Exploratory Factor Analysis: The Significance of Trust in a Revised Principal Academic Optimism Scale

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Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Doctor of Education
in
Educational Leadership and Policy Studies

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February 10, 2016
Blacksburg, Virginia

Keywords: academic optimism, principal academic optimism, academic emphasis, collective efficacy, and principal trust

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ABSTRACT

Principal Academic Optimism is an hypothesized latent construct that has strong theoretical foundations in both educational research and educational psychology. Academic Optimism derives from research on school academic optimism and teacher academic optimism, which originated via Hoy's, Tarter's, and Woolfolk Hoy's (2006a; 2006b) merger of school climate research with research on learned optimism, stemming from Martin Seligman's (1998, 2006) research on positive psychology.

Principal Academic Optimism expands upon discoveries of School Academic Optimism and Teacher Academic Optimism. The theoretical framework of Principal Academic Optimism is built upon a strong research foundation of the organizational health model, social capital theory, social cognitive theory and positive psychology. The purpose of this research is to revise Riegel's (2012) Principal Academic Optimism Scale, thereby creating and testing a comprehensive measure of Principal Academic Optimism. The questionnaire used to accomplish this goal was a revised version of Riegel's Principal Academic Optimism Scale and Tschannen-Moran's and Gareis's (2004) Principal Trust Scale. By incorporating a measure for principal trust in faculty with a measure of principal trust in clients (parents and students), a more comprehensive measure of Principal Academic Optimism was validated and found reliable ($\alpha = 0.908$).

Perhaps the most compelling finding of the study was the significant negative relationship between principals' perception of trust in clients whose schools have high percentages of students receiving free and reduced price lunches ($r = -0.444$; $p < 0.05$). Principals with high percentages of free and reduced price lunch rates explained 72.203% of the variance in principals' self-reported perception of trust in clients. Principals of schools with 61%-80% or 81%+ percentages of free and reduced price lunch rates reported lower levels of trust in clients (parents and students).

Dedication

This study is dedicated to my grandparents Hazel N.G. Sartin and Giles Edwin Sartin, who supported me throughout my life. Thank you for serving as a steadfast reminder of what hard work is all about. Papaw, it may not be the military academy you so often spoke of, but I have to say this accomplishment is something better! You supported me my entire life, and I would not be the man I am today without your example to guide me.

Acknowledgement

I would first like to acknowledge all my teachers and coaches over the years who supported me throughout my journey. Thank you to my wife who at times was the "rock" which held our home together and was like a single mother at times. To my children, who without knowing it, encouraged me when I was discouraged, strengthened me when I was weak, and pushed me when I was slacking. To them I say, "Girls, this proves that hard work does pay off!" Never give up on your dreams, girls, Daddy loves you more than you will ever know!

Secondly, I am especially indebted to those who helped me with this study: my editors, Robin Lawson, Hope Cloud, and Holly Bailey and the members of my committee, Dr. Walt Mallory, Dr. Wayne Tripp, and Dr. Brad Bizzell. Thank you to my committee members for guiding and supporting me through my research and writing of the dissertation. I would like to say a special thank you to Dr. Tripp for tirelessly devoting his time to see me through to completion.

In addition, thank you Dr. James Sellers, you took me on as the chair of my committee when I had nowhere else to turn. I will never be able to thank you for what you have done for me. You have provided a path of inspiration that I truly will follow. You are an example of what an excellent educator is, and this inspiration will light my way as I go forward from this day and the remainder of my journey.

Finally, thank you to my lord and savior Jesus Christ, who paid the ultimate price.

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Chapter 1

Introduction

The goal of this research was to revise Riegel's Principal Academic Optimism Scale, thereby creating a comprehensive measure for Principal Academic Optimism. Chapter 1 presents theories on which the concept of Principal Academic Optimism is based, sketches its history, and sets forth a theoretical framework. The chapter concludes with a discussion of the variables associated with Principal Academic Optimism.

Background and Context of the Study

Principal Academic Optimism is a derivative of earlier studies on School Academic Optimism and Teacher Academic Optimism. Research on academic optimism has been portrayed as a means to meet student needs by focusing on what can be affected as opposed to what cannot be affected by schools and teachers. Low socioeconomic status is one such example that schools have little to no control over. Therefore, by focusing on what can be controlled schools are capable of meeting all students' needs.

Despite the widely held assertion that socioeconomic status accounts for the majority of variance in student achievement, researchers have begun to present theories that suggest academic optimism accounts for equal and even greater amounts of variance in student academic achievement (Beard, Hoy, & Woolfolk Hoy, 2010; Bevel & Mitchell, 2012; Hoy, Tarter, & Hoy, 2006a; 2006b; Kirby & DiPaloa, 2011; Smith & Hoy, 2007; Wagner, 2008). This study does not challenge the fact that socioeconomic status accounts for a significant portion of student achievement, and schools might never be able overcome this variable. This study attempts to revise a measure that might assess one factor unassociated with socioeconomic status, Principal Academic Optimism, which could perhaps account for variances in student achievement.

Schools that improve academic optimism are poised to improve student success (Hoy, Tarter, & Hoy, 2006a; 2006b). There is real value in focusing on the potential of schools, particularly individuals to take advantage of the factors that can be affected, rather than dwelling on those that cannot (Marzano, McNulty, & Waters, 2005).Given the ever-increasing percentage of low socioeconomic status students, the goal must be to overcome the situations faced by schools, rather than to accept defeat. Schools may never be capable of completely overcoming low socioeconomic status; however, when schools focus on factors within their control, success may then be achieved. Principals are at the forefront of this leadership movement, and their

levels of academic optimism may have the ability to impact how schools meet these challenges. In other words, a principal's ability to contribute to the school's culture and perceived level of academic optimism could be important in supporting higher student achievement outcomes.

Academic optimism is a concept developed by Hoy and his colleagues in an attempt to identify the characteristics of schools that make a difference in student achievement. Hoy has worked closely with his students and colleagues over the past 40 years on this objective (Hoy, 2012) and has found that educators with high degrees of academic optimism viewed "teachers as capable, students as willing, parents as supportive, and the task as achievable" (Hoy, Tarter, and Woolfolk Hoy, 2006b, p. 140).

Academic optimism is formed from a triadic relationship of academic emphasis, collective efficacy, and faculty trust in parents and students (Hoy et al., 2006a, 2006b). Academic optimism is the fusion of the aforementioned three properties into one integrated whole, promoting a synergy that leads to student achievement. At the school level, academic optimism is the collective belief that faculty can make a difference and that students can learn and achieve high academic performance. Such optimism at the teacher level is both a singular and collective belief that the individual faculty member makes a difference in influencing the learning capacity and achievement of the study body.

Rooted in positive psychology, optimism in the academic setting combines affective, behavioral, and cognitive facets. The interaction of these three domains forms reciprocal causation, whereas how people think, believe, and feel influences how they behave. Bandura further (1997) describes this relationship as the affective (feeling), behavioral (actions), and cognitive facets (beliefs) as how individuals process interactions and information through self-reflection to manage their environment and adapt to its demands.

Consequently, the variables are interconnected and interdependent upon the other through a triadic relationship. Collective efficacy, considered the cognitive facet, relates to the underlying belief that faculty can positively contribute to student learning when teachers, individually and collectively, demonstrate effective performance (Hoy et al., 2006a; 2006b). Trust, the affective facet, is the belief that students, parents, teachers, and principals can work together cooperatively to improve student learning (Hoy et al., 2006a; 2006b). Trust further supplements the belief that students have the potential to learn. Finally, academic emphasis, the behavioral facet, implies that teachers can act to improve students' academic success (Hoy et al., 2006a; 2006b). Teachers, who believe in their students, create rigorous, but attainable, lessons for students. Teachers enact this behavioral facet by making changes to instruction based on their faith in their students'

capacity to learn. The common denominator among these facets is that all of them can be learned. The theory of learned optimism as provided by Seligman (1998, 2006) supports the idea that it is possible to teach individuals to improve their academic optimism.

Additionally, collective efficacy fosters a higher level of faculty trust just as trust fosters collective efficacy. Teachers and administrators push for strong academic emphasis within the classroom, parents' trust that their children are learning, and principals believe that teachers can teach students effectively. Therefore, teachers feel supported and trust students to learn, while principals feel that they can support teachers' further facilitating student learning. McGuigan and Hoy (2006) reveals this reciprocal relationship in their study of enabling school structures evidenced by the principals' development of rules, policies, and procedures that support the teaching and learning mission of the school.

Statement of the Problem

Previous empirical studies have provided quantitative evidence of the effects of academic optimism on student achievement at both the collective and individual levels (Beard, Hoy, & Woolfolk Hoy, 2010; Bevel & Mitchell, 2012; Hoy, Tarter, & Hoy, 2006a; 2006b; Kirby & DiPaloa, 2011; Smith & Hoy, 2007; Wagner, 2008). These studies can help guide future research on academic optimism. Additional research is needed to fully understand the value of academic optimism and how it can be manipulated. Research on both antecedents and outcomes are warranted to fully understand the encouraging potential of academic optimism in the field of education research and practice.

Focusing upon principals' perceptions of their own levels of academic optimism could be incalculably influential in the advancement of future research. Principals, crucial in the development of a culture of optimism, can affect a variety of school characteristics. By first understanding the antecedents that contribute to academic optimism, educators and researchers might better understand and explain outcomes. Research on school characteristics affected by the principal may lead to new research topics. Examining first the principal's perception of his or her perceived role in the development of academic optimism, therefore, may prove vital. A comprehensive Principal Academic Optimism measure could then be used to test future hypotheses that influence understanding of the development of a culture of academic optimism at both the school and teacher levels.

Few studies have examined academic optimism at the individual level. Because of this shortage of research on the individual level (principal, teacher, student, and parent), further

examination is warranted to understand how each supports the construct of academic optimism and how each relates to the other. Riegel (2012) recently examined the phenomenon of Principal Academic Optimism among elementary school principals, but she was unable to support her hypothesis. Riegel was unable to support the validity of her Principal Academic Optimism Scale because she failed to account for principal trust in faculty. Particularly Riegel stated, "Despite the emergence of the trust factor, insufficient construct coverage was available to ensure validity…" of the trust factor having excluded principal trust in faculty (p. 91). Therefore, Riegel recommends that "future studies might consider the trusting relationships between the principal and his or her faculty, as well as the clients…" (p. 91). Tschannen-Moran, Bankole, Mitchell, and Moore (2013) explored student academic optimism by conducting a confirmatory factor analysis. Controlling for socioeconomic status, the researchers were able to confirm that Student Academic Optimism, which is the triadic relationship of a student's self-efficacy, press for academic achievement, and a student's trust in teachers, has a significant direct effect on student achievement, explaining 67% of the variance. A comprehensive instrument for measuring Principal Academic Optimism is needed to confirm the construct, and lay the groundwork for future research on academic optimism at the principal level.

Current Social Issues and Need for Academic Optimism

Many societal factors contribute to apprehension and mitigate potential optimism among educators. Those factors include "poverty, drugs, unemployment, school dropouts, teen pregnancy, domestic violence, crime, and the like" (Berliner & Biddle, 1996, p. 342). Though it may seem these problems persisted decades ago, they are still prevalent today. Campbell (2013) asserts that the primary goal to improving American education must be to fix the social climate by addressing societal problems prior to students' entry into school. Additionally, the increasing use of technology, particularly social media, further complicates societal factors, further contributing negatively to the present outlook for education. Nonetheless, Berliner and Biddle (1996) asserted that "America is an optimistic nation, and most believe that our institutions can and should be improved" (p. 173). Milbank (2014) supported the fact that optimism in America is dying. Various polls since the 1990s and early 2000s supported the notion that America is becoming less optimistic. Most recently the Wall Street Journal, according to Milbank, showed that the wealthy and the poor to be equally pessimistic about the future for their children. While some may say that America has suffered from an indecisive moral compass, it is imperative that educators become a light of hope in students' lives. Schools must not only convey knowledge;

they must prepare citizens for the burdens placed on them by what some see as a flawed society. The challenges that societal problems bring to schools further complicate the role of educators and their levels of optimism. Principals combat these deficiencies by offering leadership and managing their faculties and staffs through the creation of a culture of academic optimism, becoming the lighthouse of hope for many schools.

Education is a societal institution, and the views of society often direct the role of educators. Society has demanded new accountability measures, and as these measures are put into place, a need arises to understand how schools can handle this demand and continue to improve student achievement. Studying Principal Academic Optimism may offer a glimpse into principals' perceptions of their own levels of academic optimism. The development of a comprehensive measure then can allow for future research on how Principal Academic Optimism levels affect student achievement. Paramount to this undertaking is the principal's capacity to recognize and develop a culture of academic optimism as it relates to the mission and vision of the school. The ability of principals to manipulate their own levels of academic optimism, as well as the optimism of their staffs, is contingent upon self-reflection and unravelling the variables which support academic optimism. Thus, the development of a comprehensive Principal Academic Optimism Scale can expand the research agenda on academic optimism, which perhaps may lead to new opportunities for exploration and future research questions.

This study was a quantitative study designed to explore the latent construct of Principal Academic Optimism. This method was selected since the primary tool used to collect data was a questionnaire and the overarching intent of this study was to revise and test a comprehensive measure of Principal Academic Optimism. The research questions further supported the need for a quantitative study to conclude what, if any, factor would emerge from a revised scale. Furthermore, correlation analysis was warranted to determine what, if any, relationship exists between identified demographic variables and any emerging factors.

Research Questions

This study was guided by two research questions:

1. What are the findings associated with a revised and re-administered Principal Academic Optimism Scale?
    a. Is the revised scale a valid and reliable measure of Principal Academic Optimism?
    b. What factors emerge from testing the revised Principal Academic Optimism Scale?

c. What are the findings associated with a revised and re-administered trust section to the questionnaire?

2. How do the demographic variables of principal educational attainment, gender, ethnicity, number of teachers supervised, and percentage of students receiving free and reduced price lunches explain the variance in factors emerging from The Revised Principal Academic Optimism Scale?

Theoretical Foundations of Academic Optimism

The theoretical foundations of academic optimism are vested in research from researchers such as Albert Bandura (1978; 1982; 1986; 1993; 1997; 2000), Martin Seligman (1998, 2006), Megan Tschannen-Moran (2003; 2004a; 2004b), and Wayne K. Hoy (2002; 2010; 2012). The historical foundations of the concept of academic optimism reside in Hoy's attempt to explain or identify the key factor or factors of school culture, and the effect of those factors upon student achievement (Hoy, et al., 2006a; 2006b). Academic optimism merges ideas from the fields of organizational health (Hoy & Sabo, 1998; Hoy & Hannum, 1997; Hoy, Tarter, & Kottcamp, 1991), social cognitive theory (Bandura, 1986, 1993, 1997), social capital theory (Coleman, 1988), trust (Tschannen-Moran, 2004a), and positive psychology (Seligman, 1998, 2006).

Organizational health. Organizational health is described as the collective personality of a school and is characterized by the social and professional interactions of the individuals within the school for its collective good (Hoy & Hannum, 1997). It is, in other words, often viewed as a collection of fundamental concepts similar to those of a strong school culture. School culture, which has a significant impact on student achievement, is cultivated first and foremost by the leadership of the school in relation to student achievement (Waters et al., 2003; Marzano et al., 2005).

Academic emphasis, which is a component of academic optimism, originates from within the literature on organizational heath. Hoy and Sabo (1998) identified the importance of academic emphasis through the use of the Organizational Health Inventory. The inventory comprises six dimensions: institutional integrity, collegial leadership, principal influence, resource support, teacher affiliation, and academic emphasis. Hoy et al., (2006a) identified academic emphasis as having an effect on student achievement, while controlling for socioeconomic status. Researchers have consistently identified academic emphasis as having a significant relationship in the improvement of student achievement (Hoy & Woolfolk Hoy, 1993; Smith, Hoy, & Sweetland, 2001). A clear academic emphasis—its prioritization within the

school environment—is considered the first of the three school properties that make up academic optimism's consistent relationship to student achievement.

Trust is considered to be the second of the triadic members, or components, of academic optimism (Hoy, 2006a). The health of an organization is dependent upon development of trust, particularly relational trust and organizational trust, which further influences efficacy of the group (Hoy & Tschannen-Moran, 1999; Hoy & Tschannen-Moran, 2003). The domain of trust is "a state in which individuals and groups are willing to make themselves vulnerable to others and take risks with confidence that others will respond to their actions in positive ways, that is, with benevolence, predictability, competence, honesty, and openness" (Hoy, 2006a, p. 429). Trust is reciprocated by principals, teachers, students, and parents, each trusting that students have the ability to achieve. Faculty trust in students and parents has been shown to be related to student achievement, when researchers control for socioeconomic status (Tschannen-Moran & Hoy, 2003).

Social cognitive theory. "Social cognitive theory distinguishes among three different forms of agency—personal, proxy, and collective" (Bandura, 2000, p. 75). Collective efficacy, the third and final member of the triad identified by Hoy et al. (2006a), is perhaps the most profound of the three domains. Bandura (1986) theorized that an individual's behavior is influenced by his or her thoughts and actions and by environmental factors. Hoy et al. focus on the collective efficacy of schools, which is considered an element amenable to change (Goddard, Hoy, & Woolfolk Hoy, 2000, Hoy et al., 2006a).

Bandura (1986) theorized that interactions between people are formed within their environment. Bandura's (1986, 1997) theory specifies that teachers' perceptions of self and collective capabilities influence their actions. Collective beliefs are formed from environmental factors, which are formed by both individual and group behaviors. When teachers' behaviors are "highly efficacious, the normative environment will press teachers to persist in their educational efforts, leading to changes in efficacy" (Hoy, 2010, p. 102). Consistent social sanctions placed on the group further shape the norms of the school. Thus, a cycle is formed, with each factor influenced by other factors, and fruitfully generating new outcomes. These thoughts and actions formed by the individual become collective expectations formed within a group.

Collective efficacy is the ability of individuals to collectively interact in ways that are influenced by the behaviors of others within their environment: "Perceived collective efficacy fosters groups' motivational commitment to their missions, resilience to adversity and performance accomplishments" (Bandura, 2000, p. 75). Environmental influences can lead to a

change in behavior, which leads to changes in individual self-efficacy. A change in self-efficacy consequently leads to changes in one's personal outcomes, along with expectations for changes in the outcomes for the group, and thus altering collective efficacy.

Social capital theory. Researchers have failed to recognize the relevance of Coleman's (1988) social capital theory as it relates to Hoy's concept of academic optimism. Social capital, by definition, is the development of social networks to improve any given organization for the collective benefit of the group. Similar to human capital, social capital is intangibly embodied in the skills and knowledge acquired by an individual. Coleman acknowledged, when an organization has high levels of trust and efficacy, then the group collectively exhibits greater productivity--similar to the expected collective benefit of academic optimism. Within the school environment, therefore, when principals improve their capacity to influence social capital, the potential reward becomes improved student learning outcomes. Therefore, social capital theory becomes significant to the development and maintenance of trust and efficacy in Principal Academic Optimism.

The norms established by a school are reinforced and strengthened by members of the group. Social capital is in turn facilitated by open environments where principals, teachers, and students alike feel obligated to the norms placed upon the group. Social capital, as described by Coleman (1988), parallels the concepts of financial capital, physical capital, and human capital. Similarly, professional capital, as introduced by Fullan (2014), adds value and worth to the organization. Recognition of social capital by school administrators can prove beneficial in improving student achievement outcomes, whereas professional developments may be designed to focus on building human and social capital in educators. Social interaction should be encouraged through the creation of policy and structures to allow teachers to develop social ties with one another, in particular policies and structures which might facilitate student achievement. Improving the social structure of a school or group, may improve understanding of how students achieve as well as student achievement outcomes (Moolenaar, Liou, Daly, Der-Martirosian, 2014).

Positive psychology. The aim of positive psychology is to understand the personal characteristics and tendencies that contribute to individuals' health and well-being. Positive psychology moves away from the negative and ventures toward the positive aspects of the mind. Positive psychology provides an essential component to the merging of the properties that form academic optimism (Beard, 2008). The belief that an individual's level of optimism can be manipulated supports academic optimism. This idea is founded on the research of Seligman

(1998). Seligman's theory of learned optimism changed the direction of research within the field of positive psychology. By examining optimism and hope as opposed to negative aspects of psychology, Seligman opened new doors for research. Hoy et al. (2006a; 2006b) derived the theory of academic optimism in part from Seligman's theory of learned optimism. Academic optimism is therefore rooted firmly in the field of positive psychology.

Seligman's (1998) theory of learned optimism is the belief that optimism, like other skills or attitudes, can be refined or developed. This is perhaps what is so appealing about the concept of academic optimism. The potential to increase an educator's level of optimism through professional development provides a new path for improving teachers' or principals' levels of performance, and consequently, student achievement (Hoy et al., 2006a; 2006b). The idea of transforming an individual's or a group's level of academic optimism and consequently having a positive effect on student achievement is quite appealing.

Optimism, like talent or motivation, has been shown to be important in positively affecting student achievement (Hoy et al., 2006a). Like individuals, organizations can develop learned helplessness. Pessimism can be profound and inescapable, whereas pessimism like optimism affects both beliefs in oneself as well as colleagues and students. Therefore, pessimism in principals may affect both the principal's self-efficacy as well as the collective efficacy of the organization. Consequently, the principal's level of optimism may have a trickle-down effect to teachers and students. Optimism, like pessimism, can become entrenched—reinforced and self-fulfilling—perhaps leading to improved outcomes. Teachers with positive academic optimism levels believe that they are capable and that the task of facilitating student achievement is feasible. Optimism is thwarted by stress; thus, decreasing stress supports optimism (Hoy et al., 2006a). Similarly, principals with academic optimism feel that they are capable, and that the task of leading teachers and students is possible.

Hoy et al. (2006a, 2006b) speculated that the pessimistic educator with negative academic optimism levels sees himself or herself as helpless. The pessimistic educator has beliefs such as, "These kids can't learn, and there is nothing I can do about it, so why worry about academic achievement?" (Hoy, et al., 2006a, p. 440). Educators who have positive levels of academic optimism, in contrast to the pessimistic viewpoint, see themselves "…as capable, parents as supportive, students as willing, and the task as achievable" (Hoy, et al., 2006a, p. 440).

Theory of Principal Academic Optimism

McGuigan and Hoy (2006) as well as Wu, Hoy, and Tarter (2012) examined how the principal supports the enabling structure of the school and its effect on student achievement. An enabling school structure is a hierarchy that supports rather than hinders while a systematic set of rules and regulations has been established to guide rather than penalize. Mascall, Leithwood, Straus, and Sacks (2008) examined the role of distributive leadership and its connection to academic optimism. Lisa Riegel (2012) is the only researcher who has explored academic optimism at the principal level as a construct called Principal Academic Optimism. Riegel asserted that the role of principal is vital in establishing school climate and trust.

Identification of school properties that make a real difference in academic achievement and teacher performance within the control of school leaders is a major challenge. While socioeconomic factors unquestionably have a strong association with student achievement, other factors within the control of schools appear to be as important (Hoy, Tarter, & Hoy, 2006a; 2006b). Contemporary research has provided access to better data and the use of more sophisticated statistical tools to provide new windows of exploration in accounting for academic achievement (Ransbotham, Kiron, & Prentice, 2015). Two factors of Principal Academic Optimism which Riegel (2012) identified as significant are the trust factor (principal trust in faculty and clients) and the leadership factor (academic emphasis, celebrations of success, efficacy instructional supervision and efficacy in management).

Principal Academic Optimism is considered a characteristic of schools that are academically successful; such schools consistently show greater emphasis on academics, as evidenced by student and teacher performance (Hoy, Tarter, & Hoy, 2006a; 2006b). Evidence further indicates that the higher a school's academic optimism levels, the higher the degree of perceived collective efficacy, and trust levels among faculty, parents, and students are enhanced (or positively affected). Therefore, a school with high academic emphasis, collective efficacy, and trust is driven by a quest for academic excellence, supported by an academically optimistic principal (Hoy, Tarter, & Hoy, 2006a; 2006b).

Education policies are currently transforming the role of principal by redefining the job description. Riegel (2012) examined the concept of Principal Academic Optimism in terms of the 2011 Wallace Foundation Report on Principal Effectiveness. The Wallace Foundation Report identifies five key qualities that effective principals should have:

1. Shaping a vision of academic success for all students,
2. Creating a climate hospitable to education,

3. Cultivating leadership in others,
4. Improving instruction,
5. Managing people, data, and processes to foster school improvement (Riegel, 2012, p. 4).

The concept of Principal Academic Optimism may promote principal improvement, which could support student achievement. Principal Academic Optimism may facilitate the principal's ability to evaluate and support teachers, which supports the role of instructional leadership. The role of principal as manager has transformed to that of instructional leader, and research on school leadership and improved student achievement supports this transformation (Dufour & Marzano, 2011; Marzano et al., 2005).

Principals are crucial for improving instruction at the school level. Effective principals must be capable of providing solid instructional leadership, while at the same time possessing effective organizational management capabilities. Schools capable of sustaining academic success over time have principals who are able to concentrate on the key factors that create a resilient culture of academic optimism (Hoy, Tarter, & Hoy, 2006a; 2006b). Focus cannot be solely on instructional leadership no more than it can be solely on management; the two go hand in hand. Creation of a culture of academic optimism is highly dependent upon collaboration between administrators and teachers alike supporting the importance of the social capital theory.

Theoretical framework of principal academic optimism. The hypothesized construct of Principal Academic Optimism is comprised of two primary factors which include the leadership factor and the trust factor. The principal is seen as an active designer of the school context (Dwyer, Rowan, & Lee, 1982), rather than a passive participant. Similarly, the formation of academic optimism is fueled by active participants through social networks which form collective efficacy, trust and academic emphasis. Just as the triadic relationship merges to form the original theory of academic optimism, the factors of leadership and trust merge to form Principal Academic Optimism in an active fashion. The factors (Leadership and Trust) along with their sub-components (Efficacy of Instructional Leadership, Efficacy of Management, Academic Emphasis, Celebrations of Success, Trust in Faculty and Trust in Clients) are all elements of a positive school climate that the principal controls, fosters, and builds through development of collaborative social networks (Hallinger, 2003).

The leadership factor subdivides into components of academic emphasis, celebrating success, efficacy of management, and efficacy of instructional supervision (Riegel, 2012). The trust factor also subdivides into two subcomponents, trust in faculty and trust in clients (parents

and students) (Tschannen-Moran & Gareis, 2004). The principal's level of academic optimism is influenced by each of these factors. When one factor is weak, then the level of academic optimism is negatively influenced. For example, when academic emphasis and efficacy are lacking, a principal's level of academic optimism is negatively affected, and this relationship, in turn, has an effect upon trust. The separation of the trust factor into principal trust in faculty and principal trust in clients represents a change to the original construct developed by Riegel (2012). This modification intends to create a more comprehensive measure by utilizing the Principal Trust measure developed by Megan Tschannen-Moran and Gareis (2004) to measure trust in faculty and clients as opposed to trust in clients (parents and students) exclusively. The leadership factor and trust factor are discussed further in Chapter 2 and each of the subcomponents clearly defined as well. Additionally, the theoretical framework below represents a revised measure of Principal Academic Optimism. Similar to Riegel's research, the framework is divided into two primary factors (Leadership and Trust). Figure 1, below, displays the hypothetical framework of Principal Academic Optimism, which is reliant on earlier research from Riegel.

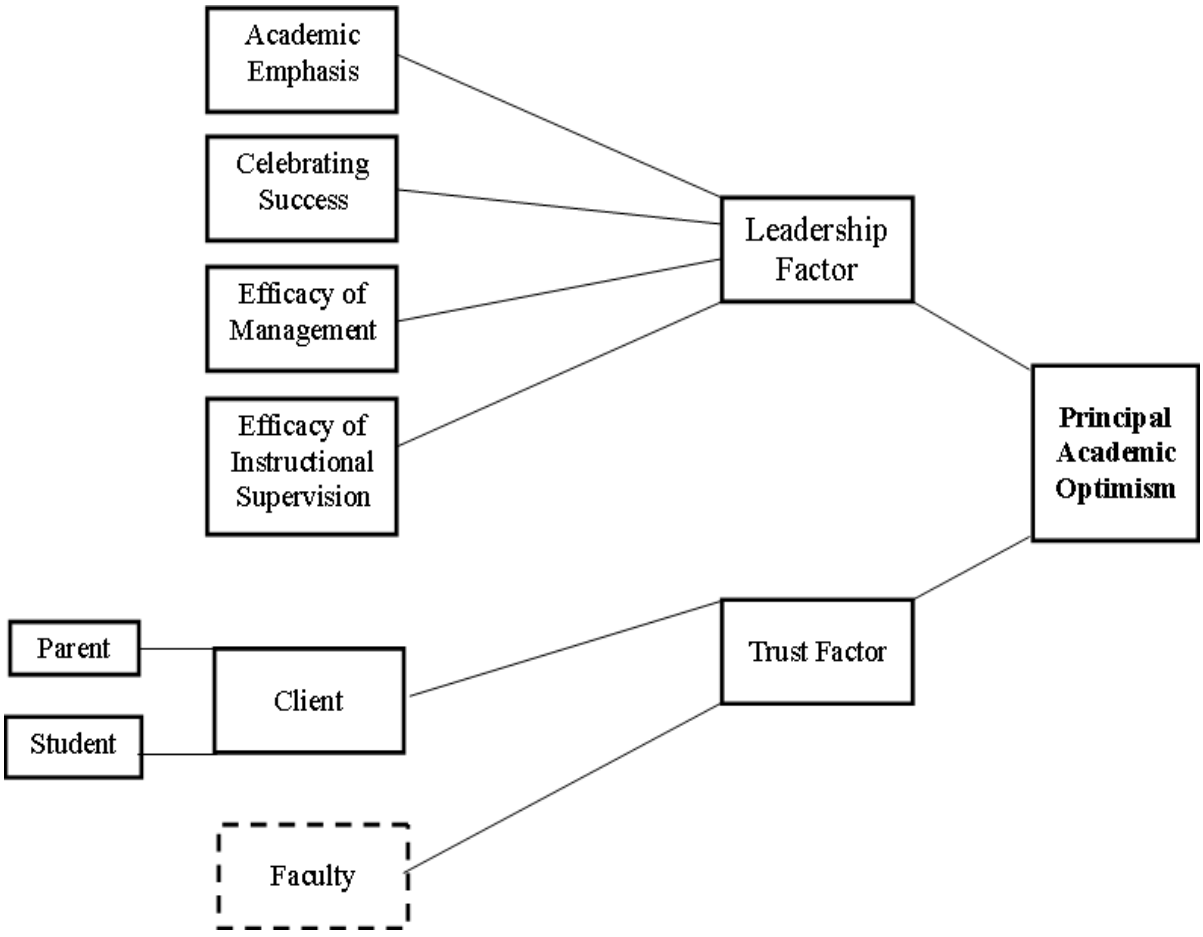

Figure 1.1. Conceptual Framework of Principal Academic Optimism: The figure demonstrates the hypothesized division of trust with the addition of trust in faculty along with trust in clients (parents and students).

Summary of Chapter One

Principals and teachers have many responsibilities beyond their everyday jobs. New accountability reforms have placed tremendous demands on educators. The present state of education appears to be less than encouraging, and new challenges have sprung forth with the accountability movement. Educators must reflect on their practices to address diverse issues related to growing socioeconomic concerns relevant to the lives of all individuals. As society changes, so too does the role of educators. Principal Academic Optimism can perhaps provide a new lens through which to analyze the perceptions of principals as they relate to student achievement and supporting faculty. There is a rapidly growing need for sensitivity toward societal needs as it relates to the roles of both principal and teacher within education.

Society continually redefines the role for educators, and with new accountability measures, the school's role has also changed. Teachers and principals alike must work collaboratively to understand what can be done at the school level to improve student achievement, and academic optimism offers encouragement in grappling with a changing society. Previous empirical studies have provided quantitative evidence of the effects of academic optimism on student achievement at both the collective and individual levels (Beard, Hoy, & Woolfolk Hoy, 2010; Bevel & Mitchell, 2012; Hoy, Tarter, & Hoy, 2006a; 2006b; Kirby & DiPaloa, 2011; Smith & Hoy, 2007; Wagner, 2008). These studies can help guide future research on academic optimism. Additional research is needed to fully understand the value of academic optimism and how it can be manipulated.

A culture of academic optimism has the potential to have a significant impact upon a variety of characteristics within a school. Perhaps first understanding the critical antecedents (collective efficacy, academic emphasis, trust) and their relationships that contribute to academic optimism, educators and researchers might better understand and explain outcomes. Consequently, understanding the principal's role in the development and maintenance of these same antecedents within a culture of academic optimism and their perception of their own optimism levels is vital to future research. Studies of principal leadership should first focus on the development of an instrument that appropriately measures a principal's level of academic optimism. The Principal Academic Optimism measure could then be used to test future hypotheses in an attempt to advance understanding of the culture of academic optimism. Additionally, examination of academic optimism at the principal level can perhaps explain the effects of other school characteristics affected by a culture of academic optimism.

The revision of the Principal Academic Optimism Scale may possibly provide a foundation for future research. Therefore, the goal of this research was to create and test a comprehensive and The Revised Principal Academic Optimism Scale. To accomplish this goal Tschannen-Moran's and Gareis' Principal Trust Scale was utilized to measure principal trust in faculty and clients for the principal trust factor. A revised version of Riegel's instrument was used to measure academic emphasis, celebration of success, collective efficacy in management, and collective efficacy of instructional supervision for the principal leadership factor.

Chapter 2

Review of Literature

The properties which form academic optimism are defined and reviewed. Additionally, this chapter examines and discusses the existing literature on principal leadership and principal trust. Finally, the chapter concludes with a discussion on the significance of Principal Academic Optimism.

This section is a review of the commentary and research literature on the development of academic optimism as a concept. The section begins with an introduction to the historical foundations of academic optimism. Each of the properties that form academic optimism is then examined: academic emphasis, collective efficacy, and faculty trust in parents and students. Scholarly articles and publications, including those that are peer-reviewed, were examined.

Scholarly research on "academic optimism" was located through keyword searchers of electronic catalogs, to include ERIC and EBSCO. In addition, the researcher utilized these findings to identify additional studies for inclusion in the review. In particular the researcher sought research studies that identified relations between academic optimism and principal's role or leadership behaviors in particular the development of culture. Articles were screened for their relevance, quality, and scholarly rigor as determined by the transparency of methods and peer review process. The literature was reviewed and findings of the results of the review lead to a framework for understanding Principal Academic Optimism. These items were limited to studies that focused on school-level and teacher-level academic optimism and the advancement of the topic. Additional studies that added significant information to support the literature review were reviewed and included. These items were deemed essential to the review and for introducing the topic of principal academic optimism.

While the review attempted to be thorough, the researcher also recognizes that the search may not have been exhaustive and that new research continues to emerge. The review is limited, in part by fact that most studies are connected to a group of researchers that are in some way connected to Wayne Hoy and/or Ohio State. Therefore, the studies tend to reference the same or similar articles with limited ideas and centralized viewpoints.

Properties of Academic Optimism

The search for a school characteristic that impacts student achievement led Hoy et al. (2006a) to develop the construct academic optimism, defined as a collective set of beliefs based on the unification of academic emphasis, collective efficacy, and trust in parents and students

(Hoy et al., 2006a). The researchers found that academic emphasis, collective efficacy, and faculty trust in parents and students are collective properties. This analysis was conducted through the utilization of intra-class correlation, which is the organization of units into groups to examine the variance, by applying descriptive statistic to quantitative measures. The researchers demonstrated with intra-class correlation coefficients that a relatively high percentage of between-school variance exists: collective efficacy at .23, academic emphasis at .24, and faculty trust in parents and students at .21. Therefore, the relatively high percentage of between-school variance found in the correlation coefficients (collective efficacy, academic emphasis, and faculty trust in parents and students) suggests that academic optimism appears to be a latent property of schools (Hoy et al., 2006a).

Academic Emphasis

Academic emphasis is descriptive of the normative and behavioral environment of the school at both the classroom and school level (McGuigan & Hoy, 2006). Academic emphasis, being one of the properties of academic optimism, encourages student achievement by boosting student learning. Furthermore, academic emphasis is the amount of academic rigor and expectations required by the teacher. Hoy (2010) defined it as follows:

> Academic emphasis is the extent to which a school is driven by a quest for academic excellence—a press for academic achievement. High but achievable academic goals are set for students; the learning environment is orderly and serious; students are motivated to work hard; and students respect academic achievement (Hoy, 2010, p. 106).

There is a positive relationship between academic emphasis and student achievement (Goddard, Sweetland, & Hoy, 2000; Hoy & Hannum, 1997; Hoy & Sabo, 1998; Hoy, Tarter, & Bliss, 1990). Academic emphasis is an important element in explaining student achievement at all school levels, particularly for low socioeconomic status students (Hoy & Hannum, 1997; Hoy & Sabo, 1998).

Hoy and Hannum (1997) found strong correlations between student academic achievement and academic emphasis. For their study, the researchers examined middle schools from 15 of 21 counties in New Jersey. Using zero-order correlations analysis, the study showed that mathematics achievement had the strongest correlation ($r = .73$, $p < .01$) with academic emphasis, and socioeconomic status ($r = .77$, $p < .01$) had similar effects. Likewise, reading ($r = .70$, $p < .01$) and socioeconomic status ($r = .75$, $p < .01$) were correlated with academic emphasis.

Teacher affiliation, institutional integrity, academic emphasis, and socioeconomic status all had significant effects on both mathematics and reading achievement. Academic emphasis was the only variable identified by Hoy and Hannum (1997) that was significantly related to socioeconomic status ($r = .67$, $p < .01$). Therefore, academic emphasis became the first of the three properties identified as a positive correlate to student achievement.

Teachers' expectations of their classes impact their desire to engage students in the classroom. It is not surprising, then, that such rigorous expectations for students' learning affects student achievement outcomes (Pringle, Lyons, & Booker, 2010). By contrast, teachers who maintain rigorous expectations for the classroom, compared to teachers who believe that students can succeed and learn, tend to have students who perform at more efficient levels (Riegel, 2012). Good and Brophy (1973) identified characteristics of effective teachers, one of which is positive expectations for student success. Holding high expectations for students is not a new concept; it has been a recurring phrase for decades (Harris & Rosenthal, 1985; Rosenthal & Jacobson, 1968). Principals supporting teachers and facilitating teachers' expectations for students supports the idea of developing a culture of academic optimism through academic emphasis.

Collective Efficacy

Collective efficacy is shared beliefs regarding capabilities to organize and execute the actions required to produce given attainments involving cognitive judgments about the performance capabilities of a whole organization (Bandura, 1997). Collective efficacy is supported by self-efficacy theory (Bandura, 1986, 1997). Self-efficacy is the critical component of collective-efficacy perspectives. Individuals first develop judgments or beliefs about their own cognitive, social, and behavioral competencies through their experiences (Bandura, 1993, 1997; Hoy, 2010). Group feedback and goals influence individual perceptions and self-efficacy levels and further reinforce the development of group goals and expectations.

Collective efficacy is an essential element of successful schools. Changing educators' collective focus away from the socioeconomic status of students, particularly within high poverty schools, and focusing on those factors that may be reformed to improve student achievement is a step in the right direction. Shifting emphasis from the pessimism created by society and moving toward a more optimistic viewpoint through collaborative practices leads to the development of collective efficacy, rather than giving in and writing off students due to surrounding societal circumstances. Controlling for socioeconomic status and teaching longevity, Bandura (1993) demonstrated a significant relationship between collective efficacy ($R^2 = .34$) and student

academic achievement in reading and mathematics. Teachers working collaboratively and creating solutions, rather than criticizing, and seeing the positive as opposed to the negative, is hypothesized to lead to improved student achievement outcomes through the development of collective efficacy (Bandura, 2000).

Goddard et al. (2000) defined collective efficacy as collective judgments about the capabilities of a school as a whole. Their definition included the efficacy beliefs of individual teachers and the efficacy beliefs of the entire faculty as a collective unit. The authors tested collective efficacy for its relationship to student achievement. Controlling for socioeconomic status, the researchers found that collective efficacy was significantly related to student achievement, explaining 53.27% and 69.64% of the variance in mathematics and reading respectively (Goddard, Hoy, & Hoy, 2000). Controlling for socioeconomic status, other researchers likewise have found that collective efficacy is related to student achievement (Tarter & Hoy, 2004). These results support Bandura's (1993) earlier finding that collective efficacy is significantly related to student achievement.

Researchers continue to identify emerging properties of collective efficacy and to expand the development of new tools to better understand collective efficacy of schools (Bandura, 2000). Data provided through new accountability measures might help to facilitate school effectiveness at the collective level and lead to higher levels of student learning. Principals who influence teacher confidence and motivation, regardless of the societal obstacles that schools face, know how to set goals that challenge and motivate. Educators learning to evaluate and recognize data findings can further support collective efficacy. Evaluating data and making it part of a school's routines might lead to higher levels of efficacy at both the individual and collective levels. Data may perhaps provide a means to celebrate success, thus furthering the cycle of academic optimism.

Faculty Trust in Parents and Students

Tschannen-Moran (2004a) defined trust as "one's willingness to be vulnerable to another based on the confidence that the other is benevolent, honest, open, reliable, and competent" (p. 17). The definition has five facets:

- *Benevolence* is the confidence that other members of the group will act in the best interests of the group and not exploit their vulnerability. Parents likewise have confidence that educators will act in the best interest of students, with compassion and fairness.

- *Honesty* implies trust that other members of the group will honor their word and future commitments. Honesty rests on a person's character, integrity, and authenticity.
- *Openness* is the ability of others to foster group communication that is accurate, relevant, and factually complete.
- *Reliability* is the consistency with which members of the group behave over time. The ability to depend on others promotes trust and the belief that effort will be present regardless of the challenges faced.
- *Competence* is the group's ability to perform a task to meet the standards developed by the group. Members of the group depend on others and trust that their skill level is consistent with the requirements of the task at hand and will be maintained as necessary to fulfill group tasks. (Tschannen-Moran, 2004a, p. 17)

All members of a group must exhibit trust if the members are to cooperate to meet established goals. Without trust, there is little mutual confidence, and it is virtually impossible to develop cooperative relationships and achieve goals (Tschannen-Moran, 2004b).

In early attempts, Hoy et al. (2006) were unable to link trust and student achievement. Early studies of trust contained measures of trust that were overpowered by socioeconomic status (Forsyth, Adams, & Hoy, 2011). It was not until faculty trust of students and parents was formed as a combined measure that evidence supporting the relationship between trust and student achievement was identified (Forsyth, Adams, & Hoy, 2011). The collective trust of parents and students was found to be related to student achievement, even when researchers controlled for student socioeconomic status (Hoy, 2002). Trust of parents and students independently was found to have no relation to student achievement, therefore trust of clients (parents and students) must be a collective measure (Forsyth, Adams, & Hoy, 2011).

Goddard, Tschannen-Moran, and Hoy (2001) developed the theory that teacher trust in students and parents is critical to student achievement and school success. Using hierarchical linear modeling, Goddard et al. were able to demonstrate that collective trust in students and parents was directly related to student achievement. A direct relationship was found even when the authors controlled for socioeconomic status. They identified trust as a social feature of the school and they noted in their main hypothesis that trust is related to differences among student achievement across schools. Accounting for student characteristics of race, gender, past

achievement, and socioeconomic status, the researchers found that trust was a positive predictor of the variance in student achievement.

Trust is built through the development of relationships and through open and honest communications. Hoy et al. (2006a; 2006b) found that a key to student achievement is relational trust. Relationships must be built and maintained, just as trust must be continually built and maintained. When change must occur within education, it may be facilitated by trust among members of the group. It is imperative that open and honest communication occurs. Establishing a line of communication that provides opportunities for feedback can build and maintain trust.

When examining trust one must be careful to examine both the relationship of teacher perceptions and their relationship to school effectiveness. Tarter and Hoy (2004) were able to explain significant variance between four predictor variables (enabling structures, collective efficacy, culture of trust, politics) and student achievement ($R^2 = .65$), while controlling for socioeconomic status. The researchers conducted a second regression model, finding that the four predictor variables explained approximately half of the variance in overall teacher perceptions of school effectiveness ($R^2 = .54$). These findings support the concept that trust is an important part of teacher perceptions as an essential property of a school's overall effectiveness. The study suggests that teachers in schools with high percentages of low socioeconomic status students view their school as effective when levels of trust outweigh politics. Tarter and Hoy demonstrate the importance of building a culture of trust and the importance of open, honest relationships.

Bryk and Schneider (2002) discovered that when trust among teachers, parents, and student is strong, student achievement increases. Bryk and Schneider's findings are similar to those of Hoy et al. (2006a; 2006b), who found that trust is a key property in the measure of academic optimism. Furthermore, Bryk and Schneider expanded the concept of trust by introducing relational trust as an important contributor to student achievement outcomes. The researchers support not only the concept of collective trust, but they also support trust as a property of academic optimism (Forsyth, Adams, & Hoy, 2011).

The role of the principal as instructional leader is as a support and safeguard to teachers, while simultaneously connecting school to home. These connections may be established through celebrations of success. Celebrations of success can help to establish the connection of school to home and potentially support the role of trust. Trust then becomes a necessary aspect of Principal Academic Optimism and may be promoted through feedback. Feedback can be a minimal statement such as "good job" or more formal celebrations where teachers or students are honored

for their successes. Trust then hypothetically becomes a key element in the concept of Principal Academic Optimism.

Principal Academic Optimism

Principal Academic Optimism is a new concept expanding the research on academic optimism at the individual level. Researchers have investigated the characteristics of the principal's role in supporting academic optimism (McGuigan & Hoy, 2006; Mascall, Leithwood, Straus & Sacks, 2008; Wu, Hoy, & Tarter 2012). McGuigan and Hoy (2006) as well as Wu, Hoy, and Tarter (2012) examined how the principal sustains the enabling structure of the school and its effect on student achievement. Mascall et al. examined the role of distributive leadership and its connection to academic optimism. Lisa Riegel (2012) is the only researcher who has explored academic optimism at the principal level as a construct called Principal Academic Optimism.

Mascall, Leithwood, Straus, and Sacks (2008) examined the relationship between distributed leadership and teacher academic optimism. Distributive leadership is quite simple leadership that is shared by all within a given organization allowing members of a given group to have voice (Mascall et al., 2008). Mascall's study provided empirical evidence of the effect of distributed leadership and other school characteristics on teacher academic optimism. Mascall et al. found that high levels of academic optimism were positively related with planned approaches of leadership distribution, whereas low levels of academic optimism supported a negative relationship. The components relating to academic optimism and trust in leaders had the strongest relationship with alignment of distributed leadership (r = .403).

Distributed leadership might support the development of the construct of Principal Academic Optimism through the development of trust. In their study Mascall et al. (2008) speculated that teacher beliefs might play a supporting role, offering a better understanding of Principal Academic Optimism. Distributive leadership might have a positive effect on the instructional leadership factor and might facilitate principal trust in faculty, which was identified by Riegel (2012) as the missing variable in her study. Distributed leadership may possibly affect principal efficacy levels as well as trust in teachers.

Education policies are currently transforming the role of principal by redefining the job description. Riegel (2012) examined the concept of Principal Academic Optimism in terms of the 2011 Wallace Foundation Report on Principal Effectiveness referenced on page 18. Principal Academic Optimism may facilitate the principal's ability to evaluate and support teachers, which

supports the concept of instructional leadership. The role of principal as manager has transformed to that of instructional leader, and research on school leadership and improved student achievement supports this transformation (Dufour & Marzano, 2011; Marzano et al., 2005).

Fullan (2014) argues that the role of principal is that of instructional leader; however, he feels that the title should change to leader of learning. No matter how the concept of principal is codified, instructional supervision is a key component in the concept of Principal Academic Optimism. The efficacy beliefs of the principal determine the effectiveness of that particular principal. Principals are crucial for improving instruction at the school level. Effective principals provide, not only solid leadership at the instructional level, they must possess a set of parallel, effective organizational management capabilities, such as controlling resources, scheduling, and leading faculty and staff. Fullan further defines this concept of management as professional capital. Schools capable of sustaining academic success over time have principals who are able to concentrate on academic optimism's key factors. Fullan similarly argues the role of principal in the development of school culture is one of a collaborative leader and inspiring conceptual philosopher rather than a micromanager. Fullan's theory of professional capital supports the importance of collaborative networks and the relevance of social capital.

Riegel (2012) set out to test the properties (efficacy, academic emphasis, trust) of academic optimism and whether these properties translated to the principal level. She was unable to find evidence to support her hypothesis. Nonetheless, factors emerged that might advance the search for a comprehensive measure of Principal Academic Optimism. Riegel's use of multiple survey instruments to obtain data might have limited participation. Principals with busy schedules may be unwilling to participate in multiple data collections and long drawn out surveys can affect willingness to take part in surveys.

Riegel (2012) tested her hypothesis of Principal Academic Optimism by modifying Hoy's (2005) School Academic Optimism Scale (see Appendix A) and Teacher Academic Optimism Scale (see Appendix B). Riegel's adapted version ultimately produced what she labeled the Principal Academic Optimism Scale. Principal components factor analysis with Varimax rotation was used to analyze the measures of efficacy, trust, and academic emphasis on the Principal Academic Optimism Scale in an attempt to extract the maximum possible variance out of the scale searching for joint variations. Although the hypothesis did not support the model being composed of the three properties of efficacy, trust, and academic emphasis; these properties morphed into six new variables. The six new variables emerging from this analysis

were principal trust in parents, principal trust in students, academic emphasis, principal efficacy in instructional supervision, principal efficacy in management, and celebrating success (Riegel, 2012).

Riegel then conducted a second analysis, examining the relationship among the six new variables discovered from the first factor analysis, treating them as supplementary factors of the analysis. The second principal axis factor analysis with Varimax rotation then revealed that two new factors had emerged, the leadership factor and the trust factor. The leadership factor comprised of the factors of academic emphasis ($\alpha = .768$), principal efficacy in instructional supervision ($\alpha = .759$), principal efficacy in management ($\alpha = 745$), and celebration of success ($\alpha = .595$). While the factors of principal trust in students ($\alpha = 808$) and principal trust in parents ($\alpha = .769$) combined to form a single trust factor.

As Riegel's literature review confirmed, the principal's role consists of two distinct entities. The two paths that Riegel found in the literature support the principal as instructional leader, whereas the other path recognizes the principal as a human resources manager (Riegel, 2012). The primary limitation of Riegel's study is its failure to include a measure for principal trust in faculty. Although two factors concerning principal emerged, the trust factor lacked validity due to its failure to include principal trust in faculty (Riegel, 2012)

Theoretical Properties of Principal Academic Optimism

Principal Leadership Factor

When principal leadership promotes teaching and learning, it is founded on strong instructional supervision, and it is based on collaboration, participative decision making, and reflective practice (DuFour & Fullan 2013). Leadership has become particularly crucial since the onslaught of standardized testing and "creating the conditions under which improved achievement can occur is the job of the principal" (Wallace Foundation, 2011, p. 2). Bandura's (1997) self-efficacy theory suggests that principals prove vital when engaging teachers in reflective practices. Instructional supervision demands that principals have the ability to examine factors that aim to promote student achievement through academic emphasis and establishment of trusting relationships.

The Coleman Report (1966), suggested that family background rather than the school was the primary indicator of educational success. Soon after, however, came the effective schools movement which sought to address and change this belief. The effective schools

movement—which formed the foundations of the modern accountability movement--sought to support the principle that all children can learn. The search for school factors that make a difference began. Edmonds (1979) introduced the concept of school leadership making a difference by maintaining high levels of expectations. Thus began the effective school movement. Interest grew in strategies to improve school leadership, and to identify those characteristics that argued against Coleman's claim that schools have little to no significant impact on student achievement. Further momentum gathered with the development of leadership academies devoted to principal leadership development (Hallinger, 2005). Instructional leadership continues to be relevant today in an era of accountability, which has reignited interest in instructional leadership in particular.

The primary perception of the school principal is that of an instructional leader (Fullan, 2014). Principals which possess strong leadership skills is perhaps one of the most powerful factors that determines teacher's motivation and satisfaction with their professional role. Teachers who have demonstrated high levels of personal efficacy are found in schools where fellow teachers and administrators have high expectations for students, and where teachers receive help from their principal in solving instructional and management problems (Hoy et al. 2006a, 2006b). Therefore, a principal's instructional leadership weighs greatly in the development of a teacher's level of self-efficacy--and ultimately the collective efficacy of the organization.

Principal efficacy, combined with instructional supervision, is proven to be a key factor in school improvement. "It requires a strong sense of efficacy to remain task oriented in the face of pressing situational demands and failures that have social repercussions" (Bandura, 1993, p. 120). It can be deduced that student and teacher relationships are profoundly affected by principal efficacy levels. Principals with poor efficacy, particularly self-efficacy, may be hesitant to make decisions and perhaps even avoid issues all together. Similarly, the ability of the principals to influence collective efficacy in the building maybe be weakened by a principal who lacks expectations of teachers and/or students. Therefore, principal efficacy in leadership supervision and management helps to develop both human and social capital. Despite this, in Effective Teaching and Learning Environments and Principal Self-Efficacy, Oplatka (2004), stated that no known empirical studies focused on the principal's self-efficacy and the expected impact on teaching and learning.

Even with poor performance levels among students, principals who may be overconfident lead themselves to believe that they are adequately addressing the problem of poor academic

achievement. Even worse these principals may blame the teacher without ever reflecting upon their own practices. Measuring principals' perceptions of their level of self-efficacy in dealing with instructional supervision may prove valuable, if for no other reason than to offer opportunity for reflection on one's own practices (Hoy, Sweetland, & Smith, 2002; Goddard, Hoy, & Woolfolk Hoy, 2000). However, research on the self-efficacy beliefs of school administrators regarding their own ability to create and facilitate effective instructional practices is lacking (Versland, 2009). Of specific interest to this researcher are the questions surrounding the principal's efficacy of instructional supervision and the principal's efficacy of management in their own practices.

What is Principal Academic Optimism? Principal Academic Optimism is a perceived latent construct which has evolved from work on school academic optimism and teacher academic optimism. Academically optimistic school principals know how to develop a school culture and have high levels of professed academic optimism (Hoy & Miskel, 2005; Hoy, Tarter, & Kottkamp, 1991). Schools which are capable of developing an academically optimistic culture tend to show comparatively greater emphasis on academics, as evidenced by high perceived collective efficacy among the faculty, garner greater trust among faculty, parents, and students (Bryk & Schnieder, 2003; Goddard et al., 2000). An academically optimistic principal establishes a culture of academic optimism that becomes synergistic in nature, thereby becoming contagious. The establishment of a culture of academic optimism becomes a mission that is founded upon rigorous academic emphasis as evidenced by high but attainable academic goals; learning is orderly; and teachers and students alike respect academic achievement (Hoy & Miskel, 2005; Hoy et al., 1991).

The academically optimistic principal facilitates and nurtures a culture of academic optimism, a culture which adapts to meet the needs of its clients. Accountability measures today demand that a principal be capable of these adaptations to meet the unique needs of not only the students, but the faculty as well. Optimists must be capable of recovering almost immediately from setbacks, while pessimists sit around and wallow in their helplessness (Seligman, 2006). The principal must be a person of action, one who is willing to wade into a given situation and meet the situation head-on. Providing such an example sets into motion the expansion of professional capital and building culture (Fullan, 2014). Optimists look for solutions even if a full solution is not evident, by working collaboratively to address situations as they occur while encouraging consensus to meet the needs of the group. Optimists are quick to begin and then to celebrate successes, even the small ones, thus creating a culture of optimism.

Academically optimistic principals positively influence the morale of both employees and clients (Rutledge, 2010). The principals' perceived attitude toward the faculty through communication of positive beliefs supports development of a collectively optimistic staff. The influence of the principal in the development of optimistic attitudes influences the teachers' perceptions of school effectiveness (Harris, 1994). Therefore, the best led schools are led by principals who understand the value of taking time to build relationships through development of trust while providing an optimistic vision. Sharing good news through celebrations of success is a significant characteristic of an optimistic individual which perhaps can lead to resilience. Optimists are more likely to address issues by facing them and seeking advice; therefore they may be more reflective of their own practices than the pessimists. The inverse would be complaining, which similarly becomes a habit and leads to acting less rationally or procrastinating. Principals play a key role in the development of a culture of academic optimism through the development of positive teacher morale especially in an era of accountability. The establishment of professional capital, perhaps, can play a key role in the development of a culture of academic optimism alongside the academically optimistic principal.

By virtue of accountability comes the need for improvements in student achievement. Improvements can be accomplished with a micromanaging style of leadership, leveraged to improve the instructional practices of teachers. However, this is not a sustainable practice. Meaningful, lasting results are driven by leaders with strong efficacious practices of instructional leadership and management, developing relationships, and building professional capital of teachers (Leithwood, 2011; Fullan 2014). Collaborative practice facilitates academically optimistic, professional behaviors within a school culture, and leads to lasting results. Effective leaders are focused on the growth of strong cultures through the improvement of instructional practices, development of collective efficacy within the organization, and building strong trusting relationships with all stakeholders (Fullan, 2014). Progress is measurable, and success sustainable, through the development of a culture of academic optimism led by a principal that is not afraid to loosen his or her grip on the organization.

Fullan (2014), in his book, *The Principal: Three Keys to Maximizing Impact*, wrote that strong principals develop professional capital. Professional capital requires strong managerial skills, principals who are capable of both leading instruction and managing the organization (Fullan, 2014). Principals who work to develop professional capital establish cultures where collaborative practices are implemented and success can be achieved. Establishing trust enhances the development of human capital as well as social capital within the organization. Professional

capital, therefore, is developed through capacity building by "fostering focused collaborative work within and across schools and districts" (Fullan, 2014, p. 67).

Mascall, Leithwood, Straus, and Sacks (2008) examined the relationship between distributed leadership and teacher academic optimism. Their study provides empirical evidence of the effect of distributed leadership and other school characteristics on teacher academic optimism. Mascall et al. found that high levels of academic optimism were positively related to planned approaches of leadership distribution, whereas low levels of academic optimism supported a negative relationship. Of the components relating to academic optimism, trust in leaders had the strongest relationship with alignment of distributed leadership (r = .403).

Distributed leadership supports the development of the construct of Principal Academic Optimism. Distributive leadership has the capacity to have a positive effect on the instructional leadership factor. As a result, such leadership practices can support principal trust in faculty through improved teacher perceptions. Subsequently trust in faculty, which was identified by Riegel (2012) as the missing variable in her study, supports the validity of trust which could potentially influence principal efficacy levels and trust in teachers.

The role of the principal as instructional leader, beyond supporting and safeguarding teachers, is simultaneously to connect school to home. One way these connections may be established is through celebrations of success. Celebrations of success can help to establish the connection of school to home and potentially support the role of trust. Trust, as defined earlier, is dependent upon the five facets (Benevolence, Honesty, Openness, Reliability, and Competence) and the same is true of the principal's connection to home. Such celebrations can be made through direct interaction with stakeholders or by mass communication such as emails, letters, or mass computerized phone calls. When principals open lines of communication celebrating successes, trust becomes reciprocal and inspiring. Trust, in consequence, is a necessary aspect of Principal Academic Optimism and may be promoted through feedback. Supporting achievement is a team effort, and the work of everyone involved is worthy of reinforcement and recognition (Marzano, Pickering, Pollock, 2001). Therefore, the ability of the principal and the organization to pursue an appropriate balance of embedded and spontaneous recognition of accomplishments, with more formal and informal celebrations of success, supports the leadership factor.

Principal Trust Factor

The principal trust factor emerges from Lisa Riegel's attempt to measure Principal Academic Optimism. Riegel (2012) conducted a principal factor analysis on the Principal

Academic Optimism Scale and found that her instrument separated into two primary factors, the principal leadership factor and the principal trust factor. Riegel's failure to include a measure of faculty in the measure of principal trust limited the validity of the instrument. Therefore, this study examined principal trust in faculty (teachers), alongside trust in clients (students and parents) as recommended by Riegel (p. 91, 2012).

Tschannen-Moran and Gareis (2004b) developed the Principal Trust Scale to measure principal trust in faculty and clients. The Principal Trust Scale measures principal trust in teachers, principal trust in students, and principal trust in parents. The measure of principal trust in students and principal trust in parents is a summative measure combining to form a measure called trust in clients. The instrument was found to be valid in a study conducted on a sample of 642 principals in Virginia and Ohio. The reliability of the instrument was found to be .87 for principal trust in teachers, .87 for principal trust in students, and .86 for principal trust in parents (Gareis & Tschannen-Moran, 2004, April).

Tschannen-Moran (2001) examined the essential trust necessary for principals and teachers to feel confident enough to work together collaboratively, and to share responsibilities of decision making as well as for allocating resources. Tschannen-Moran's research suggests that, by participating in development of instructional practices and school policies, teachers improve and are encouraged to share their expertise. A survey of 898 teachers from 45 elementary schools reveals that collaboration between faculty and principals was associated with collaboration among faculty members ($r= .68$, $p < .01$). Further, collaboration with principals significantly correlated to trust in the principal ($r = .32$, $p < .05$). Therefore, trust begot trust. Similarly, collaboration with colleagues was significantly correlated with trust in the principal ($r = .64$, $p < .01$). Tschannen-Moran concluded that schools with high levels of trust demonstrated strong collaboration between principal and the faculty as well as between teachers and colleagues.

Trust within a school manifests within school leaders; school leaders must understand factors that influence development of trust such as personal dispositions, shared values and attitudes, organizational stage, institutional support, and assumptions (Tschannen-Moran, 2004a). Trust originates in the interview and hiring process, as school leaders select staff in which they feel confident (Tschannen-Moran, 2004a). Further, administrators must recognize that trust is earned through relationship building on an ongoing basis (Meier, 2002). Principals and other school leaders must learn to address trust in their leadership strategies (Tschannen-

Moran, 2003). Furthermore, principals should be open, supportive, and concerned about teachers, professionally and personally (Tarter, Bliss & Hoy, 1989).

The ability of administrators to facilitate supportive relationships established through open and honest communication is important in building trust. Research has shown that strict rules and regulations coupled with questionable behaviors hinder the formation and development of trust (Hoy & Sweetland, 2001). The accountability movement reinforced feelings of distrust in schools through the onslaught of standardized tests. This implied that schools collectively could not be trusted to educate their students without oversight (Meier, 2002; Tschannen-Moran & Hoy, 2000).

Administrators nurture school climates and motivate staff thus building collective efficacy. Efficacy builds through trusting relationships between administrators and teachers, where administrators and teachers go well beyond their contractual duties (Tschannen-Moran, 2003). Tschannen-Moran's study (2003) surveyed more than 3000 middle school teachers in 55 schools about transformational leadership indicators. While Tschannen-Moran was unable to demonstrate that transformational leadership by the principal made a significant impact teachers perceptions of principal, trust in the principal was shown to have a moderate relationship to citizenship behavior of teachers ($r = .38$, $p < .01$). The strongest finding was the relationship found between teachers' perception of transformational leadership behaviors and their trust in the principal ($r = .75$, $p < .01$).

Additionally, Tschannen-Moran's (2001) study found that trust produced further trust, thereby demonstrating the existence of relational trust. Relational trust refers to interpersonal social exchanges taking place in a group setting. Research on relational trust has been found to have a particularly strong impact on student achievement (Bryk & Schnieder, 2003; Tschannen-Moran, 2003). Teachers' perceptions of a principal's trust in them builds capacity for further development of trust (Sheppard, 2013). Principals therefore can be perceived to facilitate trust, which is a key component in the development of a culture of academic optimism.

Once established, the relationship of trust between principals and teachers is one that must be nurtured. Significant correlations were found between school mindfulness and faculty trust in the principal ($r = .90$, $p < .01$) and school mindfulness and faculty trust in colleagues ($r = .73$, $p < .01$) (Hoy, Gage & Tarter, 2006). Faculty trust in the principal was associated with principal mindfulness ($r = .97$, $p < .01$). Faculty trust in colleagues was related to faculty mindfulness ($r = .90$, $p < .01$). The mindfulness scale addresses the five elements of mindfulness found in the literature: Focus on mistakes and failure; reluctance to simplify; sensitivity to

teaching and learning; commitment to resilience; and deference to expertise (Hoy et al., 2006). These results were confirmed by multiple regression analyses. The researchers contend that trust, rooted in mindfulness, is conducive to an atmosphere where staff feel welcome to safely identify errors and address them as learning opportunities. Therefore, the principal must be capable of trusting teachers to experiment with different strategies, work collaboratively, and build resilience (Hoy et al., 2006). Consequently, understanding principal trust in faculty is of value to understanding the concept of Principal Academic Optimism.

In 2004 Tschannen-Moran investigated the role of trust in nurturing organizational citizenship and the motivations that prompt staff to do more than the minimum requirements of their job descriptions (Tschannen-Moran, 2004a). The research is based on the idea that effective schools rely on teachers who regularly take on additional responsibilities. More than 3,000 teachers in 55 middle schools were surveyed about the indicators of transformational leadership, organizational citizenship behaviors, and faculty trust in the principal. Transformational leadership by the principal was shown to have no significant effect on organizational citizenship. Transformational leadership is a style of leadership where the leader examines the organization and identifies needed changes, creates a vision, and executes the changes with support of other members of the organization (Tschannen-Moran, 2003). Organizational leadership is in contrast is the level of commitment from members of the organization, whereas extent of an individual's voluntary support leads to success of a given organization (Tschannen-Moran, 2003).

Faculty trust in colleagues demonstrates a significant relationship to student achievement in a study published by Tschannen-Moran (2004b). Principals and teachers in 66 middle schools in Virginia completed the faculty and Principal Trust Scales to measure faculty trust in the principal, faculty trust in colleagues, in students, and in parents; as well as principal trust in teachers, in students, and in parents. The results were correlated to student scores on the Virginia Standards of Learning (SOL) tests in English and mathematics (Tschannen-Moran, 2004b). The strongest relationship was found between faculty trust in students and parents, and student achievement in English and mathematics ($r = .78$ and .74, respectively, $p < .01$). Faculty trust in colleagues was additionally shown to be related to student achievement in English and math ($r = .61$ and .57, $p < .01$), while faculty trust in the principal had a slight relationship to student achievement ($r = .14$ and .18) (Tschannen-Moran, 2004b). These findings support faculty trust as a factor in improving student achievement, hence indicating the necessity of measuring principal trust in faculty.

Further comparison of principal trust in students and achievement in English and mathematics revealed weak findings ($r = .16$ and $.25$, $p < .01$). Similarly, principal trust in parents and student achievement in English and mathematics was weak as well ($r = .16$ and $.21$, $p < .01$). There was little to no correlation between principal trust in teachers and student achievement in English ($r = .05$). Additionally, there was a weak relationship between principal trust in teachers and mathematics achievement ($r = .13$, $p < .01$) (Tschannen-Moran, 2004b). The findings indicated that principal trust in faculty was insignificant factor in raising student achievement. Though the principal's contribution is less pronounced than the contribution of a classroom teacher, the principal facilitates problem solving within the school and contributes to a positive learning environment for students indirectly through teachers (Tschannen-Moran, 2004b).

In a study of the impact of teacher empowerment on student achievement, Sweetland and Hoy (2000) suggested that healthy and open relationships, both characteristics of trust, would promote confidence-building in teachers. Such empowerment can be promoted through distributive leadership practices. Researchers suggest that principals are more likely to consult teachers when they trust and respect for them (Sweetland & Hoy, 2000). The statistical relationships were: connecting teacher empowerment and collegial leadership ($r = .55$, $p < .01$); teacher professionalism and respect for colleagues ($r = .49$, $p < .01$); and academic press ($r = .58$, $p < .01$). Multiple regression analyses established that teacher empowerment explains 60% of variance of student reading achievement (R^2 of .60, $R = .78$, $p < .01$) and 62% of variance of mathematics achievement (R^2 of .62, $R = .80$, $p < .01$) (Sweetland & Hoy, 2000). The study confirms that principal supportiveness and development of professional capital contributes to teacher empowerment, which factors into the effectiveness and efficacy of a culture of academic optimism.

Summary

Review of the literature on the variables of academic optimism, the hypothesized factors of principal leadership, and principal trust build the case for Principal Academic Optimism. The early research on academic optimism at the school and teacher levels consisted of a triadic relationship of academic emphasis, efficacy, and trust. Principal Academic Optimism, according to Riegel, (2012) lacks a similar triadic relationships. Riegel's findings demonstrated the belief that academic optimism at the principal level has comparable emerging subcomponents, however, profoundly more complex. Particularly interesting to understanding the complexity of

academic optimism at the principal level is the circumstance of principal's lacking a direct effect upon student achievement.

Academic emphasis at the principal level separated into two distinct components opposed to a single factor due to the principal's indirect relationship on student achievement. Celebrations of success at the principal level works alongside academic emphasis to reinforce other subcomponents. Similarly, efficacy at the principal level is equally as complex. Efficacy, at the principal level, was shown by Riegel to separate into two new subcomponents (efficacy in management and efficacy in instructional supervision) to work in conjunction with the components of academic emphasis and celebrations of success to form a single factor known as the principal leadership factor.

The literature on trust emphasizes the need for enhancing trust between principals and teachers, between teachers and coworkers, as well as between teachers and students. Studies have described the importance of an organizational structure that is malleable and empowers teachers to make decisions in the formation of a culture of trust through distributed leadership practices (Geist, 2002, Hoy & Sweetland, 2001). Rules should be flexible so that they do not present obstacles to creative problem solving (Geist, 2002; Hoy, Gage, & Tarter, 2006; Hoy & Sweetland, 2001). Supervision and management practices, such as micromanaging styles that are punitive and focus on blame for mistakes, will motivate teachers to protect themselves and promote disloyalty to the organization (Uline, Miller & Tschannen-Moran, 1998). However, schools that empower teachers, through collaborative distributed leadership, are most likely to adapt to external as well as internal demands, and be more efficient (Sweetland & Hoy, 2000).

The same way that positive psychology merges the variables of efficacy, academic emphasis, and trust to form a latent construct of academic emphasis. The identified subcomponents of academic emphasis, celebrations of success, efficacy in management, efficacy in supervision of instruction, trust in faculty and trust in client's works around this same synergistic theory unifying to form two distinct factors. The belief that principals can learn some how to improve their levels of academic optimism through reflective practices and development of relational trust to improve or develop the culture of academic optimism proves essential. Through collaborative practices principals can work to develop the factors of principal leadership and principal trust.

A measure of academic optimism at the principal level is yet to be confirmed, and a comprehensive measure is yet to be developed. A case for the importance of trust in the development of academic optimism has been articulated and documented. Therefore, trust proves

to be vital to the development of a comprehensive measure of principal academic optimism and the future of research on academic optimism, particularly at the principal level.

Chapter 3

Methodology

Introduction

Chapter 3 provides an explanation of the methodology employed to conduct this study. The purpose of the study and research questions are stated and populations are described. Furthermore, data collection methods, instrument development, and an explanation of data analysis procedures are provided.

Purpose of Study

The purpose of this study was to revise the Principal Academic Optimism scale and make it a comprehensive measure and to test the measure for emerging factors. The original Principal Academic Optimism scale-developed by Riegel (2012), focused on the factors of principal leadership and principal trust. The trust factor of this original scale, however, failed to include a measure for principal trust in faculty, and lacked validity. Therefore, a revised version of the principal academic optimism scale incorporating principal trust in faculty was produced and retested by the researcher. In the revised instrument, Riegel's original section measuring trust was removed and replaced with Tschannen-Moran's and Gareis' (2004) Principal Trust Scale, which had been previously validated as a measure of principal trust in faculty and clients. In summary, a revised Principal Academic Optimism Scale was devised by using Riegel's (2012) instrument, but substituting the trust section of Riegel's original instrument with Tschannen-Moran's and Gareis' (2004) questions dealing with principal trust in faculty and principal trust in clients. This revised instrument was then tested using elementary principals in Virginia. Again, the purpose of this study was to revise the Principal Academic Optimism Scale and make it a comprehensive measure and to test the measure for emerging factors.

The current iteration of the Revised Principal Academic Optimism questionnaire consists of 40 Likert scale questions. Numerical values were assigned to the Likert question responses, beginning with 1 point assigned to "Strongly Disagree" and incrementing to 6 points assigned to "Strongly Agree." Principals were asked to respond to questionnaire items with values of 1 to 6. The questionnaire had the following responses and values: 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, and 6 = strongly agree. The items with negative questions were reverse coded: 1 = 6, 2 = 5, 3 = 4, 4 = 3, 5 = 2, and 6 = 1.This translates to a total score range of 40 to 240. The survey is designed such that the higher the total score, the

greater the perceived levels of academic optimism in elementary principals. A copy of this instrument is provided in Appendix C.

Face validity, as defined by McMillian and Schumacher (2001), is a "judgement that the items appear to be relevant" (p. 241). Though face validity is considered the weakest form of construct validity, an examination of the scale reveals that the items included have the appearance of relevancy to individual traits and skills believed to be necessary for success as a principal. Furthermore, Tschannen-Moran's and Gareis's (2004) scale has demonstrated reliability and validity in the measurement of principal trust. Riegel's (2012) Principal Academic Optimism Scale yielded a two-factor structure that was readily interpretable in a framework of existing theory and research. The factors identified were the leadership factor and the trust factor. Though Riegel's measure of trust factor lacked validity, the face validity of the leadership factor was determined to be valid and reliable. Therefore, the face validity of the revised measure is determined to relevant.

Research Design

The study was a quantitative study designed to explore the latent construct of Principal Academic Optimism. This method was selected since the primary tool used to collect data was a questionnaire and the overarching intent of this study was to revise and test the Principal Academic Optimism Scale. The research questions further supported the need for a quantitative study to conclude which factor or factors would emerge from a revised scale. Furthermore, correlational analysis was warranted to determine what relationship, if any, existed between identified demographic, contextual variables, and any emerging factors.

Research Questions

This study was guided by two research questions:

1. What are the findings associated with a revised and re-administered Principal Academic Optimism Scale?
    a. Is the revised scale a valid and reliable measure of Principal Academic Optimism?
    b. What factors emerge from testing The Revised Principal Academic Optimism Scale?
    c. What are the findings associated with a revised and re-administered trust section to the questionnaire?

2. How do the demographic variables of principal educational attainment, gender, ethnicity, number of teachers supervised, and students receiving free and reduced price lunches explain the variance in factors emerging from The Revised Principal Academic Optimism Scale?

Population

The population consisted of a sample of all Virginia K-5 elementary public school principals. Of which, 103 principals responded to the questionnaire. Of those responding 70% were female and 30% were male. The ethnic breakdown was 80 % White Caucasian and 20% African American. The average educational attainment found that 64% held a MA or a MS degree, 17% held an Ed.S. Degree, and 19% held an Ed.D. or Ph.D.

As a resident of Virginia, the researcher, is familiar with the Virginia Department of Education website making principal contact information easy to obtain. Elementary public school principals were selected because Riegel used elementary principals in her study of Principal Academic Optimism. In order to be considered as a participant, the individual must have had the title of elementary school principal and have had an email address listed on the public website or the school district. A public website as defined as thefreedictionary.com is, "A location on the World Wide Web that is accessible by anyone with a Web browser and access to the Internet."

Development of the instrument

The Revised Principal Academic Optimism Scale (see Appendix C) design is modeled primarily on Riegel's study of Principal Academic Optimism. Riegel has granted permission (see Appendix D) to use her study in the completion of this research. Questions related to celebration of success were reworded in hopes of improving statistical outcomes in an attempt to develop a stronger measure. An additional question was added to address celebration of success through media outlets. The researcher's experience has been that success portrayed via the media allows for creating connections between school and community, thereby allowing for celebrations of success.

Riegel's (2012) Principal Academic Optimism Scale originally consisted of 45 questions and was found to be reliable ($\alpha = .926$). After exploratory factor analysis, Riegel revised her scale and eliminated 15 questions, thus reducing the number of questions to only 30. The revised

scale demonstrated reliability (α = .903). The intent of Riegel's scale was to measure academic emphasis, efficacy, and trust as the gauges of Principal Academic Optimism.

Riegel's (2012) scale managed to produce sufficient alpha scores for each of the domains: Academic emphasis (α = .861), celebrating success (α = .862), principal efficacy in instructional supervision (α = .850), and principal efficacy in management (α = .77). A second order factor was run and the indicated domains loaded as one factor, which Riegel chose to call the leadership factor. Correlational analysis found that the leadership factor had a weak but significant relationship with trust (r = .227) at the .05 level. The leadership factor had a significant relationship with the previously mentioned domains at the .05 level; academic emphasis (r = .831), celebration of success (r = .770), efficacy in instructional supervision (r = .813), and efficacy in management (r = .798).

For this study, trust questions from Riegel's original survey were eliminated and replaced by Tschannen-Moran's and Gareis' Principal Trust Scale. Tschannen-Moran has granted permission (see Appendix E) for the researcher to use her instrument measuring principal trust in this study. Tschannen-Moran's philosophy closely models that of Hoy's, as she was a student and colleague working with Hoy. Hoy used Tschannen-Moran's work on trust in his original scales to measure academic optimism. Therefore, Hoy's permission (see Appendix F) was sought to use his scales in the development of this measure, if needed. Riegel's suggestion to include the principal's trust in faculty was the basis for revising the original instrument by replacing Riegel's trust questions with Tschannen-Moran's Principal Trust Scale (see Appendix G).

The reliability norms of the Principal Trust Scale, as designed by Tschannen-Moran and Gareis (2004), were based on a sample of 642 principals in Virginia and Ohio. The reliability for Principal Trust in Teachers was .87 in the norming sample, .87 for Principal Trust in Students, and .86 for Principal Trust in Parents. Factor analytic studies of the Principal Trust Scale support the construct validity of the measure (Gareis & Tschannen-Moran, 2004).

Demographic questions were included to address personal characteristics of the principal, as well as characteristics of these principals' schools. The intent of the demographic questions was to allow for comparative analysis to potential personal and school characteristics that may support data findings. Characteristics of the data can then be divided into various data groups based on demographic information gathered from the survey for analysis. Care was given to selecting demographic questions that may possibly add to this study.

Responses to the questionnaire employed the use of a 6-point Likert scale. The primary reason for choosing the 6-point scale was based on the fact that both Riegel and Tschannen-

Moran used this scale in their instruments. The 6-point Likert scale, which elicits from respondents a forced response to questions, was chosen to eliminate a neutral choice. The neutral choice was eliminated in an effort to force participants to take a position agreeing or disagreeing with each item. The elimination of a neutral position can make a difference in the responses from participants, which can produce response bias. Garland (1991, p. 70) felt that "social desirability bias, arising from respondents' desires to please the interviewer or appear helpful or not be seen to give what they perceive to be a socially unacceptable answer, can be minimized by eliminating the mid-point (neutral, neither...nor, uncertain) category from Likert scales." Response bias has shown to lead to both positive and negative responses (Guy and Norvell, 1977).

Data Collection Process

The questionnaire was administered by email using Qualtrics Survey Software through Virginia Tech. The survey was distributed following approval (see Appendix H) from the Institutional Review Board (IRB). Administration took place with the cover letter being distributed on June 6, 2015 and the pre-notice distributed on June 9, 2015. The administration of the questionnaire and follow up was conducted using Dillman's Tailored Design Method (Dillman, 2000). The choice of an email questionnaire intended to allow for the convenience of interviewees, ease of data collection by the researcher, and for economy (Schaefer & Dillman, 1998). Moreover, the use of an electronic questionnaire, according to Dillman, allows researchers to go beyond taking a sample by thoroughly examining the population. The entire population of K-5 elementary principals in Virginia (837) was invited to participate in the questionnaire.

To allow for personalization of the emails, the researcher employed Qualtrics email option to distribute the survey. Dillman and colleagues (2014) recommend contacting participants in a personalized manner. Qualtrics allowed the development of a template letter and then personalization of the letter for each recipient. Individual emails addressed participants with their first and last names as opposed to a generic email being disseminated to all participants in the panel lacking personalization. Each of the 837 participants within the solicited population received a personalized email addressing him or her by name.

The first step in contacting participants was the distribution of a pre-notice email (see Appendix I) three days prior to the questionnaire being sent. The intent of the pre-notice was to make each participant aware that the questionnaire that would soon be arriving. Following the

pre-notice, the second step was emailing a cover letter (see Appendix J) that explained the purpose of the study and its potential benefits. After reading the cover letter, each participant was asked to click on an included link, which contained a statement of informed consent to participate in the study (see Appendix K). Participants were informed that by answering each of the items and clicking submit, they acknowledged their understanding of participation and thereby provided informed consent. The cover letter served to emphasize that their responses to the questionnaire were vital to the success of the study. Included in the second email was a statement assuring the participants of confidentiality explaining that their names would not be used in the study and that no identifying indicators would connect them to their responses.

As a follow-up communication, a third email (see Appendix L) was sent two weeks later to each participant to indicate the researcher's appreciation for their participation in the study. This follow-up email again included the questionnaire's link for use by any potential participants who had not yet responded. Four weeks after the original email, a fourth and final email (see Appendix M) was sent to all participants thanking them and encouraging those who had not have responded to please do so using the attached link. This method of email correspondence was selected to closely follow Dillman's Tailored Design Method (2000).

Statistical Package for the Social Sciences (SPSS) was utilized to calculate the mean of scores for each of the domains: academic emphasis, celebration of success, efficacy in instructional supervision, efficacy in management, principal trust in clients, and principal trust in faculty. Ratings for each of the identified variables: efficacy of instructional supervision, efficacy of management, celebrations of success, academic emphasis, principal trust in clients, and principal trust in faculty were totaled and divided by the number of items to obtain mean scores.

Data Analysis

The analysis for this study was completed at the individual level, principal's perceptions of their own level of academic optimism was analyzed based on empirical finding. Participants completed a scale intended to explore Principal Academic Optimism, and data analysis was conducted to directly answer the research questions. The first research question asked: What are the findings associated with a revised and re-administered Principal Academic Optimism Scale? To explore this question, principal axis factor analysis with Varimax rotation was utilized to analyze what factors emerged from the revised questionnaire. Consequently, sub-questions become apparent from this primary question that were needed to be addressed as well: Is the revised scale a valid and reliable measure of Principal Academic Optimism? What factors

emerge from testing The Revised Principal Academic Optimism Scale? What are the findings associated with a revised and re-administered trust section to the questionnaire? Each of these questions were addressed through exploratory factor analysis.

The second research question asked: How do the demographic variables of principal educational attainment, gender, ethnicity, number of teachers supervised, and percentage of free and reduced price lunches explain the variance in factors emerging from The Revised Principal Academic Optimism Scale? This question was explored through correlation analysis to determine what relationships, if any, exist between emerging factors and the identified variables.

Factor analysis is the best method to examine the relationships among variables. Factor analysis helps researchers define the construct or constructs based on the theoretical framework, which indicates the direction of the measure and identifies the greatest variance in scores with the smallest number of factors (Abu-Bader, 2010; Bryman & Cramer, 2005). Factor analysis is a statistical method commonly used during instrument development to cluster items into common factors, interpret each factor according to the items having a high loading, and summarize the items into a small number of factors (Bryman & Cramer, 2001). Loading refers to the measure of association between an item and a factor. The relationship of each variable to the underlying factor is expressed by positive and negative values of -1 to 1. The closer a variable is to 1 or -1 the more significant the relationship between the underlying factors. A factor is a list of items that belong together (Bryman & Cramer, 2005). Therefore items within a questionnaire that are found to group together would be called loadings or factor loadings. Related items define the part of the construct that can be grouped together. Unrelated items, those that do not belong together, do not define the construct and were deleted (Abu-Bader, 2010).

The two most common extraction methods used to undertake factor analysis are Principal Component Analysis (PCA) and Principal Axis Factoring (PAF). The difference between the two is that in PCA, all the variance or total variance is analyzed, while with PAF, only common variance is analyzed. Total variance consists of both specific and common variance, which describes the specific variation of a given variable or variables (Bryman & Cramer, 2005). Additionally, Varimax rotation, the most commonly used orthogonal rotation, were undertaken to rotate the factors to maximize the loading on each variable and minimize the loading on other factors (Bryman & Cramer, 2005).

Chapter 4

Discussion of Results

This section reports the findings of the questionnaire. Data intended to measure Principal Academic Optimism are explained and the results of the exploratory factor analysis are summarized. A self-reported questionnaire distributed to elementary principals in the Commonwealth of Virginia provided data for the analysis.

Initial Considerations

Sample Size

The identified 837 K-5 elementary principals in the state of Virginia were sent an email requesting their participation. Only 103 principals completed the survey, giving a response rate of 12.3%. The low response rate impacts the findings of this study; what constitutes an adequate sample size depends on the researcher and the magnitude of factor loadings. Typically, a sample size of 300 cases is considered adequate although commonalities after extraction should be over 0.5 (Field, 2005). Habing (2003) states, "You should have at least 50 observations and at least five times as many observations as variables" (p. 3). However, Field (2000, p. 443) earlier concluded, "The most important factor in determining reliable factor solutions was the absolute sample size and the absolute magnitude of factor loadings." Therefore, the more frequent and the higher the factor loadings, the smaller the sample needed.

Of the participants that decided to click the link to begin the survey (122), 84.4% completed it. The initial email was sent to 837 potential respondents, of which 122 clicked the link to begin the questionnaire. Of the 122 participants that decided to click the link 84.4% completed the questionnaire. Seven of the 837 emails were reported as having failed to deliver by Qualtrics. However, many others may have failed to deliver as a result of change of email address, delivery to junk mail, or exclusion by spam filters. The researcher cannot place an exact number on how many emails addresses had changed from the original collection of respondent email addresses or if any did at all. Of the 837 original participants, 773 potential participants remained in the panel and were sent the third and final email notices. The other sixty-four participants of the 837 original participants chose to remove themselves or were removed by the researcher at the request of the potential participants or their school district. The response rate was significantly impacted by the apparent unwillingness to participate and perhaps by the unknown number of emails that may not have been delivered, due to changes in email addresses.

Since 84.4% of the potential participants taking the time to open the survey actually completed it, the main problem, statistically speaking, was directly related to getting participants to open the link.

Two school districts advised the researcher that an application must be made in order for the district's principals to participate. Since the deadline for the study's completion was drawing near, the researcher decided to remove these principals from the sample. Another six individuals asked to be removed from the study and a number of undisclosed individuals may have chosen to unsubscribe from further email contacts; the researcher is unaware of the number or percentage of the latter owing to lack of data.

Data Preparation

The data were first analyzed for missing data and any outliers. One data item was discovered to be missing from the data set. Question number 19 was missing a response from participant 81. The procedures for handling missing data are: to analyze only the available data by ignoring the missing data; inputting the missing data with replacement values; treating these as if they were observed; inputting the missing data and accounting for the fact that these were inputted with uncertainty; or using statistical models to allow for missing data (Myatt, 2007). The decision was to input the missing data point using the mean of the question 19 (4.998). Therefore, "5" was inserted for the response of participant 81 to question number 19. The data was assumed to be missing at random, therefore, a mean was determined the best response to allow for the random assignment of a value. Although the respondent may have simply chosen to not answer the question, his true reason cannot be completely ascertained by the researcher. No other data entries were found to be missing, and no outliers were identified. The intent of examining for outliers to was to determine if any were present, outliers may lead to bias statistical results.

The scales of measurement, particularly with the use of Likert items and scale of measurement were carefully identified. Commonly Likert scales are treated as interval scales, although there are intervals between points on the scale. In deciding the appropriate scale to use, (nominal, ordinal, or interval) the literature is confusing according to Brown (2011). Brown references several articles' (Jacobson, 2004; Jamieson, 2004; Knapp, 1990) which argues that Likert items do not form an interval scale, but rather an ordinal one (as cited in Brown, 2011). According to Brown, most literature treats Likert items as interval and analyzes them as such. The confusion becomes whether the questionnaire has Likert items or Likert scales. According to

previous research on academic optimism, the questionnaires have been treated as scales with items sub-divided into multiple scales. Therefore, the decision was made to use empirical research to guide the analysis of the data as interval items with questions sub-divided according to what it was intended to measure in an a priori manner.

Finally, questions 8 and 9 were transformed by recoding. Recoding was accomplished by reverse coding them into different variables using SPSS. Values for questions were set to reflect 1=6, 2=5, 3=4, 4=3, 5=2, and 6=1, representing the reversed coding of participant responses. Below are the descriptive statistics of responses prior to recoding and then the statistics after recoding (see Table 4.1). The most significant change in the recoded items was the change in mean value of Q9 RECODE (M = 4.88). The mean of the question prior to recoding was M = 2.12.

Table 4.1

Descriptive Statistics for Q8 and Q9 with Recoded Q8 and Q9

	Min	Max	Sum	Mean	SD
Q8: I question the competence of some of my teachers.	1	6	339	3.29	1.348
Q8: RECODE: I question the competence of some of my teachers.	1	6	382	3.71	1.348
Q9: I am often suspicious of teachers' motives in this school.	1	5	218	2.12	1.013
Q9: RECODE: I am often suspicious of teachers' motives in this school.	2	6	503	4.88	1.013

Note. Min = Minimum. Max = Maximum. SD = Standard Deviations.

Review of Data Analysis

Results of Principal Academic Optimism Scale

This investigation was an exploratory factor analysis of a revised version of the Principal Academic Optimism Scale. Theory predicts that there should be two underlying independent factors related to trust and leadership (Riegel, 2012). Riegel's theory further underlines the affirmations that there should be three inter-correlated underlying factors: Academic Emphasis, Collective Efficacy, and Trust (Hoy et al., 2006a; 2006b). Alternately, Riegel argues the tasks of the principal are represented by six inter-correlated factors: Academic Emphasis, Celebrations of Success, Efficacy in Management, Efficacy in Instructional Supervision, Trust in Faculty, and

Trust in Clients.(Riegel, 2012) Therefore, data was analyzed following the direction of earlier studies, first examining data as one complete scale and then examining the separate questions based on earlier empirical findings to address emerging factors along with the research questions.

To address the first sub-question of research question one: Is the revised scale a valid and reliable measure of Principal Academic Optimism? Reliability of the 40-item Likert Scale was measured using SPSS 23 and the instrument was found to be reliable ($\alpha = 0.899$). The initial analysis looked to eliminate any variables that failed to correlate with any other variables or that correlated very highly with other variables, thus attempting to detect multicollinearity by looking at the determinant of the R-matrix. Variables should have roughly normal distributions which is the intent of a Likert scale.

The examination of the R-matrix, which is the significance value of each correlation, found the determinant = 5.339E-11, indicating that the R-Matrix needed to be reviewed and items possibly eliminated. In testing for multicollinearity or singularity a Determinant value greater than 0.00001 is considered to have significant correlation without multicollinearity (Field, 2000). Since the Determinant was less than 0.00001, one must consider eliminating items that correlate very highly ($R > 0.8$) before proceeding. Subsequently, examination of the R-matrix determined that no items had an $R > 0.8$, and so the analysis was continued. Though the potential for multicollinearity does exist, further analysis eliminated this potential problem as components were separated and analyzed as individual scales. The construct validity of the instrument was found to be valid since the items measure the intended hypothesized constructs and empirical research supports the items loadings.

The second sub-question that the analysis looks to address is: What factors emerge from testing The Revised Principal Academic Optimism Scale? Prior to the extraction of the factors, tests were conducted to evaluate the suitability of respondent data for analysis. These tests include Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy, and Bartlett's Test of Sphericity (Field, 2005). The KMO of sampling adequacy tests whether the partial correlations among variables are small. KMO is particularly useful with ratios less than 1:5, or one response per five questions. KMO indexes range from 0 to 1, with 0.50 considered suitable for factor analysis. Bartlett's Test of Sphericity should be significant ($p < 0.05$) for suitability of factor analysis (Hair, Anderson, Tatham, & Black, 1995; Tabachnick & Fidell, 2007).

The revised forty item Principal Academic Optimism Scale was first analyzed using Principal Axis Factor Analysis with Varimax (orthogonal) rotation on data gathered from 103 participants. An examination of the KMO yielded a KMO = 0.745, showing that the sample was

both adequate and significant ($p<0.001$). This finding suggests that the sample was factorable. However, most would consider a sample size of less than 200 poor at best and ill-suited for making generalizations (Hair, Anderson, Tatham, & Black, 1995; Tabachnick & Fidell, 2007).

The initial PAF yielded an 11-factor structure when eigenvalues greater than 1 were identified. However, the Scree Test (see Figure 4.1) indicates that the data should be analyzed for four factors. An 11-factor structure was not readily interpretable within the framework of existing theory and research. The analysis did not support exploring Principal Academic Optimism as a three-factor structure with the items measured on a single scale. Rather the initial analysis supports use of a four-factor structure. Empirical research supports the variables of trust in parents and trust in students (Clients) as one variable rather than two (Tschannen-Moran and Gareis, 2004). Hence, the findings should be closely examined keeping in mind that faculty trust in clients is a stronger measure than the separate measures of trust in parents and trust in students (Hoy, 2006). These findings support the need to analyze sets of questions intended to measure components of Principal Academic Optimism.

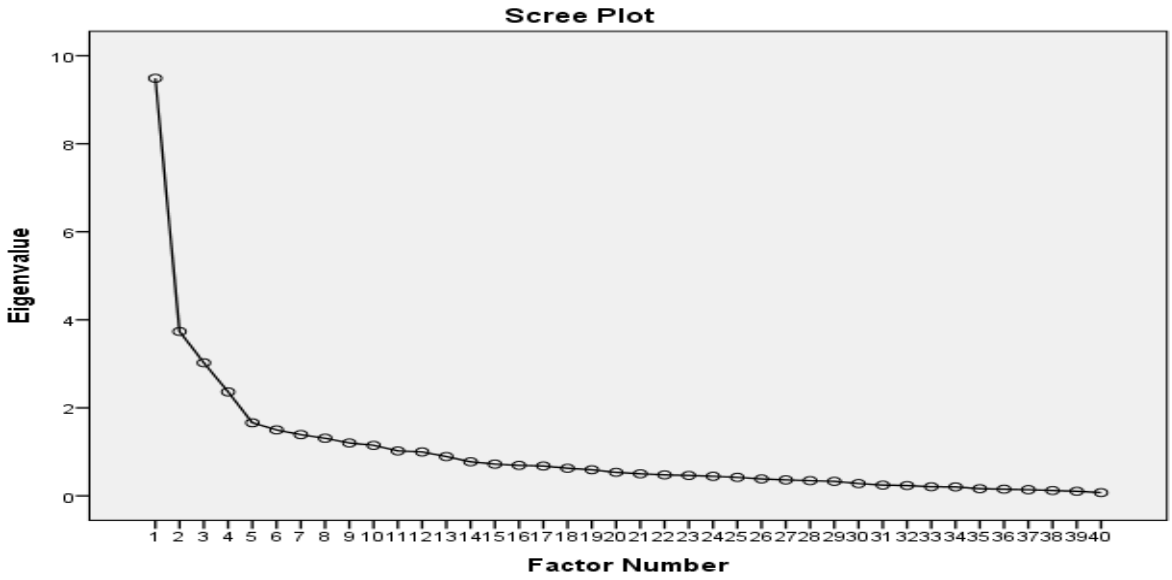

Figure 4.1. Scree plot demonstrating the need for a four factor analysis as indicated from the point of inflexion.

Furthermore, two items failed to load on any of the four factors and these items were eliminated from the analysis. These two items were: Q3 Students here really care about the school, and Q8 RECODE: I question the competence of some of my teachers. These two items possibly failed to load due to the variance in principals' responses. Responses to Q3 loaded heavily on "Agree" or "Strongly Agree" demonstrating a positively skewed response (see figure 4.2). On the other hand, responses to Q8 saw more of an even split in responses. This may or

may not have been due to participants' lack of understanding of either the question or their true feelings. Additionally, both questions extracted little or no variance out of the scale Q3 R^2 = 0.116 and Q8 even less R^2 = 0.058.

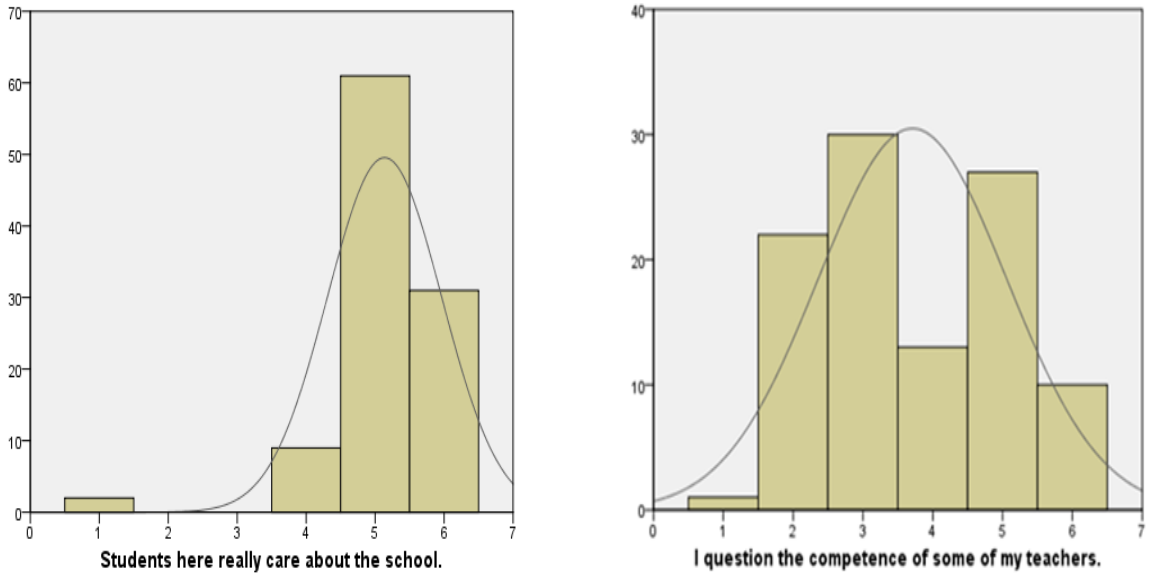

Figure 4.2. Histograms representing distribution of Q3 and Q8.

The analysis was rerun eliminating Q3 and Q8 from the inquiry, and again the sample, now of 38 items produced a reliable measure (α = 0.906), somewhat stronger than the 40 item model (α = 0.864). In an examination of the KMO, the sample adequacy did not change significantly with the elimination of the two questions (KMO = 0.753). However, an increase in the KMO should be expected with the elimination of items from the sample, thereby reducing the participant to question ratio. Again the findings were significant with a $p < 0.001$.

This analysis with thirty-eight questions relating to principal perceptions of their academic optimism were reanalyzed using Principal Axis Factor Analysis with Varimax (orthogonal) rotation (see Table 4.2). The analysis again yielded four factors explaining a total of 42.813% of the variance for the entire set of variables. Factor 1 was labeled principal trust in clients (PTC) loading on the following items:

- Most parents have good parenting skills;
- I can count on parents to support the school;
- Parents in this school are reliable in their commitments;
- Parents in this school have integrity;

- Most parents openly share information with the school;
- Students in this school are reliable;
- Most students are able to do the required work;
- Students in this school can be counted on to do their work;
- I trust the students in this school; most students in this school are honest.

Factor 1 explained 11.114% of the variance with an eigenvalue of 4.223. However, prior to rotation the factor explained 23.364% with an eigenvalue of 8.878, which meant that it explained over half of the variance that emerged. Factor 1 loadings after rotation (see Table 4.2) ranged from 0.804 to 0.314 ranging from strong to moderate positive loadings.

Factor 2 loaded on questions related to academic emphasis and celebrations of success. This factor was labeled principal academic emphasis (PAE) due to the loadings on the following items:

- I routinely celebrate the academic excellence of the school;
- I routinely celebrate the academic successes of our students;
- I work with teachers to ensure the academic success of their students;
- I highlight individual students' academic achievement;
- I highlight the school's overall academic achievement;
- I urge students to set high academic goals;
- I work with teachers to ensure they set high academic standards for all students;
- I challenge teachers in my building to give thought-provoking work to all students;
- I emphasize expectations for academic success of all students in this school;
- I routinely promote the image of the school with the media.

The variance explained by factor 2 was 10.761% with an eigenvalue of 4.089. PAE loadings ranged from 0.786 to 0.341 with similar loadings to factor one ranging from strong to moderate positive loadings.

Factor 3 loaded on questions related to principal trust in the faculty. This was labeled principal trust in faculty (PTF) due to the loadings on the following items:

- My teachers typically look out for me; I have faith in the integrity of my teachers;
- Even in difficult situations, I can depend on my teachers;
- I trust the teachers in this school;

- RECODE: I am often suspicious of teachers' motives in this school;
- When teachers in this school tell you something, you can believe it;
- I believe in my teachers; teachers in this school are candid with me.

The variance explained by Factor 3 was 10.536% with an eigenvalue of 4.004. PEff loadings ranged from 0.685 to 0.397 with similar loadings to other factors ranging from strong to moderate loadings.

Finally, Factor 4 was based on questions relating to efficacy. This factor was labeled principal efficacy (PEff) due to the loadings on the following items:

- I am confident evaluating my teachers;
- I am confident working with struggling teachers to help them improve;
- I am confident offering constructive criticism to my teachers;
- I am capable of handling the time demands of the job;
- I am confident working with teachers on goal setting;
- I am confident resolving conflicts in my building;
- I am confident crafting effective professional developments for my staff;
- I am confident in my ability to motivate teachers;
- I am confident integrating data into my decision-making process; and
- I am confident seeking outside resources to address school problems.

The variance explained by this factor was 10.402% with an eigenvalue of 3.953. PTC factor loadings ranged from 0.712 to 0.388 again demonstrating strong to moderate factor loadings.

Table 4.2

Factor Analysis of the Revised Principal Academic Optimism Scale

Question	Factor 1	Factor 2	Factor 3	Factor 4
Q20	**.804**	.068	.002	.108
Q2	**.757**	.088	.084	.041
Q15	**.696**	.120	.046	-.016
Q14	**.672**	.035	.071	.222
Q16	**.610**	-.051	.207	.139
Q19	**.608**	.038	.214	.123
Q10	**.555**	.197	.005	.063
Q5	**.475**	.049	.028	.109
Q11	**.406**	.094	.194	.147
Q7	.314	.100	-.150	.095
Q27	.159	**.786**	.170	.163
Q26	.043	**.680**	.288	.242
Q21	.084	**.597**	.188	.131
Q29	.059	**.587**	.272	.039
Q28	.181	**.548**	.111	.029
Q24	.189	**.511**	.363	.145
Q23	-.062	**.510**	.105	.222
Q22	.261	**.494**	.256	.022
Q25	.177	**.465**	-.007	.047
Q30	-.053	.341	.019	.067
Q34	-.030	.182	**.685**	.011
Q31	.027	.320	**.649**	.128
Q32	.105	.277	**.647**	.124
Q40	.037	-.098	**.646**	.136
Q37	.186	.215	**.594**	.096
Q33	.035	.352	**.521**	.252
Q36	.136	.337	**.467**	.030
Q35	.162	.262	**.454**	.329
Q38	.113	.168	**.431**	-.099
Q39	-.008	.001	.397	.336
Q17	.153	.119	.175	**.712**
Q4	.104	.208	.040	**.704**
Q13	.180	.003	.298	**.678**
Q18	.101	.209	.119	**.665**
Q9	.159	.027	-.099	**.649**
Q12	.099	.239	-.102	**.642**
Q6	.162	.230	.280	**.619**
Q1	.268	.027	.216	.388
Eigenvalue	4.223	4.089	4.004	3.953
Cumulative Variance	11.114	21.875	32.411	42.813

Note. Factor loadings > .40 are in boldface. Shading is to indicate factor grouping. Q = question.

Principal Trust

The Principal Academic Optimism Scale was next analyzed examining the trust items. The 18 remaining items measuring the principal's trust in faculty and clients were analyzed using Principal Axis Factor Analysis with Varimax rotation. This revealed four factors though loadings on Factors 3 and 4 were small at best with eigenvalues of 0.897 and 0.848. Further evaluation of the Scree plot supports a two-factor loading (see Figure 4.3 below). Therefore, the analysis was rerun extracting two factors. Additionally, the analysis was run suppressing small coefficients (0.10). This option was utilized to ensure that factor loadings within +0.1 and -0.1 range are not displayed. The reason for suppressing these values was to assist in interpretation as well as to help by increasing the default value of other items (Field, 2005).

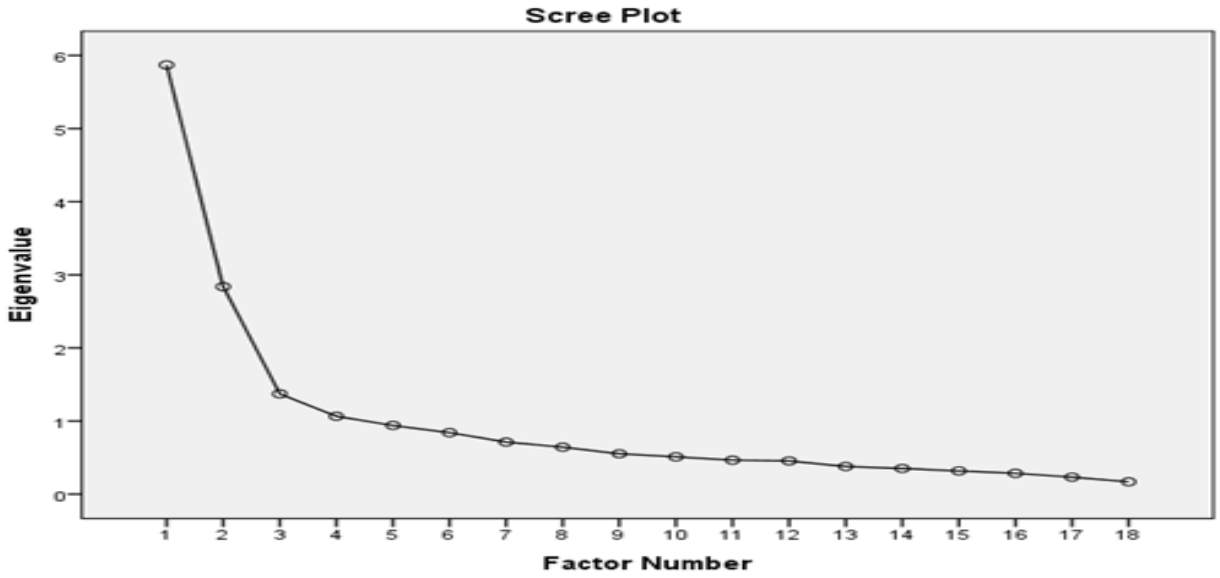

Figure 4.3. Scree Plot supporting trust as two factors as indicated from the point of inflexion.

Analysis of the reliability of the 18 items measuring trust found that the measure was reliable (Trust in Faculty and Clients $\alpha = 0.864$). The analysis yielded two factors similar to the factors discovered in the initial analysis of the whole instrument. Factor 1 again was called principal trust in clients (PTC), and Factor 2 was called principal trust in faculty (PTF) (see Table 4.3). Factor loadings for PTC ranged from 0.788 to 0.308 and loadings for PTF ranged from 0.744 to 0.434. Figure 4.4 further demonstrates that when plotted in rotated factor space the loadings for trust clearly separate into two distinct factors. Though Q1 does not load as strongly onto PTF as the other questions it was not eliminated. Alpha coefficients showed both factors were reliable ($\alpha^{PTC} = 0.849$; $\alpha^{PTF} = 0.852$). Similar to findings by Riegel (2012), two factors of

trust again emerged, although the finding of this study supports earlier findings (Bryk & Schneider, 2002; Hoy et al., 2006; Tschannen-Moran, 2004) that trust of parents and students is a single measure. Tschannen-Moran calls this measure of trust of parents and students, trust in clients. Therefore, this study followed suit and classified the measure as principal trust in clients. The two factors together produce one reliable scale ($\alpha = 0.864$) as opposed to a single factor (Table 4.4). Mean response scores were scored based on the following values: 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, and 6 = strongly agree.

Table 4.3

Factor Analysis of Principal Trust in Clients and Faculty

Question	Factor 1	Factor 2
Q20	**.788**	.142
Q2	**.752**	
Q15	**.699**	
Q14	**.657**	.252
Q19	**.626**	.156
Q16	**.620**	.160
Q10	**.561**	.100
Q5	**.498**	
Q11	**.442**	.180
Q7	.308	
Q17	.145	**.744**
Q4		**.734**
Q18	.101	**.714**
Q6	.177	**.692**
Q13	.182	**.690**
Q12		**.633**
Q9	.127	**.611**
Q1	.265	**.434**
Eigenvalue	3.939	3.718
Cumulative Variance	21.842	42.498

Note. Factor loadings > .40 are in boldface. Shading is to indicate factor grouping. Q = question.

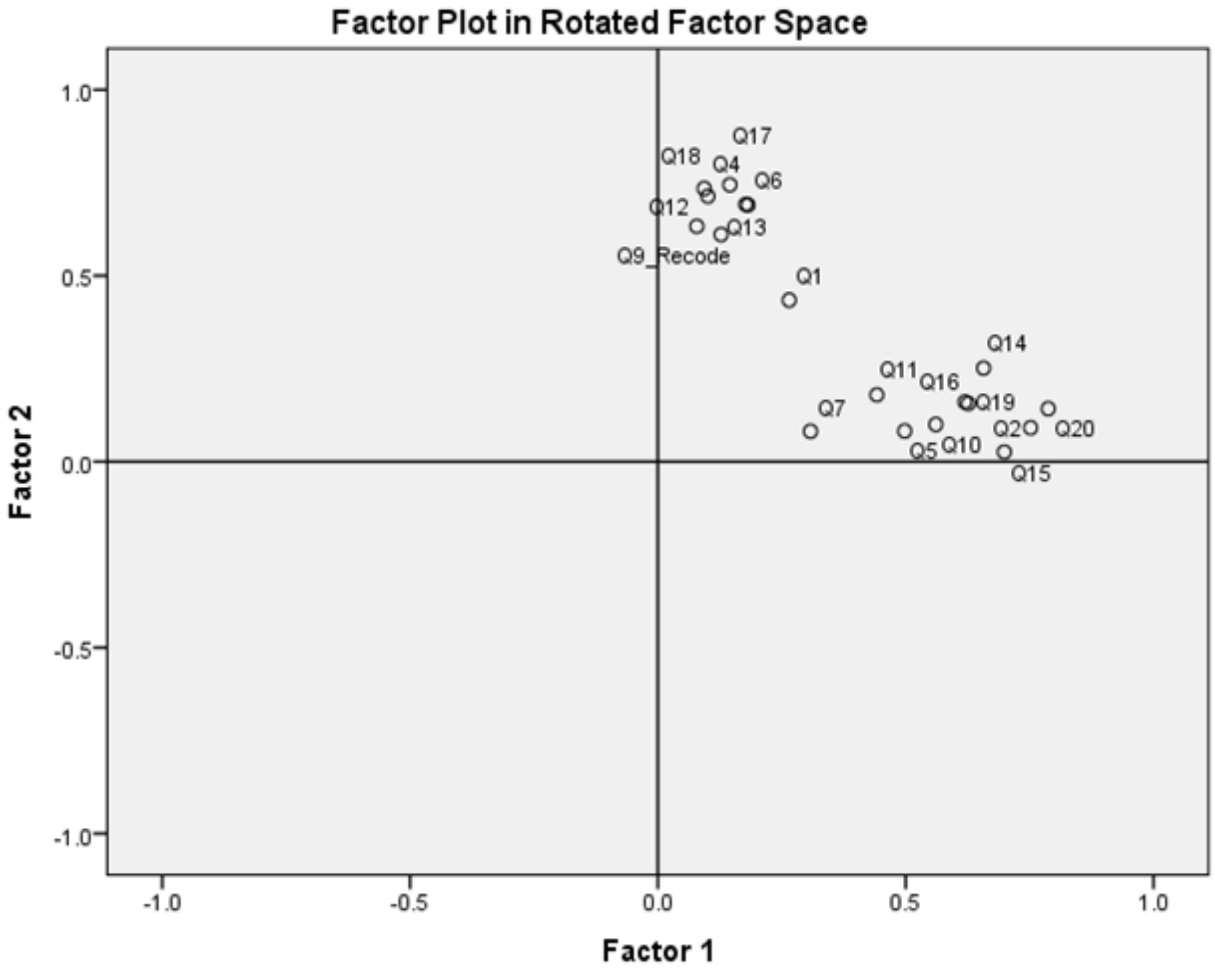

Figure 4.4. Factor plot of measures of trust in clients and trust in faculty.

Table 4.4

Principal Efficacy and their Means and Standard Deviations

Items		**Mean**	**SD**
Items for Principal trust in Clients		47.10	4.823
Q20	Most parents have good parenting skills.	4.13	.925
Q2	I can count on parents to support the school.	4.69	.940
Q15	Parents in this school are reliable in their commitments.	4.34	.913
Q14	Parents in this school have integrity.	4.50	.684
Q19	Students in this school are reliable.	4.99	.514
Q16	Most parents openly share information with the school.	4.44	.882
Q10	Most students are able to do the required work.	4.88	.646
Q5	Students in this school can be counted on to do their work.	4.76	.585
Q11	I trust the students in this school.	5.16	.538
Q7	Most students in this school are honest.	4.97	.692
Alpha for trust in clients = .849			
Item for trust in faculty		40.94	4.060
Q17	My teachers typically look out for me.	4.97	.785
Q4	I have faith in the integrity of my teachers.	5.23	.564
Q18	I trust the teachers in this school.	5.09	.702
Q6	I believe in my teachers.	5.44	.572
Q13	Even in difficult situations, I can depend on my teachers.	5.23	.689
Q12	When teachers in this school tell you something, you can believe it.	4.86	.755
Q9	I am often suspicious of teachers' motives in this school.	4.88	1.013
Q1	Teachers in this school are candid with me.	4.84	.789
Alpha for trust in faculty = .852			

Leadership

The next factor analysis conducted was on the items from Riegel (2012), which initially loaded as one factor. As with Riegel, this analysis was conducted using Principal Axis Factor Analysis with Varimax rotation. The initial analysis of the items was intended to measure academic emphasis and efficacy and yielded two factors rather than one, therefore the analysis was conducted a second time with the fixed number of two factors set to be extracted. The result was significant in producing two stronger factor loadings. This researcher therefore feels that the leadership factor has two dimensions similar to earlier research conducted by Hoy et al. (2006); it is in fact both a measure of efficacy and a measure of academic emphasis. This finding is similar to that of Beard (2008), who found that teacher's academic optimism was indeed comprised of three factors: efficacy, academic emphasis, and trust. Therefore, the decision was made to stop analyzing a single factor called leadership and instead to analyze two factors called efficacy and academic emphasis.

Principal Efficacy

The next analysis examined 10 items intended to measure principal efficacy (PE). The analysis was conducted using principal axis factor analysis. The findings clearly emerged as one factor with loadings ranging from 0.733 to 0.403. The closer the factor loading is to 1 the stronger it is considered to be (Bryman & Cramer, 2005). Additionally, loadings may be both positive and negative. A loading for 0.500 to 1 would be considered to be a strong loading, while moderate loading would be 0.300 to 0.500, and weak loading would be 0 to 0.300. The findings here tended to range from moderate to strong. The single factor explained 37.252% of the cumulative variance in the measurement of principal efficacy with an eigenvalue of 3.725 (see Table 4.5). The alpha coefficient showed that the factor was reliable ($\alpha^{PEFF} = 0.841$) (see Table 4.6). Mean response scores were scored based on the following values: 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, and 6 = strongly agree. Although Riegel's study failed to find efficacy to be two factors, that was not the case in this investigation. Efficacy, in fact, was found to be one single measure consistent with findings from earlier empirical research (Hoy et al., 2006). All of the items were, in fact, one factor that measures principal self-reported beliefs.

Table 4.5

Factor Analysis of Principal Efficacy

Questions	**Factor**
Q31	**.733**
Q32	**.733**
Q34	**.683**
Q37	**.671**
Q33	**.628**
Q35	**.585**
Q36	**.578**
Q40	**.557**
Q39	**.435**
Q38	**.403**
Eigenvalue	3.725
Cumulative Percent	37.252

Note. Factor loadings > .40 are in boldface. Shading is to indicate factor grouping. Q = question.

Table 4.6

Principal Efficacy and their Means and Standard Deviations

Items		Mean	SD
Items for Principal Efficacy		52.20	4.301
31	I am confident working with struggling teachers to help them improve.	5.07	.704
32	I am confident offering constructive criticism to my teachers.	5.14	.715
34	I am confident evaluating my teachers.	5.32	.581
37	I am confident working with teachers on goal setting.	5.24	.551
33	I am confident resolving conflicts in my building.	5.32	.581
35	I am confident in my ability to motivate teachers	5.14	.578
36	I am confident crafting effective professional developments for my staff.	5.03	.747
40	I am capable of handling the time demands of the job.	5.25	.724
39	I am confident seeking outside resources to address school problems.	5.51	.608
38	I am confident integrating data into my decision-making process.	4.97	.868
Alpha for Efficacy = .841			

Principal Academic Emphasis

The next analysis examined the final 10 items intended to measure principal academic emphasis. The initial analysis of the 10 items discovered the emergence of two factors. However, upon closer examination one item, Q30 (I routinely promote the image of the school with the media) was found to have a small effect size ($R^2 = 0.182$). Since this item was added by the researcher in an attempt to produce an improved measure, it was decided to remove Q30 from the analysis.

The analysis was rerun and the nine remaining items now produced one strong factor. This factor again supported earlier findings that celebrations of success and academic emphasis are indeed one factor rather than two separate factors. The factor loadings for this factor ranged from 0.829 to 0.473 (see Table 4.7). The Alpha coefficients for principal academic emphasis showed that the factor was indeed reliable ($\alpha^{PAE} = 0.850$) (see Table 4.8).

Table 4.7

Factor Analysis of Principal Academic Emphasis

Question	Factor
Q27	**.829**
Q26	**.764**
Q24	**.650**
Q29	**.633**
Q21	**.632**
Q22	**.580**
Q28	**.572**
Q23	**.511**
Q25	**.473**
Eigenvalue	3.641
Cumulative Percent	40.454

Note. Factor loadings > .40 are in boldface. Shading is to indicate factor grouping. Q = question.

Table 4.8

Principal Academic Emphasis and their Means and Standard Deviations

Items		Mean	SD
Items for Principal Academic Emphasis		48.09	4.088
Q27	I routinely celebrate the academic excellence of the school.	5.27	.744
Q26	I routinely celebrate the academic successes of our students.	5.32	.645
Q24	I work with teachers to ensure the academic success of their students.	5.52	.521
Q29	I highlight individual student's academic achievement.	5.09	.768
Q21	I work with teachers to ensure they set high academic standards for all students.	5.41	.633
Q22	I challenge teachers in my building to give thought-provoking work to all students.	5.21	.636
Q28	I highlight the school's overall academic achievement.	5.42	.650
Q23	I urge students to set high academic goals.	5.35	.724
Q25	I emphasize expectations for academic success of all students in this school.	5.50	.712
Alpha for Academic Emphasis = .850			

The first collection of data was intended to examine the reliability, validity, and emerging factors of The Revised Principal Academic Optimism Scale. On completion of this analysiss, 37 items remained of the original 40 items. Three questions were removed from the analysis (Q3, Q8, and Q30). These 37 items were then retested and nine factors emerged. However, upon examination of the Scree Plot, only four factors were again discovered. It is important to keep in

mind that the intent of running a factor analyis is to reduce the number of variables used to explain the givent concept (Field, 2005). Therefore, using a cut off value of an eigenvalue of ≥1 would produce nine factors, whereas the scree plot identifies only four factors at the point of inflexion. In additon, these four factors explain nearly as much variance as the nine identifed by an eigenvalue of ≥1.

Thus, the factor analysis was rerun extracting four factors. The findings of this analysis were quite similar to the initial whole scale analysis again finding four distinct factors (see Table 4.9). This analysis of 37 items utilizing Principal Axis Factor Analysis with Varimax rotation found the percentage of cumulative variance rose slightly, now explaining 43.651% of the variance in Principal Academic Optimism. Small coefficients were suppressed to an absolute value <0.30. The suppression of variable was intended to maximize factor loadings to increase the default value of 0.3 or a value reflecting the expected value of a significant factor loading given the sample size (Field, 2005).

Table 4.9

Thirty-Seven Item Factor Analysis of Principal Academic Optimism Scale

Question	Factor 1	Factor 2	Factor 3	Factor 4
Q20	**.807**			
Q2	**.749**			
Q15	**.697**			
Q14	**.668**			
Q16	**.623**			
Q19	**.604**			
Q10	**.553**			
Q5	**.479**			
Q11	**.401**			
Q7	.310			
Q27		**.765**		
Q26		**.681**		
Q21		**.615**		
Q29		**.584**		
Q28		**.567**		
Q24		**.546**		.335
Q22		**.513**		
Q23		**.491**		
Q25		**.473**		
Q17			**.712**	
Q4			**.708**	
Q13			**.674**	
Q18			**.667**	
Q9			**.650**	
Q12			**.647**	
Q6			**.621**	
Q1			.386	
Q34				**.680**
Q40				**.666**
Q32				**.646**
Q31		.339		**.638**
Q37				**.582**
Q33		.359		**.514**
Q35			.330	**.443**
Q36		.393		**.435**
Q38				**.414**
Q39			.333	**.401**
Eigenvalue	4.177	4.145	3.977	3.852
Cumulative Variance	11.290	22.493	33.240	43.651

Note. Factor loadings > .40 are in boldface. Shading is to indicate factor grouping. Q = question.

The final inquiry found the retained 37 items held a high reliability coefficient (α = 0.908). The inquiry answers the first part of the research question: Is the revised scale a valid and reliable measure of Principal Academic Optimism? The findings presented do, in fact, demonstrate a valid and reliable measure. The analysis has repeatedly demonstrated that the constructed variables measure what they were intended to measure and support a stong construct validity. The items were originally written to measure six variables: Principal Trust in Faculty, Principal Trust in Clients, Academic Emphasis, Celebrations of Success, Efficacy of Instructional Supervision, and Efficacy in Management. The exploration analysis produced four variables, which were similar to earlier studies on School Academic Optimism and Teacher Academic Optimism. In contrast to earlier studies that produced three factors, this study produced four factors. (Table 4.10).

Table 4.10

Descriptive Statistics for the Four New Variables

	Min	Max	Mean	SD	Skewness	SE Skewness	# Items
Principal Trust Client	31	57	46.84	4.916	-.686	.238	10
Principal Trust Faculty	27	48	40.55	4.205	-.692	.238	8
Principal Academic Emphasis	38	54	48.09	4.088	-.337	.238	9
Principal Efficacy	37	60	51.99	4.317	-.384	.238	10

To address what factors emerged from testing The Revised Principal Academic Optimism Scale the sums of each emerging factor were analyzed using bivariate correlational statistics (Table 4.11). Four factors emerged from the factor analysis and loading on each of the factors ranged from moderate to strong. Consideration, however, must be given to the factoral finding, and the best method to further scrutinize the factors was to take the sum of each factor at the individual level as prior research at both the school and teacher level of academic optimism has suggested (Hoy et al., 2006; Beard, 2008; Tschannen-Moran, 2004). Moreover, the investigation used the method applied by Riegel (2012), which used coarse factor scoring. Riegel felt that this was an efficient and simple way to generate scores that are generally stable across independent samples (Riegel, 2012). Correlations among the individual factors and the Principal Acadmic Optimism Score were found to be moderate to strong and significant at $p<0.01$ level. R ranged from 0.686 to 0.750 when the four individual summative factors were compared to the Principal Academic Optimism Score. The correlations among the individual factors (principal

trust in clients, principal trust in faculty, principal academic emphasis, and principal efficacy) were weak to modeately correlated, with r values ranging from 0.247 to 0.547. However, the strongest correlation was found between principal academic emphasis and principal efficacy (r = 0.547).

Table 4.11

Bivarate Correlation Analysis of Emerging Summative Factors

	PTC	PTF	PAE	PEff	PAO Score
PTC	1	.354**	.300**	.247*	.686**
PTF		1	.375**	.384**	.721**
PAE			1	.547**	.750**
PEff				1	.740**
PAO Score					1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Note. Significant at the $p < 0.05$ level. PTC = Principal Trust in Clients, PTF = Principal Trust in Faculty, PAE = Principal Academic Emphasis, PEff = Principal Efficacy, PAO = Principal Academic Optimism.

A final point to address is the last part of research question one: What are the findings associated with a revised and re-administered trust section on the questionnaire? This question was analyzed using bivariate correlation statistical analysis looking particularly at the addition of the measure of principal trust in faculty. Principal trust in faculty moderately correlated with the other three emerging factors of principal trust in clients, principal academic emphasis, and principal efficacy. The strongest correlation was found in the relationship with principal efficacy ($r = 0.384$; $p < 0.01$). The addition of a measure of principal trust in faculty proved to be significant in the revision of the principal academic optimism scale.

Furthermore, trust in faculty would facilitate efficacy beliefs in principals as well as a level of academic emphasis. Trust in faculty supports the finding of earlier research of the synergistic relationship between each factor. To understand this relationship further we must next look at the demographic and context variables used to explain the variance found in the factors. Trust appeared as two distinct factors in the analysis as trust in clients and trust in faculty. Principal trust in faculty was found to have a significant relationship ($r = 0.354$; $p < 0.01$) with principal trust in clients, as well as with principal efficacy ($r = 0.375$; $p < 0.01$), and principal academic emphasis ($r = 0.384$; $p < 0.01$). The data suggest an important point; that strong trusting relationships involve risk and require principals to be open to trusting others.

Each stakeholder must be willing to share obligations and expectations and to open themselves to others if a school is to work well (Tschannen-Moran, 2004).

Exploration and Testing of Contextual Variables

The next step in the analysis looked to answer the second and final research question: How do the demographic variables of principal educational attainment, gender, ethnicity, number of teachers supervised, and percentage of students receiving free and reduced price lunches explain the variance in factors emerging from The Revised Principal Academic Optimism Scale? One-way ANOVAs were conducted to compare the effect of the demographic variables on each of the four factors identified. The analysis found three significant relationships. The first was the relationship between the factor trust in clients and the percentage of student's receiving free and reduced price lunches. The second relationship found was between the participant's ethnicity and academic emphasis. Finally, the third relationship found was between the participants level of experience and principal trust in faculty No other significant relationships were discovered at the $p < 0.05$ level.

A one-way ANOVA between subjects was conducted to compare the effect the percentage of free and reduced price lunches had on principal trust in clients at the $p < 0.05$ level for each of the five percentages 0-20%, 21-40%, 41-60%, 61-80%, and 81%+. The percentage of students receiving free and reduced price lunches had a significant effect on the principals' self-reported perception of their trust in clients (Table 4.12). In particular, when examining the between group variance, principal trust in clients was found significant at the [$F(4.1) = 6.342$, $p = 0.000$] level. This negative correlation between principal trust and percentage of students receiving free and reduced lunches ($r = -0.444$; $p < 0.01$) indicates a significant relationship. Therefore, when a school's student percentage of free and reduced rate lunches goes up the principal's level of trust in clients goes down and vice-versa. This is supported by using a post hoc comparison using Tukey HSD (see Table 4.13); the level of significance at the 61%-80% and 81%+ responses was found to be significant when percentages were compared to the effect on the dependent variable, principal trust in clients. The mean difference between each of the percentages was found to be significant as the school's student percentage of free and reduced price lunches increased. The variance found in the factor of principal trust in clients was not affected by smaller percentages of a school's proportion of students receiving free and reduced price lunch. Principals' self-reported perception of trust in clients found that principals working

in schools having high percentages of students receiving free and reduced price lunches rates explained 72.203% of the variance.

Table 4.12

One-Way ANOVAs of Emerging Factors and School's Percentage of Students on Free and Reduced Price Lunch at the 0.05 Level

	df	F	p
PTC	4	6.342	.000
PTF	4	.327	.859
PAE	4	.815	.518
PEff	4	.720	.580

Note. Significant at the $p < 0.05$ level. PTC = Principal Trust in Clients, PTF = Principal Trust in Faculty, PAE = Principal Academic Emphasis, PEff = Principal Efficacy.

Table 4.13

Post Hoc Analysis Tukey HSD of the Effect of School's Student Percentage of Free and Reduced Price Lunch on Principal Trust of Clients at the 0.05 Level

	School's Student Percentage of Free and Reduced Price Lunch:	School's Student Percentage of Free and Reduced Price Lunch:	p
Principal Trust Clients	0-20%	21%-40%	.916
		41%-60%	.557
		61%-80%	.027
		81%+	.009
	21%-40%	0-20%	.916
		41%-60%	.883
		61%-80%	.017
		81%+	.005
	41%-60%	0-20%	.557
		21%-40%	.883
		61%-80%	.066
		81%+	.919
	61%-80%	0-20%	.027
		21%-40%	.017
		41%-60%	.066
		81%+	.919
	81%+	0-20%	.009
		21%-40%	.005
		41%-60%	.019
		61%-80%	.919

Note. Significant at the $p < 0.05$ level.

The second demographic variable to present a significant effect was ethnicity on academic emphasis. Once again a one-way between subjects ANOVA was conducted to compare the effect of ethnicity on each of the four emerging factors. Ethnicity had a significant effect on a principal's level of academic emphasis at the $p < 0.05$ level [$F(1,1) = 5.442$, $p = .022$]. It appears that as principals' response based on their ethnicity differed, so too did their level of academic emphasis. However, an examination of the descriptive data shows a skew in the number of Caucasian principals (N=82) compared to African American (N=21) (see figure 4.5).

Therefore ethnicity was found to not be significant, this finding was felt to be skewed by the far larger number of Caucasians than African Americans participating in the study. Comparisons between means indicated that the mean score for Caucasians (M = 40.56, SD = 4.121) was very similar to the mean score for African Americans (M = 40.52, SD = 3.932). The major difference that stands out is the overwhelming number or respondents from Caucasian (N = 82) compared to African American respondents (N = 21). Additionally, the difference in deviation from one ethnic group to the other perhaps impacts the significance of the ethnicity variable as well.

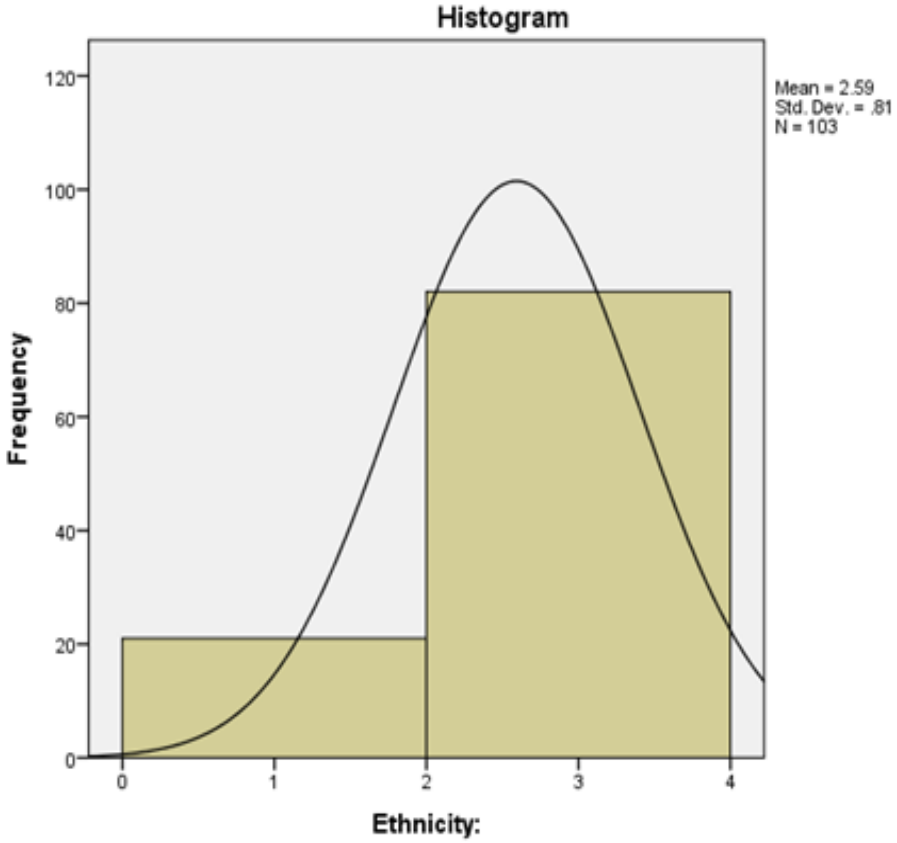

Figure 4.5. Descriptive statistics histogram on ethnicities effect on academic emphasis.

Finally, a one-way ANOVA between subjects was conducted to compare the effect of principals' level of experience in administration on each of the four emerging factors at the $p < 0.05$ level for each of the five levels 0-5 years, 6-10 years, 11-15 years, 16-20 years, and 21+ years. These ranges were chosen to closely mirror earlier administrations of the Principal Academic Optimism scale by Riegel (2012). Principals' level of experience and principal trust in faculty was found to be significant [$F(4, 98) = 2.489$, $p = 0.048$). The analysis was reran to include Tukey's HSD Post Hoc analysis. Post hoc analysis makes multiple comparisons of each of the levels on the dependent variable principal trust in faculty. The second analysis found that no one level of experience was any more significant than any other level of experience. Though the finding supports experience as an indicator of trust the finding were dismissed since no one level of experience was found to be any stronger than the others (see Table 4.14).

Table 4.14

Post Hoc Analysis Tukey HSD of the Effect of Years of Experience on Principal Trust in Faculty at the 0.05 Level

Dependent variable	(i) Experience in administration	(j) Experience in administration	p
PTF	0-5 years	6-10 years	.237
		11-15 years	1.000
		16-20 years	.468
		21+ Years	.639
	6-10 years	0-5 years	.237
		11-15 years	.078
		16-20 years	1.000
		21+ years	.990
	11-15 years	0-5 years	1.000
		6-10 years	.078
		16-20 years	.299
		21+ years	.467
	16-20 years	0-5 years	.468
		6-10 years	1.000
		11-15 years	.299
		21+ years	.998
	21+ years	0-5 years	.639
		6-10 years	.990
		11-15 years	.467
		16-20 years	.998

Note. Significant at the $p < 0.05$ level.

No additional significant relationships were identified when ANOVAs were conducted to compare the effect of the demographic variables on the four emerging factors. Other than the

three already discussed there were no other significant effects at the $p < 0.05$ level for the remaining demographic variables (highest level of educational attainment (Table 4.15), gender (Table 4.16), student population of school (Table 4.17), and number of teachers supervised (Table 4.18)). One-way analysis of variance were conducted for each variable to determine if any of the four emerging factors variance was explainable by measured demographic variables. The four emerging factors principal trust in clients (PTC), principal trust in faculty (PTF), principal academic emphasis (PAE), and principal efficacy (PEff) were analyzed to determine what if any relationship might exist between each of the identified demographic variables. Below Tables 4.15, 4.16, 4.17, and 4.18 present data examining the significance, if any, of the independent demographic variables on the dependent variables of PTC, PTF, PAE, and PEff.

Table 4.15

One-Way Analysis of Variance of Four Emerging Factors and Principals' Highest Level of Educational Attainment

	df	*F*	*p*
PTC	2	.481	.619
PTF	2	1.631	.201
PAE	2	.299	.743
PEff	2	.214	.807

Note. Significant at the $p < 0.05$ level. PTC = Principal Trust in Clients, PTF = Principal Trust in Faculty, PAE = Principal Academic Emphasis, PEff = Principal Efficacy.

Table 4.16

One-Way Analysis of Variance of Four Emerging Factors and Gender

	df	*F*	*p*
PTC	1	.051	.822
PTF	1	1.621	.206
PAE	1	1.187	.530
PEff	1	.397	.817

Note. Significant at the $p < 0.05$ level. PTC = Principal Trust in Clients, PTF = Principal Trust in Faculty, PAE = Principal Academic Emphasis, PEff = Principal Efficacy.

Table 4.17

One-Way Analysis of Variance of Four Emerging Factors and Student Population of the School

	df	*F*	*p*
PTC	4	.754	.557
PTF	4	.232	.920
PAE	4	.722	.579
PEff	4	1.001	.411

Note. Significant at the $p < 0.05$ level. PTC = Principal Trust in Clients, PTF = Principal Trust in Faculty, PAE = Principal Academic Emphasis, PEff = Principal Efficacy.

Table 4.18

One-Way Analysis of Variance of Four Emerging Factors and Number of Teachers Supervised

	df	*F*	*p*
PTC	4	1.111	.356
PTF	4	.212	.931
PAE	4	.555	.696
PEff	4	.537	.709

Note. Significant at the $p < 0.05$ level. PTC = Principal Trust in Clients, PTF = Principal Trust in Faculty, PAE = Principal Academic Emphasis, PEff = Principal Efficacy.

Summary

This chapter has presented an exploratory factor analysis of The Revised Principal Academic Optimism Scale by describing the study's sample along with detailed analyses and findings from the data. The first research question asked was: What are the findings associated with a revised and re-administered Principal Academic Optimism Scale? This was answered through three sub-questions the first of which was: Is the revised scale a valid and reliable measure of Principal Academic Optimism? The data from the sample demonstrated that the findings were reliable and the scale is felt to be a valid construct of principal academic optimism. The second sub-question asked was: What factors emerge from testing The Revised Principal Academic Optimism Scale? Four factors emerged from the data sample that was analyzed. However, these factors would not be considered new concepts, based on empirical research that supports the emerging factors. The four factors to emerge were principal trust in clients, principal trust in faculty, principal efficacy, and principal academic emphasis. Sufficient evidence indicated that the emergence of each of these factors was well supported to further ensure the

validity of the use of each. The last sub-question was: What are the findings associated with a revised and re-administered trust section to the questionnaire? The trust section appeared to be significant particularly at the principal level; the principal's view of trust affects how he or she carries carry out duties such as establishing both a strong efficacious environment and a rigorous level of academic emphasis.

The second research question addressed: How do the contextual variables of principal educational attainment, gender, ethnicity, number of teachers supervised, and percentage of free and reduced price lunches explain the variance in factors emerging from The Revised Principal Academic Optimism Scale? The data demonstrated a significant correlation between three variables and the variance in principal academic optimism: a school's percentage of students receiving free and reduced price lunches, a principal's ethnicity, and the principal's experience in administration. Of particular of interest is the finding that as a school's percentage of students receiving free and reduced price lunch increased as principal's level of trust decreased as demonstrated by the negative Pearson correlation. Finally, the significance of a principal's level of experience was dismissed, whereas findings from Post Hoc analysis failed to identify any one level as having a significant relationship with the dependent variable principal trust in faculty. No further variables were able to explain significance in any of the remaining variances.

Although the critical analysis of this study is dependent upon a sample that is relatively small, the findings do compare well with the literature on academic optimism. The absolute value of the sample was found to be sufficient with a KMO of 0.753 for the final analysis of the 37 remaining items and significant with a $p < 0.001$. Items tended to cluster on their target variables as laid out by the research. There was an issue of potential multicollinearity with a discriminant value smaller than recommended. However, the findings interpreted by the literature and taken at face validity presented as reliable. Having found a significant negative relationship between a school's student percentage of free and reduced price lunch rate and its effect on principals' perceptions of trust in clients can be of particular interest to future researchers or studies on the relationship of principal trust and socioeconomic status. The four emerging factors in the analysis explained 43.651% of the cumulative variance in the remaining items

Chapter 5

Major Findings, Conclusions, Limitations, Recommendations and Implications

The purpose of this study was to revise the Principal Academic Optimism Scale and test the instrument. To accomplish this goal data were analyzed using a priori findings. Throughout the literature review, a high degree of importance was placed upon three common factors (academic emphasis, efficacy, and trust) found to work in a synergistic partnership and used to explain academic optimism. The development of a revised Principal Academic Optimism scale attempted to adhere as closely as possible to the findings of empirical research and these findings guided the data analysis. The findings of the literature review were allowed to guide the methodology, and once achieved, the research moved forward. This chapter reports the major findings and conclusions and makes recommendations for future research.

All respondents were asked to rate a series of 40 questions on a Likert scale ranging from "strongly disagree" to "strongly agree." The neutral position was intentionally left out of the scale to make respondents take one position or another on the question. The instrument, initially comprised of 40 items, was later reduced to 37 through data analysis. The final instrument, which was found to be reliable and valid, demonstrated strong construct validity. Taken at face value the questions loaded on the items for which they were intended based on the review of the literature.

Major Findings

The first major finding of the exploratory study of The Revised Principal Academic Optimism Scale supported the instrument as being valid and reliable ($\alpha = 0.908$). Secondly, the instrument did not support three latent constructs of trust, efficacy, and academic emphasis. Instead four factors did emerge: however, research supports trust as one factor with two components (trust in clients and trust in faculty) (Tschannen-Moran & Gareis, 2004). Therefore, one may argue that Principal Academic Optimism presents as three distinct factors, of which trust is comprised of subcomponents (trust in clients and trust in faculty) that support the synergistic nature of the construct. Unlike earlier research on principal level academic optimism, the third major finding, efficacy, was found to be a single factor as was academic emphasis. Earlier research has shown that efficacy was a combination of two components: efficacy in management and efficacy of instructional supervision. Similarly, academic emphasis was thought to consist of two components: academic emphasis and celebrations of success. Riegel (2012) felt that though principals set the level of expectations and create a climate where

learning is valued that it does not necessarily mean that he/she celebrates the successes of students or teachers.

Perhaps the most compelling finding of the study was the significant negative relationship between principals' perception of trust in clients whose schools have high percentages of students receiving free and reduced price lunches ($r = -0.444$; $p < 0.05$). Principals with high percentages of free and reduced price lunch rates explained 72.203% of the variance in principals' self-reported perception of trust in clients. Principals of schools with 61%-80% or 81%+ percentages of free and reduced price lunch rates reported lower levels of trust in clients (parents and students). Research has examined the relationship of trust in a variety of roles (Tschannen-Moran, 2004), however, research directly related to principal trust in clients and the variance explained by the percentages of students receiving free and reduced lunches. The closest research related was on relational trust was from Bryk and Schneider (2002), who found that school achievement was related to teacher-principal trust. Bryk and Schneider were unable to find a relationship between the percentage of low socioeconomic families and trust. This study offers further insight that negative relationship exists between socioeconomic status and principal trust in clients, however, due to the small sample size the generalizability of the findings are reduced.

Conclusions

The study's goals of producing a revised Principal Academic Optimism Scale and testing that scale were accomplished. The findings of the data supported that the Principal Academic Optimism Scale contained components similar to school-level and teacher-level academic optimism (Beard, Hoy, & Woolfolk Hoy, 2010; Bevel & Mitchell, 2012; Hoy, Tarter, & Hoy, 2006a; 2006b; Kirby & DiPaloa, 2011; Smith & Hoy, 2007). The data and research support principal trust as having two distinct components (principal trust in clients and principal trust in faculty) each of which supports the other. These emerging factors should, therefore, be considered similar to the empirical research on school-level and teacher-level academic optimism. The data having identified four emerging factors, the researcher believes the literature and data support three factors labeled principal trust, principal efficacy, and principal academic emphasis. Trust contains two subcomponents at the principal level (see Figure 5.1), as indicated by the broken line, principal trust in clients and principal trust in faculty, which support each other in a synergistic nature. All the emerging factors were found to work in a synergistic relationship as was found in earlier research (Hoy et al., 2006a; 2006b).

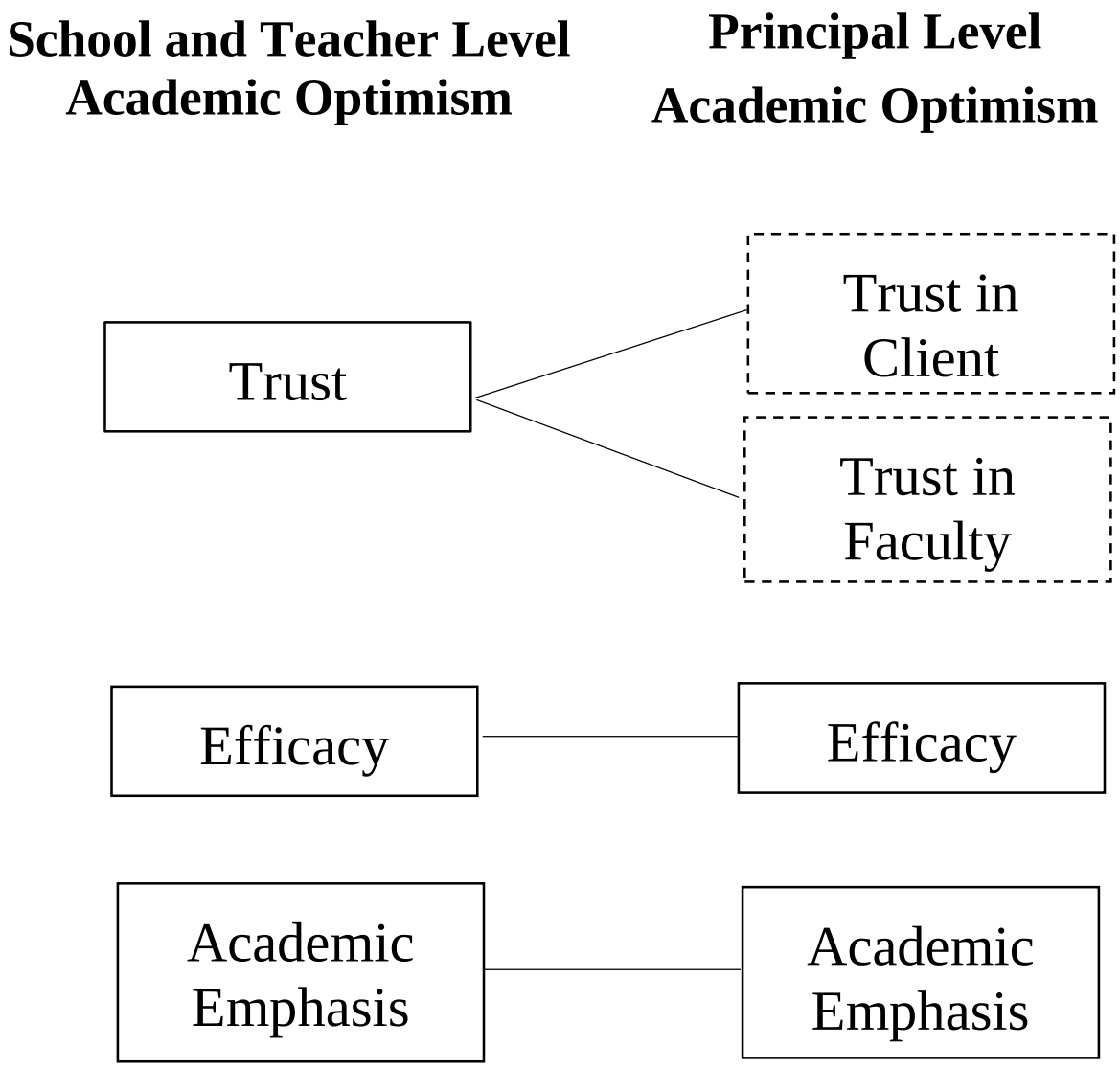

Figure 5.1. Transfer of three factors of academic optimism to four emerging factors at principal level.

Earlier research on academic optimism has consistently supported the three factors that are believed to work together interactively to produce a positive force (Beard, Hoy, & Woolfolk Hoy, 2010; Bevel & Mitchell, 2012; Hoy, Tarter, & Hoy, 2006a; 2006b; Kirby & DiPaloa, 2011; Smith & Hoy, 2007). School culture is dependent upon each factor (efficacy, academic emphasis, trust) supporting the other and when one factor (trust) develops a negative relationship (principal trust in clients) the other factors consequently diminish thereby impacting the culture of the school. While there may possibly be an endless list of problems facing schools, lack of trust as might be seen from a top-down model is one of the hardest to overcome. Trust becomes

increasingly important in the facilitation of relationship development, thus development of trusting relationships must be a priority for schools to reap the benefits of a strong school culture (Tschannen-Moran, 2004). Principals must work to establish relationships and to develop trust with all stakeholders. The synergistic nature of academic optimism may lead principals that lack trust in clients to lower the expectations for this particular group and thus impacting academic achievement. This is evidenced by the discovery of principals' perception of trust of clients as it related to students receiving free and reduced lunch.

The three factors work together to produce a single positive force that drives the culture of the school (Hoy et al., 2006a). Research on trust supports the development of a positive school culture (Tschannen-Moran, 2004). The development of trust between principal and teacher may be difficult. The development of any culture is often faced with obstacles. However, one single factor can facilitate the development of a positive academic environment: trust (Fullan, 2014). A strong trusting environment supports the development of collective efficacy that leads to rigorous academic standards (Hoy et al., 2006a; 2006b). Consequently, trust facilitates academic emphasis while confidence projects efficacious beliefs.

This research supports the nature of this force at the principal level. At the principal level, trust often works through the teacher, on to the parent and student, and vice versa. Unlike findings from earlier research at the principal level, this study found that efficacy and academic emphasis each had only a single strong variable rather than two components each (Riegel, 2012). This same indirect effect of the principal on the teacher was often inhibited in part by the principal's own cognitive beliefs. If the principal is constantly projecting doom and gloom, the teacher(s) often mirror the same. Therefore, academic optimism at the principal level continues to be an all-encompassing theme much like at the school and teacher level with each group reinforcing the other.

Trust can be divided into two distinct variables: trust in clients (students and parents) and trust in faculty. Trust at the teacher level was found to be interrelated with each reinforcing the other (Beard, 2008). The literature on trust supports a similar explanation at the principal level. While the teacher delivers the majority of instruction, working directly with students, the principal's relationship with students is more indirect, as is indicated in the literature (Hallinger, 2003; Hoy & Tschannen-Moran, 1999; Marzano, Waters, & McNulty, 2005; Mascall, B., Leithwood, Straus, & Sacks, 2008). Therefore, it seems reasonable that trust in clients would be similar though weaker than trust in faculty. Principals cannot be expected to have the same

relationship with clients as do teachers. Consequently the relationships with clients forms outside the context of the classroom and is often more distant than those of the teacher.

Unlike earlier findings (Riegel, 2012), efficacy, conversely presented as a single factor. A principal's sense of efficacy is nothing more than a judgment of his or her capabilities to structure a particular course of action. A principal's self-perceived capability to perform the cognitive and behavioral functions within a culture proceed from beliefs about self and environment (Bandura, 1997). While the literature supports the role of principal as having multiple capacities, effective principals tend to be strong in a few areas and utilize their subordinate, the assistant principal, to support their weak areas (Marzano, Waters, & McNulty, 2005). It is given that all principals must take on the role of instructional leaders; they may therefore trust enough to share this role or perhaps develop a leadership team, which is what the literature on school culture supports (Fullan, 2014; Marzano, Waters, & McNulty, 2005).

The final factor identified was academic emphasis, which much like efficacy loaded on a single factor. Riegel (p. 92, 2012) stated, "Because a principal sets high expectations and creates a climate where learning is valued does not mean that a principal celebrates the successes of the building or individual students." A competitive school culture that celebrates successes facilitates a sense of efficacy and belief in oneself that supports earlier models of academic optimism (Hoy et al., 2006a). Tschannen-Moran and Gareis (2004) recognized that a purpose of leadership was to facilitate group attainment by establishing an environment favorable to group performance. While the goal is to develop a rigorous curriculum, it should be an achievable goal. Furthermore, good leaders use social influence to motivate the actions of the group, and what better method of motivation than celebrations of success. Here the importance of social cognitive theory may be employed as a theoretical support to explain the development and effect of the principal's academic emphasis. Research has supported the relationship between academic achievement and school climate characterized by high levels of academic emphasis (Goddard, Sweetland, & Hoy, 2000). Celebrations of success encourage both teachers and students to develop a sense of belonging, much like small communities. Furthermore, celebrations of success lead to a commitment to and engagement with academics, which is an important factor with at-risk students.

The development of a culture of belonging progresses through academic success to other aspects of the school, which ultimately leads to the development of a sense of trust as well as of collective efficacy. This movement must be initiated by someone who believes in what they are doing and who demonstrates a level of confidence that makes others want to participate. A

principal that lacks efficacy and lacks trust in students or teachers to push academics is not that person.

The results of this study have practical and future research implications for principals as they grapple with ways to improve themselves and their schools. In order to reap the rewards of strong cultures, principals must be willing to cultivate trust with clients, and schools must create a culture that is not afraid to celebrate academic success that fosters a sense of belonging. There are far reaching benefits that are yet to be found but the first step is creating a strong sense of self-efficacy and not being afraid to self-evaluate.

Limitations

Every study occurs within a set of unique characteristics and limitations. This study is no exception. Therefore, the findings and conclusions to be drawn in the discussion that follow should be interpreted accordingly. Although this study attempted a census of K-5 elementary principals from the Commonwealth of Virginia, the findings may be difficult to generalize to all K-5 elementary principals across the United States, particularly due to the small sample size (N = 103). The generalizability of the results and conclusions of this study are limited by the extent to which other settings are similar to the situation in which this study occurred.

The generalizability as to the results of this study are constrained by the following issues: the return rate of questionnaires, participants may not have responded with complete honesty, the participant pool was limited to only the Commonwealth of Virginia, the overall sample size of elementary principals was relatively small, and the validity of the instrument was taken at face validity. In addition the factor ability of such a small sample size should be taken into consideration as well.

Several other limitations need further elaboration. First, the use of a one-time survey does not allow for explanation or answers beyond the items on the instrument. Second, the results may not be generalized outside the sample. Although the results could provide data to promote further studies, there may be other factors beyond academic optimism of school administrators that affect the results in other schools.

One obvious limitation of questionnaires is that they are subject to faking, and therefore, to social desirability bias. When considering how an item such as “I trust the students in this school.” should be marked or “I trust the teachers in this school,” individuals may be inclined to choose a higher rating in order to appear more desirable to themselves or to others. To the extent that social desirability bias is uniform within a group under study, it will inflate individual

responses but not alter their rank order. This would prove significant if the questionnaire were to be evaluated by others, particularly if used for evaluations. If some individuals respond more to social pressure than others, however, their placement within the overall distribution of responses could change.

Additionally, further validation may be needed before the measure is perfected, specifically testing with a larger sample size. The small sample size limits the generalizability of the instrument and this study as well as the factor ability. In addition, principals who felt as though they may perform below expectancy may have been reluctant to participate in the study, which may have skewed the participation results, thus reducing participation rates. Participants that opened the survey had an extremely high completion rate.

Recommendations and Implications

Principal Academic Optimism has the potential to influence teachers, students, and principals alike. The level of self-efficacy, academic emphasis, and trust perceived by a school administrator and particularly by a principal may have a significant impact on the culture of the school and ultimately on the level of achievement. The role of the school principal is constantly changing with accountability an ever-increasing factor. The role of the principal has become increasingly significant. The development and refinement of a valid and reliable scale of an instrument that is capable of accurately measuring the perceptions of the principal is now possible and the potential advantages of such an instrument in the future are enormous.

The next step in the future study of Principal Academic Optimism might be an attempt at a confirmatory factor analysis. A confirmatory factor analysis would allow researchers to test the set of latent variables defined by this study as well as any hypotheses, which might subsequently be developed to further our understanding of the nature of the emerging latent constructs.

This study attempted to examine and revise a measure for Principal Academic Optimism by testing the revised measure. The new construct of Principal Academic Optimism was shown to be both important and useful in understanding the self-perceived levels of Principal Academic Optimism. The new construct has expanded the potential for future research in this area. Though this study was quantitative, as most studies on academic optimism have been, there is a need for qualitative case study research as has been suggested by Hoy et al.

The revision of the Principal Academic Optimism Scale has opened the way to potential theory development that could help explain why some schools are academically successful.

Future research could examine how principal academic optimism levels affect student achievement in particular with relevance to questions such as:

1. Are students more successful when principals' self-perceived levels of academic optimism level are high?
2. What does a school look and feel like when led by an academically optimistic principal?
3. How would high or low levels of Principal Academic Optimism affect teacher optimism levels?
4. How do high and low levels of academic optimism in principals affect their role in student achievement.

This study enhances the research that already exists. Previous research on individual levels of academic optimism is limited; this study adds a new measure to facilitate further research on this factor. Like most other studies on academic optimism, this study is quantitative; therefore qualitative or mixed-method studies would be fruitful approaches in the future.

This study would have benefited from a larger sample size and by expanding to a larger population; a national sample or a larger number of principals at all school levels in the sample would be useful. Additional, comparative studies could compare optimism levels of principals at different grade levels. Nevertheless, this research does add to the knowledge base of school culture as enhanced by principals.

The use of longitudinal data used to track student performance would be useful when comparing academic optimism levels of principals across grade levels. How would students from schools which have principals with high academic optimism levels compare to cohorts with principals with low academic optimism levels? Does success then come down to leadership? Could it be related to teachers' individual academic optimism levels or their beliefs? How does a faculty perceive new policies or procedures from a principal with low or high academic optimism levels?

From a practical standpoint could principal academic optimism scales predict the success of a principal at a particular school or district? Would it be beneficial to have principals take the scale prior to employment or even before an interview? What effect might this have on the human resource perspective? A better understanding of a principal's beliefs prior to hiring may have some merit and could potentially lead to discovery of some significant baseline knowledge of that individual. Perhaps a school has a high percentage of low socioeconomic status students

and the prospective principal lacks trust in parents and students necessary to be effective. Perhaps this principal lacks trust in faculty, and so putting them together in a small school with a strong community-oriented culture would unlikely prove a success.

The Revised Principal Academic Optimism Scale may serve as pre-interview questionnaire to determine if the candidate for a position would be suitable for a school culture. In particular, a school division might benefit from taking the scores from the questionnaire and determining fit for particular school cultures. If a candidate has low levels of academic optimism they would perhaps not be a good fit for a school that has high percentages of students receiving free and reduced lunches according to the data findings. The development of school culture has proved important in the success of schools and in particular is cultivated by the leadership of the school as evidenced by researchers on school culture (Dufour & Fullan, 2013; Marzano et al. 2005; Waters et al., 2003).

In addition, the scale may be used as an evaluation tool at the district level to examine principals' perceptions of their own capacity to lead change within a school. The scale then has the potential to strengthen schools by placing principals in schools that need the most optimistic leader possible. The use of The Revised Principal Academic Optimism Scale could have a ripple effect that might lead to influences on student achievement.

The use of The Revised Principal Academic Optimism Scale could prove to impact professional growth and learning as a tool for self-reflection. This reflection could lead to a better understanding of oneself in an effort to learn and advance as a leader. Principals may then examine areas that could be connected to their own needs for professional developments which would promote continuous learning and reflection and guide best practices. The need for self-reflection in one's own practices was evidenced by earlier researchers (Bandura, 1997; Goddard et al,, 2000; Hoy et al. 2002)

We have the opportunity to learn a lot from this study and many recommendations for future study and practice have been presented. These recommendations are only limited by one's imagination. Schools are always attempting to improve student achievement or to get the most out of their employees, and this revised measure has the potential to lead to new questions that will only lead to more questions. The continued search for the best answer will always be the best answer.

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Appendix A

School Academic Optimism Survey (SAOS)

SAOS

Directions: Please indicate your degree of with each of the statements about your school from **strongly disagree** to **strongly agree**. Your answers are confidential.	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
1. Teachers in this school are able to get through to the most difficult students.	1	2	3	4	5	6
2. Teachers here are confident they will be able to motivate their students.	1	2	3	4	5	6
3. If a child doesn't want to learn teachers here give up.	1	2	3	4	5	6
4. Teachers here don't have the skills needed to produce meaningful results.	1	2	3	4	5	6
5. Teachers in this school believe that every child can learn.	1	2	3	4	5	6
6. These students come to school ready to learn.	1	2	3	4	5	6
7. Home life provides so many advantages that students are bound to learn.	1	2	3	4	5	6
8. Students here just aren't motivated to learn.	1	2	3	4	5	6
9. Teachers in this school do not have the skills to deal with student disciplinary problems.	1	2	3	4	5	6
10. The opportunities in this community help ensure that these students will learn.	1	2	3	4	5	6
11. Learning is more difficult at this school because students are worried about their safety.	1	2	3	4	5	6
12. Drug and alcohol abuse in the community make learning difficult for students here.	1	2	3	4	5	6
13. Teachers in this school trust their students.	1	2	3	4	5	6
14. Teachers in this school trust the parents.	1	2	3	4	5	6
15. Students in this school care about each other.	1	2	3	4	5	6
16. Parents in this school are reliable in their commitments.	1	2	3	4	5	6
17. Students in this school can be counted upon to do their work.	1	2	3	4	5	6
18. Teachers can count upon parental support.	1	2	3	4	5	6
19. Teachers here believe that students are competent learners.	1	2	3	4	5	6
20. Teachers think that most of the parents do a good job.	1	2	3	4	5	6
21. Teachers can believe what parents tell them.	1	2	3	4	5	6
22. Students here are secretive.	1	2	3	4	5	6

Directions: Please indicate the degree to which the following statements characterize your school from **Rarely Occurs** to **Very Often Occurs**. Your answers are confidential.	Rarely	Sometimes	Often	Very Often
23. The school sets high standards for performance.	1	2	3	4
24. Students respect others who get good grades.	1	2	3	4
25. Students seek extra work so they can get good grades.	1	2	3	4
26. Academic achievement is recognized and acknowledged by the school.	1	2	3	4
27. Students try hard to improve on previous work.	1	2	3	4
28. The learning environment is orderly and serious.	1	2	3	4
29. The students in this school can achieve the goals that have been set for them.	1	2	3	4
30. Teachers in this school believe that their students have the ability to achieve academically.	1	2	3	4

Appendix B

Teacher Academic Optimism Scale – Elementary (TAOS-E)

TAOS-E

Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential.	Nothing		Very Little		Some Influence		Quite a bit		A Great Deal
1. How much can you do to get students to believe they can do well in school work?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
2. To what extent can you craft good questions for your students?	①	②	③	④	⑤	⑥	⑦	⑧	⑨
3. How much can you do to get children to follow classroom rules?	①	②	③	④	⑤	⑥	⑦	⑧	⑨

Directions: Please indicate the extent to which you agree with each of the statements below from Strongly Disagree (1) to Strongly Agree (5).	Never	Rarely	Sometimes	Often	Always
4. I trust the parents of my students.	①	②	③	④	⑤
5. I can count on parent support.	①	②	③	④	⑤
6. I trust my students.	①	②	③	④	⑤
7. I have confidence in my students.	①	②	③	④	⑤
8. I ask students to explain how they get their answers.	①	②	③	④	⑤
9. I don't accept shoddy work from my students.	①	②	③	④	⑤
10. I give my students challenging work.	①	②	③	④	⑤
11. I press my students to achieve academically.	①	②	③	④	⑤

Appendix C

Principal Academic Optimism Scale (PAOS) (REVISED)

Principal Trust in Faculty and Clients (Parents and Students) (PTFC)

1. Teachers in this school are candid with me.
2. I can count on parents to support the school.
3. Students here really care about the school.
4. I have faith in the integrity of my teachers.
5. Students in this school can be counted on to do their work.
6. I believe in my teachers.
7. Most students in this school are honest.
8. I question the competence of some of my teachers. #
9. I am often suspicious of teachers' motives in this school. #
10. Most students are able to do the required work.
11. I trust the students in this school.
12. When teachers in this school tell you something, you can believe it.
13. Even in difficult situations, I can depend on my teachers.
14. Parents in this school have integrity.
15. Parents in this school are reliable in their commitments.
16. Most parents openly share information with the school.
17. My teachers typically look out for me.
18. I trust the teachers in this school.
19. Students in this school are reliable.
20. Most parents have good parenting skills.

Items for Principal Academic Emphasis (PAE)

21. I work with teachers to ensure they set high academic standards for all students.
22. I challenge teachers in my building to give thought-provoking work to all students.
23. I urge students to set high academic goals.
24. I work with teachers to ensure the academic success of their students.
25. I emphasize expectations for academic success of all students in this school.

Appendix C (con't)

Items for Celebrating Success (CS)

26. I routinely celebrate the academic successes of our students.
27. I routinely celebrate the academic excellence of the school.
28. I highlight the school's overall academic achievement.
29. I highlight individual student's academic achievement.
30. I routinely promote the image of the school with the media. *

Items for Principal Efficacy in Instructional Supervision (PEIS)

31. I am confident working with struggling teachers to help them improve.
32. I am confident offering constructive criticism to my teachers.
33. I am confident resolving conflicts in my building.
34. I am confident evaluating my teachers.
35. I am confident in my ability to motivate teachers. *

Items for Principal Efficacy in Management (PEM):

36. I am confident crafting effective professional developments for my staff.
37. I am confident working with teachers on goal setting.
38. I am confident integrating data into my decision-making process.
39. I am confident seeking outside resources to address school problems.
40. I am capable of handling the time demands of the job. *

Appendix D

Permission Riegel

To Marcus Sartin's doctoral dissertation committee,

I am so pleased to know Marcus will be extending the work I began in my dissertation. There are many changes I would make to my design, including the trust questions on the survey. I am glad he is pursuing this line of inquiry, and I will be very interested to see the results of his research.

He is very welcome to use my scale, which was adapted from Wayne K. Hoy's academic optimism scale for teachers.

Thank you and good luck to Marcus.

Sincerely,

Lisa Riegel, Ph.D.

Executive Director

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Appendix E

Permission Tschannen-Moran

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Megan Tschannen-Moran, Ph.D.
Professor of Educational Policy, Planning, and Leadership
mxtsch@wm.edu
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15 February, 2014

Marcus,

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

> Gareis, C. R. & Tschannen-Moran, M. (2004, April). *Principals' Sense of Efficacy and Trust*. Paper presented at the annual meeting of the American Educational Research Association, San Diego.

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
http://wmpeople.wm.edu/site/page/mxtsch

Appendix F

Permission Hoy

Wayne Hoy
whoy@mac.com

6/2/13

to sartin75@vt.edu

Marcus,

You have my permission to use the SAOS in your research.

Best wishes in your work.

Wayne Hoy
Fawcett Professor Emeritus
Ohio State University

Appendix G

Principal Trust Scale

Principal Survey

Directions: This questionnaire is designed to help us gain a better understanding of the quality of relationships in schools. Your answers are confidential.

Please indicate the extent that you agree or disagree with each of the statements about your school, marking in the columns on the right, ranging from (1) Strongly Disagree to (6) Strongly Agree, filling the bubbles completely.

		Strongly Disagree					Strongly Agree
1.	Teachers in this school are candid with me.	①	②	③	④	⑤	⑥
2.	I can count on parents to support the school.	①	②	③	④	⑤	⑥
3.	Students here really care about the school.	①	②	③	④	⑤	⑥
4.	I have faith in the integrity of my teachers.	①	②	③	④	⑤	⑥
5.	Students in this school can be counted on to do their work.	①	②	③	④	⑤	⑥
6.	I believe in my teachers.	①	②	③	④	⑤	⑥
7.	Most students in this school are honest.	①	②	③	④	⑤	⑥
8.	I question the competence of some of my teachers.	①	②	③	④	⑤	⑥
9.	I am often suspicious of teachers' motives in this school.	①	②	③	④	⑤	⑥
10.	Most students are able to do the required work.	①	②	③	④	⑤	⑥
11.	I trust the students in this school.	①	②	③	④	⑤	⑥
12.	When teachers in this school tell you something, you can believe it.	①	②	③	④	⑤	⑥
13.	Even in difficult situations, I can depend on my teachers.	①	②	③	④	⑤	⑥
14.	Parents in this school have integrity.	①	②	③	④	⑤	⑥
15.	Parents in this school are reliable in their commitments.	①	②	③	④	⑤	⑥
16.	Most parents openly share information with the school.	①	②	③	④	⑤	⑥
17.	My teachers typically look out for me.	①	②	③	④	⑤	⑥
18.	I trust the teachers in this school.	①	②	③	④	⑤	⑥
19.	Students in this school are reliable.	①	②	③	④	⑤	⑥
20.	Most parents here have good parenting skills.	①	②	③	④	⑤	⑥

For office use only.

Appendix H

Institutional Review Board Approval Letter

VirginiaTech

Office of Research Compliance
Institutional Review Board
North End Center, Suite 4120, Virginia Tech
300 Turner Street NW
Blacksburg, Virginia 24061
540/231-4606 Fax 540/231-0959
email irb@vt.edu
website http://www.irb.vt.edu

MEMORANDUM

DATE: June 5, 2015

TO: Walt Mallory, Marcus Clifton Sartin

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires April 25, 2018)

PROTOCOL TITLE: Principal Academic Optimsim: Exploratory Factor Analysis

IRB NUMBER: **15-600**

Effective June 5, 2015, the Virginia Tech Institution Review Board (IRB) Chair, David M Moore, approved the New Application request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

http://www.irb.vt.edu/pages/responsibilities.htm

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

Approved As:	**Exempt, under 45 CFR 46.110 category(ies) 2,4**
Protocol Approval Date:	**June 5, 2015**
Protocol Expiration Date:	**N/A**
Continuing Review Due Date*:	**N/A**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

Appendix I

Pre-Notice E-mail 1 for Questionnaire

June 6, 2015

Dear ${m://FirstName} ${m://LastName},,

We are researchers in the School of Education at Virginia Tech, and we are studying the concept of principal academic optimism. We write asking for your assistance.

We believe that principals can be an integral contributor to students' academic success. While there are many influences potentially impacting student achievement including teacher efficacy, class size, educational resources, changing demographics, and family and/or community socioeconomics, we also believe that principals' understandings, beliefs and actions can impact student learning. Many schools within the Commonwealth of Virginia have shown tremendous increases in student achievement despite being confronted with various confounding factors. Through this study, we want to develop and test a measure that may help assess the role that principals play in promoting student learning.

In approximately three days, you, as a Virginia elementary principal, will receive a second email containing a cover letter with an explanation of our research. This email will contain a link to a web-based questionnaire on this topic. We are hoping that you will access the questionnaire, then spend about fifteen minutes of your time completing the online form, and then submit the form for return to us.

Should you have any questions or concerns about the study's conduct or your rights as a research subject, you may contact the VT IRB Chair, Dr. David M. Moore at moored@vt.edu or (540) 231-4991.

Thank you in advance for your considered participation in this research. Your confidential response would be greatly appreciated.

Gratefully,

Marcus C. Sartin
Graduate Candidate
Virginia Polytechnic Institute and State University
sartin75@vt.edu
(276) 393.8454

Dr. Walter Mallory
Clinical Assistant Professor, Educational Leadership
Virginia Polytechnic Institute and State University
wmallory@vt.edu
(703) 538.8496

Appendix J

Cover Letter E-mail 2 for Questionnaire

June 9, 2015

Dear ${m://FirstName} ${m://LastName},

A few days ago, you received an email asking for your participation in a Virginia Tech study of principal academic optimism. This is a follow-up to that introductory letter.

This study is about the development of a valid measure of principal academic optimism.

We believe that your participation in this study will provide information that will help both clarify and identify characteristics of principals own perceptions of their professional practices which facilitate the work of teachers in classrooms and ultimately student outcomes.

We believe that principals greatly impact both the school's culture and students' academic success through their own understandings, beliefs, and actions. This study concerns the development of a valid measure of principal academic optimism. We believe that your participation in this study will help clarify concepts associated with principal optimism and perhaps offer opportunity future research that may examine its effects on both teachers and students within the school.

We are asking you to complete a brief, on-line questionnaire. Your name will not be used in this research, nor will you be identified in the report of the study. This study has been approved by the Virginia Tech Institutional Review Board. While there is no compensation to you for participating in this study, we are hoping that you will assist us in advancing this research.

The questionnaire may be accessed by clicking on the attached link (**${l://SurveyLink?d=Take%20the%20Survey**}).

We estimate that it should take you no longer than 15 minutes to complete this online survey. By clicking on the above URL you are agreeing to participate in the study. You may discontinue participation at any time by simply closing the URL. If you fail to complete the questionnaire your responses will not be recorded. You are asked to click submit at the end of the survey after responding to each of the items on the questionnaire. By clicking submit you are further providing informed consent that you agree to participate.

We greatly appreciate your participation. Please feel free to contact Marcus Sartin (sartin75@vt.edu), the primary researcher, should you have questions or to request to remove your name, or clicking unsubscribe below, from the list of principals if you do not wish to be contacted again.

Should you have any questions or concerns about the study's conduct or your rights as a research subject, you may contact the VT IRB Chair, Dr. David M. Moore at moored@vt.edu or (540) 231-4991.

Sincerely,

Appendix J (Con't)

Marcus C. Sartin
Graduate Candidate
Virginia Polytechnic Institute and State University
sartin75@vt.edu
(276) 393.8454

Dr. Walter Mallory
Clinical Assistant Professor, Educational Leadership
Virginia Polytechnic Institute and State University
wmallory@vt.edu
(703) 538.8496

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Appendix K

Informed Consent for Participants in Research Projects Involving Human Subjects

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Informed Consent for Participants in Research Projects Involving Human Subjects

Title of Project: Confirmatory Factor Analysis of Principal Academic Optimism

Investigator(s):	**Marcus C. Sartin**	**sartin75@vt.edu / (276) 393.8454**
	Name	E-mail / Phone number
	Dr. James L. Sellers	**jlseller@vt.edu /(540) 230.5473**
	Name	E-mail / Phone number

I. Purpose of this Research Project

The intent of this study is to develop a valid and reliable measure of Principal Academic Optimism. Additionally, this study is further intended and developed for completion of dissertation. Elementary School principals in schools which house a minimum of a K-5 grade configuration will be solicited to participate in this study. This study will only be distributed to K-5 principals in Virginia of which 837 participants have been identified via the Virginia Department of Education Website.

II. Procedures

Subjects will be asked to complete a questionnaire comprised of specifically selected questions by responding to a 6-point Likert scale. The 6-point Likert scale will range from "strongly agree" to "strongly disagree". The questionnaire will remain open for four weeks at which time participants will be reminded each successive week. Participants will only have to complete this questionnaire once and will not be solicited further for participation.

The questionnaire can be completed anywhere the participant chooses. The questionnaire will be posted within the email as an URL link to the Virginia Tech Qualtrics and participants will simply click on the link to complete by following the directions that are attached. The instrument used in this questionnaire is one that is designed to measure a principal's level of academic optimism through measures of academic emphasis, collective efficacy, and trust. The instrument has been developed by the researcher building off of the work of other researchers.

Should principals agree to participate, they will be asked to complete the questionnaire which should take approximately 15 minutes.

III. Risks

Minimal to no risks exist that the researcher is aware of. The participant's responses will remain completely anonymous. There will be no way to connect a participant to his or her responses. Contact information will be stored in a password protected online digital program. Contact

Appendix K (Con't)

information which will only include the first and last name of the school principal and school email address will be the only information that is collected on participants.

If as a result of the research project, the investigator determines that the subject should seek counseling or medical treatment, a list of local services should be provided. If accurate, inform participants that any expenses accrued for seeking or receiving treatment will be the responsibility of the subject and not that of the research project, research team, or Virginia Tech.

IV. Benefits

No tangible benefits nor intangible benefits are offered for participation in this questionnaire. If participants complete this questionnaire it will be strictly voluntary to benefit the educational endeavors of this researcher.

No promise or guarantee of benefits has been made to encourage you to participate.

V. Extent of Anonymity and Confidentiality

Data from the questionnaire will not connect the participant to their responses. Participants, therefore, will be able to answer questions on the questionnaire anonymously. Contact information will be stored in a password protected online digital program. Contact information which will only include the first and last name of the school principal and their school email address will be the only information that is collected on participants. This information will be deleted after completion of this study. This information will not be connected to responses and the information will be deleted after completion of this study. Additionally, the IP address of participants will not be viewable to the researcher, whereas the option in Qualtrics to hide IP address will be selected.

The Virginia Tech (VT) Institutional Review Board (IRB) may view the study's data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

Note: in some situations, it may be necessary for an investigator to break confidentiality. If a researcher has reason to suspect that a child is abused or neglected, or that a person poses a threat of harm to others or him/herself, the researcher is required by Virginia State law to notify the appropriate authorities. If applicable to this study, the conditions under which the investigator must break confidentiality must be described.

VI. Compensation

There is no compensation for participating in this research project, participation is strictly voluntary.

Appendix K (Con't)

VII. Freedom to Withdraw

It is important for you to know that you are free to withdraw from this study at any time without penalty. You are free not to answer any questions that you choose or respond to what is being asked of you without penalty.

Please note that there may be circumstances under which the investigator may determine that a subject should not continue as a subject.

VIII. Questions or Concerns

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document.

Should you have any questions or concerns about the study's conduct or your rights as a research subject, or need to report a research-related injury or event, you may contact the VT IRB Chair, Dr. David M. Moore at moored@vt.edu or (540) 231-4991.

IX. Subject's Consent

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent: By answering questionnaire and clicking submit below I am providing informed consent that I have read and understand that my participation is voluntary.

(Note: each subject must be provided a copy of this form. In addition, the IRB office may stamp its approval on the consent document(s) you submit and return the stamped version to you for use in consenting subjects; therefore, ensure each consent document you submit is ready to be read and signed by subjects.)

Appendix L

Follow-up Email 3

June 22, 2015

Dear ${m://FirstName} ${m://LastName},

Two weeks ago you were sent a questionnaire on principal academic optimism.

For those of you that have already completed the questionnaire, we thank you for your participation. If you completed the questionnaire, there is not a need to complete it a second time.

If you have not completed the questionnaire, please take a few minutes to do so at this time.
The questionnaire may be accessed at **${l://SurveyLink?d=Take%20the%20Survey}.**

Your input will be an important contribution to the future work of researchers and principals. Your involvement in this study poses minimal risk to you as a participant, as there is no way to connect you to your responses. Your responses are totally anonymous so please answer as openly and honestly as possible. Neither your name nor your IP address will be recorded by participating in this survey. There will be no compensation for participating in this survey, beyond the personal reward of helping a doctoral candidate to complete his dissertation.

We greatly appreciate your participation. Please feel free to contact Marcus Sartin (sartin75@vt.edu), the primary researcher, should you have questions or to request to remove your name from the list of principals if you do not wish to be contacted again.

Should you have any questions or concerns about the study's conduct or your rights as a research subject, you may contact the VT IRB Chair, Dr. David M. Moore at moored@vt.edu or (540) 231-4991.

Sincerely,

Marcus C. Sartin
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Appendix M

Follow-up E-mail 4 Final Notice for Questionnaire

July 7, 2015

Dear ${m://FirstName} ${m://LastName},

Approximately a month ago, you were invited to participate in a study examining principal academic optimism. Many principals from across the state have completed the questionnaire. If you have done so, thank you. If not, would you please take a few minutes to complete and submit the questionnaire now? The questionnaire may be accessed at **${l://SurveyLink?d=Take%20the%20Survey}.**

The results of the study will provide information on principals' perceptions of their own levels of academic optimism. Both researchers and administrators may find the information useful for reflective practices as well as future studies.

Your responses to the questionnaire items are essential to the success of the study, and we encourage you to make them a part of the results. We want to assure you that you will not be identified in any way in the report of the results nor will there be a way to connect you to your responses to the items.

We greatly appreciate your participation. Please feel free to contact Marcus Sartin (sartin75@vt.edu), the primary researcher, should you have questions.

Should you have any questions or concerns about the study's conduct or your rights as a research subject, you may contact the VT IRB Chair, Dr. David M. Moore at moored@vt.edu or (540) 231-4991.

Sincerely,

Marcus C. Sartin
Graduate Candidate
Virginia Polytechnic Institute and State University
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Appendix N

Training in Human Subjects Protection Certification