influence self-efficacy ratings even when the context for behavior has not been considered. This calls into question whether or not these two variables may operate independently of one another. Ultimately, Williams's (2010) claim that summarized his research provided the basis for Figure 3.

Figure 3. The casual influence of outcome expectancies on self-efficacy judgments (Williams, 2010, p. 420).

Bandura provided a rebuttal to these claims when they first appeared (as cited in Williams, 2010); however, in his own rebuttal, Bandura conceded that self-efficacy judgements can be causally influenced by outcome expectations (Williams, 2010, p. 420). From a research perspective, Williams (2010) argued that current self-efficacy theory is consistent to Bandura's (1977) original claims and abates the evidence that outcome expectations do influence self-efficacy. He further claims that this condition exacerbates self-efficacy research "at the expense of attention to outcome expectancies in the context of theoretical models and as targets of behavior change intervention" (p. 421). Ultimately, Williams (2010) contends that to reconcile this issue, researchers should modify their operational definition of self-efficacy to be independent of expected outcomes or be influenced by expected outcomes. Either way, the current practice of researching self-efficacy theory implying self-efficacy expectations predict and heavily influence outcome expectations (Bandura, 2000) should be discontinued and researchers need to "be clear about their theoretical position regarding self-efficacy and outcome expectations" (Williams, 2010, p. 422).

The implications of Williams's (2010) research on this study, therefore, strongly suggest outcome expectations, an unexplored concept in research describing principal self-efficacy and student achievement, should include outcome expectations as a separate variable. It is possible,

then, that outcome expectations, considered independent of efficacy expectations, when examined in this study may provide insight relative to student achievement that reinforces current self-efficacy theory, challenges self-efficacy theory, or provides data necessary to take the study of principal self-efficacy and student achievement in a new direction.

CHAPTER THREE

METHODOLOGY

Research Design and Methodology

The purpose of this study was to investigate the relationship among elementary school principals' self-efficacy beliefs, their goal expectations, and student achievement, along with their own demographics, the demographics of the schools where they work and the overall actual student achievement levels in their schools. A quantitative approach was utilized in the design of this study. A survey provided quantitative descriptions of a population through studying a sample of that population from which generalizations or inferences were drawn on the population (Creswell, 2014). A survey was used in this study, for surveys "help identify important beliefs and attitudes of individuals" (Creswell, 2012, p.377). Although survey research does not demonstrate cause and effect data or provide explanations as much as experimental research design, survey research does correlate variables and provides trends in data (Creswell, 2012).

This study examined elementary school principal self-efficacy, along with outcome expectations of achievement in schools in the state of Illinois as it relates to actual achievement levels based on the Partnership for Assessment of Readiness for College and Careers (PARCC) test. An Internet survey was sent to a random sample of a larger number of principals to collect a large amount of data (Creswell, 2012). Descriptive statistics were used to determine the mean,

standard deviations and ranges of data in the sample (Creswell, 2012). Within this study, the variables included a principal self-efficacy composite, principal self-efficacy (efficacy for management, efficacy for instructional leadership, efficacy of moral leadership), expected student outcomes, actual student outcomes, and demographics (principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population).

In addition to descriptive statistics, this type of study employed the use of inferential statistics. Creswell (2014) indicates that some descriptive studies move beyond descriptive approaches and utilize relating variables or comparing groups in terms of variables so that inferences can be drawn from a sample as it relates to the population. Gravetter and Wallnau (2014) explain that the basic assumption of inferential statistics that is "samples should be representative of the populations from which they come" (p. 99). Additionally, a researcher utilizes this method to detect meaningful and significant patterns in research results (Gravetter & Wallnau, 2014). The inferential statistical analysis aims at determining whether or not the patterns in the sample reflect the corresponding patterns in the population, also understanding the relationship that may exist between variables as well as determining how variability in a sample occurs whether by chance or not (Gravetter & Wallnau, 2014).

Research Questions

Research questions that guided the study were:

RQ1: What are the levels of self-efficacy (efficacy for management, efficacy for instructional leadership, efficacy for moral leadership) among elementary school principals and academic

achievement levels (expected and actual achievement) in these schools?

RQ2: What are the differences in levels of self-efficacy (efficacy for management, efficacy for instructional leadership, efficacy for moral leadership) by demographics (principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population) and student achievement levels by types of elementary schools?

RQ3: What are the relationships among self-efficacy variables (efficacy for management, efficacy for instructional leadership, efficacy for moral leadership) and student achievement levels (meets and exceeds, does not meet)?

RQ4: What are the impacts of demographics (principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population) on principal self-efficacy (efficacy for management, efficacy for instructional leadership, efficacy for moral leadership) and student academic achievement levels (meets and exceeds, does not meet)?

Population and Sample

The target population for this study consisted of elementary principals throughout Illinois. The Illinois Principals Association reports there are 2,065 elementary principals in the State of Illinois (D. Landers, personal communication, April 5, 2016). Utilizing a single random sampling procedure, a random sample of Illinois elementary school principals from those schools were directly invited to participate in the survey to assure a large-enough sample size. All participant emails were obtained by permission through the Illinois Principals Association. Then, all participants were emailed the survey to complete. The total sample size consisted of

205 participants.

Data Collection and Instrumentation

An online survey design was used to collect current attitudes of elementary school principals in Illinois along with student achievement scores after achievement tests had been administered and scored. Participants were expected to answer all questions in each section of the web-based survey.

I sent a hyperlink of the web-based survey via email to elementary school principals in the state of Illinois. In addition to the survey, each participant was sent a welcome letter to the study and a consent form.

Because self-efficacy beliefs are context related, measures should assess the range of behaviors necessary to succeed at a given task in the predicted context. Self-efficacy measures should examine both level and strength of efficacy beliefs. Level refers to task difficulty, and a range of tasks at varying degrees of difficulty should be used to tap efficacy beliefs. The strength of efficacy beliefs should be assessed by asking respondents to identify a point along a continuum of beliefs rather than an "all or none" or "yes-no" format (Tschannen-Moran & Gareis, 2004, p. 575).

The Principal Self-Efficacy Survey (PSES) developed by Tschannen-Moran and Gareis (2004) was the instrument used to collect and measure principal self-efficacy data along with the questions necessary to obtain data from the remaining variables relating to the respondent, the

respondent's school and the respondent's school's student academic achievement. This instrument is an 18-item Likert-scale measure that assesses perceptions of capabilities as a school leader. (Tschannen-Moran & Gareis, 2004). In addition to the PSES, a questionnaire was used to gather respondent demographic data along with respondent school demographic data.

Construct validity of the Principal Self-Efficacy Survey (PSES) was determined by correlating the instrument against other known constructs to determine if anticipated relationships would emerge. A principal's sense of efficacy was significantly negatively related to work alienation ($r = -0.45$; $p < 0:01$) and positively correlated to both trust in teachers ($r = 0.42$, $p < 0:01$) and trust in students and parents ($r = 0.47$; $p < 0:01$) (Tschannen-Moran & Gareis, 2004). Cronbach's alpha was used to measure the reliability of the instrument. The results of Cronbach's alpha are .789 for management efficacy, .832 for instructional leadership efficacy, and .785 for moral leadership efficacy (Lehman, 2007, p. 50).

Data Collection Procedures

The research design, the data collection instruments, and the descriptive statistical analysis methods were submitted and sought for approval by the dissertation committee to go to the Institutional Review Board (IRB). Approval from the IRB of Northern Illinois University was granted before data was collected. Permission from Dr. Megan Tschannen-Moran was granted for use of the Principal Self-Efficacy Survey (PSES).

Email was sent to Illinois elementary school principals through the email addresses obtained by the Illinois Principals Association (IPA). The email invitation explained the purpose of the study and gave each respondent access to the website with the electronic survey

instrument. After a respondent accessed the survey, each respondent received a letter of consent. A follow-up letter was sent to those participants who did not complete the survey after two weeks.

Additionally to the information collected by principals completing the online survey, 2016 PARCC student achievement data from each school represented by each principal was made available by the Illinois School Board of Education in October 2016.

Data Analysis

This type of study was completed using descriptive statistics (Creswell, 2012) with multiple independent variables. Descriptive statistics report general tendencies in data such as the mean, median, mode, variance, standard deviation and range (Creswell, 2012). According to Gravetter and Wallnau (2014), "The general goal of descriptive statistics is to simplify a set of data by organizing it or summarizing a large set of scores" (p. 119).

Once all data was collected, it was coded for analysis in the Statistical Package for the Social Sciences software (SPSS), 23rd edition. Data collected was analyzed using both descriptive statistical analysis and inferential statistical analysis. The variables in this study included principal self-efficacy composite, principal self-efficacy for management, principal self-efficacy for instructional leadership, principal self-efficacy for moral leadership, principal gender, years of experience, level of education, location of school, type of elementary school and percentage of free and reduced student population. Descriptive statistics were performed to demonstrate the means, percentages and standard deviations of the variables.

Analysis by *t* tests and ANOVA was performed to determine the differences in levels of

self-efficacy (self-efficacy composite, efficacy for management, efficacy for instructional leadership, efficacy for moral leadership) by demographics (principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population) and student achievement levels by types of elementary schools.

Pearson correlation analysis was performed to study the relationships among self-efficacy variables (self-efficacy composite, efficacy for management, efficacy for instructional leadership, efficacy for moral leadership) and student achievement levels (meets and exceeds).

Regression analysis was performed to study the impact of demographics (principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population) on principal self-efficacy (self-efficacy composite, efficacy for management, efficacy for instructional leadership, efficacy for moral leadership) and student academic achievement levels (meets and exceeds, does not meet).

CHAPTER FOUR

DATA ANALYSIS

The purpose of this study was to investigate perspectives of elementary school principals on self-efficacy beliefs and student achievement, along with the impacts of their own demographics, the demographics of the schools where they work and the overall actual student achievement levels in their schools. In order to meet this purpose, the following questions were addressed:

1. What are the mean scores and standard deviations for all variables that are part of this study? The dependent variable is the actual PARCC 2016 composite score. Independent variables: principal levels of self-efficacy (efficacy for management, efficacy for instructional leadership, efficacy for moral leadership) and demographics (principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population and principals' expected PARCC 2016 composite scores).
2. What are the differences based upon principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student lunch population, actual PARCC 2016 composite scores among principal self-efficacy scales, and what are the differences based upon principal gender, years of experience, level of education, location of school, type of elementary school, level of

free/reduced student lunch population, and actual PARCC 2016 composite scores among expected PARCC 2016 composite scores?

3. What are the relationships between expected and actual PARCC 2016 composite scores and principal levels of self-efficacy and actual PARCC 2016 composite scores?
4. What principal self-efficacy factors predict actual PARCC 2016 composite scores, and what principal-expected PARCC 2016 composite scores predict actual PARCC 2016 composite scores?

Within this quantitative study, the dependent variable was the composite score for the PARCC (Partnership for Assessment of Readiness for College and Careers) assessment. Independent variables included principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population, and principal self-efficacy scores. The target population (N = 2,161) used in this study are elementary principals in the state of Illinois. Of the 2,161 elementary principals in the state of Illinois, 205 elementary principals participated in this study. These 205 elementary principals represent the total sample (n) for this study.

Data collected for this study came from a survey distributed to each of the elementary school principals within the state of Illinois. Survey data included both principal and school demographic data, PARCC composite scores and principal self-efficacy scores. Additionally, PARCC composite scores reported by each principal within the survey were corroborated with the Illinois State Board of Education.

SPSS statistical software was used to analyze the collected data. This chapter begins with

a summary of the demographic data, PARCC composite scores and principal self-efficacy factors through analysis of their mean values and standard deviation. ANOVA was conducted to establish if there are differences among the principal self-efficacy factors and PARCC composite scores based upon demographic data including principal gender, years of experience, level of education, location of school, type of school, and free and reduced student population. Correlations were computed to determine the strength of relationships among PARCC composite scores and principal self-efficacy factors. Finally, regression analysis was done to determine which, if any, of the principal self-efficacy factors had predictive qualities related to PARCC composite scores.

Reliability

Assessment of reliability was conducted on the PSES survey. The Cronbach's alpha coefficient for each subscale was reported as follows: (1) Management Efficacy (.99), (2) Instructional Leadership Efficacy (98), and (3) Moral Leadership Efficacy (.98). These results show that there is a large degree of internal consistency in the PSES across all three subscales, and the PSES is, in fact, testing what it purports to test.

Analysis of Mean Score Values

In creating Tschannen-Moran and Gareis's (2004) Principal Self-Efficacy Scale (PSES), three separate subscales became evident related to the tasks of a principal: Management, Instructional Leadership, and Moral Leadership. These three subscales from the PSES were reported separately when completing the statistical analysis for this study. As stated earlier, the

total sample for this study was 205 while the total sample for actual PARCC 2016 composite scores was 186. Taken from the sample population, Table 1 represents the means and standard deviations for principal self-efficacy across the whole sample.

Table 1

Principal Self-Efficacy Subscales (Means) and Standard Deviation Scores (SD) Across the Sample

	Principal Self-Efficacy Subscales (0-9)			
	Self-Efficacy Composite	Instructional Leadership	Management	Moral Leadership
Sample = 204	7.09 (1.35)	6.33 (1.02)	6.43 (1.64)	7.54 (1.25)

Table 2 presents descriptive data by gender. The data demonstrates that male principals reported less self-efficacy as a whole and within each subscale as compared to their female counterparts (self-efficacy composite: male Mean = 5.95 < female Mean = 8.13 and self-efficacy subscales: male Mean = 5.45 < female Mean = 7.12, male Mean = 5.04 < female Mean = 7.69, male Mean = 6.50 < female Mean = 8.47). Additionally, both male and female principals rated their moral leadership self-efficacy higher than instructional leadership self-efficacy and management self-efficacy (Moral Leadership Mean: 6.50 > Instructional Leadership Mean: 5.45 or Management Mean: 5.04, Moral Leadership Mean = 8.47 > Instructional Leadership Mean: 7.12 or Management Mean: 7.69). Standard deviations for women are smaller than their male counterparts as a composite and in all self-efficacy subscales. This indicates female self-efficacy ratings have less variance than male self-efficacy ratings.

Table 2

Self-Efficacy Subscale (Means) and Standard Deviation Scores (SD) by Gender

Gender	Principal Self-Efficacy Composite and Subscales (0-9)			
	Self-Efficacy Composite	Instructional Leadership	Management	Moral Leadership
Male	5.96	5.45	5.04	6.50
	(.97)	(.68)	(1.16)	(.99)
Female	8.13	7.12	7.69	8.47
	(.59)	(.49)	(.76)	(.48)
Sample Size	*n* = 205	*n* = 204	*n* = 203	*n* = 205

Table 3 presents the means and standard deviations of principals with 0-5 years of experience, 6-10 years of experience, 11-15 years of experience, 16-20 years of experience, 21 or more years of experience along with principal self-efficacy as demonstrated as a composite and in three subscales of instructional leadership, management, and moral leadership.

Table 3

Principal Years of Experience and Self-Efficacy Subscale Means and Standard Deviation Scores (SD)

Years of Experience	Principal Self-Efficacy Composite and Subscales (0-9) Self-Efficacy Composite	Instructional Leadership	Management	Moral Leadership
0 – 5 years	6.95 (1.52)	6.22 (1.14)	6.25 (1.82)	7.40 (1.45)
6-10 years	6.94 (1.35)	6.22 (1.03)	6.24 (1.65)	7.41 (1.26)
11 – 15 years	7.26 (1.11)	6.44 (.87)	6.44 (1.39)	7.67 (.96)
16 – 20 years	7.36 (1.23)	6.51 (.93)	6.75 (1.52)	7.79 (1.11)
21 + years	7.69 (1.51)	6.78 (.87)	7.12 (1.47)	8.08 (.98)
Sample Size	*n* = 205	*n* = 204	*n* = 203	*n* = 205

Data in Table 3 demonstrates that no matter what level of experience a principal has, his/her self-efficacy as it relates to moral leadership is higher than with his/her self-efficacy as a composite or as it relates to his/her management or instructional leadership. Second, principals

with more years of experience demonstrate a higher mean of self-efficacy across all subscales (instructional leadership, management, and moral leadership) and as a composite score. Finally, with no exception, and regardless of how many years of experience a principal has, his/her self-efficacy as it relates to instructional leadership exhibits less variance than the self-efficacy composite or with the self-efficacy subscales of instructional leadership and management.

Table 4 presents means and standard deviations of principals' level of education along with principal self-efficacy as a composite and with all three subscales of instructional leadership, management, and moral leadership. For purposes of this study, an advanced degree is a postgraduate degree earned following a master's degree and prior to earning a doctorate degree. Table 4

Principal Level of Education and Self-Efficacy Subscale Means and Standard Deviation Scores (SD)

Level of Education	Principal Self-Efficacy Composite and Subscales (0-9)			
	Self-Efficacy Composite	Instructional Leadership	Management	Moral Leadership
Masters Degree	6.53 (1.07)	5.73 (.77)	5.53 (1.29)	6.88 (1.05)
Advanced Degree	8.30 (.37)	7.30 (.23)	7.82 (.41)	8.64 (.38)
Doctorate	8.98 (.04)	7.73 (.05)	8.98 (.06)	9.00 (0.00)
Sample Size	*n* = 205	*n* = 204	*n* = 203	*n* = 205

As illustrated in Table 4, principals' moral leadership displayed the highest mean levels of all three subscales, even greater than the overall self-efficacy composite. Also, with more

education, principals demonstrated higher levels of efficacy. In addition, the least variance occurred where principal self-efficacy, specifically moral leadership, is paired with principals who possess a doctorate (0.00). Furthermore, principals with a master's degree have the most variance in the management self-efficacy subscale (1.29), indicating scores within this area are clustered farther from the mean than the composite score and the other two self-efficacy subscales (instructional leadership and moral leadership, respectively).

Table 5 presents means and standard deviations of principals' school location along with principal self-efficacy as a composite and the three subscales of instructional leadership, management, and moral leadership.

Table 5

Principal School Location and Self-Efficacy Subscale Means and Standard Deviation Scores (SD)

Location of School	Principal Self-Efficacy Composite and Subscales (0-9)			
	Self-Efficacy Composite	Instructional Leadership	Management	Moral Leadership
Rural	5.77 (.93)	5.32 (.66)	6.33 (.96)	4.81 (1.10)
Suburban	7.98 (.65)	6.99 (.55)	8.34 (.55)	7.51 (.79)
Urban	9.00 (0.00)	7.75 (0.00)	9.00 (0.00)	9.00 (0.00)
Sample Size	n = 205	n = 204	n = 203	n = 205

Table 5 shows that principals report higher mean scores of self-efficacy in the area of management regardless of a school's location. Also, urban school principals report higher mean values of self-efficacy as a composite and across all three subscales with the least amount of

variance in their mean values. It is important to note that this data may be skewed as the number of urban school principal participants constituted no more than 2.5 % of the total sample size (5 out of 205).

Table 6 presents the means and standard deviations of principals' school type along with principal self-efficacy as demonstrated in the self-efficacy composite score and three subscales of instructional leadership, management, and moral leadership.

Table 6

Principal School Type and Self-Efficacy Subscale Means and Standard Deviation Scores (SD)

School Type	Principal Self-Efficacy Composite and Subscales (0-9)			
	Self-Efficacy Composite	Instructional Leadership	Management	Moral Leadership
Elementary District (K – 8)	6.30 (1.05)	5.69 (.74)	5.48 (1.28)	6.83 (1.05)
Unit District (K – 12)	8.41 (.45)	7.38 (.28)	8.02 (.64)	8.68 (.40)
Sample Size	*n* = 205	*n* = 204	*n* = 203	*n* = 205

Here, Table 6 indicates that principal self-efficacy mean scores are higher in unit districts than in elementary school districts. Moral leadership was higher in both elementary districts and unit districts than the composite score and the subscales of management and instructional leadership. Last, unit districts demonstrated the least variance in their self-efficacy subscale scores with instructional leadership self-efficacy, indicating the least variance for both district

types and self-efficacy subscales (.28).

Table 7 presents the means and standard deviations of principals' school free and reduced student lunch population along with principal self-efficacy as a composite and in three subscales of instructional leadership, management, and moral leadership.

Table 7

Principal School Free and Reduced Student Lunch Population and Self-Efficacy Subscale Means and Standard Deviation Scores (SD)

Free and Reduced Student lunch Population	Principal Self-Efficacy Composite and Subscales (0-9)			
	Self-Efficacy Composite	Instructional Leadership	Management	Moral Leadership
1 – 25%	7.23 (1.23)	6.44 (.95)	6.61 (1.53)	7.68 (1.11)
26 – 50%	6.96 (1.41)	6.24 (1.07)	6.25 (1.68)	7.41 (1.37)
51 – 75%	7.11 (1.28)	6.33 (.97)	6.46 (1.56)	7.56 (1.18)
76 – 100%	7.02 (1.51)	6.25 (1.14)	6.37 (1.86)	7.46 (1.37)
Sample Size	n = 205	n = 204	n = 203	n = 205

Table 7 indicates that the lowest levels of free and reduced student lunch population (1 - 25%) as it relates to principal self-efficacy had the least amount of variance in reported scores. Second, principals reported higher levels of self-efficacy across all three subscales and the self-efficacy composite with the least amount of free and reduced student lunch population as compared to those same subscores with more free and reduced student lunch populations. Last,

principals' instructional leadership as a self-efficacy subscale demonstrated the least amount of variance in reported mean averages.

Table 8 presents the means and standard deviations of principals' actual 2016 spring PARCC scores along with principal self-efficacy as a composite and in three subscales of instructional leadership, management, and moral leadership. As stated previously, only 186 principals in the total sample of 205 provided actual PARCC 2016 composite scores.

Table 8

Principal School Actual PARCC 2016 Composite Scores and Self-Efficacy Subscale Means and Standard Deviation Scores (SD)

	Principal Self-Efficacy Composite and Subscales (0-9)			
Actual PARCC Composite 2016	Self-Efficacy Composite	Instructional Leadership	Management	Moral Leadership
0 -20%	6.63 (1.58)	5.98 (1.17)	5.89 (1.86)	7.08 (1.54)
21 – 40%	6.85 (1.16)	6.10 (.88)	6.10 (1.42)	7.34 (1.07)
41 – 60%	6.91 (1.27)	6.20 (.98)	6.17 (1.48)	7.39 (1.24)
61 – 80%	7.17 (1.30)	6.39 (.98)	6.51 (1.57)	7.59 (1.23)
81 – 100%	8.61 (.08)	7.57 (.02)	8.08 (.11)	9.00 (1.23)
Sample Size	*n* = 186	*n* = 186	*n* = 186	*n* = 186

Table 8 indicates that no matter the actual PARCC 2016 composite score, the self-efficacy subscale of moral leadership among principals had the highest mean score above the

self-efficacy composite score and instructional leadership and management self-efficacy subscales. With the exception of 81 -100% on the actual 2016 PARCC composite, all other actual PARCC 2016 composite score ranges demonstrated the highest variance in their means with the principal self-efficacy subscale. Instructional leadership in all actual PARCC 2016 composite score ranges demonstrated the least variance, meaning their scores did not vary from each other much. Last, it would appear that as principals reported higher efficacy, their buildings' actual PARCC 2016 composite scores increased.

Table 9 presents the means and standard deviations of principals' actual 2016 spring PARCC scores along principals' expected 2016 PARCC composite scores.

Table 9

Principals' Schools' Actual PARCC 2016 Composite Scores and Principals' Expected PARCC 2016 Composite Scores (SD)

Principal Expected PARCC 2016 Composite	Actual PARCC 2016 Composite
49.03 (18.91)	44.59 (19.07)
Sample Size	*n* = 186

Table 9 indicates the actual PARCC 2016 composite score has a lower mean (44.59) than the expected score (49.03), signifying that the principals' schools surveyed in this study overall earned lower scores on the PARCC assessment than originally expected. Additionally, a higher standard deviation for the actual PARCC composite vs. the expected PARCC composite indicates more variance with the actual PARCC composite scores.

Differences Among Principal Self-Efficacy Subscales and Principal Demographic Measures

To determine if there exists statistically significant differences among the principal self-efficacy composite score and the self-efficacy subscales (Moral Leadership, Instructional Leadership, and Management) based on principal demographic measures (gender, years of experience, level of education, location of school, free and reduced student population, type of school, and PARCC 2016 composite score), a series of independent-samples *t* tests and one-way ANOVA tests were performed. Additionally, to determine if there exists statistically significant differences among principal-expected PARCC 2016 composite scores and principal demographic measures (gender, years of experience, level of education, location of school, free and reduced student population, type of school, and PARCC 2016 composite score), independent samples *t* tests and one-way ANOVA tests were also performed. If statistical significance was established, post-hoc testing using the Tukey test was done to determine where the differences occurred between groups.

Independent-samples *t* tests compared principal self-efficacy composite and subscale scores among gender (male and female) and type of school (elementary school district and unit school district). Additional independent-samples *t* tests compared principal-expected PARCC 2016 composite scores among gender and type of school (elementary school district and unit school district). Table 10 demonstrates results of principal self-efficacy by gender.

Table 10

*Results of T-*Test *and Descriptive Statistics for Principal Self-Efficacy Subscales by Gender*

	Gender									
	Male			Female			95% CI for Mean Difference	t	df	Sig.
	M	SD	N	M	SD	N				
Self-Efficacy Composite	5.95	.97	97	8.13	.59	106	-2.39, -1.95	-19.02	155.79	.00
Instructional Leadership	5.44	.68	97	7.12	.49	107	-1.84, -1.51	-19.95	172.93	.00
Moral Leadership	6.50	.99	97	8.47	.48	108	-2.19, -1.75	-17.81	136.07	.00
Management	5.05	1.17	97	7.69	.76	106	-2.92, -2.37	-18.94	162.06	.00

*p < .05.

Statistical significant mean differences were found between males and females with the self-efficacy composite and in each of the principal self-efficacy subscales (instructional leadership, moral leadership, and management). Results show that females tend to have higher self-efficacy scores in each of the subscales and composite.

An independent-samples *t* test compared outcome expectation of principal-expected PARCC 2016 composite scores by gender. Results are presented in Table 11.

Table 11

*Results of T-*Test *and Descriptive Statistics for Principal-Expected PARCC 2016 Composite Scores by Gender*

	Gender									
	Male			Female			95% CI for Mean Difference	t	df	Sig.
	M	SD	N	M	SD	N				
Principal Expected PARCC 2016 Composite Scores	48.11	19.70	97	50.22	18.08	90	-7.35, 3.54	-.69	184.98	.49

*p < .05.

Results indicate there is no statistically significant mean difference in principal-expected PARCC 2016 composite scores between males and females. However, results show that females tend to have higher expected PARCC scores with less variance. Table 12 demonstrates principal self-efficacy by school type.

Table 12

*Results of T-*Test *and Descriptive Statistics for Principal Self-Efficacy Subscales by School Type*

	School Type									
	Elementary S.D.			Unit S.D.			95% CI for Mean Difference	t	df	Sig.
	M	SD	N	M	SD	N				
Self-Efficacy Composite	6.30	1.05	127	8.41	.45	76	-2.36, -1.90	-19.81	184.76	.00
Instructional Leadership	5.69	.74	127	7.38	.28	77	-1.84, -1.55	-23.12	177.03	.00
Moral Leadership	6.84	1.06	127	8.69	.40	78	-2.05, -1.64	-17.75	175.99	.00
Management	5.48	1.28	127	8.02	.64	76	-2.80, 2.27	-18.66	196.05	.00

*p < .05.

There is a statistically significant mean difference in each principal self-efficacy subscale (instructional leadership, moral leadership, and management) and self-efficacy composite between elementary school districts and unit school districts. Results show that principals in unit school districts tend to have significantly higher self-efficacy as a composite and in each of the subscales. Further, principal school location differs statistically as it relates to each of the three self-efficacy subscales and composite. Table 13 demonstrates principal-expected PARCC 2016 composite scores by school type.

Table 13

*Results of T-*Test *and Descriptive Statistics for Principal Expected PARCC 2016 Composite Scores by School Type*

	School Type									
	Elementary S.D.			Unit S.D.			95% CI for Mean Difference	t	df	Sig.
	M	SD	N	M	SD	N				
Principal Expected PARCC 2016 Composite Scores	47.76	19.32	127	51.73	17.86	60	-9.66, 1.71	-1.38	124.48	.17

*p < .05.

There is no statistically significant mean difference in principal-expected PARCC 2016 composite scores between elementary school districts and unit school districts. Results show that unit school districts tend to have higher expected PARCC composite scores with less variance.

ANOVA testing compared principal self-efficacy subscales among years of experience,

level of education, location of school, free and reduced student population, and PARCC 2016 composite scores. Further ANOVA testing compared principal-expected PARCC 2016 composite scores among years of experience, level of education, location of school, free and reduced student population, and PARCC 2016 composite scores. ANOVA results are presented in Tables 14 - 38.

ANOVA was conducted on the principal self-efficacy composite among the five groupings of years of experience: 0-5, 6-10, 11-15, 16-20, and 21+. The analysis found no statistically significant difference, $F(4, 203) = 1.29$, $p < .05$, $\eta^2 = .03$, as presented in Table 14. Taken together, these results suggest that principal years of experience did not differ with a principal's overall self-efficacy (composite).

Table 14

One-Way Analysis of Variance of Self-Efficacy Composite Among Principal Years of Experience

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	4	9.38	2.34	1.29	.27	.03
Within groups	198	357.48	1.81			
Total	203	366.85				

ANOVA was conducted on the principal self-efficacy subscale Instructional Leadership among the five groupings of years of experience: 0-5, 6-10, 11-15, 16-20, and 21+. The analysis found no statistically significant difference, $F(4, 203) = 1.18$, $p < .05$, $\eta^2 = .02$, as presented in Table 15. Taken together, these results suggest that principal years of experience did not differ

on a principal's self-efficacy as it relates to his/her instructional leadership.

Table 15

One-Way Analysis of Variance of Principal Instructional Leadership Self-Efficacy Among Principal Years of Experience

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	4	4.92	1.23	1.18	.32	.02
Within groups	199	208.08	1.05			
Total	203	213.08				

ANOVA was conducted on the principal self-efficacy subscale, Moral Leadership. Among the five groupings of years of experience (0-5, 6-10, 11-15, 16-20, and 21+), the analysis found no statistically significant difference, $F(4, 204) = 1.19$, $p < .05$, $\eta^2 = .02$, as presented in Table 16. Taken together, these results suggest that a principal's years of experience does not lead to difference on a principal's self-efficacy as it relates to moral leadership.

Table 16

One-Way Analysis of Variance of Principal Moral Leadership Self-Efficacy Among Principal Years of Experience

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	4	7.38	1.85	1.19	.32	.02
Within groups	200	310.47	1.55			
Total	204	317.85				

ANOVA was conducted on the principal self-efficacy subscale, Management. Among the five groupings of years of experience (0-5, 6-10, 11-15, 16-20, and 21+), the analysis found no statistical significant difference, $F(4, 202) = 1.25$, $p < .05$, $\eta^2 = .02$, as presented in Table 17. Taken together, these results suggest that a principal's years of experience do not differ on a principal's self-efficacy as it relates to management.

Table 17

One-Way Analysis of Variance of Principal Management Self-Efficacy Among Principal Years of Experience

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	4	13.46	3.36	1.25	.29	.02
Within groups	198	531.09	2.68			
Total	202	544.54				

ANOVA was conducted on principal expected PARCC 2016 composite scores among the five groupings of years of experience, 0-5, 6-10, 11-15, 16-20, and 21+. The analysis found no statistical significant difference, $F(4, 182) = .91$, $p < .05$, $\eta^2 = .02$, as presented in Table 18. Taken together, these results suggest that principal years of experience do not produce different principal expected PARCC 216 composite scores.

Table 18

One-Way Analysis of Variance of Principal Expected PARCC 2016 Composite Scores among Principal Years of Experience

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	4	1298.69	324.67	.91	.46	.02
Within groups	182	65199.12	358.23			
Total	186	66497.81				

ANOVA was conducted on the principal self-efficacy composite score among the three groupings of level of education, masters degree, advanced degree, and doctorate. The analysis found statistical significance, $F(2, 200) = 131.71$, $p < .05$, $\eta^2 = 1.32$, as presented in Table 19. Post hoc comparisons using the Tukey test indicated that the mean score for an advanced degree (M = 8.30, SD = .37) was significantly different from both the masters degree (M = 6.53, SD = 1.07) and the doctorate (M = 8.98, SD = .04). Taken together, these results suggest that levels of education may lead to differences on principals' overall self-efficacy.

Table 19

One-Way Analysis of Variance of Self-Efficacy Composite among Principal Level of Education

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	2	208.53	104.26	131.71	.00	1.32
Within groups	200	158.23	.792			
Total	202	366.85				

ANOVA was conducted on the principal self-efficacy subscale, Instructional Leadership among the three groupings of level of education, masters degree, advanced degree, and doctorate. The analysis found statistical significance, $F(2, 201) = 165.90$, $p < .05$, $\eta 2 = .62$, as presented in Table 20. Post hoc comparisons using the Tukey test indicated that the mean score for an advanced degree ($M = 7.31$, $SD = .32$) was significantly different from both the masters degree ($M = 5.74$, $SD = .77$) and the doctorate ($M = 7.73$, $SD = .06$). Taken together, these results suggest that levels of education may lead to differences on principals' self-efficacy as related to Instructional Leadership.

Table 20

One-Way Analysis of Variance of Principal Instructional Leadership Self-Efficacy among Principal Level of Education

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	2	132.65	66.33	165.90	.00	.62
Within groups	201	80.36	.40			
Total	203	213.01				

ANOVA was conducted on the principal self-efficacy subscale, Moral Leadership among the three groupings of level of education, masters degree, advanced degree, and doctorate. The analysis found statistical significance, $F(2, 202) = 105.92$, $p < .05$, $\eta^2 = .51$, as presented in Table 21. Post hoc comparisons using the Tukey test indicated that the mean score for a masters degree (M = 6.88, SD = 1.06) was significantly different from both the advanced degree (M = 8.64, SD = .39) and the doctorate (M = 9.0, SD = .00). Taken together, these results suggest that principals' Moral Leadership self-efficacy differs as related to their level of education.

Table 21

One-Way Analysis of Variance of Principal Moral Leadership Self-Efficacy among Principal Level of Education

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	2	162.70	81.35	105.92	.00	.51
Within groups	202	155.15	.77			
Total	204	317.85				

ANOVA was conducted on the principal self-efficacy subscale, Management among the three groupings of level of education, masters degree, advanced degree, and doctorate. The analysis found statistical significance, $F(2, 200) = 138.69$, $p < .05$, $\eta^2 = .58$, as presented in Table 22. Post hoc comparisons using the Tukey test indicated that the mean score for an advanced degree (M = 7.82, SD = .41) was significantly different than both the masters degree (M = 5.54, SD = 1.29) and the doctorate (M = 8.98, SD = .06). Taken together, these results suggest that principal's self-efficacy as related to Management differs related to level of education.

Table 22

One-Way Analysis of Variance of Principal Management Efficacy among Principal Level of Education

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	2	316.41	158.20	138.69	.00	.58
Within groups	200	228.14	1.14			
Total	202	544.54				

ANOVA was conducted on the principal-expected PARCC 2016 composite scores among the three groupings of level of education: master's degree, advanced degree, and doctorate. The analysis found no statistical significance, $F(1, 185) = 1.46$, $p < .05$, $\eta 2 = 01$, as presented in Table 23. Taken together, these results suggest that principal level of education does not produce differences in principals' expected PARCC 216 composite scores

Table 23

One-Way Analysis of Variance of Principal-Expected PARCC 2016 Composite Scores Among Principal Level of Education

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	1	521.09	521.09	1.46	.23	.01
Within groups	185	65976.71	356.63			
Total	186	66497.81				

ANOVA was conducted on the principal self-efficacy composite score among the three groupings of school location: rural, suburban, and urban. The analysis found statistical significance, $F(2, 200) = 205.67$, $p < .05$, $\eta^2 = 2.06$, as presented in Table 24. Post hoc comparisons using the Tukey test indicated that significance occurred between rural schools and suburban schools and rural schools and urban schools. No statistically significant difference occurred between suburban schools and urban schools when compared to the principal self-efficacy composite score.

Table 24

One-Way Analysis of Variance of Self- Efficacy Composite Among Principal Location of School

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	2	246.84	123.42	205.67	.00	2.06
Within groups	200	120.02	.600			
Total	202	366.85				

ANOVA was conducted on the principal self-efficacy subscale Instructional Leadership among the three groupings of location of school: rural, suburban, and urban. The analysis found statistical significance, $F(2, 201) = 202.50$, $p < .05$, $\eta^2 = .67$, as presented in Table 25. Post hoc comparisons using the Tukey test indicated that the mean score for rural location (M = 5.33, SD = .66) was significantly different than both the suburban location (M = 6.99, SD = .55) and urban location (M = 7.75, SD = .00).

Table 25

One-Way Analysis of Variance of Principal Instructional Leadership Efficacy Among Principal Location of School

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	2	142.36	71.18	202.50	.00	.66
Within groups	201	70.65	.35			
Total	203	213.01				

ANOVA was conducted on the principal self-efficacy subscale Moral Leadership among the three groupings of location of school: rural, suburban, and urban. The analysis found statistical significance, $F(2, 202) = 188.30$, $p < .05$, $\eta^2 = .65$, as presented in Table 26. Post hoc comparisons using the Tukey test indicated that the mean score for rural location (M = 6.33, SD = .96) was significantly different than both the suburban location (M = 8.34, SD = .55) and urban location (M = 9.00, SD = .00). Post hoc comparisons using the Tukey test found no statistical

significance between both suburban and urban locations.

Table 26

One-Way Analysis of Variance of Principal Moral Leadership Efficacy Among Principal School Location

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	2	206.89	103.44	188.30	.00	.65
Within groups	202	110.99	.549			
Total	204	317.85				

ANOVA was conducted on the principal self-efficacy subscale Management among the three groupings of location of school: rural, suburban, and urban. The analysis found statistical significance, $F(2, 200) = 217.86$, $p < .05$, $\eta^2 = .69$, as presented in Table 27. Post hoc comparisons using the Tukey test indicated that the mean score for rural location (M = 4.81, SD = 1.09) was significantly different than both the suburban location (M = 7.51, SD = .79) and urban location (M = 9.00, SD = .00).

Table 27

One-Way Analysis of Variance of Principal Management Efficacy Among Principal Location of School

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	2	373.23	186.61	217.86	.00	.69
Within groups	200	171.32	.86			
Total	202	544.54				

ANOVA was conducted on the principal-expected PARCC 2016 composite scores among the three groupings of school location: rural, suburban, and urban. The analysis did not find statistical significance, $F(1, 185) = .52$, $p < .05$, $\eta 2 = .00$, as presented in Table 28. Taken together, these results suggest that expected PARCC 216 composite scores did not differ in reference to principal school location.

Table 28

One-Way Analysis of Variance of Principal-Expected PARCC 2016 Composite Scores Among Principal Location of School

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	1	186.01	186.01	.52	.47	.00
Within groups	185	66311.79	358.442			
Total	186	66497.81				

ANOVA was conducted on the principal self-efficacy as a composite score among the five groupings of population of students on free and reduced lunch: 0-25%, 26-50%, 51-75%, and 76-100%. The analysis found no statistical significant difference, $F(3, 199) = .45$, $p < .05$, $\eta^2 = .01$, as presented in Table 29. Taken together, these results suggest principal self-efficacy as a composite score does not differ as compared to the percentage of free and reduced student population.

Table 29

One-Way Analysis of Variance of Self-Efficacy Composite Among Free and Reduced Student Population.

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	3	2.39	.79	.45	.73	.01
Within groups	199	364.46	1.831			
Total	202	366.85				

ANOVA was conducted on the principal self-efficacy subscale Instructional Leadership among the five groupings of population of students on free and reduced lunch: 0-20%, 21-40%, 41-60%, 61-80%, and 81-100%. The analysis found no statistical significant difference, $F(3, 200) = .51$, $p < .05$, $\eta^2 = .01$, as presented in Table 30. Taken together, these results suggest principal instructional leadership self-efficacy does not differ as compared to the percentage of free and reduced student population.

Table 30

One-Way Analysis of Variance of Principal Instructional Leadership Self-Efficacy Among Free and Reduced Student Population.

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	3	1.61	.54	.51	.68	.01
Within groups	200	211.40	1.60			
Total	204	317.85				

ANOVA was conducted on the principal self-efficacy subscale Moral Leadership among the five groupings of free and reduced student population: 0-20%, 21-40%, 41-60%, 61-80%, and 81-100%. The analysis found no statistical significant difference, $F(3, 201) = .52$, $p < .05$, $\eta^2 = .01$, as presented in Table 31. Taken together, these results suggest principal moral leadership self-efficacy does not differ as compared to the percentage of free and reduced student population.

Table 31

One-Way Analysis of Variance of Principal Moral Leadership Self-Efficacy Among Free and Reduced Student Population

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	3	2.43	.81	.52	.67	.01
Within groups	201	315.42	1.57			
Total	204	317.85				

ANOVA was conducted on the principal self-efficacy subscale Management among the five groupings of free and reduced student population: 0-20%, 21-40%, 41-60%, 61-80%, and 81-100%. The analysis found no statistical significant difference, $F(3, 199) = .49$, $p < .05$, $\eta^2 = .01$, as presented in Table 32. Taken together, these results suggest principal management self-efficacy does not differ as compared to the percentage of free and reduced student population.

Table 32

One-Way Analysis of Variance of Principal Management Self-Efficacy Among Free and Reduced Student Population

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	3	3.99	1.33	.49	.69	.01
Within groups	199	540.548	2.72			
Total	202	544.54				

ANOVA was conducted on principal-expected PARCC 2016 composite scores among the five groupings of free and reduced student population: 0-20%, 21-40%, 41-60%, 61-80%, and 81-100%. The analysis found no statistical significant difference, $F(3, 183) = .48$, $p < .05$, $\eta^2 = .01$, as presented in Table 33. Taken together, these results suggest that the separate free and reduced levels of student population at principals' schools did not produce different principal-expected PARCC 2016 composite scores.

Table 33

One-Way Analysis of Variance of Principal-Expected PARCC 2016 Composite Scores Among Free and Reduced Student Population

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	3	513.77	171.26	.48	.70	.01
Within groups	183	65984.04	360.57			
Total	186	66497.81				

ANOVA was conducted on the principal self-efficacy composite score among the five groupings of the actual PARCC 2016 composite score: 0-20%, 21-40%, 41-60%, 61-80%, 81-100%. The analysis found no statistical significant difference, $F(4, 182) = 1.54$, $p < .05$, $\eta^2 = .03$, as presented in Table 34. Taken together, these results suggest that the actual PARCC 2016 composite scores do not differ as compared to a principal's overall self-efficacy.

Table 34

One-Way Analysis of Variance of Self-Efficacy Composite Among Actual PARCC 2016 Composite Score

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	4	9.941	2.485	1.54	.194	.03
Within groups	182	294.538	1.618			
Total	186	304.479				

ANOVA was conducted on the principal self-efficacy subscale Instructional Leadership among the five groupings of the actual PARCC 2016 composite score: 0-20%, 21-40%, 41-60%, 61-80%, 81-100%. The analysis found no statistical significant difference, $F(4, 182) = 1.73$, $p < .05$, $\eta^2 = .04$, as presented in Table 35. Taken together, these results suggest that the actual PARCC 2016 composite scores do not differ on a principal's self-efficacy as it relates to his/her instructional leadership.

Table 35

One-Way Analysis of Variance of Principal Instructional Leadership Self-Efficacy Among Actual PARCC 2016 Composite Score

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	4	6.45	1.61	1.73	.15	.04
Within groups	182	169.95	.93			
Total	186	176.40				

ANOVA was conducted on the principal self-efficacy subscale Moral Leadership among the five groupings of the actual PARCC 2016 composite score: 0-20%, 21-40%, 41-60%, 61-80%, 81-100%. The analysis found no statistical significant difference, $F(4, 182) = 1.47$, $p < .05$, $\eta^2 = .03$, as presented in Table 36. Taken together, these results suggest that the PARCC 2016

composite scores do not differ on a principal's self-efficacy as it relates to his/her moral leadership.

Table 36

One-Way Analysis of Variance of Principal Moral Leadership Self-Efficacy Among Actual PARCC 2016 Composite Score

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	4	8.63	2.16	1.47	.21	.03
Within groups	182	267.11	1.47			
Total	186	275.74				

ANOVA was conducted on the principal self-efficacy subscale Management among the five groupings of the PARCC 2016 composite score: 0-20%, 21-40%, 41-60%, 61-80%, 81-100%. The analysis found no statistically significant difference, $F(4, 182) = 1.41$, $p < .05$, $\eta^2 = .03$, as presented in Table 37. Taken together, these results suggest that the PARCC 2016 composite scores do not differ from a principal's self-efficacy as it relates to his/her management.

Table 37

One-Way Analysis of Variance of Principal Management Self-Efficacy Among PARCC 2016 Composite Score

Source	*df*	*SS*	*MS*	*F*	*p*	η^2
Between groups	4	12.97	3.24	1.41	.23	.03
Within groups	182	418.60	2.30			
Total	186	431.57				

A one way sample t-test was run to determine whether principal expected PARCC 2016 composite scores were statistically different than actual PARCC 2016 composite scores, defined as a score of 49.03. Mean depression score (M = 44.59, SD = 19.07) of the actual PARCC 2016 composite score was lower than the expected PARCC 2016 composite score of 49.03 along with a statistically significant mean difference of -4.44, 95% CI [-7.19 to -1.69], t = -3.19, *p* = .00. Taken together, these results suggest that the principal expected PARCC 2016 composite scores differed from the actual 2016 PARCC 2016 composite scores. Data is presented in Table 38.

Table 38

Results of One-sample t-test and Descriptive Statistics for Principal Expected PARCC 2016 Composite Scores and Actual PARCC 2016 Composite Scores

Outcome	M	SD	n	Sig. (2-tailed)	95% CI for Mean Difference	t	df
Actual PARCC 2016 Composite Scores	44.58	19.07	187	.00	-7.19, -1.69	-3.19	186

Correlation of Principal Self-Efficacy and PARCC Composite Scores

The third research question in this paper, and the basis for this study, inquires, "What are the relationships between expected and actual PARCC 2016 composite scores and principal levels of self-efficacy and actual PARCC 2016 composite scores?" The analysis of these subscales and composite scores examined the relationship among the subscales for principal self-efficacy of Instructional Leadership, Moral Leadership, and Management and the PARCC 2016 composite scores.

When examining the correlations among the principal self-efficacy composite scores and subscale scores (Instructional Leadership, $n = 204$; Moral Leadership, $n = 205$; and Management, $n = 203$) and actual PARCC 2016 composite scores in the study ($n = 186$), statistically significant relationships were found for the self-efficacy composite score, all subscale scores, and actual PARCC 2016 composite scores. The strongest relationships exists among principal self-efficacy as it relates to Instructional Leadership and PARCC 2016 composite scores ($r = .15$, $p = .05$). Weaker relationships exists among the principal self-efficacy composite score Moral Leadership, Management, and PARCC 2016 composite scores ($r = .14$, $p = .05$, $r = .14$, $p = .05$, $r = .14$, $p = .05$, respectively). This data is presented in Table 39.

Table 39

Correlations Among Principal Self-Efficacy Composite Score, Self-Efficacy Subscales and Actual PARCC 2016 Composite Scores

	Self-Efficacy Composite	Moral Leadership	Instructional Leadership	Management	Expected PARCC 2016 Composite	Actual PARCC 2016 Composite
	(*n* = 203)	(*n* = 205)	(*n* = 204)	(*n* = 203)	(*n* = 186)	(*n* = 186)
Self-Efficacy Composite	1					
Moral Leadership	.99**	1				
Instructional Leadership	.99**	.98**	1			
Management	.99**	.98**	.99**	1		
Expected PARCC 2016 Composite	.14**	.13*	.15*	.14*	1	
Actual PARCC 2016 Composite	.14*	.14*	.15*	.14*	.33**	1

*$p < .05$, two-tailed. **$p < .01$, two-tailed.

Relationships exist among principal self-efficacy composite scores, self-efficacy subscales, and PARCC 2016 composite scores. Statistically significant strong linear relationships exist between Moral Leadership and Instructional Leadership ($r = .98$, $p < .01$), Moral Leadership and Management ($r = .98$, $p < .01$), and Instructional Leadership and Management ($r = .99$, $p < .01$). Statistically significant, but very weak, linear relationships exist between actual PARCC 2016 composite scores and the self-efficacy composite score ($r = .14$, $p < .05$); actual PARCC 2016 composite scores, Moral Leadership ($r = .14$, $p < .05$), actual PARCC 2016 composite scores and Instructional Leadership ($r = .15$, $p < .01$); and actual PARCC 2016 composite scores and Management ($r = .14$, $p < .05$). When examining the correlations among

principal-expected PARCC 2016 composite scores (n = 186) and the actual PARCC 2016 composite score, a statistically significant but weak linear relationship exists (r = .33, p = .00).

Predicting Actual PARCC 2016 Composite Scores Using the Principal Self-Efficacy Composite Score, Principal Self-Efficacy Subscales and Principal-Expected PARCC 2016 Composite Scores

A final examination of the data, regression analysis, was done to determine if the overall principal self-efficacy composite score, the individual principal self-efficacy subscales, and the principal-expected PARCC 2016 scores could predict actual PARCC 2016 composite scores.

Table 40 shows the results of a multiple regression analysis conducted to predict the influence of the principal self-efficacy composite score, the principal self-efficacy subscales, and the principal-expected PARCC 2016 composite scores on actual PARCC 2016 composite scores. A statistically significant regression line equation was found [$F(5, 181) = 4.62$, $p < .05$] with an adjusted R^2 of .11. However, further analysis of the regression coefficients revealed that only one factor, principal-expected PARCC 2016 composite scores, was found to be statistically significant and have impact upon actual PARCC 2016 composite scores.

Table 40

Summary of Regression Analysis of Principal Self-Efficacy Composite Scores, Principal Self-Efficacy Subscales and Principal-Expected PARCC 2016 Composite Scores Predicting Actual PARCC 2016 Composite Scores (*n* = 186)

Variable	*B*	*SE B*	β	Sig.
Step 1				
Constant	.67	1.11		
Composite Self-Efficacy	7.54	5.17	10.20	.15
Instructional Leadership Self-Efficacy	-2.58	2.07	-2.66	.22
Moral Leadership Self-Efficacy	-2.52	1.73	-3.25	.15
Management Self-Efficacy	-2.65	1.74	-4.26	.13
Expected PARCC 2016 Composite	.28	.07	.28	.00

Note: R^2 = .11 for Step 1, $p < .05$

Chapter Summary

After a review of the purpose and research questions for this study, reliability coefficients were provided for the Principal Self-Efficacy Scale (PSES). Then, an overview was provided of principal demographic data, principal self-efficacy composite scores (n = 203), principal self-efficacy subscale scores (Instructional Leadership, n = 204; Moral Leadership, n = 205; and Management, n = 203), principal-expected PARCC 2016 composite scores (n = 186), and actual PARCC 2016 composite scores (n = 186) through analysis of their mean values and standard deviations. Following this, independent-samples *t* tests and ANOVAs were performed to determine if there are differences in self-efficacy scores among principals by gender, principal years of experience, level of education, location of school, free and reduced student populations,

type of school, principal self-efficacy subscales (Instructional Leadership, Moral Leadership, and Management), principal-expected PARCC 2016 composite scores, and actual PARCC 2016 composite scores. Then correlations were presented to examine the relationships among principal self-efficacy subscales and actual PARCC 2016 composite scores along with principal-expected PARCC composite scores and actual PARCC 2016 composite scores. Finally, regression analysis was conducted to determine if the principal self-efficacy composite score, the principal self-efficacy subscales, and principal-expected PARCC 2016 composite scores could predict to have a positive impact on actual PARCC 2016 composite scores.

Results from the analysis of the PSES survey indicate it is reliable across all three subscales: (1) Management Efficacy (.99), (2) Instructional Leadership Efficacy (98), and (3) Moral Leadership Efficacy (.98). Review of the demographic data indicates females tend to report higher levels of self-efficacy as a composite and across all three subscales. Additionally, principals with more years of experience and increased education levels reported increased principal self-efficacy. Principals within urban locations report higher levels of self-efficacy as a composite and across all three self-efficacy subscales. However, only 5 out of 205 principals in the sample were reported to work in urban locations. Principals in unit districts reported higher levels of self-efficacy as a composite and across all three subscales. Level of free and reduced student population did not demonstrate a trend in levels of principal self-efficacy. However, principal self-efficacy as it relates to Moral Leadership demonstrated higher levels of self-efficacy over Instructional Leadership and Management and the principal self-efficacy composite score. Principals with higher PARCC 2016 composite scores reported higher levels of self-efficacy as a composite and across all three subscales. Finally, principal-expected PARCC

composite scores had a higher reported mean value (M = 49.03) than the actual PARCC 2016 composite score mean value (M = 44.59),

Independent-samples *t* tests and ANOVA analysis indicate statistically significant differences exist between principal gender and school type and the principal self-efficacy composite and the principal self-efficacy subscales. There were no statistically significant differences among principals' years of experience and their efficacy across all three subscales and the self-efficacy composite score. Statistically significant differences exist between a principal's self-efficacy, as a composite and in all three subscales, and his/her level of education. Statistically significant differences were found between a principal's self-efficacy, as a composite and in all three subscales, and his/her location of their school, specifically in rural areas. No statistically significant differences were found between a principal's self-efficacy, as a composite or in any of the three subscales, and the free and reduced student population in his/her school. ANOVA results indicated that there were no statistically significant differences between principal self-efficacy, as a composite or across all three subscales, and PARCC 2016 composite scores. Last, no statistically significant differences existed between principal-expected PARCC 2016 composite scores and principal gender, school type, years of experience, level of education, and free and reduced student population. However a statistically significant difference exists between principal-expected PARCC 2016 composite scores and actual PARCC 2016 composite scores.

Relationships among principal self-efficacy subscales and the composite score were strongest; relationships between principal self-efficacy and actual PARCC 2016 composite

scores were weakest. A statistically significant weak linear relationship was determined to exist between principal-expected PARCC 2016 composite scores and actual PARCC 2016 composite scores.

To determine the predictive qualities of principal self-efficacy on actual PARCC 2016 composite scores, regression analysis demonstrated the principal self-efficacy composite score and each of the principal self-efficacy subscales (Instructional Leadership, Moral Leadership, and Management) did not significantly predict actual PARCC 2016 composite scores. Unlike principal self-efficacy, which does not appear to impact actual PARCC composite scores, single linear regression analysis results showed principal-expected PARCC 2016 composite scores do impact actual PARCC 2016 composite scores.

Information learned from this research will contribute to the body of knowledge that exists regarding the relationship among principal self-efficacy and academic achievement scores for students in the state of Illinois. This is particularly relevant during this time of increased accountability from the local, state, and federal government along with the increased demands placed on elementary principal in the state of Illinois. Chapter 5 will provide interpretation of this data, conclusions that can be drawn from the data and recommendations for further research.

CHAPTER 5

SUMMARY OF FINDINGS, DISCUSSION AND RECOMMENDATIONS

The purpose of this study was to investigate perspectives of elementary school principals on self-efficacy beliefs and student achievement, along with the impacts of their own characteristics, the demographics of the schools where they work, their expected outcome for student achievement and the overall actual student achievement levels in their schools.

Research presented in Chapter 2 of this study demonstrates that several factors affect student achievement including, the concept of educational leadership. The nature of educational leadership has changed in recent years with increased accountability being placed upon school leaders to improve student achievement scores. As an example, school leaders' evaluations in Illinois are now required by law to include a factor of student growth. This paradigm shift that traditionally focused on the direct relationship between teachers and student achievement now places significant emphasis on the direct impact school leaders should have on student achievement.

To illustrate this point, principal self-efficacy has been explored in research to shed light on the indirect impact principals have on student achievement. Although these studies yielded mixed results as to whether or not principal self-efficacy positively impacts student achievement, not one study was found that focused on principals' outcome expectation of student achievement and its possible impact on student achievement. Despite limited focus, outcome expectations are in fact as integral to Bandura's social cognitive theory (1977) as is self-efficacy.

This study utilized a framework that borrows from Pajares (1996) and examined the extent to which both components of Bandura's (1977) theory, specifically principal self-efficacy and principal outcome expectations, act independently or collectively on their impact on student achievement.

In order to meet this purpose, the following questions were addressed:

1. What are the mean scores and standard deviations for all variables that are part of this study? The dependent variable is the actual PARCC 2016 composite score. Independent variables: principal levels of self-efficacy (efficacy for management, efficacy for instructional leadership, efficacy for moral leadership) and demographics (principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population, and principals' expected PARCC 2016 composite scores.
2. What are the differences based upon principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population), and actual PARCC 2016 composite scores among principal self-efficacy scales, and what are the differences based upon principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population), and actual PARCC 2016 composite scores among expected PARCC 2016 composite scores?
3. What are the relationships between expected and actual PARCC 2016 composite scores and principals' levels of self-efficacy and actual PARCC 2016 composite scores?
4. What principal self-efficacy factors predict actual PARCC 2016 composite scores, and

what principal-expected PARCC 2016 composite scores predict actual PARCC 2016 composite scores?

In responding to the questions of this study, a quantitative study was designed and implemented to include Illinois elementary principals' levels of self-efficacy (efficacy for management, efficacy for instructional leadership, efficacy for moral leadership) and demographics (principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population, principals' expected PARCC 2016 composite scores, and actual PARCC composite scores). A summary of the findings follows.

Summary of Findings

Research Question #1: What are the mean scores and standard deviations for all variables that are part of this study? The dependent variable is the actual PARCC 2016 composite score. Independent variables: principal levels of self-efficacy (efficacy for management, efficacy for instructional leadership, efficacy for moral leadership) and demographics (principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population, and principals' expected PARCC 2016 composite scores.

An examination of the principals' composite self-efficacy score alongside the separate subscales of principal self-efficacy reveals principals use more of the moral dimension of efficacy in their work. The subscale Moral Leadership had the highest average mean (M = 7.54, SD = 1.25). When examined by gender, this is also true as both males and females perceive higher moral leadership than any other subscale or the composite (M = 6.50, SD = .99; M = 8.47,

SD .48, respectively). Also, females not only perceive higher levels of moral dimension about their work, they scored extremely high on moral dimension in their work as reflected by their mean score, M = 8.47 in a scale measuring from 1.00 to 9.00.

With more experience principals demonstrate higher levels of self-efficacy. It is important to note that principals with the most experience, 21+ years, perceived the highest levels of efficacy in Moral Leadership (M = 8.08, SD = .98). As we examine principal efficacy further, this study reveals that additional educational attainment also coincides with greater efficacy. Moreover, principals with a doctorate also had the greatest sense of efficacy.

Next, the examination of principal location (rural, suburban, and urban) in regards to their self-efficacy demonstrated urban principals actually showed the highest levels of efficacy across all subscales and composite while rural principals demonstrate the least efficacy across all subscales and composite. These results may be skewed as very few urban principals completed this study in comparison to rural and suburban principals. By exploring school type (elementary districts vs. unit districts), it was found that efficacy among principals in unit school districts far exceeded that of their elementary counterparts. Additionally, principals in unit school districts had the highest perceived levels in Moral Leadership (M = 8.68, SD = .40) while principals in elementary districts had the lowest perceived levels of Moral Leadership (M = 5.69, SD = .74).

This study also revealed principals in schools with the lowest free and reduced lunch student population (1 -25%) illustrated the highest averages of self-efficacy. Principals' perceived moral leadership among schools with lowered populations of students on free and reduce lunch was higher than any other subscale or composite (M = 7.68, SD = 1.11). Also, principals with the highest reported actual PARCC 2016 composite score had the highest

efficacy across all subscales and composite, again, with Moral Leadership actually being the highest (M = 9.00, SD = 1.23). Finally, when comparing principal-expected PARCC 2016 composite scores to actual PARCC composite scores (0 -100%), principals scored higher on expectation outcomes than actual outcomes (M = 49.03, SD = 18.91; M = 44.59, SD = 19.07).

Research Question #2: What are the differences based upon principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population), and actual PARCC 2016 composite scores among principal self-efficacy scales, and what are the differences based upon principal gender, years of experience, level of education, location of school, type of elementary school, level of free/reduced student population), and actual PARCC 2016 composite scores among expected PARCC 2016 composite scores?

Given the multitude of variables examined in this study, only those found to have statistically significant differences are summarized here. In exploring principal gender in relation to their self-efficacy expectations, independent-samples *t* tests revealed there was a significant difference for gender, with women receiving higher scores than men (Self-Efficacy Composite: $t(201) = -19.42$, $p < .05$; Instructional Leadership: $t(202) = -20.27$, $p < .05$; Moral Leadership: $t(203) = -18.41$, $p < .05$; and Management: $t(201) = -19.29$, $p < .05$). In addition to gender, in exploring principal school district type in relation to their self-efficacy expectations, independent-samples *t* tests revealed there was a significant difference for school district type, with unit school districts receiving higher scores than elementary school districts (Self-Efficacy Composite: $t(201) = -16.58$, $p < .05$; Instructional Leadership: $t(202) = -19.22$, $p < .05$; Moral

Leadership: $t(203) = -14.80$, $p < .05$; and Management: $t(201) = -16.03$, $p < .05$).

As well as gender and school location, ANOVA testing revealed there was a significant difference for a principal's level of education in relation to his/her self-efficacy expectations, with principals possessing a doctorate receiving higher scores than any other education level (Self-Efficacy Composite: $F(2, 200) = 131.71$, $p < .05$, $\eta^2 = 1.32$; Instructional Leadership: $F(2, 201) = 165.90$, $p < .05$, $\eta 2 = .62$; Moral Leadership: $F(2, 202) = 105.92$, $p < .05$, $\eta^2 = .51$; and Management: $F(2, 200) = 138.69$, $p < .05$, $\eta^2 = .58$).

Finally, ANOVA testing also revealed there was a significant difference for principals' school location in relation to their self-efficacy expectations, with principals from urban areas receiving higher scores than those from rural or suburban locations (Self-Efficacy Composite: $F(2, 200) = 205.67$, $p < .05$, $\eta^2 = 2.06$; Instructional Leadership: $F(2, 201) = 202.50$, $p < .05$, $\eta^2 = .67$; Moral Leadership: $F(2, 202) = 188.30$, $p < .05$, $\eta^2 = .65$; and Management: $F(2, 200) = 217.86$, $p < .05$, $\eta^2 = .69$). Last, a *t* test demonstrated statistically significant differences between principal-expected PARCC 2016 composite scores and actual PARCC 2016 composite scores, with principal-expected PARCC 2016 composite scores higher than actual PARCC 2016 composite scores (Expected PARCC 2016 composite: $t(186) = 35.46$, $p < .05$; and actual PARCC 2016 composite: $t(186) = 31.98$, $p < .05$).

Research Question #3: What are the relationships between expected and actual PARCC 2016 composite scores and principal levels of self-efficacy and actual PARCC 2016 composite scores?

As a key aspect in this study, correlations among the principal self-efficacy composite scores and subscale scores (Instructional Leadership, Moral Leadership, and Management) and

actual PARCC 2016 composite scores were examined. Statistically significant relationships were found for the relationships among the self-efficacy composite score, all subscale scores, and actual PARCC 2016 composite scores. Very weak correlations were found among principal self-efficacy subscale and composite scores as they relate to actual PARCC 2016 composite scores (Composite, $r = .14$, $p < .01$; Moral Leadership, $r = .14$, $p < .05$; Instructional Leadership, $r = .15$, $p < .05$; and Management, $r = .04$, $p < .05$). Evidently, principal self-efficacy positively, but weakly, correlates to student achievement. Results show the principal self-efficacy composite and separate subscales correlate highly to one another. These correlations, none less than $r = .98$, $p < .01$, clearly demonstrate that components of self-efficacy influence one another.

Another key aspect of this study was to determine if, in fact, principal-expected PARCC 2016 composite scores would correlate to actual PARCC 2016 composite scores. A positive but weak to moderate correlation exists between these two variables ($r = .33$, $p < .01$). Taken together, all correlation analysis in this study clearly shows that principal self-efficacy and principal-expected outcomes positively correlate to student achievement. However, stronger correlations exist between principal-expected outcomes of student achievement and actual student achievement than principal self-efficacy expectations and student achievement.

Research Question #4: What principal self-efficacy factors predict actual PARCC 2016 composite scores, and what principal-expected PARCC 2016 composite scores predict actual PARCC 2016 composite scores?

For the regression model, wherein the dependent variable of actual PARCC 2016 composite scores was regressed against the independent variables of principal self-efficacy (both

the composite and separate subscales) and principal-expected PARCC 2016 composite scores, it was found that the whole equation contributed 11% of the variance in actual PARCC 2016 composite scores, but the significant variable was the expected PARCC 2016 composite.

In the section that follows these findings will be linked to the framework for this study, tied to literature, and utilized to develop a rationale for recommendations for further study.

Discussion

In Chapter 1of this study, a framework was presented as a means to consider the relationship between self-efficacy, outcome expectations, and actual outcomes. Specifically, this framework asserts that principal self-efficacy and principal outcome expectations act independent of one another insofar as their impact on student achievement is concerned. Findings from this study indicate that both principal self-efficacy and principal outcome expectations correlate positively to student achievement. Findings from this study are supported by the study's framework that these two variables act independently of one another because principal outcome expectations were found to impact student achievement, whereas principal self-efficacy did not, as evident in the regression analysis. This dichotomy in results from this study substantiates Pajares's (1996) claim that both self-efficacy expectations and outcome expectations may in fact act independently of one another. Ultimately, results from this study raise questions about why available research on principal self-efficacy and its impact on student achievement lacks principal outcome expectations as a variable.

Outcome expectations and self-efficacy, critical variables for this study, are key components of Bandura's (1977) social cognitive theory. Specifically, Bandura claims outcome

expectations and self-efficacy expectations influence one another and likely to both have influence on actual outcomes. However, several studies exist that only explored the impact of principal self-efficacy on student achievement. Research in the area of principal self-efficacy and its impact on student achievement has been influenced by Tschannen-Moran & Gareis's study (2004) where they developed a reliable instrument to measure the efficacy of a principal. In the development of the instrument, the Principal Self-Efficacy Scale (PSES), they observed three subscales emerge (Instructional Leadership, Moral Leadership, and Management). All three subscales are equally represented in the PSES, each with six questions. Cronbach's alphas for Instructional Leadership, Moral Leadership, and Management were .83, .79, and .79, respectively.

From 2004 onward several studies have focused on the influence these three subscales of the PSES have had on student achievement. Specifically, Aderhold's study (2005) of South Dakota principals, which examined the relationship between elementary school principals' self-efficacy and student achievement in reading, found no significant relationships between principal self-efficacy and student reading achievement. All three self-efficacy subscales were found in his study to not relate to fifth-grade reading achievement. Furthermore, unlike this study where principal self-efficacy in all subscales was found to be statistically significantly different by gender, Aderhold's results were mixed, where management efficacy was not found to be statistically significant. Similarly, Lovell (2009) found in a study of Georgia principals from elementary, middle and high schools that their efficacy beliefs were not predictors of overall school performance as measured by AYP status. When examined solely at the elementary level, results from Lovell's study mirrored this study's results. Principal efficacy beliefs in all

subscales did not account for a significant amount of the variation in predicting student achievement. Conversely to the findings of Aderhold's (2005) study, Lovell's (2009) study and this study, a study of Wisconsin elementary school principals conducted by Lehman (2007) found a statistically significant relationship existed between principal self-efficacy and reading achievement. Lehman found a correlation existed between principal self-efficacy and student achievement. Only principal efficacy for Instructional Leadership was found to predict student achievement. Last, Szymendera (2013) found in a study of Pennsylvania principals that principal self-efficacy, specifically all three efficacy subscales (Instructional Leadership, Moral Leadership and Management), helped predict student achievement. That study found "that self-efficacy contributed significantly to the criterion variable set. Principals with stronger beliefs in their capabilities as instructional and moral leaders, as well as in their management, were more likely to behave in ways that could indirectly or directly affect student achievement" (p. 75).

When considering moral leadership independently from the other subscales, this study's findings demonstrated that perceived moral leadership of a principal was higher than the perceived levels of instructional leadership and management. This was reflected in principal gender, years of experience, level of education, school type, free and reduced student lunch population and student achievement scores. Why would the perceived morality of a principal in this study be higher, more pervasive, than their perceptions of instructional leadership and management? To this end, Firestone and Riehl (2005) state:

> Moral accountability assumes that leaders have internalized a socially encouraged value system that guides their practice. Personal integrity, adherence to personal and communal values, and empathy for others are expected to be the primary guides for behavior. (p. 88)

Furthermore, it is a principal's morality that guides his/her everyday decision making and

there is “no way to avoid moralistic decisions and commitments (Wagner & Simpson, 2009, p. 11). Given the sheer number of decisions made daily by principals, Pede (2015) states, “A principal’s daily decisions are replete with moral decision-making. The principal is in essence the sole person in charge of focusing the moral obligations of the members of the school community to be ethically just for all students” (p. 42). As leaders, principals are expected to know how to act with integrity, fairness, and engage in ethical practice (National Policy Board for Educational Administration, 2011). This large undertaking of principals requires a solid moral foundation, one that is “engaged in the understanding of others, a focus on community and interpersonal skills, communication with ongoing dialogue allowing all voices to be heard” (Pede, 2018, p. 41). Furthermore, Strike (2005), as cited in Vitton & Wasonga, (2009) further acknowledges the all-encompassing nature morality plays in the role of the principal as they are leaders engaged in a multitude of tasks that all involve ethical behavior. Ultimately, even though this study found principals possess heightened senses of moral leadership, this sense of morality did not impact student achievement. However, is it possible that a principal leading with his/her moral compass has an indirect relationship on his/her school culture and, in turn, influences instructional outcomes?

Principals in this study also reported low perceived instructional leadership efficacy results in relation to principal gender (males were lowest), level of education (both advanced and doctorate were lower than those with a master’s degree), and school type (unit districts were lowest). To help explain the low levels of principal-perceived instructional leadership, Lunenburg and Ornstein (2008) suggest, “Even though principals recognize curriculum and instruction are top priorities for them and they need to spend more time in these areas of the job,

principals spend only 10-15% of their time devoted to these areas" (p. 315). Firestone and Riehl (2005) add even though school leaders need to be knowledgeable about teaching and learning and those practices associated with increased student performance, "Factors and conditions closer to student learning, like instructional variables, have stronger effects than more distant factors such as school organization, policy-related conditions, or school leadership" (p.17). Teacher perceptions may also be affecting the perceived ability of principals to positively impact student achievement. Lunenburg and Ornstein (2008) state data suggests that teachers do not see their principals as capable instructional leaders and are hesitant to accept principals in this capacity. "Often teachers feel that principals are not capable of providing such leadership, and don't always want the principal's assistance" (Lunenburg & Ornstein, 2008, p. 315). This could result from the fact that principals spend 3 – 7% of their time observing teachers, as other managerial tasks take up most of their time (Lunenburg & Ornstein, 2008).

Either separately or acting in conjunction with the other subscales of principal-perceived efficacy, principal-perceived management did not significantly impact student achievement. In relation to the variables presented in this research study, principal-perceived management was highest in regards to school location. It was lower than principal-perceived moral leadership in relation to all other variables presented in this study (principal gender, years of experience, level of education, free and reduced student lunch population and type of school). Contradicting views of management may play a role in the discrepant results of principal-perceived management in this study, as principals in this study may perceive management differently. Wagner and Simpson (2009) warn that a good manager may be efficient, but there is little educational value in such leaders. In contrast, Lunenburg and Ornstein (2008) feel "the role of the manager is

essential for the principal and is probably the most important aspect of school leadership" (p. 313). Wagner and Simpson (2009) acknowledge the significance of management but caution that an "entire range of professional skill and commitment makes leaders and managers into successful administrators" (p. 69). In support of Wagner and Simpson's (2009) claim, Bolman and Deal (2008) add, "The wise manager, like a skilled carpenter, wants at hand a diverse collection of high-quality implements" (p. 13).

Whereas a plethora of research exists in education claiming the impact of self-efficacy, principal characteristics, and school demographics on student achievement, there still exists a void in research. The other indispensable variable of Bandura's social cognitive theory (1977), outcome expectations, has not been researched alongside principal self-efficacy to determine its possible impact on student achievement. Bandura (1977) explains outcome expectations are indispensable to his theory as a person's efficacy expectations lead himself/herself to execute behaviors that in turn influence his/her outcome expectations, leading to actual outcomes. Also, according to Bandura, self-efficacy expectations are distinct from outcome expectations as self-efficacy, is a perceived ability to execute a behavior, whereas outcome expectations are beliefs about the probability of actual outcomes stemming from, as an example, a principal's moral efficacy, which may include his/her perception of his/her ability to promote ethical behavior among school personnel; while a moral-related outcome expectation may be, if they promote acceptable behavior among students, then incidents of poor student behavior will decline. Next, an example of a principal's management efficacy may include his/her perception of his/her ability to handle the time demands of the job, while a management-related outcome expectation may be, if they maintain control of their schedule, they will handle the time demands of the job.

Last, an example of a principal's instructional leadership efficacy may include his/her ability to facilitate learning in his/her school, while an instruction-related outcome expectation may be, if they create a positive learning environment within their school, then this will raise student achievement.

Relevant to this discussion on outcome expectations and this study's findings, Bandura (as cited by Fouad and Guillen, 2006) noted, "The more value or importance an individual placed on the outcome expectations, the greater the likelihood the individual would engage in the behavior" (p. 133). Given Bandura's claim, and the correlation of principal-expected PARCC 2016 composite scores and actual PARCC 2016 composite scores ($r = .33$, $p < .01$), this suggests that principals in this study placed value and importance on their outcome expectations for student achievement and, consequently, engaged in behavior necessary to attain their expected levels of student achievement.

In trying to understand why outcome expectations have not been examined as variables in previous research studies relating principal self-efficacy and student achievement, Bandura, (as cited in Fouad & Guillen, 2006) emphasized the value of self-efficacy expectations over outcome expectations by stating, "It does not matter what value is placed on the outcome expectation if the individual does not have the self-efficacy to carry out the task to receive the reward" (p. 134). This could be the reason outcome expectations have been left alone in educational leadership research, as Bandura made this claim shortly after he proposed his social cognitive theory. As further evidence as to why outcome expectations may not have been examined in educational leadership research, one can extrapolate from the research of Lent et al. (1994), as cited in Fouad and Guillen, (2006). Here, it is stated, "Self-efficacy is hypothesized to determine outcome

expectations" (p. 134), meaning, if an individual's self-efficacy is high, so will be their outcome expectations, thereby negating the need to study both variables' impact on behavior.

However, it is not suggested that outcome expectations be eliminated from the study of self-efficacy and behavior, as Berry (2013) offers:

> The debate pertaining to outcome expectancies and self-efficacy has subsided in recent years; however, because of the inattention to the debate more focus has been placed on self-efficacy as a better predictor of human behavior rather than expected outcomes (Williams 2010). Bandura (1978) believes that self-efficacy is a better predictor of human behavior than outcome expectancies; however, he maintains that when self-efficacy is combined with outcome expectations, a better prediction about performance tasks can be obtained. (p. 28)

Given that Bandura acknowledges the need to study both outcome expectations and self-efficacy together in order to better predict human behavior, this study focused on both variables in relationship to their impact on student achievement. When studying both self-efficacy expectations and outcome expectations, Bandura (1977) claims that self-efficacy expectations influence outcome expectations. This study's framework suggested that efficacy expectations and outcome expectations act independent of one another. Bandura's (1977) theory has drawn much controversy about the influence self-efficacy has on outcome expectations.

As a matter of fact, research exists that established a contradiction to Bandura's original theory. Williams (2010) cites several research studies that demonstrate judgments of self-efficacy are influenced by outcome expectations. He further contends that when Bandura tried to refute these studies, Bandura actually conceded and stated self-efficacy judgments can be causally influenced by outcome expectations. Further research by Parajes (1996) support, "that an individual's perception of the outcome and his value of the task necessary to achieve that outcome will regulate his behavior as powerfully as his self-efficacy beliefs, and independently

of them" (p. 559). This is why this research study was designed to examine the independent impact of self-efficacy and outcome expectations on student achievement.

Important to note is that even with all of this controversy over which variable influences the other in Bandura's theory, no research studies were found in education to support these claims one way or another. Furthermore, research continues to neglect, or even acknowledge, outcome expectations not just simply as part of Bandura's original theory, but as a possible separate variable (Agunbiade, 2015).

Notably, this research study's framework demonstrates both principal self-efficacy and principal outcome expectations influence actual outcomes and thereby supports Bandura's social cognitive theory (1977). While not in support of Bandura's social cognitive theory, the results of this study are aligned to the claim by Parajes (1996) that outcome expectations and self-efficacy act independently of one another.

Whether or not outcome expectations and self-efficacy expectations act independently of one another in the field of education, studies involving the role of outcome expectations and self-efficacy are commonplace in the field of medicine. A question to ask here is, if the medical field acknowledges the need to research both self-efficacy and outcome expectations for the purposes of improving human life, then why hasn't the field of education extended itself in the area of school leadership research and conducted studies on principal self-efficacy and principal outcome expectations to assist principals in improving student achievement?

As a means to assist principals with improving student achievement, the results of this study indicate student achievement was impacted 11%, with principals' outcome expectation as the major contributor. This finding, although unique, is not foreign as a concept to Illinois

principals. Principals in Illinois need to continue to be aware of their students' level of achievement and regularly make decisions regarding their expectations of student growth as their own evaluations must contain evidence of student growth. That being said, the construct of outcome expectations, specifically student achievement outcome expectations, ought to be studied further alongside principal self-efficacy to assist in the pursuit of improving student achievement outcomes. The next section of this chapter will focus on the intended audience for this study.

Recommendations

This study demonstrated that not only are a principal's outcome expectations of student achievement significant, they do have impact on actual student achievement. Who would benefit from being the intended audience of this study, and why? First and foremost, principals and other school leaders should consider what the results of this study mean to their practice. School district leaders may wish to consider how this study may impact their approach of the impact principal outcome expectations have upon student achievement. Legislators may wish to consider the impact of this study when drafting legislation relevant to student achievement. Those responsible for professional development may want to consider this study's findings when designing principal professional development designed to improve student achievement.

This study began with a problem statement that identified the need to include principal outcome expectations in the area of research related to principal self-efficacy and its impact on student achievement. Both outcome expectations and self-efficacy are cornerstones of Bandura's social cognitive theory (1977). Although much debate has occurred over the influence outcome

expectations and self-efficacy have upon one another, Berry (2013) contends that the void in educational research of relating outcome expectations to self-efficacy happened as outcome expectations were not seen by Bandura to be significant a predictor of behavior as was self-efficacy. However, Bandura did acknowledge a clear understanding of actual outcomes comes from a study of both variables.

Given this acknowledgement by Bandura, and the mere fact that other fields such as medicine consistently utilize the combination of both variables in research, outcome expectations need to become part of the research of principal self-efficacy and its impact on student achievement.

Furthermore, it is critical that more research follows this study and is conducted to better understand the impact outcome expectations have on student achievement. Future directions for research could include the variable of principal outcome expectations in replications of previous studies of principal self-efficacy and its impact on student achievement. Additionally, moving forward, new research could include the impact of principal outcome expectations, along with principal self-efficacy expectations, on student achievement. Moreover, this study could be a springboard for mixed-method or qualitative studies that seek to learn more about how principal outcome expectations impact student achievement. This commitment in research to more fully understand outcome expectations should include a focus on Victor Vroom's expectancy theory (Miner, 2005) and the Pygmalion effect (Rosenthal & Aronson, 2002). This additional research will bring to light just how significant, or not, outcome expectations are and why they need to be examined alongside principal self-efficacy to best understand their impact on student achievement.

If we accept the notion that self-efficacy is a better predictor of actual outcomes than outcome expectations and continue to study principal self-efficacy and its impact on student achievement without regard for the role outcome expectations may have, then we turn our backs on findings such as those in this study that demonstrate clearly principal outcome expectations significantly impact student achievement independently of principal self-efficacy.

In order to tie this study's findings together in a recommendation for practice, this field of education needs to move forward with researching the impact that both principal outcome expectations and principal self-efficacy have on student achievement. Now, if the field of education, like the field of medicine, will recognize the importance of studying self-efficacy as it relates to outcome expectations, then possibly more can be learned by conducting research similar to this study about how principals can improve student achievement within their schools. This one study, although significant, may not be enough to warrant proposed changes in practice for elementary principals' approach to improving student achievement. Only after continued research of this type is conducted may a pathway for considerations in practice likely emerge that will illuminate how elementary principals can utilize their self-efficacy beliefs and outcome expectations in a manner to improve student achievement.

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APPENDIX A

PRINCIPAL AND SCHOOL DEMOGRAPHIC SURVEY

Appendix A: Principal and School Demographic Survey

1. Your gender:
    - Male
    - Female

2. How many years of experience do you have as an elementary school principal? _____

3. How many years have you been working in your current role as principal? _____

4. Highest Degree Earned:
    - Bachelors
    - Masters
    - Advanced
    - Doctorate

5. Your SCHOOL location type:
    - Rural (outside urbanized area)
    - Suburban (urbanized area outside of a city)
    - Urban (within a city of 50,000+ people)

6. What is the student population of your school? _____

7. What is the percentage of free and reduced student population in your school? _____

8. Your District type:
    - Elementary (K-8)
    - Unit (K-12)

9. What were your expectations of the percentage of students in your school that would meet and exceed the overall performance levels on the PARCC exam? _____

10. What was the actual level of percentage of students in your school that did meet and exceed the overall performance levels on the PARCC exam? _____

11. If your expectations of students that would meet and exceed the performance level on PARCC did not match the actual level of students that met or exceeded the performance levels on PARCC, please explain why you think this occurred?

APPENDIX B

PRINCIPAL SELF-EFFICACY SCALE

Appendix B: Principal Self-Efficacy Scale

Principal Questionnaire

This questionnaire is designed to help us gain a better understanding of the kinds of things that create challenges for principals in their school activities.

Directions: Please indicate your opinion about each of the questions below by marking one of the nine responses in the columns on the right side. The scale of responses ranges from "None at all" (1) to "A Great Deal" (9), with "Some Degree" (5) representing the mid-point between these low and high extremes. You may choose any of the nine possible responses, since each represents a degree on the continuum. Your answers are confidential.

Please respond to each of the questions by considering the combination of your *current* ability, resources, and opportunity to do each of the following in your present position.

	"In your current role as principal, to what extent can you..."	None at All		Very Little		Some Degree		Quite a Bit		A Great Deal
1.	facilitate student learning in your school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2.	generate enthusiasm for a shared vision for the school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3.	handle the time demands of the job?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4.	manage change in your school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5.	promote school spirit among a large majority of the student population?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6.	create a positive learning environment in your school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7.	raise student achievement on standardized tests?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8.	promote a positive image of your school with the media?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
9.	motivate teachers?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10.	promote the prevailing values of the community in your school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11.	maintain control of your own daily schedule?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12.	shape the operational policies and procedures that are necessary to manage your school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
13.	handle effectively the discipline of students in your school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
14.	promote acceptable behavior among students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
15.	handle the paperwork required of the job?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
16.	promote ethical behavior among school personnel?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
17.	cope with the stress of the job?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
18.	prioritize among competing demands of the job?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

APPENDIX C

PERMISSION TO USE THE PRINCPAL SELF-EFFICACY SCALE

Appendix C: Permission to use the Principal Self-Efficacy Scale

William & Mary
School of Education

MEGAN TSCHANNEN-MORAN, PHD
PROFESSOR OF EDUCATIONAL LEADERSHIP

September 24, 2015

Paul,

You have my permission to use the Principals' Sense of Efficacy Scale, which I developed with Chris Gareis, in your research. The best citation to use is:

Tschannen-Moran, M. & Gareis, C. (2004). Principals' sense of efficacy: Assessing a promising construct. *Journal of Educational Administration*, 42, 573-585.

You can find a copy of these measures and scoring directions on my web site at http://wmpeople.wm.edu/site/page/mxtsch . I will also attach directions you can follow to access my password protected web site, where you can find the supporting references for these measures as well as other articles I have written on this and related topics.

I would love to receive a brief summary of your results when you finish.

All the best,

Megan Tschannen-Moran
The College of William and Mary
School of Education

P.O. Box 8795 • Williamsburg, VA 23187-8795 • (757) 221-2187 • mxtsch@wm.edu