

Spring 2015

Effect of Psychological Capital on Elementary Teacher Stress and Workplace Affect

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EFFECT OF PSYCHOLOGICAL CAPITAL ON ELEMENTARY TEACHER STRESS
AND WORKPLACE AFFECT

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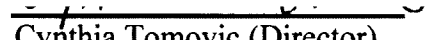
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Requirements for the Degree of

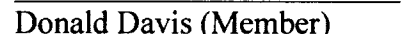
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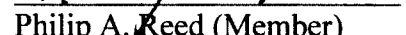
EDUCATION


OLD DOMINION UNIVERSITY
May 2015

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ABSTRACT

EFFECT OF PSYCHOLOGICAL CAPITAL ON ELEMENTARY TEACHER STRESS AND WORKPLACE AFFECT

Scott Stephen Casad
Old Dominion University, 2015
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Calling upon principles of positive psychology, the quantitative study used structural equation modeling (SEM) to explore the relationships between teacher psychological capital (PsyCap), role ambiguity, role conflict, role overload, workplace stress, job satisfaction, job commitment, and intention to quit. Valid and reliable instruments from the literature were incorporated into a 64-item survey and distributed to 830 third through fifth grade teachers at seven northern Virginia school districts. In total, 225 complete responses were received. SEM testing rejected the exact-fit hypotheses and revealed insufficient overall fit between the study data and hypothesized models; thereby, providing no support for the proposed causal relationships. Furthermore, high unexplained variance in the models suggested unaccounted for variables in predicting teacher turnover. However, individual parameter estimates confirmed PsyCap's statistically significant relationship with satisfaction, commitment, stress, and intention to quit. Findings further supported new evidence establishing significant negative relationships between PsyCap and role conflict, ambiguity, and overload, which had not been previously studied. Additionally, the study was the first investigation of PsyCap with elementary school teachers and confirmed findings from manufacturing, engineering, service industry, and academia. The study was not without its limitations. SEM testing requires data be independent; however, teachers were nested within schools

and within school districts, which increased the likelihood of type II errors. The alpha level was lowered to .01 to counter this limitation. Normality testing also indicated there was greater likelihood of multivariate non-normality, which detrimentally effects SEM fit statistics and chi-square testing. Despite strong literature support for the intention to quit measurement instrument, the reliability in this study was low enough to raise questions regarding its value to assess teacher turnover intention. Lastly, the sample size exceeded the academically accepted minimum of 200, but structural modeling benefits from a large robust data set typically in the thousands. Future studies would benefit from exploring the antecedents of PsyCap, the multilevel effects of PsyCap, the influence of workplace relationships on PsyCap and worker affect, and the impact on other desired educational outcomes.

Dedicated to all who seek to be well.

ACKNOWLEDGMENTS

When you finally get around to writing this page, you realize the magnitude of what has been accomplished and all of those who helped you get here. I would have never made it this far without the guidance and counsel of McKenzie and her enduring support and patience as I took this journey. My committee members deserve special recognition for their professional and personal wisdom in channeling my inner researcher to come out. Their expertise and insights were critical to my success. Finally, I thank all of those whose path I crossed that gave me inspiration to focus on the positive and invigorating acts of life. To all of you, be well!

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CHAPTER I

INTRODUCTION

In the mid-1990s, the field of psychology went through a substantial transition. During the nearly fifty years following World War II, psychology developed a robust set of knowledge and practices on the diagnosis, treatment, and interventions for improved mental, physical, and emotional health. The evolution of psychology over those years took a strictly diseased model approach, which resulted in a pathology that neglected the psychological elements of fulfillment, vitality, energy, and strength (Peterson & Seligman, 2003). In 1998, the president of the American Psychological Association, Martin Seligman, recognized a growing need for psychology to focus on the positive elements of the human condition, which resulted in the formal discipline of positive psychology (Fowler, Seligman, & Koocher, 1999).

Positive psychology seeks to balance the traditional work in treating the ill and distressed by illuminating the strengths that represent the best in life and incorporating them into support for human fulfillment and flourishing (Gillham & Seligman, 1999; Seligman & Csikszentmihalyi, 2000). While positive psychology incorporates a wide perspective from prevention to therapy to the applied, it is primarily concerned with positive experiences such as joy, happiness, or satisfaction; with traits such as resilience, hope, courage, or optimism; and with behaviors such as appreciation, tolerance, altruism, or collaboration. The focus on flourishing is consistent with hedonistic and heliotropic perspectives, specifically that people are motivated to seek pleasure and avoid pain while also being drawn to that which gives them life and promotes vitality.

The benefits of positivity can radiate from and through the individual, group, or organization. From among the emerging fields of study in positive psychology, positive

organizational scholarship applies principles of positivity to capture and repeat the positive results, behaviors, and character of organizations (Cameron, Dutton, & Quinn, 2003). These positive organizational attributes represent an organization's positive deviance (Wilkins, 1964), which stand in stark contrast to the negative deviances (Bennett & Robinson, 2000; Robinson & Bennett, 1995) typically analyzed by traditional approaches to management and organizational development (e.g., burnout, abuse, distrust, betrayal). Approaches to both positive and negative deviance take a systematic path to understanding the phenomena; however, positive organizational scholarship contends that positive deviant effects manifest non-linearly such that positive behaviors and outcomes have a broadening and building effect on an organization (Frederickson, 1998).

At the core of the broadening and building effect are the relationships and interactions between people working together within an organization. These positive organizational behaviors, and the associated positive emotional responses, temporarily open or broaden individuals' ability for greater fulfillment and positive response, which in turn builds their physical, intellectual, social, and psychological capital for future personal and professional work efforts (Frederickson, 2001; Frederickson & Joiner, 2002). Through this spiraling process of positivity, employees develop relationships and connections, which help them to succeed (Dutton & Raggins, 2007), and it has been long believed that these positive outcomes are contributing to engagement, prosocial, and citizenship behaviors extending beyond the minimum task requirements of a job (e.g., volunteering, staying late, supporting co-workers) (Brief & Motowidlo, 1986; George, 1991; Smith, Organ, & Near, 1983). Specifically, psychological capital consisting of

hope, optimism, resiliency, and self-efficacy has been correlated with turnover (Avey, Patera, & West, 2006), satisfaction and commitment (Larson & Luthans, 2006), and performance (Youseff & Luthans, 2007). Positive personal capacities, such as psychological capital, represent an individual resource for overcoming obstacles and achieving success (Frederickson, 2001). These affective and performance benefits have yet to be explored in the context of teacher stress and outcomes in primary education settings.

Problem Statement

The purpose of the study was to assess the tenability of various theoretical models regarding the effect of positive personal capacities on teacher stressors, stress, and affective job outcomes. In addition, to examine the overall tenability of the proposed models, specific hypotheses were also tested within each alternative model. More details of the theoretical models and hypotheses are listed in Chapter III.

Background and Significance

Increasing pressures and demands on elementary teachers from national education requirements have arguably added an additional layer of complexity and stress to those charged with developing the future of the country (Crute, 2004; Margolis, 2006). This strain may lead to a focus on gaps in performance, unmet expectations, and negativity rather than strength based, positively oriented attributes of teachers. These potentially positive attributes were believed to be contributors to of teacher stress and affect.

Educational Outcomes

The increasing emergence of multi-national companies and virtual businesses continue to reinforce the truly global nature of today's economy and marketplace. For the

United States, the expanding, competitive global workforce has driven the need to critically evaluate the nation's ability to educate and promote a healthy workforce that supports keeping jobs in the United States rather than watching them migrate to adjacent and overseas countries. Efforts in Washington D.C. to understand these influences, and the subsequent implications to the country's educational systems, have resulted in a primary focus on the areas of science, technology, engineering, and mathematics (STEM) (Kuenzi, 2008).

Among the numerous standardized tests test for primary and secondary education, only the National Assessment of Educational Progress (NAEP) nationally and continuously captured student achievement in math and science since 1969. For math, the trend since 1990 has been flat with no significant improvement in the percentage of students performing at only the basic level; however, the overall total percentage of students performing at basic, proficient, and advanced achievement has increased significantly (Kuenzi, 2008). Similarly for science achievement, the trend for students at the basic achievement has been flat with mixed findings for those achieving proficient or advanced achievement (U.S. Department of Education, 2006b). These national statistics reflect similarly in the United State's comparison with other countries. The Trends in International Mathematics and Science Study (TIMSS) can be used to compare standardized test scores between countries (Neidorf, Binkley, & Stephens, 2006). TIMSS was most recently administered in 2003 with 25 countries where United States' students ranked 11th overall in math (54th percentile) and 8th in science (67th percentile) for 4th grade, and 20th in math (56th percentile) and 13th in science (71st percentile) for 8th grade, which portrays a sobering perspective on the need for improved STEM focused efforts

(Gonzales et al., 2004).

During the past decade, the federal government has endeavored to raise the priority of STEM through the President's American Competitiveness Initiative in 2006 and the America Competes Act of 2007. Along with the National Academy of Sciences' (2007) report, *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future* (i.e., "Augustine" report), these efforts have targeted the need to further develop existing STEM teacher skill sets, increase the overall number of STEM teachers, improve the pre-collegiate process, award more STEM-related postsecondary degrees, and expand STEM oriented research. Ultimately, when coupled with the requirements for improved school performance under the No Child Left Behind (NCLB) Act of 2001, these initiatives strive to raise the standardized math and science scores of elementary and secondary students. Due to the United State's lagging international performance in STEM and potential harm to the country's global competitiveness, primary and secondary educational systems need to remain vigilant in their external awareness of these federal initiatives and Congressional acts, but also look inward to consider the impacts of additional stress and consider potential benefits of positive psychology.

Teacher Outcomes

According to the National Center for Education Statistics, for the fall of 2009 approximately 3.7 million full time equivalent (FTE) elementary and secondary school teachers began the school year in the estimated 99,000 schools across the United States (Snyder & Dillow, 2010). Public schools represented 3.2 million teachers, while 5 million worked in private schools, which combined signified a total increase of 12% since 1999.

Consistent with Planty et al. (2008), 17% of those teachers will have left their current job by the end of the school year. Nearly half (8%) will merely change positions from one school to another, but the remaining 9% will leave education completely. According to the National Commission on Teaching and America's Future, teacher turnover may be costing the United States an estimate \$7 billion annually to recruit, hire, and prepare teachers employed to replace those who have departed (Barnes, Crowe, & Schaefer, 2007).

The implications of increased stress potentially resulting from standardized testing and NCLB legislation on these turnover rates cannot be ignored. NCLB has subjected state schools to increased federal accountability, which has subsequently increased the demands placed on teachers. These demands have resulted in increased teacher stress (Crute, 2004; Margolis, 2006). Prior to NCLB, teachers were already under a great deal of occupational stress (Borg & Falzon, 1989; Borg & Riding, 1991; Borg, Riding, & Falzon, 1991; Cooper & Kelly, 1993; Hui & Chan, 1996), and studies showed that teachers generally experienced more stress than other occupations focused on serving "clients", such as nurses, doctors, tax officers, and dentist (Travers & Cooper, 1993, 1994). More recently, Oginska-Bulik (2005) concluded teacher stress exceeded that of firefighters and prison officers.

Stress has a direct relationship with teacher affect and performance. Existing evidence indicates stress related to time demands stemming from increased responsibilities and decreased autonomy is in fact lowering teacher commitment (Borg, Riding, & Falzon, 1991). Occupational stress has also been negatively correlated with performance and positively with turnover (Babin & Boles, 1998; Sullivan & Baghat,

1992; Tubre & Collins, 2000; Williams et al., 2001). Teacher stress can also lead to burnout due to intense work conditions (Ganster & Schaubroeck, 1991), which may result in physical absence from the classroom thereby having a negative impact on student performance (Dick and Wagner, 2001; Gulek, 2003; Yoon, 2002). Even when teachers are present in the classroom, burnout due to stress affects teachers psychological ability to focus, stay on task, and respond to classroom developments, which gradually reduces their effectiveness, damages the quality of learning, and lowers student performance (Travers & Cooper, 1994).

Obsession with unresolved stress can lead to a focus on what is wrong and negative within an individual, team, or organization. There exists a need to focus on positive aspects of education that may counter outcomes related to teacher stress, specifically the relationships between personal capacities and teacher stress and affective outcomes. Here, positive psychology has documented benefits to personal health, health of social relationships, work, income, longevity, and societal happiness (Donaldson, Csikszentmihalyi, & Nakamura, 2011).

Positive Benefits

Financial implications to school districts and potential impacts on the quality of educational services due to stress and turnover as a result of educational reform, raised questions whether elements of positive organizational psychology may have predictive value in assessing teachers' satisfaction, commitment, and intention to leave. If positivity can predict higher teacher affect, there are likely additional benefits beyond the scope of this study resulting in higher prosocial and organizational citizenship behaviors (OCBs). Prosocial behaviors are "(a) performed by a member of an organization, (b) directed

toward and individual, group, or organization with whom he or she interacts while carrying out his or her organizational role, and (c) performed with the intention of promoting the welfare of the individual, group, or organization toward which it is directed” (Brief & Motowidlo, 1986, p. 711). Individuals are more likely to engage in prosocial behaviors when they feel supported by the organization (Mauseth, 2008; Smith, Organ, & Near, 1983), have positive relationships at work (Soldner, 2010; Twenge, Ciarocco, Baumeister, & Bartels, 2007), and experience positive affect about their work (George, 1991). Conversely, those who felt rejected or experienced poor supervisor support reported lower OCB activity (Smith, Organ, & Near, 1983; Twenge, Ciarocco, Baumesiter, & Bartels, 2007).

Following Coleman and Borman’s (2000) model of performance citizenship that includes interpersonal citizenship performance, organizational citizenship performance, and job/task conscientiousness, teachers engage in each of these prosocial behaviors when they give back to other teachers (e.g., covering a class), to the school and district (e.g., community outreach), and to the students and their families (e.g. extra tutoring, glee club, sports). These extracurricular activities show positive impacts on achievement, development, grade level transitions, classroom behavior, and college expectations (Akos, 2006; Broh, 2002; Covay, 2010; Dumais 2009; Feldman & Matjasko, 2005; Hunt, 2005; Peck, Roeser, Zarett, & Eccles, 2008).

From these potential positive antecedents and outcomes, it was believed a better understanding of the relationship between teacher psychological capital, stress, and affect would further enhance the body of evidence supporting positive results in education.

Limitations

The following were limitations of this study:

- The work environment was constrained to only elementary educational settings.
- The educational setting was confined to only seven eastern Virginia school districts.
- Respondents were limited to third through fifth grade teachers.
- Independent and dependent variables were collected at the same time.
- The sample consisted of all volunteer participants.
- There was no independence between teachers; that is, individual teachers were nested within work groups, groups within schools, and schools within school districts.

Assumptions

For this study, the following assumption was held to be constant:

- People are hedonistic and heliotropic; that is, people are motivated to experience pleasure rather than pain and are drawn to that which is positive and good, brings vitality, and gives life.

Procedures

Upon Institution Review Board approval (Appendix A), the sample for this study was purposefully selected from seven school districts in northern Virginia, from which the subjects formed a convenience sample of third through fifth grade teachers. Prior to instrument deployment, each school district Superintendent approved the study, and then during data collection teacher consent was collected electronically. The 64-question electronic instrument, administered during May and September 2013, incorporated

validated and reliable instruments for psychological capital, role stressors, teacher stress, job satisfaction, organizational commitment, and intention to quit. Continuing with the quantitative research design, data were compiled and prepared for statistical testing with structural equation modeling.

Definitions of Terms

The following terms are defined to provide better understanding of the content discussed within this study:

- *Commitment* – the affect to remain with an organization because one wants to, needs to, or feels obligated to (Allen & Meyer, 1990).
- *High quality connections* – a positive relationship at work identified by heightened sensation of vitality, sense of being valued, and feeling of mutual participation, which holds space for larger range and frequency of authentic emotions, flex but do not break in response to obstacles and stress, and shun counterproductive behaviors for ones that generate openness and innovation (Dutton & Heaphy, 2003; Ragins & Dutton, 2007).
- *Hope* – “a positive motivational state that is based on an interactively derived sense of successful (1) agency (goal-directed energy) and (2) pathways (planning to meet goals)” (Snyder, Irving, & Anderson, 1991, p. 287).
- *Intention to quit* – “attitudinal orientation or a cognitive manifestation of the behavioural decision to quit” (Elangovan, 2001, p. 159).
- *Job satisfaction* – “pleasurable emotional state resulting from the appraisal of one’s job as achieving or facilitating one’s job values. Job dissatisfaction is the

unpleasurable emotional state resulting from the appraisal of one's job as frustrating or blocking the attainment of one's values'' (Locke, 1969, p. 317).

- *Occupational Stress* – an individual's perception of their ability to cope or resolve internal and external demands within their life through balance restoring behaviors (Lazarus, 1966).
- *Optimism* – the attribution and explanation of positive events in terms of self-directed effort, sustainability, and systemic causes, while deflecting negative events as the result of uncontrollable forces, momentary setbacks, and circumstance (Seligman, 1998).
- *Prosocial behavior* – “behavior which is (a) performed by a member of an organization, (b) directed toward and individual, group, or organization with whom he or she interacts while carrying out his or her organizational role, and (c) performed with the intention of promoting the welfare of the individual, group, or organization toward which it is directed” (Brief & Motowidlo, 1986, p.711).
- *Psychological capital* – “an individual's positive psychological state of development and is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success” (Luthans, Youssef, & Avolio, 2007, p. 3).

- *Resilience* - “positive psychological capacity to rebound, to ‘bounce back’ from adversity, uncertainty, conflict, failure, or even positive change, progress and increased responsibility” (Luthans, 2002, p. 702).
- *Role Ambiguity* – “uncertainty about what actions to take to fulfill the expectations of the role” (Örtqvist & Wincent. 2006, p. 399).
- *Role Conflict* - “the simultaneous occurrence of two (or more) sets of pressures such that compliance with one would make more difficult compliance with the other” (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964, p.19).
- *Role Overload* – “the total demands on time and energy associated with the prescribed activities of multiple roles are too great to perform the roles adequately or comfortably” (Voydanoff, 2002, p. 147).
- *Science, Technology, Engineering, and Math (STEM)* – Includes the study of engineering, biological sciences, agricultural sciences, earth/atmospheric/ocean sciences, computer sciences, mathematics/statistics, medical/other life sciences, physical sciences, psychology, and social sciences (National Science Foundation, 2012).
- *Self-efficacy* – “the employee’s conviction or confidence about his or her abilities to mobilize the motivation, cognitive resources or courses of action needed to successfully execute a specific task within a given context” (Stajkovic & Luthans, 1998, p. 66).

Summary and Overview

This chapter introduced the discipline of positive psychology and the role of positive organizational scholarship as a concept for broadening and building vitality and

fulfillment throughout an organization. From among the various constructs of positive organizational scholarship, the problem statement posited a model for representing a positive personal resource (psychological capital) as an indicator of teacher stress and affective outcomes. The research goals clarified the model variables, and limitations and assumptions bound the scope of the study. Further discuss of the variables offered background and significance on why the study arose and why it was important to conduct the research. A definition of terms provided the reader with understanding of key language.

The Review of Literature in Chapter II discusses STEM education, NCLB legislation, teacher stress, job satisfaction, organizational commitment, intention to quit, and psychological capital within the context of positive organizational scholarship in education. The Methods and Procedures of Chapter III explain the reliability and validity of study instruments, data collection methodologies and design, and justification for the selected statistical testing method. The Findings in Chapter IV explain the results of the data and the fit of the structural model. The Summary, Conclusions, and Recommendations in Chapter V summarize and draw conclusions from the study to explain limitations and highlight areas for future research.

CHAPTER II

REVIEW OF LITERATURE

The introduction of federal education reform into state school systems can substantially increase the pressures and threats teachers experience due to organizational changes, increased time demands, increased accountability and responsibility, reduced autonomy, and reduced control. This was no more evident than in the institutionalizing of the No Child Left Behind (NCLB) Act of 2001. To situate the relevancy of this study, the context was established within the growing educational concerns with STEM education in primary public schools. The emerging application of positive psychology was explored to address the role individual psychological capital as well as the body of work defining and studying teacher roles stressors, workplace stress, job satisfaction, organizational commitment, and ultimately intent to quit.

Science, Technology, Engineering, and Mathematics Education

Due to an increasing global economy and increased demand for technical expertise, the United States continues to expand efforts focused on developing a strong and robust workforce capable of capturing, securing, and maintaining jobs in the United States rather than having those jobs migrate to the global workforce. This has driven politicians, educators, and industry leaders to renew efforts to improve the country's educational systems and bring a priority to STEM and the related academic subjects of mathematics and science (Kuenzi, 2008). As reported and tracked by the National Science Foundation (2012), STEM includes the study of engineering, biological sciences, agricultural sciences, earth/atmospheric/ocean sciences, computer sciences,

mathematics/statistics, medical/other life sciences, physical sciences, psychology, and social sciences.

U.S. Math and Science Scores

Among the numerous standardized tests for primary and secondary education, only the National Assessment of Educational Progress (NAEP) nationally and continuously captured student achievement in math and science since 1969. Administered in public and private schools at grades 4, 8, and 12, NAEP assesses student knowledge on a scale of 0-500, and recently during the past two decades has assessed the percentage of students attaining basic, proficient, or advanced achievement in each subject. Basic achievement represents partial mastery of the knowledge and skills necessary to achieve proficient work. Proficient denotes sound performance for the grade, and advanced depicts exceptional academic achievement.

For the math, the trend since 1990 has been flat with no significant improvement in the percentage of students performing at only the basic level; however, the total percentage of overall students performing at basic, proficient, and advanced achievement has increased significantly (Kuenzi, 2008). In 2005, nearly a third of students scored at the proficient level while upwards of 40% of students fell below basic achievement (see Table 1), but the overall number of students at the basic level or higher has increased nearly 30% since 1990 (U.S. Department of Education, 2006a). Recent math results for 2009 showed no change in all three levels of achievement since 2005 (U.S. Department of Education, 2009). Similarly for science achievement, the trend for students at the basic achievement has been flat with mixed findings for those achieving proficient or advanced

Table 1

Domestic and International Math and Science Achievement of U.S. Students

	<u>Math</u>	<u>Science</u>
<u>Domestic: Proficient – 2005</u>		
4 th Grade	36%	29%
8 th Grade	30%	29%
12 th Grade	22%	18%
<u>Domestic: Below Basic - 2005</u>		
4 th Grade	20%	32%
8 th Grade	30%	41%
12 th Grade	40%	46%
<u>International Comparison – 2003</u>		
4 th Grade (25 countries)	11 th	8 th
8 th Grade (45 countries)	20 th	13 th

achievement (U.S. Department of Education, 2006b). Again, results from 2005 showed approximately a third of students achieving proficient levels while 40% did not reach basic achievement. With the exception of 4th graders, the percentage of students scoring basic or above was lower in 2005 than it was in 1996. Results from 2009 were not yet available.

International Comparison

Considering the concern regarding the United State's international competitiveness and ready workforce skilled in STEM, the Trends in International Mathematics and Science Study (TIMSS) can be used to compare standardized test scores between countries (Neidorf, Binkley, & Stephens, 2006). TIMSS was most recently administered in 2003 where 25 countries participated in the 4th grade assessment and 45 in the 8th grade assessment (see Table 1). At the 4th grade, the international average was 495 in math and

489 in science, while the United States scored 518 and 536, respectively (Gonzales et al., 2004). These scores are remarkably higher; however, when looked at as a relative ranking, United States' students ranked 11th overall in math (54th percentile) and 8th in science (67th percentile), which portrays a more sobering perspective on the need for improved STEM focused efforts. 8th grade international scores averaged 466 in math and 473 in science, while the United States scored 504 and 527, respectively, which corresponded with an overall ranking of 20th in math (56th percentile) and 13th in science (71st percentile). As compared to countries participating in both the 1995 and 2003 TIMSS, the United State's ranking between those two periods decreased for 4th graders (5th to 8th in math, 1st to 5th in science) but increased for 8th graders (13th to 8th in math, 16th to 11th in science). As a nation that prides itself on innovation and exploration, these number provide further evidence that the United States is positioned for improvement in math and science achievement, and hence growth in STEM competitiveness.

Government Focus

During the past decade, the federal government has endeavored to raise the priority of STEM through the President's American Competitiveness Initiative in 2006 and the America COMPETES Act of 2007. Along with the National Academy of Sciences' (2007) report, *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future* (i.e., "Augustine" report), these efforts have targeted the need to further develop existing STEM teacher skill sets, increase the overall number of STEM teachers, improve the pre-collegiate process, award more STEM-related postsecondary degrees, and expand STEM oriented research. Ultimately, when coupled with the requirements for improved school performance under the No Child Left

Behind (NCLB) Act of 2001, these initiatives strive to raise the standardized math and science scores of elementary and secondary students. Due to the United State's lagging international performance in STEM and potential harm to the country's global competitiveness, primary and secondary educational systems need to remain vigilant in their external awareness of these federal initiatives and Congressional acts, but also look inward to consider teacher work environments and the potential benefits of positive psychology.

No Child Left Behind Act of 2001

Federal mandates targeted at improving school accountability for learning have introduced additional requirements and consequences for teachers. These additional expectations often supersede or overrun teachers' desires for autonomy, control, and influence over their classroom and learning environment. This lack of power creates additional stress above and beyond that created by typical work environments (e.g., relationships, resources, work load, work-life balance).

History

On January 23, 2001, Congress introduced Public Law No. 107-110 as a reauthorization of the Elementary and Secondary Education Act of 1965. Nearly a year later on January 8, 2002, President George W. Bush signed into law the No Child Left Behind (NCLB) Act (Pub. L. No. 107-110). In conjunction with then Secretary of Education, Rod Paige, President Bush championed the law as part of this educational reform plan. There was great concern with disadvantaged and minority students not keeping pace with middle-class students. The law sought disaggregation by focusing on improving performance for all groups of students through concerted efforts targeted at

standards-based reform and accountability. President Obama's proposed 'A Blueprint for Reform' would expand the focus to embrace greater flexibility and equity, look beyond test scores to view schools as systems, develop school leaders as well as teachers, and hold the entire school system accountable rather than just teachers (U.S. Department of Education, 2010). The proposed law has not been passed yet.

In accordance with NCLB (Pub. L. No. 107-110), the law aggressively pursues five core requirements. First, school systems must implement scientifically proven teaching strategies that lead to learning and performance improvement. Schools are afforded the freedom to select those strategies as long as they have empirical support and contribute to the goals of NCLB. Second, NCLB requires a greater emphasis on reading to ensure graduates are literate and able to use those skills as a member of society and the national workforce. Third, states must implement standardized testing to assess the learning and progress of students. States may execute standardized tests of their choosing; however, they must align with national objectives. The National Assessment of Educational Progress (NAEP) was established to align state and national efforts. Fourth, schools must show Annual Yearly Progress (AYP) as evidenced by consistently improving standardized test scores. AYP comes with improvement plans for underachieving schools, required achievement of academic objectives by high school graduation, threat of losing federal funding, and possibility of losing students who transfer after schools fails AYP in two consecutive years. Finally, the fifth core element of NCLB drives states and schools to employ highly qualified teachers. There is no national standard for 'high qualified', so each state is left to establish a standard, which creates great variability across the nation.

Commonwealth of Virginia Standards of Learning

The Commonwealth of Virginia pursued and implemented standards of learning (SOLs) to align with outcome-based education. The standardized testing allowed for a common evaluation tool to assess individual districts, schools, and grade levels on academic achievement. With the passing of NCLB, the SOLs became the state's means of meeting federal mandates for standardized testing and of demonstrating AYP for continued federal funding. By all estimations, this is the most critical and political measure of student achievement and State academic success.

Development of the Virginia SOLs began in the early 1990s with the establishment of Common Core of Learning in 1993, which was specifically created to address the growing emphasis on outcome-based education (Yecke, 1999). Politicians primarily drove these efforts with minimal input from educators or the public. This resulted in 1993 town hall debate in Richmond, VA and ultimately caused the Governor to pull back the Common Core of Learning initiative. Recognizing the error in excluding public input and participation, a series of over ten public hearings were held in the coming year to discuss strategies, standards, requirements, and processes. In June 1995, the Virginia Department of Education approved the SOLs, and then in 1997 established Standards of Accreditation to link school system accountability to standardized test scores (VADOE, 2001; Yecke, 1999). The first testing occurred in 1998, and with the passage of NCLB in 2002, Virginia formalized the SOLs as the standardized test for meeting federal requirements.

The SOLs provide annual assessments various subjects throughout a student's academic career (VADOE, 2011, SOL). At grades 3, 5, and 8, the SOLs test English,

math, history, social sciences, and science. Additionally, with the implementation of NCLB, the state added standardized testing in grades 4, 6, and 7 specifically to address math and reading. In high school, students take subject area specific tests at the completion of their coursework and prior to graduation. Alternative and alternate testing options are available for students with special needs.

Virginia school and student performance has consistently improved since inaugural testing in the last 1990s (VADOE, 2005, press release). In 1998, only 2% of the commonwealth's public schools met the standard for full accreditation. Over the next five years, the percentage of accredited schools would increase from 6.5% in 1999 to 40% in 2001 to 84% in 2004. In 2010, 98% of schools were accredited (VADOE 2011, accreditation). It is important to note accreditation is more than just test scores, and when looking at AYP for NCLB, the Commonwealth of Virginia met AYP in 2007 and 2008, but did not in 2009 (VADOE, 2011, report card). Data indicate students lack in English and math, especially for black, economically disadvantaged, and students with disabilities.

Positive Psychology

Over the past two decades, psychologists have recognized the need to focus more effort and energy on those aspects of society, organizations, and individuals that promote and raise positive well-being rather than fixating on remedying negative conditions. In other words, the emphasis is on seeking out those attitudes, behaviors, and conditions that bring life, vitality, and flourishing to the human condition. These positive perspectives not only overcome negatives situations, but can prevent them from developing in the first place.

Historical Perspective

During the nearly fifty years following World War II, psychology developed robust knowledge of the diagnosis, treatment, and interventions for improved mental health. The evolution of psychology over those years took a strictly diseased model approach, which resulted in a pathology that neglected the psychological elements of fulfillment, vitality, energy, and strength (Peterson & Seligman, 2003). In 1998, the president of the American Psychological Association, Martin Seligman, recognized a growing need for psychology to focus on the positive elements of the human condition, which resulted in the formal discipline of positive psychology (Fowler, Seligman, & Koocher, 1999).

Positive psychology seeks to balance the traditional work in treating the ill and distressed by illuminating the strengths that represent the best in life and incorporating them into support for human fulfillment and flourishing (Gillham & Seligman, 1999; Seligman & Csikszentmihalyi, 2000). While positive psychology incorporates a wide perspective from prevention to therapy to the applied, it is primarily concerned with positive experiences such as joy, happiness, or satisfaction; with traits such as resilience, hope, courage, or optimism; and with behaviors such as appreciation, tolerance, altruism, or collaboration.

Applied Positive Psychology

Positive psychology is a multilevel discipline with broad applications. The benefits of positivity radiate from and through the individual, group, organization, and society. Applying positive psychology requires a consideration of all levels and the interactions and integration between them. Ultimately, the application of positive

psychology would support positive institutions that create positive individuals who have more positive subjective experiences that lead to flourishing at work, home, and play.

Societal implications. When considering what Kaufman (1981) called the ‘mega’ of organizational or system outcomes, at a societal level positive psychology has called for inquiries into the meanings of and impacts from environmental issues such as commuting, green space, air pollution; health issues such as weight management, cardiovascular, and chronic pain; and individual behaviors such as stronger social relationships, higher income, longer lives, and increased societal trust, confidence, cooperation, and tolerance (Diener & Ryan, 2011). According to Diener and Ryan, these invitations have led to requests for increased public policies to assess and improve national well-being and develop indicators of national well-being similar to economic indicators (e.g., GNP). A positive-centric society would contribute to individual flourishing through an optimal ratio of positive to negative emotions of 3:1 (Losada & Heaphy, 2004).

Organizational implications. The infusion of positive psychology into work settings has established the practice of positive organizational psychology (POP), which aligns in two directions: 1) efforts targeting the positive outcomes, processes, and attributes of organizations (i.e., positive organizational scholarship, POS) ((Cameron, Dutton, & Quinn, 2003) and 2) practices developing the strengths, character, and psychological capacities of individuals (i.e., positive organizational behavior, POB) (Luthans, 2002).

Positive organizational scholarship applies principles of positivity to capture and repeat the positive results, behaviors, and character of organizations (Ko & Donaldson,

2011). These positive organizational attributes represent an organization's positive deviance, which stands in stark contrast to the negative deviances typically analyzed by traditional approaches to management and organizational development (e.g., burnout, abuse, distrust, betrayal). The focus is on what is good and working rather than what is bad and broken. The intent is human flourishing in different settings. Approaches to both positive and negative deviance take a systematic path to understanding organizational behavior; however, positive organizational scholarship contends that positive deviant effects manifest non-linearly such that positive behaviors and outcomes have a broadening and building effect on individuals and organizations (Frederickson, 1998).

At the core of the broadening and building effect are the relationships and interactions between people within an organization. The positive behaviors of individuals, and the associated positive emotional responses, temporarily open or broaden their ability for greater fulfillment and positive response, which in turn builds their physical, intellectual, social, and psychological capital for future personal and professional work efforts (Frederickson, 2001; Frederickson & Joiner, 2002). Through this spiraling process of positivity, employees develop relationships and connections, which help them to succeed and promote norms and climates for positivity (Dutton & Raggins, 2007). It has long been believed that a positive climate contributes to positive outcomes (Brief & Motowidlo, 1986; George, 1991; Smith, Organ, & Near, 1983).

Individual implications. The study of POBs has emerged as a means of calling attention to those positive strengths, abilities, and resources that allow workers to grow, develop, and flourish (Luthans & Church, 2002; Luthans & Youssef, 2007). Luthans and Church (2002) defined POB as “the study and application of positively oriented human

resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today's workplace" (p. 59). POBs spotlight the best in individuals and leverage those advantages to contribute to POB outcomes and desired organizational goals and results. In the literature, POBs associated with strength-based practice (Clifton & Harter, 2006); positive leadership including authentic (Avolio, Luthans, & Walumbwa, 2004), transformational (Walumbwa et al., 2008), ethical (Brown & Trevino, 2006), and spiritual (Pandey & Gupta, 2008) leadership; organizational virtuousness (Cameron et al., 2004); and flow (Csikszentmihalyi, 1990).

Psychological Capital

Among the various POBs developing from positive psychology, Luthans, Youssef, and Avolio's (2007) psychological capital (PsyCap) represented a second-order construct incorporating four positive attributes typically desired in teachers, but not yet situated in education. PsyCap consists of the four constructs of self-efficacy, resiliency, hope, and optimism (Luthans et al., 2004; Luthans & Youssef, 2004). Individually, the four constructs were well studied, but not yet combined into a second-order construct. The growing literature on PsyCap supported further investigation into educational applications.

Construct Development

As a whole, PsyCap is viewed as a state rather than trait construct, which has been supported with a growing body of evidence demonstrating the influential nature of the four core PsyCap factors (Kluemper, Little, & Degroot, 2009; Wright, Cropanzano, & Meyer, 2004). PsyCap as a state is supported by social cognitive theory that emphasizes a

reciprocal interaction among the individual, environment, and past behaviors to influence current beliefs, emotions, and actions (Miller & Dollard, 1941). This perspective on social learning theory, in combination with Frederickson's (2001) broaden and build theory, help explain how individuals' PsyCap can be changed and modified through observation and interaction with others demonstrating higher or lower PsyCap. As Avey, Luthans, and Youssef (2010) noted, PsyCap "result[s] from dynamic processes that activate the adaptive encoding of cognitive categories, expectancies, goals, values, affects, and self-regulatory plans. These processes are selectively activated and context specific" (p. 435). A lengthy and robust development of PsyCap in both domestic and international contexts can be found in Luthans, Avolio, Avey, & Norman (2007); Luthans, Avolio, Walumbwa, & Li (2005); and Luthans, Youssef, & Avolio (2007).

As a relatively new second order construct, PsyCap required confirmation of its structure and inclusion of the four factors of self-efficacy, hope, optimism, and resiliency, which each individually had been previously studied, but not combined. First, consideration was given to whether the four factors are in fact independent and discriminant. According to Luthans et al. (2008), correlations between the four were less than .60, which provides support for discriminant validity. Next, prior to testing the full PsyCap model, item loadings of the individual factors had to be considered. Item loadings were found to be .89 to .98 thereby supporting the validity of the respective factors and their measurement items (Luthans et al., 2008). Consequently, the four factors were then loaded onto the single concept of PsyCap to test the overall fit of the model. Following Hu and Bentler's (1999) recommended satisfactory fit indices of less than .08 for standardized root mean square residual (SRMR), less than .06 for root mean square

error of approximation (RMSEA), and greater than .95 for comparative fit indices (CFI), numerous tests of this second-order model were found to be adequate (see Table 2). Finally, to confirm the second-order structure of PsyCap, Luthans and colleagues (2008)

Table 2

PsyCap Second-Order Confirmatory Factor Analysis.

	<u>SRMR</u>	<u>RMSEA</u>	<u>CFI</u>
Avey et al., 2006	.065	.025	.981
Avey, Youseff, et al., 2010	.05	.05	.96
Luthans et al., 2007	.051 (Study 1)	.046 (Study 1)	.934 (Study 1)
	.056 (Study 2)	.048 (Study 2)	.924 (Study 2)
Luthans et al., 2008	.01	.08	.97

also conducted chi-square differences test between a single latent factor structure with all items loaded directly onto PsyCap and a second-order structure with the items loaded onto their respective factors that were then loaded onto PsyCap. The results supported a second-order structure ($\Delta\chi^2 (7) = 1831.14, p < .001$). Dawkins, Martin, Scott, & Sanderson (2013) provided a comprehensive review of PsyCap psychometrics.

Additionally, to confirm the state-like nature of PsyCap, Luthans et al. (2007) considered the stability of the measure over time, and using corrected test-retest calculations and disattenuating for internal reliability, showed PsyCap (.52) to be less stable than core self-evaluations (.87) and personality traits (.76); therefore, supporting PsyCap as a state rather than a trait.

Optimism. Optimism is the attribution and explanation of positive events in terms of self-directed effort, sustainability, and systemic causes, while deflecting negative

events as the result of uncontrollable forces, momentary setbacks, and circumstance (Seligman, 1998). While PsyCap considers optimism a state, others have viewed optimism as a trait of individuals (i.e., dispositional optimism) (Scheier & Carver, 1992). Optimistic individuals are more capable of seeing the positive in a situation rather than the negative and therefore better prepared to avoid the negative consequences of stress. Optimism represents individuals' ability to focus on those beliefs and behaviors that they control, but simultaneously not allowing themselves to be drawn down into those events over which they have no influence. Strutton and Lumpkin (1992) showed a positive relationship between optimism and coping strategies. Where there was higher optimism there was a greater chance of focusing on stress as problem to be solved rather than an emotional response to be endured. This problem-focused approach led to better performance than dwelling on the emotional reaction. Responding to the pressures of teaching, optimism drives teachers to explore the positive and not dwell on the negative; therefore, optimistic work environments positively contribute to teachers' coping strategies for overcoming stress.

General findings of optimism showed early negative correlations with turnover and performance (Seligman & Schulman, 1986) and were later found to positively predict physical health and sales productivity (Schulman, 1999). Later, Tuten and Neidermeyer (2004) demonstrated negative relationships between optimism, stress, and conflict. In education, there has been little exploration of teachers' optimism. The focus has predominately been on student optimism and focused at the organizational level with the construct of academic optimism (Hoy, Tarter, & Woolfolk Hoy, 2006; McGuigan & Hoy, 2006). Hoy, Hoy, and Kurz (2008) conceptualized academic optimism at the individual

or teacher level; however, it varied substantially from the previously presented construct of optimism and relied on efficacy, trust, and academic emphasis to construct the second order factor of individual academic optimism. Teacher optimism has accounted for the most variance in student optimism for those students performing at grade level academic standards (Steinberg, 2008). In their path analysis, Medlin, Green, and Gaither (2010) demonstrated one of the most direct studies of teacher optimism-performance relationship. They found significant positive correlations linking workplace optimism with goal setting and then to individual optimism and performance.

Hope. Hope is “a positive motivational state that is based on an interactively derived sense of successful (1) agency (goal-directed energy) and (2) pathways (planning to meet goals)” (Snyder, Irving, & Anderson, 1991, p. 287). The degree of hope helps explain how one copes with stress. Higher levels of hope represent a stronger purpose and internal drive to confront the threat that is causing stress and to pursue a solution that eliminates or minimizes the threat. As a construct, hope represents individuals’ focused efforts to achieve success through purposeful direction of their energy and strengths to overcome barriers to their performance, such as the pressures of NCLB. Overall, hope supports better coping strategies for handling and resolving stress.

The broad base of literature on hope supports positive correlations with athletic and academic performance (Curry, Snyder, Cook, Ruby, and Rehm, 1997) as well as workplace performance (Luthans & Jensen, 2002). The influential effect of higher-level organizational hope also has been positive, although no studies were located specifically on team hope. Hopeful leaders have been connected with more profitable work units, higher employee job satisfaction and higher employee retention (Peterson & Luthans,

2003). Confirming earlier findings, Mansfield (2008) similarly found that senior leaders' hopefulness positively correlated with followers' job satisfaction and retention.

According to Jacobs (2008), there has been far more theoretical work on the role of teacher hope on educational outcomes of student achievement, teacher motivation, and longevity (Ayers, 2006; Elbaz, 1992; Freire, 1994; Hansen, 1998) than there have been empirical studies operationalizing and quantifying the effects of teacher hope (Halpin, 2001; Kumarakulasingam, 2003; Snyder, McDermott, Cook & Rapoff, 1997). While some evidence supports a direct relationship between teacher hope and student achievement (Snyder, McDermott, Cook & Rapoff, 1997), it is more likely that the relationship is partially mediated by student hope, specifically that teacher hope correlates with student hope which then predicts academic achievement (McDermott, Hastings, Gariglietti, Gingerich, Callahan, & Diamond, 1997). Considering teacher outcomes, hope has been positively connected with lower burnout and higher job satisfaction (Halpin, 2001; Kumarakulasingam, 2003), and furthermore Kumarakulasingam (2003) demonstrating that hope has a moderating effect on teacher stress-performance relationships. That is, teachers with higher hope are more likely to experience less negative impacts of stress on their performance. This is consistent with Tobert's (2007) work on using hope to predict coping strategies teachers will select to manage workplace stress. Similarly, Jacobs (2008) qualitative evidence indicated commitment and hope work in conjunction to protect teachers from the negative effects of teaching. Overall, the general and teacher-specific findings support the value of hope in education and the concept that positive aspects of individuals and work can influence and possibly be transferred within and between organizational levels.

Resiliency. Resilience is the “positive psychological capacity to rebound, to ‘bounce back’ from adversity, uncertainty, conflict, failure, or even positive change, progress and increased responsibility” (Luthans, 2002, p. 702). When confronted with threats, resiliency allows an individual to adapt to the situation and to continually adopt coping strategies that work towards overcoming the stressor. Resiliency often consists of three factors involving assets, risks, and adaptational processes (Masten, 2001; Masten & Reed, 2002). Assets represent those individual knowledge, skills, and abilities, as well as physical assets, to combat the presenting challenge or stress. The risks manifest as a cost-benefit assessment of the value gained or lost as a result of overcoming the current trial. Based on the available assets and understanding of risks, individuals then make decisions and develop strategies to execute adaptational processes that allow them to move forward and potentially thrive. This is consistent with Coutu’s (2002) position that resiliency includes “a staunch acceptance of reality; a deep belief, often buttressed by strongly held values, that life is meaningful; and an uncanny ability to improvise (p. 48).

A relatively new construct, resiliency has not been quantitatively explored in educational settings, and in the broader literature base, there are numerous theoretical perspectives (Fay & Nordhaug, 2002; Luthans & Avolio, 2003; Stajkovic, 2003; Sutcliffe & Vogus, 2003; Youssef & Luthans, 2003), but minimal empirical research. The limited evidence does support positive relationships between resiliency and performance, job satisfaction, work happiness, and organizational commitment (Youssef, 2004; Youssef & Luthans, 2007). In education, Patterson, Collins, and Abbott’s (2004) qualitative study indicated resiliency among teachers led to greater engagement in professional development opportunities, increased mentoring of others, and more exploration of new

ideas and practices. In another qualitative study, Gu and Day (2007) revealed positive relationships between teacher resiliency and attachment, motivation, identify, and self-efficacy.

Self-efficacy. Building on the early works of Heider (1958) and White (1959), Bandura (1977) conceptualized self-efficacy from social cognitive theory and identified two construct dimensions of outcome expectations and efficacy expectation. Outcome expectations represent the results an individual expect after engaging in an activity or behavior, and efficacy expectation explains the individuals belief he or she can achieve the desired outcomes. Stajkovic and Luthans (1998) further defined self-efficacy as “the employee’s conviction or confidence about his or her abilities to mobilize the motivation, cognitive resources or courses of action needed to successfully execute a specific task within a given context” (p. 66). In practice, self-efficacy both mediates and moderates individual behaviors and affect (Bandura, 1982). Education has also embraced the concept, and one of the earliest definitions of teacher self-efficacy comes from a RAND study (Armor et al., 1976), which Solomon (2007) summarized as “the extent to which a teacher believes he or she has the capacity to affect students’ learning outcomes” (p. 42). A more commonly accepted definition that provides clearer outcome and efficacy expectations is Short’s (1998) characterization of self-efficacy as “teachers’ perceptions that they have the skills and ability to help students learn, are competent in building effective programs for students, and can effect changes in student learning” (p. 490). It is important to note teacher self-efficacy extends to all students regardless of student capability or motivation (Gsukey & Passaro, 1994).

Broadly, self-efficacy has positive relationships with desire outcomes. In their seminal meta-analysis, Stajkovic and Luthans (1998) demonstrated a significant positive relationship between self-efficacy and individual performance. Since then, several studies have confirmed this relationship (Chen, Casper, & Cortina, 2001; Liao & Chuang, 2007; Walumbwa, Avolio, & Zhu, 2008). Others have explored relationships surrounding leaders and self-efficacy. Hrinda (2008) noted self-efficacy always occurred in conjunction with optimism and hope in transformational leaders, while Murphy and Ensher (1999) established higher levels of self-efficacy among individuals with stronger leader-member relationships. In educational settings, early research efforts have waned due to theoretical and conceptual questions surrounding the specific construct of teacher self-efficacy (Henson, 2002; Klassen, Tze, Betts, & Gordon, 2011); however, the evidence does support positive relationships. Specifically, self-efficacy has predicted higher teacher performance (Kumarakulasingam, 2003), increased student performance (Henson, 2001; Moore & Esselman, 1992; Anderson, Greene, & Loewen, 1988; Ross, 1992; Watson, 1991), and greater family involvement in schools (Garcia, 2004). Furthermore, teacher's self-efficacy has been linked to increases in students' own self-efficacy (Anderson, Greene, & Loewen, 1988) and overall student motivation (Midgley, Feldlaufer, & Eccles, 1989).

Outcomes

A wide array of organizational outcomes have been studied within the context of PsyCap and its associated four positive factors of self-efficacy, hope, optimism, and resiliency. Early studies by Luthans et al. (2005) and Youssef and Luthans (2007) conceived of positive organizational behaviors (POBs) associated with hope, optimism,

and resiliency, but not self-efficacy, as in the final PsyCap model. In their work, they found these POBs accounted for an addition 4-15% of the variance in individual performance, job satisfaction, work happiness, and organizational commitment. While Luthans et al. found hope, optimism, and resiliency had significant positive relationships with performance, Youssef and Luthans found that only optimism was related to performance and only hope was related to satisfaction, happiness, and commitment. Luthans et al. also reported the combined effect of all three factors as having a stronger relationship with the criterion. Despite somewhat contradicting findings, both studies pointed to the future need for considering the collective effects of all three factors together as a single concept.

The incorporation of self-efficacy by Luthans, Youssef, and Avolio (2007) formalized the second-order, core factor of PsyCap. In possibly the earliest published, empirical study, Larson and Luthans (2006) demonstrated that PsyCap had a significant correlation with job satisfaction and organizational commitment, while self-efficacy and optimism did not. Analysis of the resiliency scale showed both relationships with satisfaction and commitment were significant, but PsyCap's correlation with those outcomes was stronger still. Hope was the only single factor to be significant and stronger than PsyCap. Furthermore, Larson and Luthans' study established the first evidence of PsyCap's importance above and beyond social and human capital on satisfaction and commitment. After controlling for the two traditional forms of organizational capital, the change in variance was significant, and the regression model for satisfaction became significant, while the model for commitment remained significant.

In addition to looking at valued organizational outcomes, researchers have studied the relationship of PsyCap on an individual's well-being. In Avey et al.'s (2010) work, they found PsyCap was positively correlated with general health and personal well being, and after controlling for an individual's initial PsyCap state, these relationships translated into small statistically significant increases in explained variance, which offers indirect evidence of PsyCap's role in managing occupational stress and well being. Likewise, Avey et al.'s (2006) early work with PsyCap and absenteeism demonstrated that PsyCap was a better predictor of both voluntary and involuntary turnover than job satisfaction or organizational commitment. With the exception of hope, PsyCap was a better predictor than its component subscales. These findings further support the importance of PsyCap above and beyond traditional measures of individuals within organizations.

Turning to individual performance, the literature supports the role of PsyCap with individual outcomes. PsyCap had a significant positive relationship with individual performance in manufacturing and service firms, and consistent with previous studies showed an increase in the multiple correlation value above and beyond the four component sub-scales (Luthans et al., 2007). In a similar study, Luthans et al. (2008) found PsyCap was significantly related to performance, satisfaction, and commitment in manufacturing engineers and technicians and in university students. Also noteworthy in their study was the introduction of a supportive climate variable, which was a second level organizational variable that introduced PsyCap to multi-level research. In their findings, PsyCap fully mediated the relationship between the supportive climate and individual performance, and opened the possibility for future studies in multi-level research with PsyCap.

Beyond individual performance, evidence supported PsyCap's significant relationship with individual outcomes and intentions. Avey, Luthans, and Youseff (2010) showed a significant and positive correlation with individual organizational citizenship behaviors (OCBs) and organizational OCBs, while also demonstrating a negative relationship with counterproductive work behaviors (CWBs). Similarly, PsyCap had a negative relationship with workplace stress and intention to quit, and in fact workplace stress partially mediated the path between PsyCap and intention to quit. Avey, Luthans, and Youseff found a moderate relationship with intention quit, and furthermore after controlling for individual performer differences (e.g., gender, job level, education, personality traits, person-job and –organization fit), PsyCap contributed significant unique variance to organizational OCBs, CWBs, and intention to quit.

Teacher Stress

NCLB has subjected state schools to increased federal accountability, which has subsequently increased the demands placed on teachers, and many of those changes at both the national and state level were conducted without consulting teachers. These demands and exclusion in the decision making process have resulted in increased teacher stress (Crute, 2004; Jacobsson, Pousette, & Thylefors, 2001; Margolis, 2006; O'Connor & Clarke, 1990; Steel 2001). Additionally, NCLB has raised concerns whether teachers' employment is threatened due to annual yearly progress and strict adherence to teaching methods. Continual anxiety over job security further contributes to teacher stress (Jacobsson, Pousette, & Thylefors, 2001; O'Connor & Clarke, 1990; Steel 2001) and possible burnout (Ganster & Schaubroeck, 1991), which often corresponds with lower student performance (Dick and Wagner, 2001; Gulek, 2003; Yoon, 2002).

Prior to NCLB, teachers were already under a great deal of occupational stress (Borg & Falzon, 1989; Borg & Riding, 1991; Borg, Riding, & Falzon, 1991; Cooper & Kelly, 1993; Hui & Chan, 1996), and studies showed that teachers generally experienced more stress than other occupations focused on serving “clients”, such as nurses, doctors, tax officers, and dentist (Travers & Cooper, 1993, 1994). More recently, Oginska-Bulik (2005) concluded teacher stress exceeded that of firefighters and prison officers.

Occupational Stress

Research into occupational stress began in earnest during the 1960s when Lazarus (1966, 1976) codified stress as individual’s perception of their ability to cope or resolve internal and external demands within their life through balance restoring behaviors (i.e., coping). During the 1970s, this perspective on coping strategies expanded to incorporate positive and negative outcomes of stress, as defined by Selye’s (1976) introduction of eustress and distress. Eustress represents coping that leads to positive outcomes, while distress results in negative outcomes. The type of stress relies solely on the strategies that the individual chooses. For example, a teacher attempting to complete report cards may feel stress due to time constraints. One coping strategy would be to prioritize the work and create milestones for completing the report cards. It is likely these strategies would result in eustress and create a sense of motivation and accomplishment as the teacher works through the stressful time. Conversely, the teacher could elect to ignore the deadline, bury him or herself in non-productive activities such as television watching, and ultimately may experience distress, as these strategies do not contribute to a successful outcome. Occupational stress has been negatively correlated with performance and positively with turnover (Babin & Boles, 1998; Sullivan & Baghat, 1992; Tubre &

Collins, 2000; Williams et al., 2001).

Studies of teacher stress also emerged during the 1970s (Dunham, 1976; Kyriacou & Sutcliffe, 1978a), gained momentum during the following decade (Hiebert & Farber, 1984; Kinnunen, 1988; Makinen & Kinnunen, 1986; Mykletun, 1984), and continued into recent years (Bachkirova, 2005; Gulwadi, 2006; Hui & Chan, 1996; Schonfield, 1992; Wilhelm, Dewhurst-Savellis, & Parker, 2000). Unfortunately, most efforts have been conducted overseas with very few teacher stress studies conducted in the United States (Adams, 1999; Adams, Heath-Camp, and Camp, 1999; Mearns and Cain, 2003). It has been speculated that this lack of research stems from weaker teachers unions in the United States (Tolbert, 2007), which are not nationally organized and are subject to State regulations and laws, and therefore contribute to inconsistency in advocating for teachers and against working conditions that contribute to teacher stress. This current study will help further the understanding of teacher stress.

While numerous models have been posited over the years by Adams (2001), Boyle Borg, Falzon, & Baglioni (1995), and Leach (1984), the most widely accepted, applied, adapted, and reported on is the original model of Kyriacou and Sutcliffe (1978a). Their model defines a linear path along which potential stressors are identified by an individual as either a physical or psychological threat to his or her well being that elicits an affective response (positive or negative), which results in coping strategies that successfully or unsuccessfully resolve or eliminate the threat. Through this lens, a combination of factors can lead to increased teacher stress.

Increased responsibilities coupled with decreased autonomy created time demands on teachers that were both stressful and negatively impacted teacher health (Bryne, 1994;

Gersten, Gersten, Keating, Yovanoff, & Harniss, 2001; Mykletum, 1984; Sutton, 1984). Often these changes and associated stress resulted from school reform or organizational changes being pushed down by federal, state, or district administrators, and these findings were confirmed more recently by Travers and Cooper (1993) and Tolbert (2007). Negative affective responses by teachers who felt ignored or neglected during important school or educational decisions or felt they had no control over external factors (e.g., socioeconomic, past learning, familial support) add to these stress-inducing organizational changes (Jacobsson, Pousette, & Thylefors, 2001; O'Connor & Clarke, 1990; Steel 2001). Furthermore, this lack of control and coupled stress also extends to teachers' discretion on curriculum, teaching methods, and assessment (Hole, 2003; Yero, 2002), and continues further into mandated standardized testing (Abrams, Pedulla, & Madaus, 2003; Jones, Jones, Hardin, Chapman, Yarbrough, & Davis, 1999; Koretz, Barron, Mitchell, & Stecher, 1996; Koretz, Mitchell, Barron, & Keith, 1996).

Role Stressors

Three commonly held work stressors include role overload, ambiguity, and role conflict. In 1964, Kahn et al. (1964) introduced the theory of organizational role dynamics, which sparked decades of research (Abdel-Halim, 1978; Parasuraman & Cleek, 1984; Podsakoff, LePine, & LePine, 2007; Williams & Alliger, 1994) and meta-analyses (Abramis, 1994; Fisher & Gitelson, 1983; Jackson & Schuler, 1985; Tubre & Collins, 2000) regarding roles in organizations. Considering job demands, role theory provides further insight into occupational stress. Initially proposed in the 1920s, role theory posits that individuals in all social environments take on roles and associated responsibilities (Linton, 1936; Mead, 1934). Roles form around the division of labor and

are driven by norms of society or the organization. These roles define what individuals should do, how they should do it, and what others around them should be doing. In classic organizational theory, individual roles support the principle of unity of command, specifically “that for any action an employee should receive orders from one superior only, and that there should be only one leader and one plan for a group of activities having the same objective” (Rizzo, House, & Lirtzman, 1970, p.150). In other words, individuals should have clear expectations of what is expected of them and should be assigned tasking that does not conflict with the overall objectives of the supervisor and/or organization.

Role overload. Each individual has a limited set of resources and energy to expend in fulfilling role duties and responsibilities. As the demands of the role increase and the available resources dwindle, the individual becomes overwhelmed by the work. At this point, the individual is experiencing role overload (Kahn et al., 1964). Voydanoff (2002) defined role overload as, “the total demands on time and energy associated with the prescribed activities of multiple roles are too great to perform the roles adequately or comfortably” (p. 147). The lack of personal resources inhibits the individual’s ability to meet obligations, commitments, and performance objectives (Rizzo et al., 1970). This can occur as a result of too many tasks, not enough time, limited abilities, or organizational constraints (e.g., improper tools). As a result of the stressor, individuals experience poorer attitudes and increased stress (O’Driscoll & Beehr, 1994; Stordeur, D’hoore, & Vandenberghe, 2001).

Role ambiguity. When there is misalignment in roles, role ambiguity and role conflict emerge. Role ambiguity refers to the misalignment of job performance

requirements and the standards or expectations by which the individual is evaluated and held accountable (Kahn et al., 1964; Rizzo et al., 1970; Tubre & Collins, 2000). Örtqvist and Wincent (2006) define it as the “uncertainty about what actions to take to fulfill the expectations of the role” (p. 399). This can be a consistent misalignment where the individual was hired to perform one set of functions and has been redirected to other duties in conflict with the primary functions, but is still accountable to those responsibilities initially hired for. Role ambiguity can also generate from extreme inconsistency where the individuals is constantly receiving different tasking or direction on a weekly, daily, or hourly basis. In the end, the lack of clear information regarding performance expectations leaves the individual confused and unsure about what is expected to be successful at the job.

Role conflict. Likewise, role conflict results from an individual being torn between two competing roles (Kahn et al., 1964; Rizzo et al., 1970; Tubre & Collins, 2000). Kahn et al. (1964) defined it as “the simultaneous occurrence of two (or more) sets of pressures such that compliance with one would make more difficult compliance with the other” (p. 19). These roles can be at work, at home, or at social obligations. The stressor forms when the individual has to decide between meeting obligations of one role while potentially having to leave the other role obligations unfulfilled. Attempts may be made to fulfill both roles, but with limited resources, it is unlikely either role will be satisfactory to the individual or the superior who tasked the role. There is an overlap between role conflict and role overload, but research continues to support them as distinct role stressors (Gilboa, Shirom, Fried, & Cooper, 2008; Jackson & Schuler, 1985; Tubre & Collins, 2000).

Outcomes. As Tuten and Neidermeyer (2004) noted, organizational stress originating in role stressors can have a downward negative spiral on individual performance and affect. Considering that individuals have a finite reserve of resources and energies to perform their work, the introduction of a role stressor requires the redirection of energy to cope with the stressor, which lowers the available energy being directed at the job task(s). The effort to resolve the stressor may be successful, but if not, more effort is applied and stress continues to increase with a respective decline in performance, satisfaction, and commitment. Early research on these relationships supported the negative relationships between role ambiguity and conflict with performance and affect (Abramis, 1994; Fried, Shirom, Gilboa, & Cooper, 2008; Jackson & Schuler, 1985; Örtqvist & Wincent, 2006; Rizzo et al., 1970; Schuler, Aldag, & Brief, 1977); however, a more recent meta-analysis by Tubre & Collins (2000) used a larger sample size and improved statistical testing techniques to confirm the negative relationship between role ambiguity and performance, but did not confirm the same negative relationship with role conflict. Meta-analyses associated with organizational commitment (Mathieu & Zajac, 1990) and employee turnover (Griffeth, Hom, & Gaertner, 2000) also confirmed negative relationships between role stressors and workplace affect. The remaining sections of this chapter further explore relationships of satisfaction, commitment, and intention to quit with stress.

Job Satisfaction

Job satisfaction has nearly eight decades of theories, models, hypotheses, and empirical research, which makes it one of the most studied aspects of organizational psychology. For each study indicating significant relationships, another can be found

offering a countering argument. Teacher satisfaction antecedents align with other occupations, but have different outcomes set within the educational context.

Construct Development

Research into job satisfaction arguable began with Taylor's (1911) studies of scientific management in which he looked to gain efficiencies in performance through better management of work processes and procedures (e.g., assembly lines, hourly wages). He recognized that machine-like management practices did improve outputs; however, at a cost to physical and mental exhaustion as well as increasing worker dissatisfaction. He concluded humans could not be thought of as machines and must be considered as complex and in need of more than just engineered solutions. Decades later in the Hawthorne studies of the 1920s and 1930s, Mayo (1945) again confirmed that workers are influenced by more than the physical work environment and incentives (e.g., lighting, pay), but rather identified an internal affective element of work that drove or motivated individuals to perform their duties and influenced the quality of the produced work. Other early researchers also took up the call, and in Brief and Weiss's (2002) review of affect in the workplace, they identified numerous classic studies including *The Dissatisfied Worker* (Fisher & Hanna, 1931), *Workers' Emotions in Shop and Home: A Study of Individual Workers from the Psychological and Physiological Standpoint* (Hersey, 1932), and *Management and the Worker* (Roethlisberger & Dickson, 1939).

These seminal works lead to numerous theories and models of job satisfaction. Consistent with Vroom's (1964) expectancy theory, the range of affect theory describes job satisfaction based on the gap between what an individual desires from a job and what he or she actually receives (Locke, 1976). When those wants are not met, the degree to

which the individual values particular aspects of a job helps moderate the degree of satisfaction he or she feels towards their work. That is, those most valued job characteristics can bolster satisfaction even when the overall job is failing to meet an individual's desires. This aligns with Hackman and Oldham's (1974) job characteristics model (JCM), which consists of five core job characteristics: 1) skill variety, 2) task identity, 3) task significant, 4) autonomy, and 5) feedback. These job qualities drive three distinct psychological states that contribute to and determine job satisfaction: 1) experienced meaningfulness, 2) experienced responsibility for outcomes, and 3) knowledge of the actual results. Through focusing on improvements to any or all elements of the JCM, organizations can create work environments that support greater opportunity for employee job satisfaction. Conversely, the model supports turning inward towards the individual to assess unique affective characteristics that contribute to satisfaction, and this internal attention similarly corresponds with the core self-evaluation (CSE) model (Judge & Hulin, 1993; Judge, Locke, Durham, & Kluger, 1998). Building upon a general dispositional theory, CSE asserts four core areas drive individual feelings towards a job: 1) self-esteem, 2) general self-efficacy, 3) locus of control, and 4) neuroticism. CSE holds that these four employee states are subject to influence and variation based on the work environment such that higher self-esteem and self-efficacy create greater satisfaction, that internal locus of control provides more job satisfaction, and that lower neuroticism contributes to higher satisfaction.

The breadth of theories and models is also matched by numerous definitions of job satisfaction. Table 3 provides a cross-sectional summary of definitions across the decades.

Antecedents

The literature supports a wide array of factors predicting employee job satisfaction. In general, affective experiences and beliefs contribute to individual evaluations of satisfaction (Weiss, 2002). Those with higher negative affectivity showed lower job satisfaction, while those with a more positive disposition tended to show greater satisfaction in their work (Weiss, Nicholas, & Daus, 1999). Consistent with the CSE model, Klassen and Chiu (2010) found a significant correlation between lower

Table 3

Summary of Job Satisfaction Definitions

<u>Definition</u>	<u>Reference</u>
“...pleasurable emotional state resulting from the appraisal of one’s job as achieving or facilitating one’s job values. Job dissatisfaction is the unpleasurable emotional state resulting from the appraisal of one’s job as frustrating or blocking the attainment of one’s values.”	Locke (1969), p. 317
“...a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences.”	Locke (1976), p. 1300
“...judgments about the favorability of the work environment.”	Motowidlo (1996), p. 176
“...how people feel about their jobs and different aspects of their jobs.”	Spector (1997), p. 2
“an internal state that is expressed by affectively and/or cognitively evaluating an experienced job with some degree of favor or disfavor”	Brief (1998), p. 86
“...a positive (or negative) evaluative judgment one makes about one’s job or job situation”	Weiss (2002), p. 6

individual self-efficacy and lower job satisfaction. They also identified a direct negative relationship between stress and satisfaction, to wit, more stress corresponded with less satisfaction. However, these affective elements of job satisfaction must also be taken within the context of the work environment which individuals perform their duties.

The work environment has strong support for predicting job satisfaction. Mirroring several elements of the JCM model, Brief and Weiss (2002) identified a broad set of external factors influence job satisfaction including exogenous factors (e.g., home life, social relationships), relationships with leadership (e.g., transformational leadership), work group or team dynamics, physical workspace design, rewards, and punishments. Despite commonly held notions, in their meta-analysis of the pay-satisfaction relationship, Judge, Piccolo, Podsakoff, Shaw, and Rich (2010) established only a weak relationship between employee pay and job satisfaction. Stronger evidence exists supporting the positive influence of peer relationships. In their longitudinal study, Major, Kozlowski, Chao, and Gardner (1995) found that strong leader-member and team-member exchange predicted job satisfaction, commitment, and turnover intention. More recently, Hamilton (2007) confirmed workplace relationships influenced individual affect, which contributed to increased employee job satisfaction.

Consistent with the broader literature, contemporary looks at antecedents to teacher satisfaction have shown greater emphasis on the work environment. The focus has centered on what is happening around the teacher rather than what is going on internal to the teacher. In comparing teachers of the 1960s with teachers of today, Klassen and Anderson (2009) observed a noted difference between the factors influencing teacher satisfaction. In 1962, teachers were concerned primarily with sources

external to the classroom (e.g., salary, condition of buildings, state of equipment, poor staff relations); however, in 2007 teacher communicated greater concern with factors relating directly to the classroom (e.g. time demands, student behavior). Arguably, these additional stresses contribute to emotional exhaustion and lower personal performance, both signs of teacher burnout, which have negative effects on individual affect (e.g., self-esteem, self-efficacy, locus of control) and job satisfaction (Skaalvik & Skaalvik, 2009). However, Skaalvik and Skaalvik also found a positive work environment supports a partially mediating effect between negative affect and job satisfaction; thereby, holding up evidence to justify the importance of workplace factors as well as individual characteristics.

Outcomes

Job satisfaction has been studied in the context of numerous desired outcomes. Increased job satisfaction has routinely been shown over the years through multiple meta-analyses to support significant and positive relationships with performance (Iaffaldano & Muchinsky, 1985; Judge et al., 2001). Those who are more satisfied with their work are more likely to produce outcomes and accomplishments desired by the organization. They are also more likely to remain with the organization (Cropanzano, James, & Konovsky, 1993). Among these desired outcomes, job satisfaction correlates with increased prosocial behaviors and organizational citizenship behaviors (George, 1991; George & Brief, 1992). This is substantial to educational settings where teachers are often called upon or expected to do more than just deliver learning materials in the classroom. Potentially more important, job satisfaction mediates the relationship between individual personality and organizational citizenship behaviors (Ilies, Fulmer, Spitzmuller, &

Johnson, 2009), which for those organizations wishing to inspire greater teacher involvement, focusing on raising teacher satisfaction would create greater probabilities of overcoming negative teacher personalities. Higher levels of satisfaction have also been shown to correspond with enhance creative problem solving (Estrada, Isen, & Young, 1997; Isen, 1999), which may serve to assist teachers in overcoming classroom and school challenges.

In teaching, it was difficult to identify any targeted studies relating teacher job satisfaction specifically to school, classroom, or student academic performance (i.e., test scores); however, the literature does support other desired outcomes. Following the broad literature based, teachers with higher job satisfaction are less likely to leave their teaching jobs (Hall, Pearson, & Carroll, 1992), and those same highly satisfied teachers are more likely to engage in implementation of integrated prevention programs and learning strategies (Baker, Kupersmidt, Voegler-Lee, Arnold, & Willoughby, 2010). Conversely, negative outcomes are just as likely. There was significant correlation between low job satisfaction and lower self-efficacy (Betoret, 2006; Schwarzer & Hallum, 2008; Skaalvik & Skaalvik, 2007); however, it was not possible to assess which was causing the other, and the CSE model would support low satisfaction as an outcome of low self-efficacy rather than a predictor. Possibly, a more likely connection is a reciprocal relationship where an individual spirals down through low satisfaction and self-esteem with each continually contributing to the other. From the individual to the classroom, poor teacher-pupil rapport and lower levels of effectiveness have been positively correlated with low teacher job satisfaction (Abel & Sewell, 1999; Kokkinos, 2007).

Organizational Commitment

Following the extensive inquiry into job satisfaction, commitment emerged as a valid construct and mediating factor between satisfaction and many of the desired outcomes and negative consequences of low satisfaction. Teachers commit to their districts and schools out of need, desire, or obligation. Contributing to their commitment is the degree to which they feel supported and satisfied by their work. Increased commitment leads to great willingness to remain with the school and to participate in extracurricular activities, and furthermore a supportive work environment can have a moderating effect on negative workplace factors causing lower commitment.

Construct Development

Allen and Meyer (1990) offered the most recognized and robust construct for organizational commitment and it has been arguably the most cited and researched model. They framed organizational commitment as the affect to remain with an organization because one wants to, needs to, or feels obligated to. This framework led to a three-component model with distinguishable components rather than varying degrees of attitudinal commitment. That is, individuals can and do experience each component, or psychological state, simultaneously or independently and to varying degrees based on their affect and situational context.

In the first component, affective commitment, Allen and Meyer (1990) described the desire to remain with an organization. They called upon the work of Kanter (1968) to describe how the individual's affective attachment to the group is driven by emotions experienced through interaction. In essence, the group elicits within the individual a desire to either stay part of the group or to separate and seek other opportunities. As

Buchanan (1974) pointed out, this is often due to a “partisan, affective attachment to the goals and values of the organization, to one's role in relation to the goals and values, and to the organization for its own sake, apart from its purely instrumental worth” (p. 533). This was noteworthy as it identified affective commitment in terms of shared values and a sense of common purpose as important factors in organizational commitment. Mowday, Steers, and Porter (1979) held a similar belief that the strength of an individual's commitment is directly related to the degree which he or she identifies with the organization and participates in the activities that support that shared connection. Theoretically, these perspectives predicted affective commitment would be driven by personal characteristics, job characteristics, work experience, and organizational structure (Meyer & Allen, 1987; Mowdy, Porter, & Steers, 1982).

Continuance commitment, the second prong of the commitment trident, was conceptualized as the recognition that leaving the organization may be more detrimental than staying (Allen & Meyer, 1990). That is to say, the individual conducts a cost-benefit analysis to determine whether he or she would be better off staying associated with the organization, or as alternative, would expect things to be more advantageous with another organization (Kanter, 1968). Stebbins (1970) recognized this internal evaluation of the current conditions against a potential future state continuously demands of the individual an assessment of his or her commitment and the “awareness of the impossibility of choosing a different social identity . . . because of the immense penalties in making the switch” (p. 527). Through these perspectives, theoretical predictors of continuance commitment would be the breadth and depth of resources invested by the individual as

well as perceptions regarding the availability and feasibility of alternate work options (Becker, 1960; Farrell & Rusbult, 1981).

In the third component, normative commitment formed as a self-developed and self-imposed obligation to remain with the organization (Allen & Meyer, 1990). As individuals share lived experiences with the organization, superiors, peers, and subordinates, they create an internal psychological contract that binds them to the job through a sense of responsibility and devotion to duty to support and contribute to the success of the organization. Wiener (1982) summarized, “[the] totality of internalized normative pressures to act in a way which meets organizational goals and interests” (p. 471). Hypothetically, this pressure is even greater when the individual has been with the organization longer and when the common shared set of values is strongly embedded within the individual and the organization. Wiener defined potential theoretical antecedents associated with the individual’s experiences both prior to and following admission into the organization. Prior experiences may include cultural and familial factors, while within the organization the individual experiences organizational socialization and grooming.

Antecedents

Similar to job satisfaction, predictors of organizational commitment vary between the individual and the work environment, with a greater empirical focus on organizational factors. At the individual level, meta-analysis results supported a positive relationship existed between age, tenure, satisfaction, self-efficacy, comfort at work, and competence (Allen & Meyer, 1990; Hulpia, Devos, & Rosseel, 2009; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002), and a negative relationship with locus of control and stress (Mathieu

& Zajac, 1990; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). These findings suggest older individuals with a developed sense of self-directed control and confidence in their abilities are likely to have higher organizational commitment, while those with limited work experience and less expertise in their chosen professional will be more inclined to have lower commitment. Given the limited breadth and depth of these individual characteristics, and when taken in context of Allen and Meyer's three-component model, there is greater support for the influence and importance of the work environment.

In defense of their three-components of affective, continuance, and normative commitment, which rely heavily on the interactions between the individual and the organization, Allen and Meyer (1990) noted greater organizational commitment when larger investments are made in the individual. That is, when the work system surrounding an individual is solid and supportive, the individual is more likely to feel a desire to stay, to not be tempted by external opportunities and to experience rewarding relationships. In their seminal meta-analysis of organizational commitment, Meyer, Stanley, Herscovitch, and Topolnytsky (2002) confirmed these expectations of positive organizational support. They found positive influences on commitment from organizational support, transformational leadership, distributive justice, procedural justice, and interactional justice, while documenting negatives correlations with role ambiguity, role conflict, and transferability of skills.

Considering a combination of organizational and individual factors, Rosenholtz and Simpson (1990), and later Morrison (2008), demonstrated stress mediated the relationship between organizational support and commitment, such that a decrease in

organizational support pointed to greater potential for increased stress, which increased the possibility of lower organizational commitment. This has been further explored with teachers to show increased stress resulting from increased responsibility and decreased autonomy (i.e., loss of organizational support) had a direct and negative effect on teacher commitment (Borg, Riding, & Falzon, 1991). In recent years, findings regarding the loss of organizational support and increased stress are further compounded when teachers lose control and are cut out of the decision making process (e.g., federal education reform), and through these changes, they lose some of the organizational support that they have come to rely on, which creates additional stress and lowers organizational commitment. (Bartlett, 2004; Gavish & Friedman; 2010; Kukla-Acevedo, 2009; LaMastro, 2010). Conversely, evidence does support positive effects on commitment when teachers experience greater team cohesiveness, leadership support, and decentralized leadership (Hulpia, Devos, & Rosseel, 2009), and especially the role of the principal-teacher relationship (Hulpia, Devos, & Van Keer, 2009). Overall, these antecedent relationships appear to have generalizability, as they have been confirmed in international settings in both educational and corporate organizations (Byrne, 1994; Su, Baird, & Blair, 2009; Üstüner, 2009; Wanc & Xu, 2008).

Outcomes

According to Meyer, Stanley, Herscovith, and Topolnytsky's (2002) meta-analysis of 155 work settings and over 50,000 employees, organizational commitment negatively correlated with turnover and positively correlated with performance. Recent findings have confirmed the meta-analysis (Joo, 2010) and additionally identified correlations between organizational commitment and positive employee relationships

(Ismail, Zainuddin, & Ibrahim, 2010; Lee, 2005; Soldner, 2010). While these studies provided broad applicability, the specific issue of educational systems warranted careful consideration for effects happening within schools.

In an early study, Kushman (1992) found no significant correlation between teacher commitment and student achievement; however, the increased interest in educational basics of reading, writing, and math have more recently shown significant relationships. Pressley, Rankin, and Yokoi (1996) demonstrated a positive effect on reading achievement, which was confirmed by Weller and Weller (1999) who also identified a positive relationship between teacher's commitment and students' attitudes towards reading as well as their reading performance. Positive relationships have also been shown for student achievement in communication arts and mathematics (Solomon, 2007). In working to establish strong educational programs within elementary schools, Baker et al. (2010) noted teachers with higher organizational commitment were more likely to implement integrated programs. This points to a potentially doubling effect where teacher commitment contributes to individual student success in academic achievement, but also team or unit success in establishing educational strategies and mandates.

Intention to Quit

Individuals leave organizations for numerous and varied reasons. Departure is sometimes voluntary and other times involuntary. The voluntary departure is the greatest concern because an organization has invested time and resources to hire and develop the individual. Reasons for self-initiated departure generally revolve around dissatisfaction

with the current work situation and lead to lower organizational commitment and eventually voluntary turnover. Teachers are not immune from these influences.

Construct Development

Identification of an individual after he or she has left an organization is a challenging starting point for theorist and researchers and has led to a focus on the intention to quit rather than the actual act of leaving. This spotlight on intention rather than action has strong historical support (Mobley, Griffeth, Hand, & Meglino, 1979; Mitchel, 1981; Bluedorn, 1982). By centering on the individual's desire to stay with the current organization, Elangovan (2001) posited the “intention to quit represents an attitudinal orientation or a cognitive manifestation of the behavioral decision to quit” (p. 159). This is consistent with Vroom's (1964) expectancy theory, which would dictate that once the work fails to provide what is desired (valence) then the individual believes there is no value (instrumentality) to continue working (expectancy). From this perspective, turnover intention is the symptom of unmet needs within the current work environment or the possibility of greater opportunities in another work setting.

Antecedents

Following a deficiency driven framework, the potential contributors and predictors to turnover intention lie at all levels of an organization within the work, worker, and workplace. As previously noted, the best predictor of turnover is the intent to turnover, and many have looked at the antecedents to turnover intention. The role of job satisfaction has been well documented (Chiu & Francesco, 2003; Coomber & Barribal, 2007; Richard, LeMay, Taylor, & Turner, 1994; Tett & Meyer, 1993) and consistently supported that those with higher job satisfaction are less likely to intend on leaving an

organization. A similar negative relationship existed with commitment (Peters, Bhagat, & O'Connor, 1981), and in a seminal meta-analysis of employee turnover, Griffeth, Hom, and Gartner (2000) identified commitment as a better predictor than job satisfaction. As previously discussed stress has a direct relationship on satisfaction and subsequently commitment, and in the employee turnover literature there is a long history of significant positive correlation between job stress and intent to quit (Firth et al, 2004; Cavanaugh, Boswell, Roehling, & Boudreau, 2000; Chen & Spector, 1992; Firth, Mellor, Moore, & Loquet, 2004; Gupta & Beehr, 1979). This is consistent with the foundation based on expectancy theory that individuals will continually evaluate their current situation and conditions with the valued gained for the effort required, and higher stress jobs are likely less attractive than simpler or easier work environments. As Hom and Kinicki (2001) noted the chances of employee turnover increase with inter-role conflicts, job demand conflicts, and strong labor markets, which may all contribute to job stress. Furthermore, the quality of interpersonal relationships and supervisor support are strong predictors of turnover intentions (Morrow, Suzuki, Crum, Ruben, & Pautsch, 2005; Price, 2001). Finally in attempt to establish a causal relationship between stress, satisfaction, commitment, and turnover, Elangovan (2001) established and tested a structural model that confirmed more stress relates to decreased satisfaction which in turn lowers commitment and increases the intention to quit.

In education, teachers exhibited similar relationships with turnover. Teachers leave when they are no longer capable or willing to employ coping strategies to deal with stress, which as previously discussed negatively impacts their satisfaction and commitment. From among the numerous predictors of teacher turnover intent, teacher

autonomy emerged as one the greatest antecedents and with significant negative correlations (Coladarci, 1992; Darling-Hammon, 2003; Ingersoll, 2001; Ingersoll & Smith, 2003). As teachers experienced less control of their practice, they developed greater stress and increased likelihood to leave education. Teacher burnout has also been a consistent predictor of teacher turnover among the newest and oldest teachers as well as internationally (Adams, 1996; Hanushek, Kain, & Rivkin, 2004; Ingersoll, 2001; Leung & Lee, 2006). This is often a result of additional time pressures on teachers (Abel & Sewell, 1999), and organizational and educational changes, such as NCLB and standardized testing, have been perceived as infringing upon teacher's independence and time management (Hoffman, Assaf, & Paris, 2001). Furthermore, factors beyond the control of teachers gave rise to stress (e.g., socioeconomics, student family support) and shared a positive relationship with teacher turnover, especially in urban schools (Smith & Smith, 2006; Ingersoll, 2003).

In recent years, the focus shifted from the teacher to the relationships and support developed for the teacher. Gavish and Friedman (2010) identified the potential for lower teacher turnover when teachers believed they worked in a more supportive environment. A supportive work environment included appreciation and recognition from students and the public, collaboration with other school staff, and guidance from administrators; however, evidence does support that overly supportive environments, especially with administrators, can be detrimental. As Kukla-Acevedo (2009) discovered, there was no significant relationship between teacher autonomy/control and turnover intentions, but a positive correlation with educational administrator participation, which contrasted with literature supporting a negative relationship (Gavish & Friedman, 2010; Ingersoll, 2001).

She speculated the positive relationship may exist as a result of administrators becoming too involved in teachers' work and thereby limiting teachers' perceived independence, which would be consistent with pressures resulting from NCLB and standardized testing.

Outcomes

Impacts of teacher turnover are not well documented in the scientific literature. According to the National Center for Education Statistics, for the fall of 2009 approximately 3.7 million full-time equivalent (FTE) elementary and secondary school teachers began the school year in the estimated 99,000 schools across the United States; 3.2 million worked in public school systems, and the remaining .5 million represented private schools; a total increase of 12% since 1999 (Snyder & Dillow, 2010). Seventeen percent (17%) of those teachers will have turned over by the end of the school year; nearly half (8%) will have changed positions from one school to another, but the remaining 9% will have left education completely (Planty et al., 2008). In 2005, the cost of replacing teachers who left the education field was estimated at \$2.2 billion per year and the impacts to student learning are not well understood (Teacher Attrition, 2005). This can primarily be attributed to the difficulties of developing experimental designs to test the consequences of teacher turnover, which typically occurs between school years, and specifically it is difficult to control for differences across academic years among students, instructional strategies, and organizational support. Of greatest significance may be Tickle's (2008) position that the inability to maintain "highly qualified teachers" jeopardizes schools' abilities to comply with NCLB and meet standardized testing standards, which has further implications on federal funding, increased pressures, and job security.

CHAPTER III

METHODS

The intent of this study was to test alternative models of the effects of individual positive capacities on teacher stressors, stress, and affective outcomes. Based on the review of literature in Chapter II, further investigation was warranted to explore and establish relationships of psychological capital situated within a structural model of teacher stress and affect. A sample of Northern Virginia elementary grade teachers were sampled using reliable and valid instruments, and data was analyzed using structural equation modeling (SEM).

Theoretical Foundation

According to past literature, the proposed model and alternative models depict hypothesized structural relationship between psychological capital, teacher role stressors (conflict/ambiguity/ overload), stress, satisfaction, commitment, and intention to quit (Figures 1-3). Also included in the models are variable disturbances (d) for unspecified causes of endogenous variables (i.e. error or residual). Considering the affects of teacher stress first, Selye's (1976) work on stress lead to the development of general adaptation syndrome based on the work of Cannon (1929). He described the body's biological response to external threats with the overall intent to maintain internal homeostasis. This outward biological focus stood in contrast to Lazarus' (1966) transactional model of stress, which proposed that the individual's perception of the external threat was equally or more likely the cause of stress than the threat itself. From these two perspectives of stress, researchers developed the person-environment fit (P-E) theory and associated model (French, Caplan, & Harrison, 1982). As Ganster and Schaubroeck (1991) noted,

Figure 1. Full Structural Model of Hypothesized Effect of Psychological Capital on Teacher Stress and Affecti

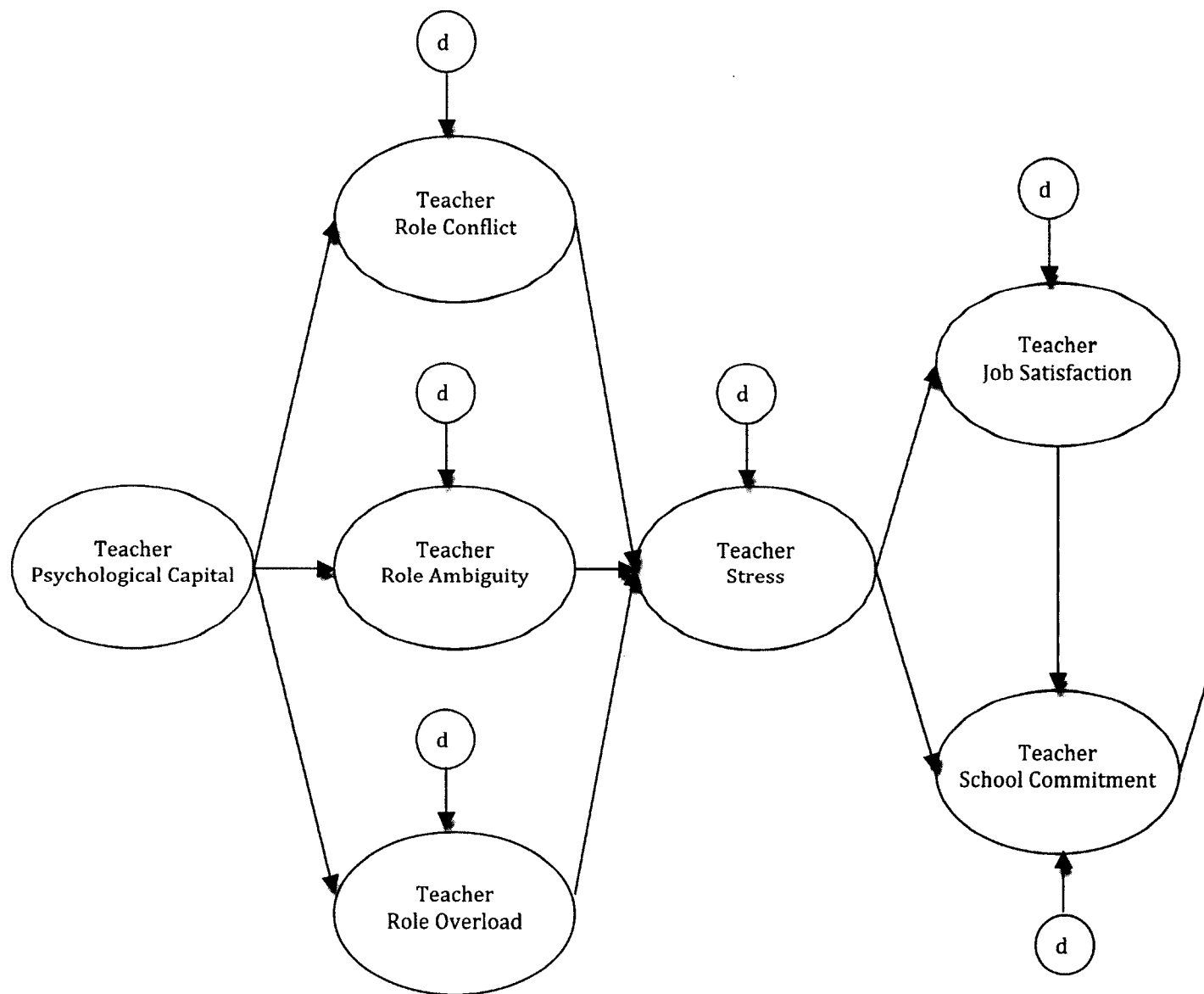


Figure 2. Full Structural Model of Alternative Hypothesis With Psychological Capital as Outcome of Teacher

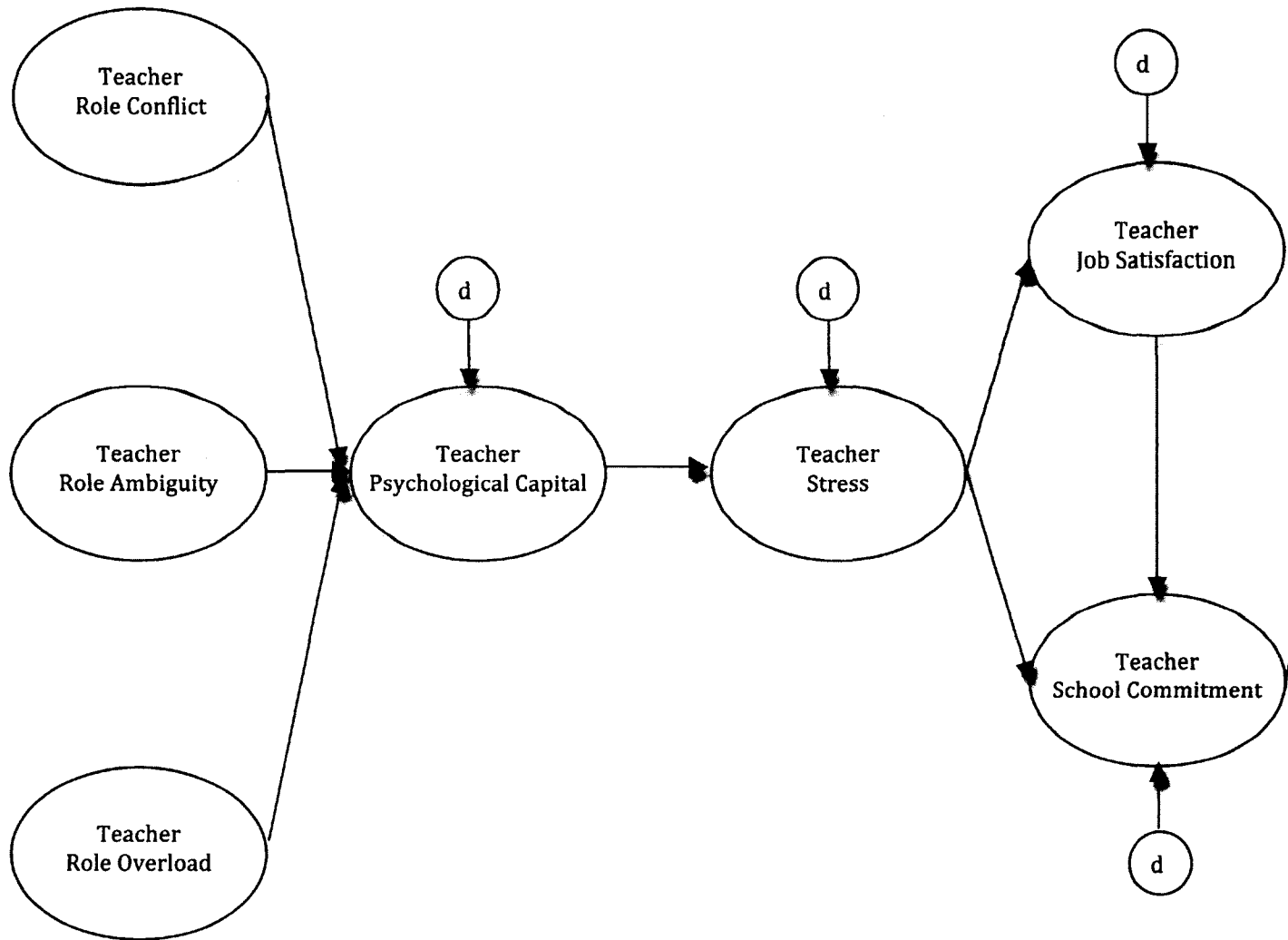
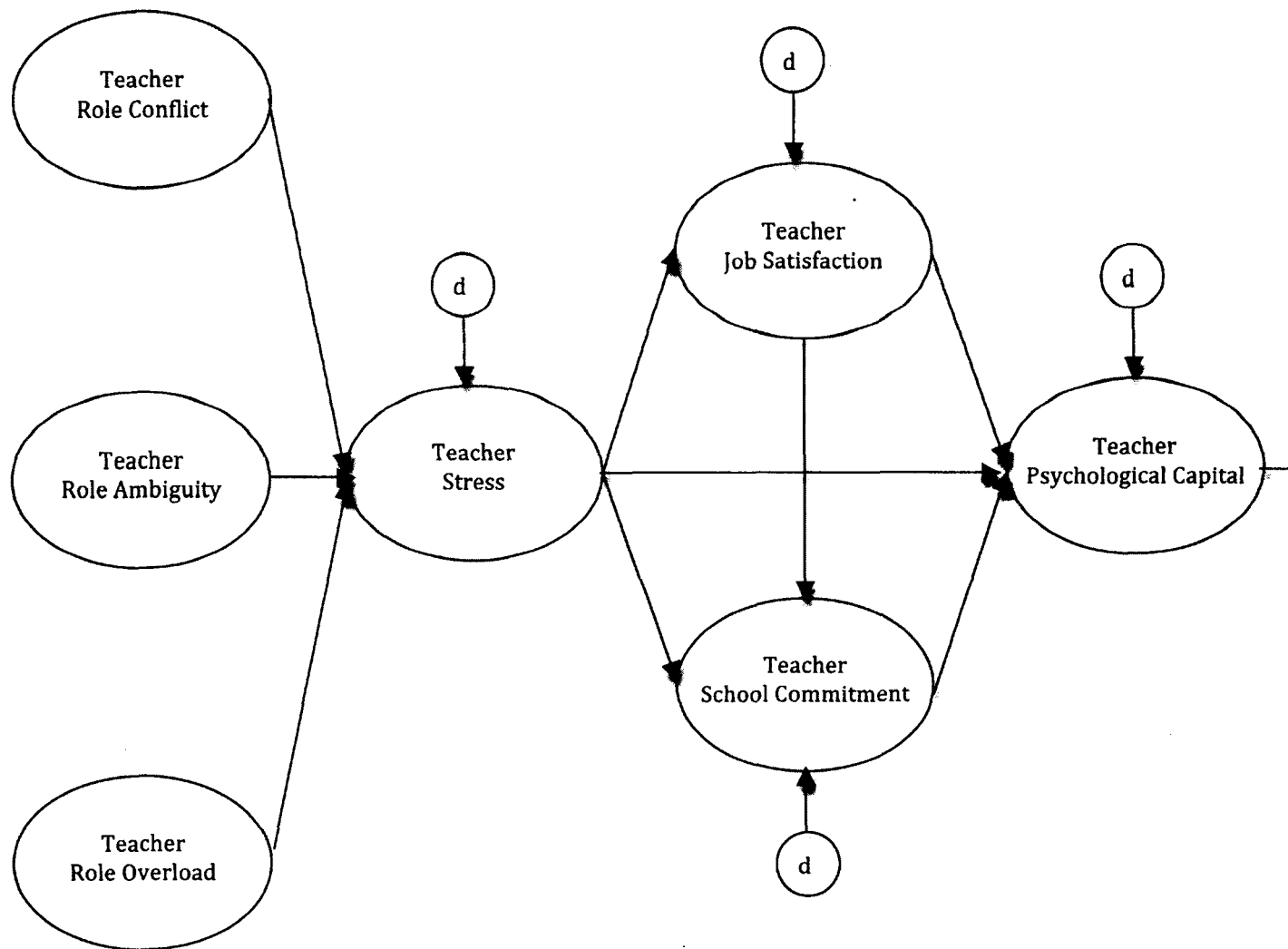


Figure 3. Full Structural Model of Alternative Hypothesis With Psychological Capital as Outcome of Teacher



P-E fit theory derives from Lewin's (1951) and Murray's (1938) works in motivation. At the core of the theory is the basic alignment between the individual and the job environment. The extent of this alignment, or misalignment, drives the degree of stress experienced by the individual. The P-E fit is split along two axes: 1) outcomes of the job aligned with individual needs and desires, and 2) demands of the job aligned with individual knowledge, skills, and abilities.

Considering the demands of the job, role theory provides further insight into the relationship with occupational stress. Established in the 1920s, role theory posits that individuals in all social environments take on roles and associated responsibilities (Linton, 1936; Mead, 1934). Roles form around the division of labor and are driven by norms of society or the organization. These roles define what individuals should do, how they should do it, and what others around them should be doing. When placed in the context of P-E fit, role theory establishes demands of the individual, and when conflict results within or between roles, there is a misalignment between the individual and the environment, which creates strain on the individual. Calling upon the work of Rizzo et al. (1970) and Reilly (1982), the misalignment of roles can be categorized into role conflict, role ambiguity, and role overload, which contribute to workplace stress. Furthermore, when considering the effects of work design on job satisfaction and subsequent commitment and intention to quit, Hackman and Oldham's (1976, 1980) job characteristics model sets task identity, task significant, and autonomy among the key factors in the psychological state of workers.

Shifting focus to the personal resources, the study integrates elements of positive organizational behavior in to the model (i.e., psychological capital). The model relies on

Lazarus' (1966) transactional model of stress and Frederickson's (2000, 2001) broaden and build theory. Lazarus argued individual's perception of stress consists of two appraisals. First, does the external threat pose potential harm to the individual? If not, then there is no stress; however, if the threat may be harmful, then the second appraisal assesses whether the individual has the resources to cope with the threat. When considering the development and availability of coping resources, Frederickson (2001) believes positive emotions, affect, and experiences "temporarily broaden people's momentary thought-action repertoires, which in turn serves to build their enduring personal resources, ranging from psychical and intellectual resources to social and psychological resources" (p. 218). This is consistent with others' work demonstrating the influential role of positive affect and beliefs during periods of adversity (Aspinwall, 2001; Aspinwall & Taylor, 1997; Kahn & Isen, 1993; Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000). Through broadening and building, individuals develop the resources necessary for preventing and prevailing over adversity and stress. While this study does not explore the development of these resources, their existence is critical to explaining how these resources manifest in an individual as personal capacities, specifically psychological capital.

Hypotheses

As an indicator of one's positive capacity or available resources, psychological capital has strong theoretical and empirical support as a second-order construct within positive organizational behavior (Luthans, Avolio, Avey, & Norman, 2007; Luthans, Avolio, Walumbwa, & Li, 2005; and Luthans, Youssef, & Avolio, 2007). Following the broaden and build theory, psychological capital represents one of the "enduring personal

resources” that result from positive emotions and experiences and equip individuals to counter or avert unfavorable circumstances. In this study, psychological capital prepares an individual with the mental and affective tools for reducing adversity in role conflict, ambiguity, and overload and for reducing the stress experienced as a result of that adversity. Given the theoretical foundations for the relationships between roles, stress, and job outcomes, and the application of positive psychology to those relationships, the first hypothesized model as depicted in Figure 1 is:

H1: Higher teacher psychological capital reduces perceived teacher role conflict, ambiguity, and overload, which results in lower teacher stress thereby creating higher teacher job satisfaction and organizational commitment that lead to lower teacher intention to quit.

Alternate Models

Given that the broaden and build theory is contingent upon the experiences, emotions, and affects of the individual for developing coping resources, it is possible role adversities may be factors in the development of psychological capital rather than being influenced by it. Greater adversity and stressors would create lower psychological capital, which increases stress and reduces individual’s capacity to positively experience their work and develop positive attitudes towards their work. The alternate model proposed in Figure 2 was hypothesized as:

H2: Teacher role conflict, ambiguity, and overload lead to reduced psychological capital, which leads to increased teacher stress and subsequently lower teacher job satisfaction and organizational commitment with higher teacher intention to quit.

Similarly, higher job satisfaction and organizational commitment have a positive effect on individuals. Therefore, it is also possible these outcomes, along with teacher stress, are having a direct effect on psychological capital. Higher stress combined with lower job satisfaction and organizational commitment creates the opportunity for lower psychological capital, which reduces the individual resources or capacity for preventing turnover. In Figure 3, this alternate model was hypothesized as:

H3: Teacher role conflict, ambiguity, and overload increase teacher stress, which creates lower teacher job satisfaction and organizational commitment, and combines with job satisfaction and organizational commitment to lower psychological capital and increase teacher intention to quit.

Sample

A variety of sample size estimation approaches have been offered for structural equation modeling. According to Jackson (2003), simulation research has demonstrated a wide array of techniques for estimating sample size using latent variable indicators (Gerbing & Anderson, 1985; Marsh, Hau, Balla, & Grayson, 1998; Velicer & Fava, 1998), estimations of strength between indicators and latent variables (Bandalos, 1997; Gerbing & Anderson, 1985; Velicer & Fava, 1998), multivariate normality (West, Finch, & Curran, 1995), power analysis (MacCallum, Browne, & Sugawara, 1996), and ratio of parameter estimates (Bentler & Chou, 1987; Bollen, 1989; Kline, 1998, Marsh, Balla, & McDonald, 1988; Mueller, 1997; Tanaka, 1987; Ullman, 1996).

While ratios between sample size and parameter estimates are commonly cited as preferred methods in SEM research, often with values between 10:1 to 20:1 (Kelloway, 1998; Kline, 1998; Mueller, 1996), Jackson's Monte Carlo simulation work (2001, 2003)

with parameter estimates demonstrated some support for ratio values in the commonly cited ranges, but he found stronger support for the ratio having a greater impact on model fit than sample size. In agreement with an established pattern of literature support (Anderson & Gerbing, 1984; Boomsma, 1983; Chou & Bentler, 1995; Cohen, Cohen, & Velez, 1990; Gerbing & Anderson, 1985; Hoogland & Boomsma, 1998), Jackson concluded, “the general advice of basing sample size on some minimum value (e.g., 200 or more observations), ensuring indicators are carefully chosen and reliable, and ensuring there are an adequate number of indicators per latent variable seemingly provide more supportable guidelines for sample size than $N:q$ [sample size to parameter estimate ratio]” (p. 139). Consistent with this body of work, this study aimed for a sample size of at least 200 participants.

Considering a population of all Virginia elementary schools, the sampling focused on northern Virginia public elementary schools, specifically those located in the counties of Spotsylvania, Stafford, Caroline, King George, Westmoreland, Culpepper, Orange, Fauquier, Louisa, and Hanover. A convenience sample was collected based upon school districts’ willingness to allow their schools to participate and teachers’ self-selection to complete the survey instrument. It was recognized this method increased the likelihood for bias and error; however, due to the logistical challenges of obtaining individual teacher contact information as well as the large sample size required to conduct statistical testing, random assignment of participants was not feasible. There were 82 total elementary schools in the ten school districts, which represented approximately 1900 elementary teachers. Consistent with the argument that federal oversight and standardized testing are contributing to teacher stress, the sample was further refined to

third through fifth grade teachers, as this aligned with Virginia's Standards of Learning testing. These grades represented approximately 1000 teachers across the ten selected school districts, which dictated a response rate of 20% to achieve ample sample size for statistical testing.

Units of Analysis

All data collection and analysis was conducted at the individual level. The target of the study was individual elementary teachers. As noted previously in Chapter I, teachers are nested within work groups, schools, and school districts, which violates one of the primary tenets of SEM that data are independent and equally distributed (Bentler & Chou, 1987). Ignoring nested data can have adverse effects leading to overestimated parameter estimates, underestimation of standard errors, increased Type I errors, and inflated chi-square tests, which warranted a review and adjustment of the alpha level for this study.

The concept of statistical significance and associated alpha levels began in earnest with Pearson's (1914) publication of *Tables for Statisticians and Biometricians*, and later Fisher (1925) introduced his tables for selected *p*-values in *Statistical Methods for Research Workers*, which further strengthened the acceptance of statistical significance testing. Fisher tables are still referenced today and included in standard statistical textbooks. It was Fisher who first implied an alpha level of .05 for statistical significance as it represented deviations greater than two standard deviations and thus he felt those results were significant and warranted concluding the results were most likely due to the effect of experiment rather than due to error or chance. He institutionalized .05 through his proclamation:

It is convenient to draw the line of significance at about the level at which one can say: Either there is something in the treatment, or a coincidence has occurred such as can not occur more than once in twenty trials. (Fisher, 1925, p. 509)

Besides Fisher's assertions, there is no mathematical, practical, or theoretical justification for using .05 as the accepted level for significance testing (Cohen, 1994).

This apparently arbitrary setting of alpha at .05 has raised many contrary positions questioning other factors and methods that should be considered when reporting testing results and setting alpha levels (Berger & Berry, 1988; Gelman & Stern, 2006; Krantz, 1999), which led Cohen (1994) to conclude:

So even when used and interpreted 'properly,' with a significance criterion (almost always $p < .05$) set a priori (or more frequently understood), H_o has little to commend it in the testing of psychological theories in its usual reject- H_o -confirm-the-theory form. The ritual dichotomous reject-accept decision, however objective and administratively convenient, is not the way any science is done. (p. 999)

By his own acknowledgement, Fisher (1956) also recognized the subjective nature of setting the alpha level and advised considering all factors of the experiment in setting the level of statistical significance:

However, the calculation is absurdly academic, for in fact no scientific worker has a fixed level of significance at which from year to year, and in all circumstances, he rejects hypotheses; he rather gives his mind to each particular case in the light of his evidence and his ideas. (p. 42)

This is consistent with Robinson and Wainer's (2001) recommendation to establish the statistical test a priori and adequately explain the justification for said selection,

specifically the alpha level should be reflective of the investigator's "threshold for the dismissal of the idea of chance" (Alberoni, 1962, p. 262). Similarly, Tukey (1969) asserted:

Need we – should we – stick to $p = 0.05$ if what we seek is a relatively pure list of appearances? No matter where our cutoff comes, we will not be sure of all appearances. Might it not be better to adjust the critical p moderately – say to .03 or .07 – whenever such a less standard value seems to offer a greater fraction of presumably real appearances among those significant at the critical p ? We would then use different modifications for different sets of data. No one, to my knowledge, has set himself the twin problems of how to do this and how well doing this in a specific way performs. (p. 85)

As such, the unique aspects of this research warrant discussion prior to setting the study's alpha level. It has been acknowledged there exists a nesting of data for this study, specifically teachers within schools and schools within school districts. Structural equation modeling assumes independent data for accurate analysis, and the introduction of nested data violates this assumption and increases the likelihood of a Type 1 error (Kline, 2011). Given the complexity of the proposed structural model, hierarchical analysis methods were determined to be beyond the scope of the research, and instead, alternative analysis methods were explored for addressing the effect of nested data. While no specific statistical methods were identified, Thomas and Heck (2001) recommended:

The evaluation criterion can be adjusted according to the ICC [intraclass correlation coefficient] – where higher ICCs should lead to lower alpha values.

Unfortunately, there exists little empirical work assessing this relationship with large numbers of groups of unequal size to provide a firm framework in which to consider such adjustments. (p. 533)

It was also acknowledged that setting the alpha level at .05 is not necessarily the most favorable condition for Type 1 errors and that deviations from .05 are acceptable if made ahead of time and fully justified by the researcher (Moye, 2004). Recognizing the data nesting limitation of this study, the alpha level was set at .01 for parameter estimates and Chi-Square testing, to ensure a more stringent standard for significance testing and to further reduce the likelihood of a Type 1 error.

Instruments

Well-established, reliable instruments from the literature were identified to measure the endogenous variable and seven exogenous variables (Table 4). Additionally, the literature fully supported the reliabilities of the PsyCap sub-scales (Table 5). Consistent with Peterson's (1994) and Slater's (1995) assessments, Cronbach's alpha levels were considered acceptable at or above .60. As needed, instrument language was reworded to reflect study focus on teachers and schools (e.g., replace organization with school) (Appendix B). With the exception of the psychological capital questionnaire, all other instruments were available in public domain and not copyright protected. Approval was obtained to use the psychological capital questionnaire (Appendix C). Measurement models were created to establish relationships between instrument items and latent variables for statistical testing.

Psychological Capital

Psychological capital was self-reported using the 12-item version of the Psychological Capital (PCQ-24) questionnaire (Avey, Luthans, & Mhatre, 2008; Luthans, Avey, Clapp-Smith, & Li, 2008; Luthans, Youssef, & Avolio, 2007; Norman, Avolio, & Luthans, 2010). Instrument items were scored on a Likert scale from one to six and individually entered into the measurement model (Figure 4).

Role Ambiguity and Conflict

Role ambiguity and conflict were self-reported using Rizzo et al.'s (1970) 14-item instrument. Eight items measured role conflict, and six items measured role ambiguity. Instrument items were scored on a Likert scale from one to seven and individually entered into the measurement models (Figure 5 and 6).

Role Overload

Role overload was self-reported using Thiagarajan, Chakrabarty, & Taylor's (2006) 6-item instrument derived from Reilly's (1982) seminal measure. Instrument items were scored on a Likert scale from one to seven and individually entered into the measurement model (Figure 7).

Teacher Stress

Teacher stress was self-reported using Boyle et al.'s (1995) 20-item instrument derived from Kyriacou and Sutcliffe's (1978b) seminal work. Instrument items were scored on a Likert scale from one to five and individually entered into the measurement model (Figure 8).

Job Satisfaction

Job satisfaction was self-reported using 3-items from Hackman and Oldham's (1980) Job Diagnostic Survey. Instrument items were scored on a Likert scale from one to seven and individually entered into the measurement model (Figure 9).

School Commitment

School commitment was self-reported using Meyer et al.'s (1993) 6-item Organizational Commitment Affective Scale. Instrument items were scored on a Likert scale from one to seven and individually entered into the measurement model (Figure 10).

Intention to Quit

Intention to quit was self-reported using a 3-item scale from the Michigan Organizational Assessment Questionnaire (Cammann et al., 1983). Instrument items were scored on a Likert scale from one to seven and individually entered into the measurement model for statistical testing (Figure 11).

Data Collection

Individually addressed letters were delivered to each of the seven school district Superintendents or Assistant Superintendents requesting their schools' participation (Appendix D). Following this effort, a cover letter and the study instruments were delivered as an electronic survey using the online survey service Survey Monkey (Appendix E). The surveys were confidential and password-protected to ensure only those participating teachers responded. A three-week period was set aside for the completion of the survey, and weekly reminders were sent to encourage the greatest extent of participation. Since individual responses were not tracked or recorded, follow-

Table 4

<i>Reliabilities of Existing Data Collection Instruments</i>			
<u>Instrument</u>	<u>Variable</u>	<u>Reliabilities (α)</u>	<u>Reference(s)</u>
Psychological Capital (PCQ-24)	Psychological Capital	.88 - .95	Avey et al. (2009); Avey, Luthans, et al. (2010); Avey, Luthans, & Youssef (2010); Luthans et al. (2007)
Rizzo et al (1970)	Role Ambiguity; Role Conflict	Ambiguity .71 - .95 Conflict .71 - .87	Dobbins, Cardy, & Platz-Vieno, (1990); Fortunato, Jex, & Heinich (1999); Fried & Tiegs (1995); Gregersen & Black (1992); Netemeyer et al. (1995);
Thiagarajan et al. (2006)	Role Overload	.86 - .91	Booth (2011); Cowlshaw, Evans, & McLennan (2010); Storfer-Isser & Musher-Eizenman (in press); Thiagarajan, Chakrabarty, & Taylor (2006)
Teacher Stress Inventory	Teacher Stress	.85 - .89	Boshoff (2011); Boyle et al. (1995); Griffeth, Steptoe, & Cropley (1999)
Job Diagnostic Survey	Job Satisfaction	.75 - .87	Hackman & Oldham (1975); Hackman & Oldham (1980); Kluemper, Little, & DeGroot (2009);
Organizational Commitment Affective Scale	School Commitment	.70 - .91	Luthans et al. (2008); Meyer and Allen (1991); Meyer, Allen, & Gellatly, (1990); Meyer, Stanley, Herscovitch, & Topolnytsky (2002)
Michigan Organizational Assessment Questionnaire	Intention to Quit	.81 - .87	Cammann, Fichman, Jenkins, & Klesh (1983); Glazer & Kruse (2008); Harris, Kacmar, & Witt (2005); Kim, et al., (2010)

Table 5

PsyCap and Sub-Scale Measurement Reliabilities (Cronbach's Alpha)

	<u>PsyCap-24</u>	<u>Self-Efficacy</u>	<u>Hope</u>	<u>Optimism</u>	<u>Resilience</u>
Avey et al. (2006)	.90	.82	.81	.65	.78
Avey, Luthans, Smith, et al (2010)	.93	.87	.87	.78	.72
Avey, Luthans, & Youssef (2010)	.95	.92	.87	.78	.83
Avey et al. (2009)	.92	NR	NR	NR	NR

Figure 4. Psychological Capital Measurement Model

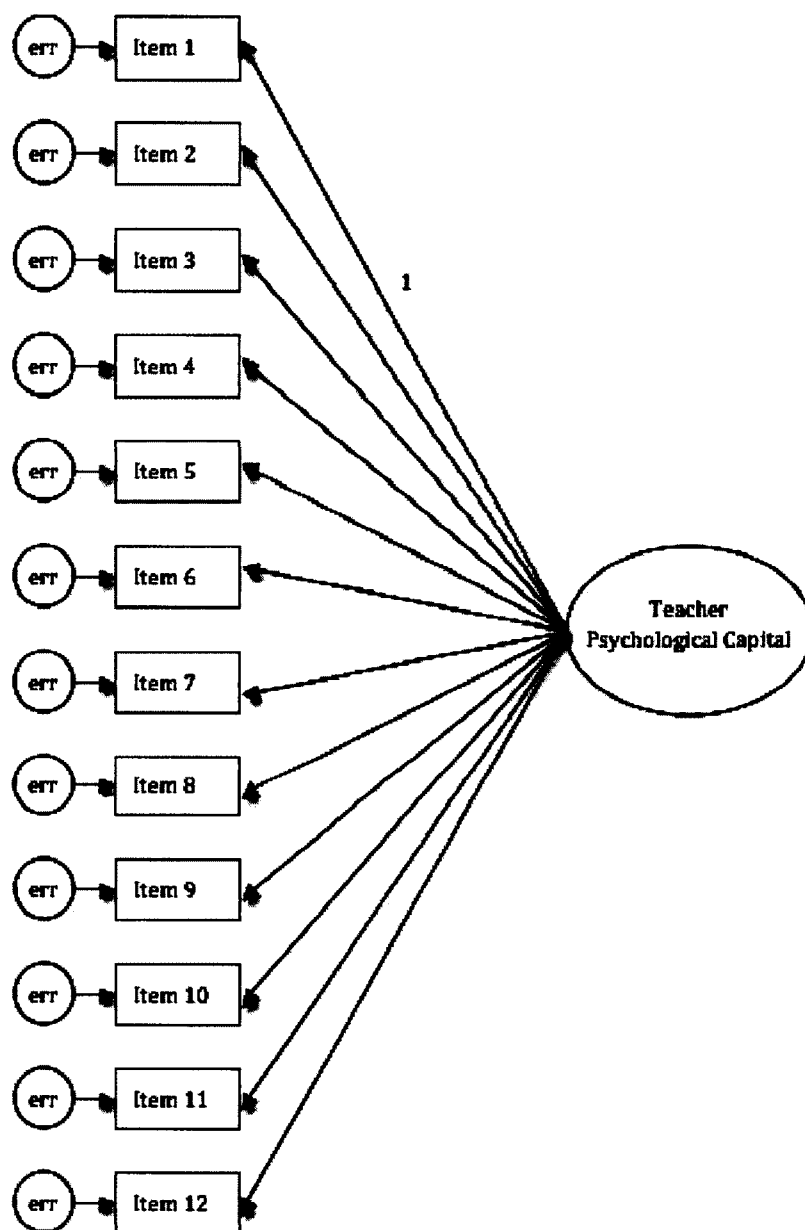


Figure 5. Role Ambiguity Measurement Model

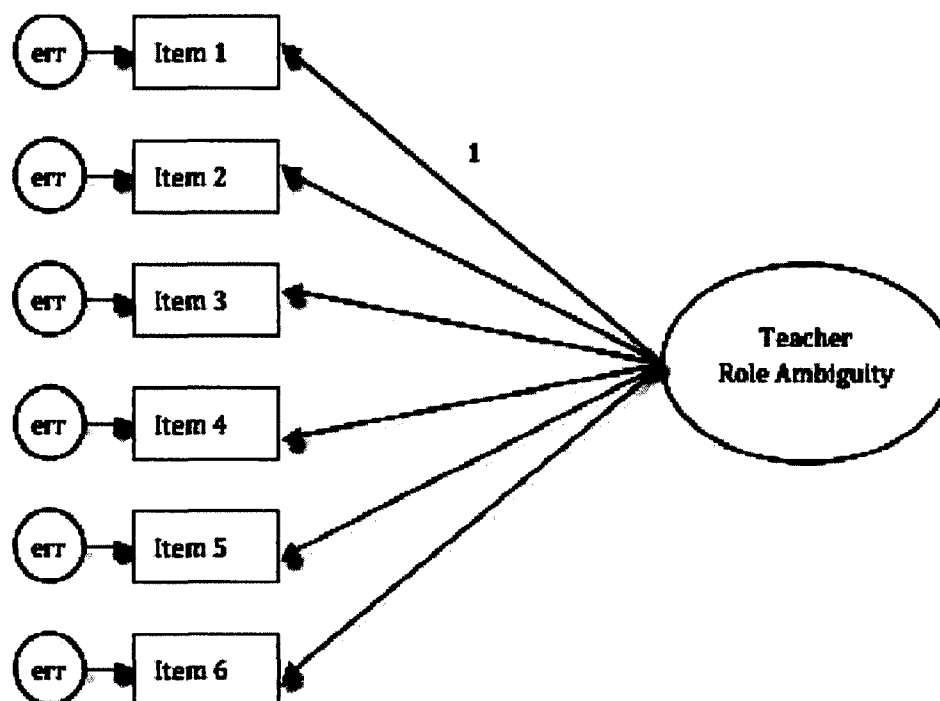


Figure 6. Role Conflict Measurement Model

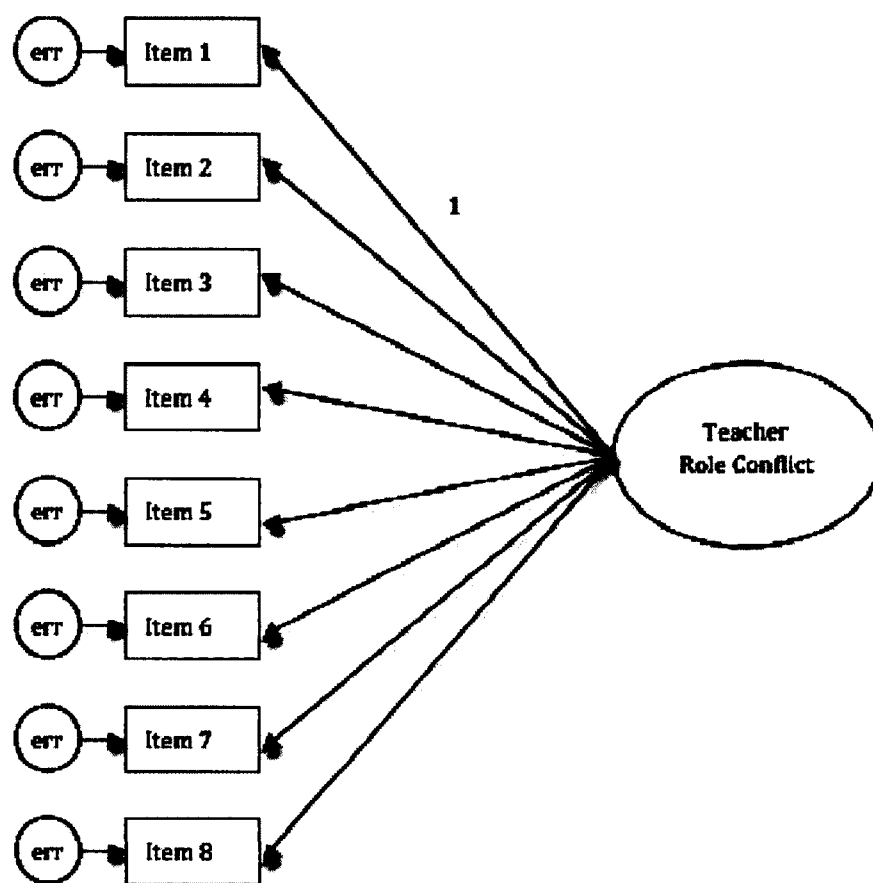


Figure 7. Role Overload Measurement Model

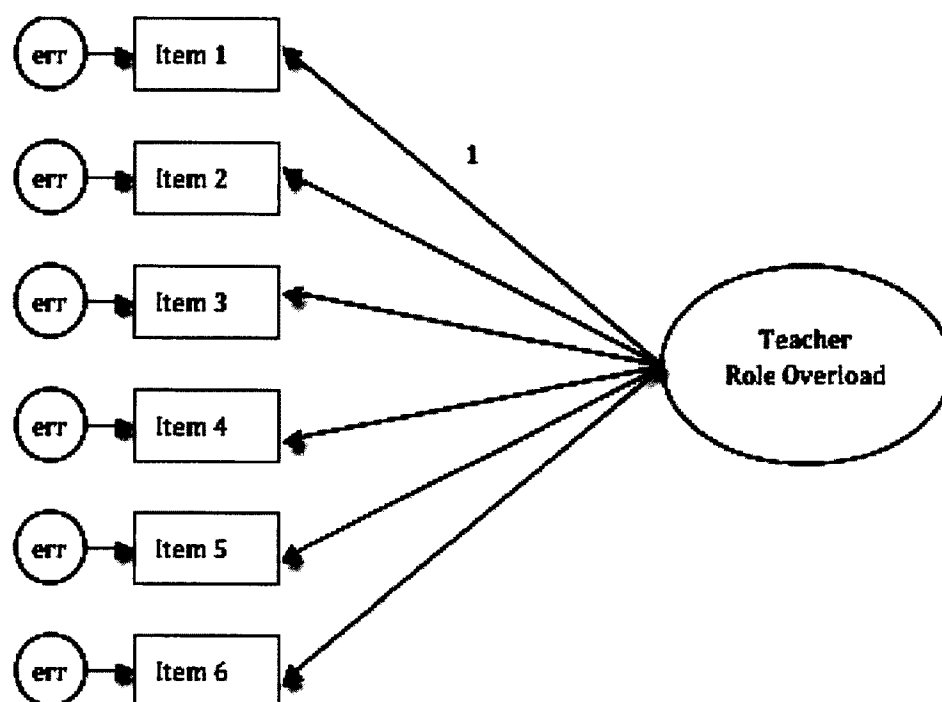


Figure 8. Teacher Stress Measurement Model

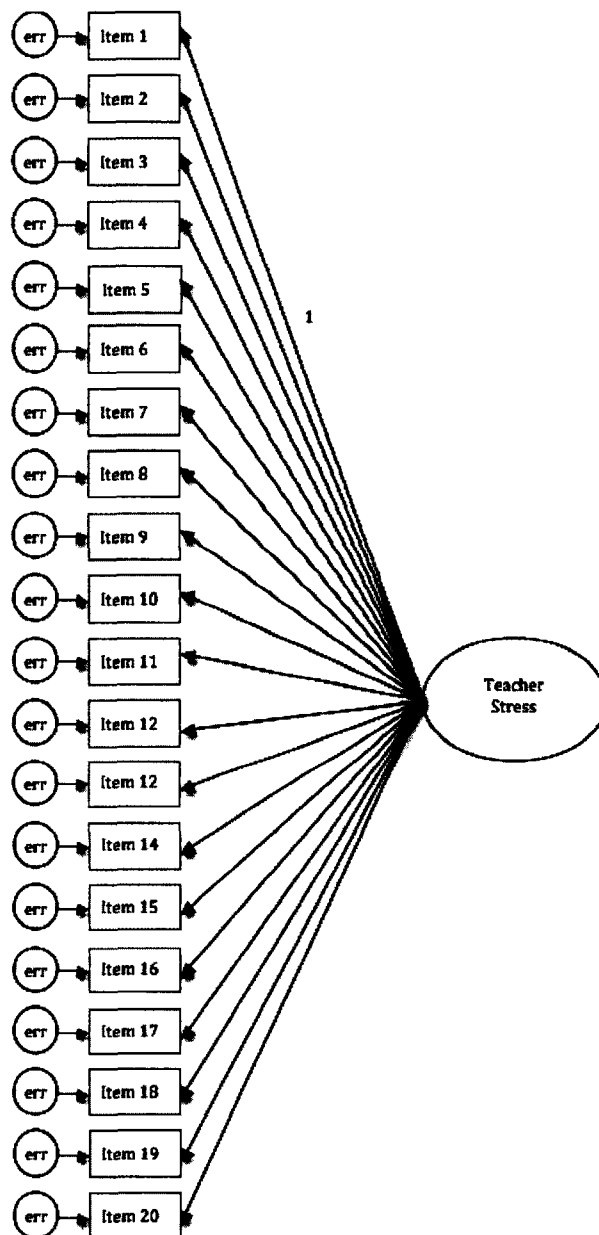


Figure 9. Job Satisfaction Measurement Model

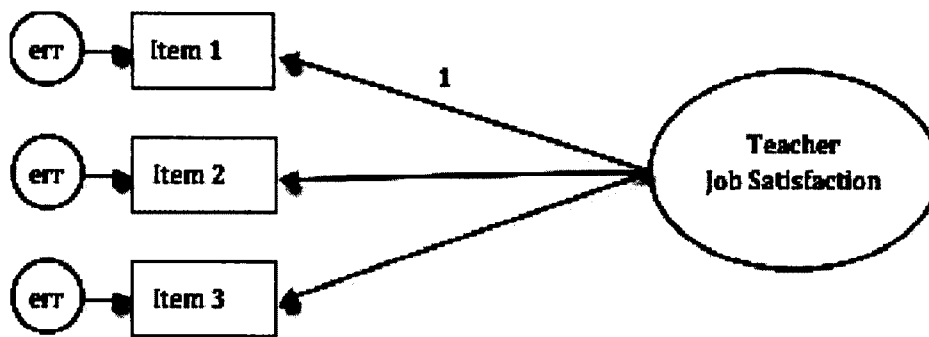


Figure 10. School Commitment Measurement Model

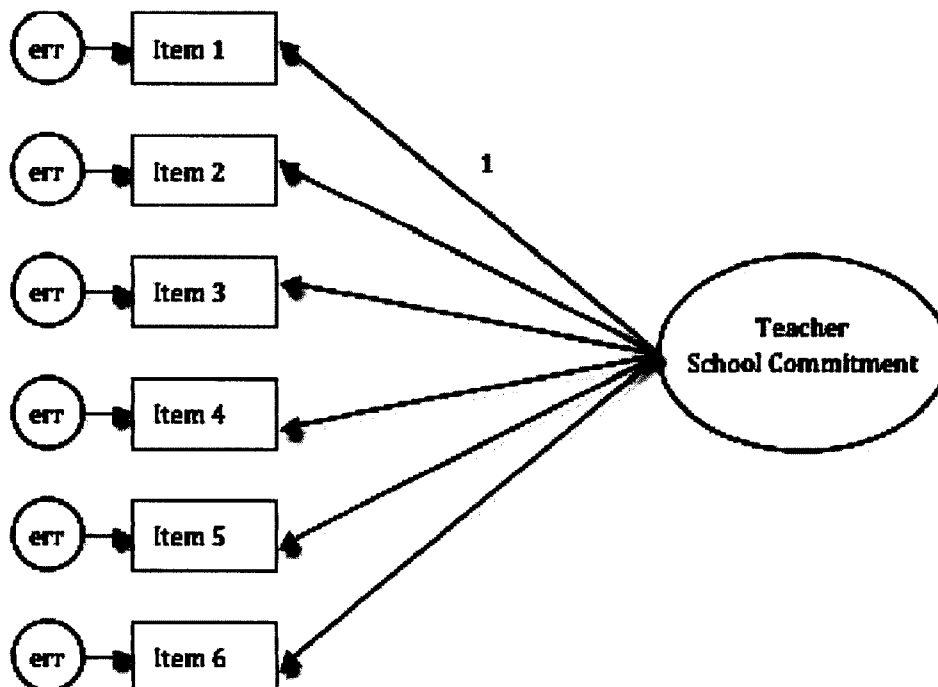
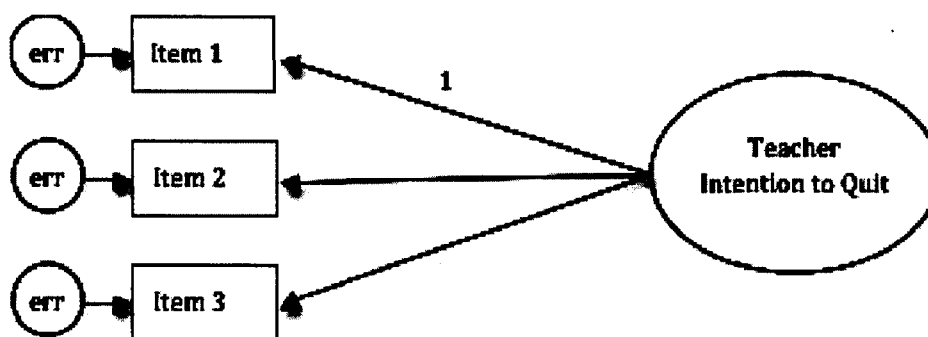


Figure 11. Intention to Quit Measurement Model



up reminders were sent to all participants. Data collection took place following SOL testing in the spring and shortly after the beginning of the fall quarter. As an incentive to participate in the study, teachers were offered the opportunity to enter three random drawings for gift cards.

Data Analysis

Structural equation modeling (SEM) using AMOS 21.0 with maximum likelihood method was used to complete this study. Analysis was also performed to ensure the reliability of the instruments.

Structural Equation Modeling

From theory or empirical evidence, variables can frequently be arranged a priori to predict relationships, causation, and hypothesized outcomes. Pictorially structuring the study variables in a prearranged order before collecting and analyzing data drives a confirmatory rather than exploratory research approach. This approach is known as structural equation modeling (SEM) and is a statistical methodology for hypothesis testing multiple variables with theoretical support for their order and relationships. Byrne (2010) explained:

The term *structural equation modeling* conveys two important aspects of the procedure: (a) that the causal processes under study are represented by a series of structural (i.e., regression) equations, and (b) that these structural relations can be modeled pictorially to enable a clearer conceptualization of the theory under study (p. 3).

Through this approach, the variables and associated relationships of a hypothesized model can be statistically tested simultaneously while controlling for each of the variables within the model. The testing provides a goodness-of-fit estimate for the entire network of study variables, and if the fit is strong enough, the proposed model is accepted and the causal relationships are inferred to likely be true.

According to Byrne (2010), there are three advantages to SEM. First, in contrast to common multivariate processes that provide exploratory and descriptive analyses, SEM is undertaken to confirm a hypothesized model based on empirical or theoretical literature. This shifts the focus from descriptive to inferential. That is, instead of asking what is the relationship between multiple variables, the research defines those relationships (direction and effect) a priori and supports the assertions through the literature. Second, SEM accounts for and corrects measurement error in the independent variables. Ordinary least squares regression cannot calculate or adjust for the error, and generally assumes the error disappears, which can have substantial impacts on the results. Third, SEM allows the incorporation of both observed and unobserved (i.e., latent) variables into the hypothesized model, which permits the researcher to think more systemically about the theories in question.

From the review of literature in Chapter II, hypotheses #1, #2, and #3 were developed from the theoretical and experimental evidence supporting the hypothesized relationships of this study's proposed structural model and alternate models. Given the establishment of priori relationships and the structural representation of the latent variables, SEM was an appropriate statistical testing methodology.

Statistical Assumptions

In alignment with Kline's (2011) recommendations for SEM testing, outliers, normality, and collinearity were assessed prior to model fit testing. Univariate outliers were identified using z-scores (± 3.0) and reviewing box plots, while multivariate outliers were flagged by Mahalanobis Distance ($p = .001$). The variance inflation factor (VIF; >10) and squared multiple correlation ($R^2_{\text{sme}}; >.90$) were calculated to determine collinearity. Univariate normality was assessed by skewness (<3.0), kurtosis (<10.0), visual inspection of histogram and Q-Q plots, and non-significant Shapiro-Wilk tests. Multivariate normality was evaluated using Mardia's coefficient (Bryne, 2010) and a critical ratio of less than 5.0. Outliers and collinearity

Model Fit

Several fit indices will be calculated to determine which of the three hypothesized models best fit the observed data. Consistent with Schreiber, Nora, Stage, Barlow, and King's (2006) assessment of SEM reporting in educational research, and following the lead of Jackson, Gillaspy, and Purc-Stephenson (2009),

[T]here is no universally agreed upon number of fit indices to report, a minimal set would include the chi-square value and the associated degrees of freedom and probability value, an index to describe incremental fit, such as the TLI, CFI (or

RNI)...and a residuals-based measures (e.g., RMSEA and its associated confidence intervals or SRMR) (p. 19).

Based on this guidance, model fit will be assessed with the chi-square test and the fit indices of the comparative fit index (CFI) (Bentler, 1990), Normed Fit Index (NFI) (Bentler & Bonett, 1980), and the root mean square error of approximation (RMSEA) (Hooper, Coughlan, & Mullen, 2008).

A traditional test of fit, the chi-square assesses the alignment of the observed covariance matrix with the implied matrix of the hypothesized model(s). A good model fit is accepted with a non-significant chi-square value; however, a statistically significant result represents poor fit and indicates the model cannot explain variance in the data. Unfortunately, chi-square tests are sensitive to sample size, and large samples are likely to show a poor model fit (Bollen, 1989). Despite arguments that chi-square testing is sufficient for model fit (Barrett, 2007), the use of alternate fit indexes is warranted (Byrne, 2010). NFI and CFI are relative fit indices for assessing the degree of fit between the proposed model(s) and a model with no structure (Bentler, 1990). According to Byrne (2010), NFI has been a primary and popular index in structural modeling research; however, it is prone to underestimate fit in small samples. Since CFI accounts for sample size, it is often also included in model testing. RMSEA is an absolute measure of fit and calculated based on residual estimates (Hooper, Coughlan, & Mullen, 2008). It tends to be positively biased (i.e. large) for small degrees of freedom and sample sizes. Consistent with Hu and Bentler (1999) and following current practices (Byrne, 2010; Jackson et al., 2009; Schreiber et al., 2006), satisfactory fit indices will be greater than .95 for CFI and NFI and less than .06 for RMSEA.

To compare the hypothesized models against one another, Akaike Information Criterion (AIC) was used to determine which model best fit the data. The lowest AIC score represented the best model fit.

Reliability

The reliabilities of study instruments were confirmed using Cronbach's alpha. Any alpha value greater than .60 was considered acceptable (Peterson, 1994; Slater, 1995).

Protection of Human Subjects

Participants were protected in accordance with the Institution Review Board's approval and recommendations (Appendix A). Participants electronically agreed to informed consent (Appendix F). All research related data was maintained on a password-protected computer and will be destroyed after three years. During the data collection process, the survey responses were confidential. E-mail addresses were used to verify who completed the survey, but addresses were not associated with the individual's unique responses. Furthermore, all e-mails were sent individually to teachers rather than as a mass distribution list, which minimized who knows who participated in the research and likely reduced any concerns teachers had about their supervisors being aware of their participation or responses. Aggregated findings were gladly shared with participating school districts, but results associated with individual schools were not shared.

CHAPTER IV

RESULTS

Following two rounds of data collection to achieve an adequate sample size, data were analyzed using SPSS 21.0 and AMOS 21.0 to review study demographics, to confirm statistical testing assumptions, to address study variable variance due to nesting effects from schools within school districts, and to test hypothesized structural equation models.

Survey Results

In the spring of 2013, two school districts of the ten districts approached to participate in the study approved participation, and electronic surveys were distributed to 204 teachers. Sixty-seven teachers completed the survey for a response rate of 32.8%. The total number of responses fell short of the minimum 200 required for SEM testing, so a second round of data collection was completed in the fall of 2013. The eight remaining districts were approached again, and five agreed to participate. Surveys were distributed to 626 teachers with 167 completing for a response rate of 26.7%. Together, the two samples provided a total of 234 respondents, which was large enough for SEM testing. To assess whether the two samples could be combined, a t-test was conducted for each of the eight study variables (Table 6). With the exception of role overload, all variables showed no statistical differences between the two data collection times. To allow the study to move forward, responses for all variables were combined, and the statistical difference in role overload means between spring and fall was noted as a limitation of the research.

Response data and demographics for the spring, fall, and combined are presented in Table 7. Respondents were predominately white females. Only 10% of respondents

Table 6

Fall and Spring Descriptive Comparison

	<u>Time</u>	<u>n</u>	<u>\bar{x}</u>	<u>s</u>	<u>t</u>
Quit	Spring	66	12.11	3.844	1.48
	Fall	159	11.23	4.091	
Commit.	Spring	66	29.44	7.432	1.931
	Fall	159	31.48	7.115	
Satis.	Spring	66	14.18	3.486	.761
	Fall	159	14.57	3.432	
Stress	Spring	66	58.18	11.427	.320
	Fall	159	57.63	11.929	
Overload	Spring	66	30.26	7.490	3.242*
	Fall	159	33.42	6.293	
Conflict	Spring	66	31.98	9.109	.901
	Fall	159	33.27	9.998	
Ambiguity	Spring	66	18.50	6.330	1.090
	Fall	159	17.47	6.490	
PsyCap	Spring	66	52.71	7.587	.428
	Fall	159	53.15	6.750	

* $p < .05$

were male and less than 3% were non-white. Teachers averaged 39 years in age with 12-years of teaching experience and nearly 8 of those years with their current school. There was a relatively even distribution of teacher grade levels with 38% in 3rd grade, 30% in 4th grade, and 32% in 5th grade. The average classroom had 22 students. Of note, the spring respondents were typically younger, had less experience and time with their school, and taught in the lower grade levels.

To finalize the data set for statistical and model testing, outliers were identified for each of the eight study variables. Using a z-score of +/- 3.0 (Kline, 2011), univariate outliers were located in role overload (2), role ambiguity (3), and psychological capital (1). Review of the box plots confirmed the outliers as well as identified four additional outliers (role overload – 1, role ambiguity – 2, psychological capital – 1). The use of

structural equation modeling also requires identification of multivariate outliers using Mahalanobis Distance ($df = 8$; critical value 26.12 at $p = .001$). This identified one outlier in intention to quit, which was associated with the same respondent as one of the univariate outliers. In total, nine respondents were identified with outlier scores and removed from the data set. This resulted in final sample size of 225.

Statistical Assumptions

As presented in Chapter 3, SEM requires certain statistical assumptions be met before model testing can be conducted.

Normality

The distributional shape of the eight study variables was examined to determine the extent to which the assumption of normality was met (Table 8). Skewness and kurtosis values were within acceptable limits of 3.0 and 10.0, respectively (Kline, 2011). Shapiro-Wilk test of normality confirmed normality for stress and psychological capital, but not for the remaining six variables, which necessitated a visual inspection of histogram and Q-Q plots for all eight variables. A relatively bell-shaped distribution displayed in the histogram as well as a Q-Q plot with points adhering closely to the diagonal line suggest evidence of normality. Despite significant Shapiro-Wilk tests, the overall evidence supported the assumption that univariate normality was met.

Multivariate Normality

The multivariate kurtosis was 257.2 with a critical ratio of 20.98. The critical ratio exceeded 5.0 and highly suggested non-normality (Byrne, 2010 citing Bentler, 2005).

Table 7

<i>Study Demographics</i>			
	<u>Spring 2012 (<i>n</i> = 67)</u>	<u>Fall 2013 (<i>n</i> = 167)</u>	<u>Total</u>
Response Rate, %	32.8	26.7	28.2
Gender, <i>n</i> (%)			
Male	7 (10.4)	10 (6.0)	17 (7.3)
Female	60 (89.6)	157 (94.0)	217 (92.7)
Age, <i>n</i> (%)			
18-24	8 (11.9)	6 (3.6)	14 (6.3)
25-34	27 (40.3)	52 (31.1)	79 (33.7)
35-44	16 (23.9)	50 (29.9)	66 (28.6)
45-54	10 (14.9)	36 (21.6)	46 (19.7)
55-64	5 (7.5)	21 (12.6)	26 (11.2)
65+	1 (1.5)	1 (0.6)	2 (0.9)
\bar{x}	36.3	39.9	38.9
<i>s</i>	11.4	10.8	11.0
Race, <i>n</i> (%)			
American Indian/Alaska Native	1 (1.5)	0 (0.0)	1 (.4)
Asian	1 (1.5)	1 (0.5)	2 (.9)
Black or African American	0 (0.0)	3 (1.8)	3 (1.3)
Native Hawaiian/Other Pacific Islander	0 (0.0)	0 (0.0)	0 (0.0)
White	65 (97.0)	163 (97.7)	228 (98.4)

Table 7 continued

Grade Level, n (%)			
3rd	33 (49.3)	55 (32.9)	88 (37.8)
4th	18 (26.9)	51 (30.5)	69 (29.6)
5th	16 (23.9)	61 (36.5)	77 (32.5)
Years Teaching, n (%)			
1-5	29 (43.3)	37 (22.2)	66 (28.1)
6-10	19 (28.4)	38 (22.8)	57 (24.2)
11-15	10 (14.9)	39 (23.4)	49 (20.6)
16-20	1 (1.5)	27 (16.2)	28 (11.9)
20+	8 (11.9)	26 (15.6)	34 (14.4)
\bar{x}	9.16	12.9	11.7
s	8.27	8.63	8.60
Years at School, n (%)			
1-5	44 (65.7)	70 (41.9)	114 (48.1)
6-10	16 (23.9)	50 (29.9)	66 (28.1)
11-15	3 (4.5)	27 (16.2)	30 (12.5)
16-20	2 (3.0)	9 (5.4)	11 (4.6)
20+	2 (3.0)	11 (6.6)	13 (5.5)
\bar{x}	5.30	8.38	7.40
s	5.62	6.90	6.61
Students per Classroom			
0-10	5 (7.5)	7 (4.2)	12 (5.0)
11-20	24 (35.8)	47 (28.1)	71 (30.0)
21-30	38 (56.7)	111 (66.5)	149 (61.9)
30+	0 (0.0)	2 (1.2)	2 (0.9)
\bar{x}	20.8	21.7	21.5
s	5.00	4.71	4.76

Collinearity

The variance inflation factor (VIF) and squared multiple correlation (R^2_{smc}) were calculated to determine whether collinearity existed (Table 9). VIF values greater than 10, and R^2_{smc} greater than .90 would indicate collinearity (Kline, 2011). There were no indications of collinearity among any of the eight study variables.

Reliability

With the exception of intention to quit ($\alpha = .532$), all study variables had a Cronbach's alpha of at least .60 (Table 8).

Alpha Level

Due to the nested nature of schools within school districts, Chapter 3 discussed lowering the alpha level to .01 to adjust for increased likelihood of Type I errors. As a test of the variance due to school district among the eight study variables, a one-way fixed ANOVA was conducted with individual variables as dependent variables and school districts as the classification (independent) variable. Consistent with Olejnik and Algina's (2003) calculations, omega squared (ω^2) estimates the proportion of the variance in study variables that is explained by differences among the school districts. Olejnik and Algina cautioned that eta squared is a more frequently cited effect size statistic; however, it overestimates the population proportion of variance explained and therefore ω^2 is less biased and preferred for small samples (Carroll & Nordholm, 1975; Keselman, 1975).

Table 8

Consolidated Descriptive Statistics

	<u>Quit</u>	<u>Commit.</u>	<u>Satis.</u>	<u>Stress</u>	<u>Overload</u>	<u>Conflict</u>	<u>Amb.</u>
<i>n</i>	225	225	225	225	225	225	225
\bar{x}	11.49	30.88	14.45	57.79	32.49	32.89	17.45
<i>s</i>	<i>SE</i> = .269	<i>SE</i> = .483	<i>SE</i> = .230	<i>SE</i> = .784	<i>SE</i> = .454	<i>SE</i> = .650	<i>SE</i> = .385
Reliability (α)	4.031	7.252	3.445	11.762	6.804	9.743	6.104
Skew (<i>SE</i> = .162)	.532	.868	.704	.857	.871	.868	.881
Kurtosis (<i>SE</i> = .323)	.313	-.467	-.597	-.072	-.730	-.414	-.301
Shapiro-Wilk (S-W)	-.418	-.501	.042	-.337	-.260	-.331	-.191
Omega Squared (ω^2)	.977*	.962*	.956*	.991	.936*	.978*	.990
	.058	.096	.046	.000 ^a	.034	.000 ^a	.000

a – Value was negative

* $p < .05$

Table 9

Collinearity Tests

	Dependent Variable						
	<u>Quit</u>	<u>Commit.</u>	<u>Satis.</u>	<u>Stress</u>	<u>Overload</u>	<u>Conflict</u>	<u>Arr</u>
Quit	-	1.512	1.244	1.502	1.523	1.524	1
Commit.	1.323	-	1.249	1.329	1.316	1.334	1
Satis.	1.765	2.024	-	2.160	2.141	2.127	2
Stress	1.952	1.974	1.979	-	1.720	1.879	1
Overload	1.728	1.706	1.713	1.501	-	1.536	1
Conflict	1.771	1.772	1.743	1.681	1.574	-	1
Ambiguity	1.763	1.686	1.759	1.710	1.689	1.652	
PsyCap	1.609	1.637	1.477	1.623	1.618	1.609	1
R^2_{smc}	.345	.251	.538	.496	.422	.436	

Kirk (1996) provided values of ω^2 such that the effect of the independent variable was small ($<.01$), medium ($.01-.13$), and large ($>.14$). Higher ω^2 would indicate greater nesting effect and support lower alpha level.

Stress and role conflict showed no variance due to school districts; however, intention to quit, job commitment, job satisfaction, role overload, and role ambiguity demonstrated medium effects due to school district, while psychological capital had low effect (Table 8). The results show a degree of differences between variables due to school districts, which supports nesting effects and raise questions regarding data independence. As such, lowering of the alpha level was supported.

Model Testing

As outlined in Chapter 3, three structural models were tested using chi-squared, Comparative Fit Index (CFI), Normed Fit Index (NFI), and the Root Mean Square Error of Approximation (RMSEA) for model fit as well as Akaike Information Criterion (AIC) for comparison of the three hypothesized models. Table 10 summarizes model fit statistics and standardized parameter estimates. Tables 11 and 12 provide correlation and variance-covariance matrices.

Table 10

Model Fit Statistics

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
χ^2	4216.7	4337.9	4252.5
<i>df</i>	1942	1944	1942
<i>p</i>	.000	.000	.000
RMSEA (90% CI)	.072 (.069-.075)	.074 (.071-.077)	.073 (.070-.076)
CFI	.672	.655	.667
NFI	.529	.516	.525
GFI	.610	.602	.610
AIC	4492.7	4609.9	4528.5

Table 11

Correlation Matrix

	<u>Quit</u>	<u>Commit.</u>	<u>Satis.</u>	<u>Stress</u>	<u>Overload</u>	<u>Conflict</u>	<u>Amb.</u>
Quit	-						
Commit.	$r = -.325^{**}$	-					
Satis.	$r = -.552^{**}$	$r = .422^{**}$	-				
Stress	$r = .346^{**}$	$r = -.244^{**}$	$r = -.464^{**}$	-			
Overload	$r = .189^{**}$	$r = -.034$	$r = -.341^{**}$	$r = .551^{**}$	-		
Conflict	$r = .297^{**}$	$r = -.181^{**}$	$r = -.420^{**}$	$r = .549^{**}$	$r = .519^{**}$	-	
Ambiguity	$r = .272^{**}$	$r = -.366^{**}$	$r = -.441^{**}$	$r = .435^{**}$	$r = .165^{*}$	$r = .400^{**}$	
PsyCap	$r = -.167^{*}$	$r = .190^{**}$	$r = .475^{**}$	$r = -.398^{**}$	$r = -.289^{**}$	$r = -.243^{**}$	$r = -.221^{**}$

* $p < .05$ ** $p < .01$

Table 12

Variance-Covariance Matrix

	<u>Quit</u>	<u>Commit.</u>	<u>Satis.</u>	<u>Stress</u>	<u>Overload</u>	<u>Conflict</u>	<u>Amb.</u>
Quit	16.251						
Commit.	-9.508	52.597					
Satis.	-7.669	10.550	11.865				
Stress	16.415	-20.856	-18.784	138.336			
Overload	5.173	-1.699	-7.988	44.081	46.296		
Conflict	11.655	-12.807	-14.081	62.870	34.410	94.926	
Ambiguity	7.071	-17.130	-9.803	32.988	7.237	25.123	41.5
PsyCap	-4.698	9.646	11.437	-32.692	-13.761	-16.529	-22.1

Model 1¹

The model chi-square is statistically significant ($\chi^2(1942) = 4216.7, p = .000$). RMSEA (.072) failed to reach a value of .06 and the 90% confidence interval (.069-.075) exceeded acceptable values. CFI (.672) and NFI (.529) did not achieve a value of .95. The predicted model covariance matrix explained 61% of the total variability in the sample covariance matrix (Good of Fit Index, GFI = .610), and the relative fit of the model was a 67% improvement over that of the independence model fit (CFI = .672)

The parameter estimates were all statistically significant ($p < .01$) with the exception of stress on commitment (Table 13). Psychological capital had a direct negative effect on role conflict (-.358), role ambiguity (-.646), and role overload (-.296). Role conflict (.338), role ambiguity (.357), and role overload (.452) all predicted higher levels of stress. Stress then had a direct negative effect on satisfaction (-.521), but no statistical effect on commitment (.072, $p = .404$). Satisfaction predicted higher commitment (.535), and commitment negatively effected intention to quit (-.436). Portion of explained variance (R^2_{smc}) ranged from .087 for role overload to .596 for stress.

Model 2

The model chi-square is statistically significant ($\chi^2(1944) = 4337.9, p = .000$). RMSEA (.074) failed to reach a value of .06 and the 90% confidence interval (.071-.077) exceeded acceptable values. CFI (.655) and NFI (.516) did not achieve a value of .95.

¹ A fourth model framed from Model 1 was tested post hoc based on Committee feedback that PsyCap may moderate the relationships of role conflict, ambiguity, and conflict with stress. Model fit improved; however, interaction and study variable parameter estimates were not significant.

Table 13

Model 1 – Maximum Likelihood Estimates

	<u>Unstandardized</u>	<u>SE</u>	<u>Standardized</u>
<u>Direct effects</u>			
PsyCap→Conflict	-.928*	.272	-.358
PsyCap→Ambiguity	-1.917*	.431	-.646
PsyCap→Overload	-.507*	.180	-.296
Conflict→Stress	.140*	.038	.338
Ambiguity→Stress	.129*	.034	.357
Overload→Stress	.282*	.081	.452
Stress→Satis.	-1.038*	.284	-.521
Stress→Commit.	.229	.274	.072
Satis.→Commit.	.853*	.168	.535
Commit.→Quit	-.356*	.092	-.436
<u>Disturbance variances</u>			
Conflict ($R^2_{smc} = .128$)			.872
Ambiguity ($R^2_{smc} = .417$)			.583
Overload ($R^2_{smc} = .087$)			.913
Stress ($R^2_{smc} = .596$)			.404
Satis. ($R^2_{smc} = .272$)			.728
Commit. ($R^2_{smc} = .251$)			.749
Quit ($R^2_{smc} = .190$)			.810

Note: Standardized estimates for disturbance variances are proportions of unexplained variance.

* $p < .01$

The predicted model covariance matrix explained 60% of the total variability in the sample covariance matrix (GFI = .602), and the relative fit of the model was a 67% improvement over that of the independence model fit (CFI = .672).

The parameter estimates were all statistically significant at .01 with the exception of role conflict on psychological capital and stress on commitment (Table 14). Role ambiguity (-.643) and role overload (-.293) had direct negative effects on psychological capital, while role conflict (.038, $p = .547$) had no significant effect. Psychological

Table 14

Model 2 – Maximum Likelihood Estimates

	<u>Unstandardized</u>	<u>SE</u>	<u>Standardized</u>
<u>Direct effects</u>			
Conflict→PsyCap	.014	.024	.038
Ambiguity→PsyCap	-.211*	.048	-.643
Overload→PsyCap	-.169*	.056	-.293
PsyCap→Stress	-.644*	.197	-.573
Stress→Satis.	-1.02*	.275	-.528
Stress→Commit.	.168	.266	.054
Satis.→Commit.	.847*	.168	.527
Commit.→Quit	-.356*	.091	-.437
<u>Disturbance variances</u>			
PsyCap ($R^2_{smc} = .500$)			.500
Stress ($R^2_{smc} = .329$)			.671
Satis. ($R^2_{smc} = .278$)			.722
Commit. ($R^2_{smc} = .250$)			.750
Quit ($R^2_{smc} = .191$)			.809

Note: Standardized estimates for disturbance variances are proportions of unexplained variance.

* $p < .01$

capital (-.573) predicted lower levels of stress. Stress then had a direct negative effect on satisfaction (-.528), but no statistical effect on commitment (.054, $p = .528$). Satisfaction predicted higher commitment (.527), and commitment negatively effected intention to quit (-.437). Portion of explained variance (R^2_{smc}) ranged from .191 for intention to quit to .500 for psychological capital.

Model 3

The model chi-square is statistically significant ($\chi^2(1942) = 4252.5, p = .000$). RMSEA (.073) failed to reach a value of .06 and the 90% confidence interval (.070-.076) exceeded acceptable values. CFI (.667) and NFI (.525) did not achieve a value of .95.

The predicted model covariance matrix explained 61% of the total variability in the sample covariance matrix (GFI = .610), and the relative fit of the model was a 67% improvement over that of the independence model fit (CFI = .667).

The parameter estimates were all statistically significant at .01 with the exception of stress on commitment, stress on psychological capital, and commitment on psychological capital (Table 15). Role conflict (.339), role ambiguity (.418) and role overload (.501) had direct positive effects on stress. Stress predicted lower levels of satisfaction (-.517), but no had statistical effect on commitment (.083, $p = .349$) or psychological capital (-.214, $p = .041$). Satisfaction had direct positive effects on commitment (.524) and psychological capital (.582), while commitment had no statistical effect on psychological capital (-.089, $p = .272$). Psychological capital predicted lower intention to quit (-.495). Portion of explained variance (R^2_{snc}) ranged from .237 for commitment to .541 for stress.

Model Comparison

AIC indicated data fit Model 1 (4492.7) better than Model 2 (4609.9) and Model 3 (4528.5).

Table 15

Model 3 – Maximum Likelihood Estimates

	<u>Unstandardized</u>	<u>SE</u>	<u>Standardized</u>
<u>Direct effects</u>			
Conflict→Stress	.130*	.038	.339
Ambiguity→Stress	.138*	.037	.418
Overload→Stress	.292*	.087	.501
Stress→Satis.	-1.09*	.315	-.517
Stress→Commit.	.284	.303	.083
Stress→PsyCap	-.240	.118	-.214
Satis.→Commit.	.847*	.168	.524
Satis.→PsyCap	.310*	.084	.582
Commit.→PsyCap	-.029	.027	-.089
PsyCap→Quit	-1.98*	.452	-.495
<u>Disturbance variances</u>			
PsyCap ($R^2_{smc} = .464$)			.536
Stress ($R^2_{smc} = .541$)			.459
Satis. ($R^2_{smc} = .267$)			.733
Commit. ($R^2_{smc} = .237$)			.763
Quit ($R^2_{smc} = .245$)			.755

Note: Standardized estimates for disturbance variances are unexplained variance.

* $p < .01$

CHAPTER V

CONCLUSIONS

Following the results of statistical analysis, conclusions were drawn regarding hypothesized model fit and parameter estimates. As a result of the conclusions, the study's limitations, implications, and recommendations for future research were considered.

Hypotheses

Both the overall fit of the hypothesized models as well as the parameter estimates were evaluated.

Model Fit

The exact-fit hypothesis was rejected, and values of the approximate fit indexes also did not support the model; that is, none of the three proposed hypothesized models had a non-significant chi-square and/or values greater than .95 for CFI and NFI and less than .06 for RMSEA (Bryne, 2010; Hu and Bentler, 1999; Jackson et al., 2009; Schreiber et al., 2006). Given that the data accounted for no more than 61% of the variance in any of the three model covariance matrices, a substantial amount of influences on the three models were omitted. This was further confirmed through the disturbance variance for each model variable, which indicated individual unexplained variance as high as 91% (role overload in Model 1), 81% (intention to quit in Model 1), and 81% (intention to quit in Model 2). For those variables with lower disturbance variance, they still showed a large portion of unexplained variance (40% of stress in Model 1, 46% of stress in Model 3, 50% of psychological capital in Model 2).

Of the three models, the data best fit Model 1 where psychological capital

predicted teacher role affect, stress, satisfaction, commitment, and intention to quit; however, without supporting fit indexes, the overall model with resulting causal relationships could not be established.

Parameter Estimates

Consistent with the literature review in Chapter 3 and hypothesized variable relationships, parameter estimate findings and correlations supported previous research. Psychological capital had a significant positive relationship with commitment and satisfaction (Avey et al., 2006; Larson & Luthans, 2006; Luthans et al., 2005; Luthans et al., 2008; Youssef & Luthans, 2007), while a significant negative relationship existed with intention to quit and stress (Avey, Luthans, & Jensen, 2009; Avey, Luthans, & Yousseff, 2010). Findings further supported Avey, Reichard, Luthans, and Mhatre's (2011) meta-analysis confirming significant positive relationships with commitment and job satisfaction and negative relationships with intention to quit and stress.

Considering stress variables, stress negatively predicted job satisfaction (Klassen & Chiu, 2010; Skaalvik & Skaalvik, 2009), commitment (Mathieu & Zajac, 1990; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Morrison, 2008), and intention to quit (Firth et al, 2004; Cavanaugh, Boswell, Roehling, & Boudreau, 2000; Chen & Spector, 1992; Firth, Mellor, Moore, & Loquet, 2004; Gupta & Beehr, 1979). Role stressors had a significant positive correlation with stress (Bryne, 1994; Gersten, Gersten, Keating, Yovanoff, & Harniss, 2001; Jacobsson, Pousette, & Thylefors, 2001; Mykletum, 1984; O'Connor & Clarke, 1990; Steel 2001; Sutton, 1984), and negatively predicted satisfaction (Klassen & Anderson, 2009), commitment (Mathieu & Zajac, 1990), and

intention to quit (Coladarci, 1992; Darling-Hammon, 2003; Griffeth, Hom, & Gaertner, 2000; Ingersoll, 2001; Ingersoll & Smith, 2003).

Shifting to workplace affect, job satisfaction had a significant positive relationship with commitment (Allen & Meyer, 1990; Cropanzano, James, & Konovsky, 1993; Hulpia, Devos, & Rosseel, 2009; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002) and negative relationship intention to quit (Chiu & Francesco, 2003; Coomber & Barribal, 2007; Hall, Pearson, & Carroll, 1992; Richard, LeMay, Taylor, & Turner, 1994; Tett & Meyer, 1993). Commitment also had a negative relationship with intention to quit (Griffeth, Hom, & Gartner, 2000; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Peters, Bhagat, & O'Connor, 1981).

The following exceptions were noted. First, none of the three models showed a significant relationship in the parameter estimates between stress and commitment, but correlation analysis showed a significant negative relationship ($r = -.244, p < .01$). This would support the conclusion that stress is not partially mediated as modeled and is consistent with Elangovan's (2001) structural model in which job satisfaction fully mediated the stress-commitment relationship. Second, role conflict (Model 2), stress (Model 3), and commitment (Model 3) did not significantly predict psychological capital despite having significant individual correlations. While overall model fit was not confirmed, the best fitting model (Model 1) indicated workplace affect, stress, and role stressors are a product of psychological capital rather than antecedents. However, the degree of unexplained variance in all three models warrants caution that other factors may have contributed to the non-significant parameter estimates.

Regarding psychological capital, the study confirmed new relationships with role

stressors as well as establishing the effect of psychological capital in a primary education setting. While previous studies established the effect of psychological capital with stress (Avey, Luthans, & Youseff, 2010), no study specifically addressed stressors due to role conflict, role ambiguity, and role overload. Correlations were significant and negative for each stressor, and in the best fitting Model 1, parameter estimates indicated significant relationships with higher psychological capital resulting in lower role stressors, especially role ambiguity (-.646). In their meta-analysis Avey et al. (2011) did not indicate any previous studies set in primary education, and as such, this study established an introductory exploration of psychological capital with U.S. teachers and their stress and workplace affect.

Similarly, the literature lacked research regarding the relationship of role stressors and stress within the context of primary education teachers in North America. Staying with the best fitting Model 1, the findings supported new evidence indicating higher teacher role conflict, ambiguity, and overload predicts higher stress, which is consistent with research from non-educational settings as well as non-North American educational settings (Jacobsson, Pousette, & Thylefors, 2001; Mykletum, 1984; O'Connor & Clarke, 1990; Tubre & Collins, 2000).

Limitations

The study bore overarching limitations in methodology and statistical testing.

Methodological

Several limitations impacted the data collection. First, the data were nested. That is, teachers were nested in schools, which in turn were nested in school districts. This limitation was noted a priori and the alpha level was adjusted to account for greater

likelihood of Type 2 errors resulting from the nesting. Statistical analysis indicated an effect due to school district, and future studies would be best served to employ multilevel data collection and statistical testing. Second, data were collected at different school districts during different academics years and different times of the year. Due to low participation during the spring data collection, a second data collection was required in the fall. While a test of means between the two data collections indicated no effect due to time of year for almost all variables, there was a significant difference for role overload with the mean being higher in the fall. Given that the fall represents the earliest months of the academic year, it is possible that teacher's returning from the summer break felt a greater workload as they adjusted to new students, new parents, new faculty, and new administrators. Future studies may be warranted to look at the variables contributing to teacher overload at points during the academic year and possibly the role that PsyCap may have in mediating and/or moderating those relationships.

Third, independent and dependent variable data were collected at the same time for each respondent. This increases the likelihood of common method variance and social desirability response bias. Additionally, respondents self-selected to participate, which did raise concerns that those with higher PsyCap may be more willing to participate as their overall affect was more positive and consistent with findings that they would engage in more positive behaviors (Avey et al., 2010; Avey, Luthans, & Yousseff, 2010). To combat common method variance, researchers can adopt Podsakoff, Mackenzie, Lee, and Podsakoff's (2003) recommendation to separate the collection of the independent and dependent variables by as little as a couple days. For social desirability bias, specifically regarding the PsyCap instrument, Harms and Luthans (2012) suggested researchers

utilize the Implicit PsyCap Questionnaire (I-PCQ) to minimize respondents answering how they think they should answer and from faking how they truly feel. The I-PCQ uses three stories to implicitly measure PsyCap by having respondents project an implicit level of PsyCap through questions related to each of the four components.

Finally, the study was conducted during historic economic times with high unemployment and poor financial and housing markets. The proposed models all relied on intention to quit as the dependent variable, which was likely influenced by larger societal factors not accounted for in the model. This was consistent with the large portion of unexplained variance in the model. Fortunately, all teachers came from the same region of Virginia and all were experiencing the same economic impacts, so variability within the sample was not likely; however, their overall responses regarding their intention to look for other employment may have been low due to worries regarding future employment and/or personal finances. While adding this variable to the model may not be fully warranted, future researchers should consider and address the larger effects of the economy on turnover intention.

Statistical Testing

Analysis revealed several study limitations. First, SEM requires a robust sample size for model testing. With only 225 respondents, the study met a minimum cutoff of 200 (Jackson, 2001, 2003), but was far from the ideal standard of 10:1 to 20:1 ratio between sample size and parameter estimates (Kelloway, 1998; Kline, 1998; Mueller, 1996), which would have required thousands of respondents based on the number of study variables and associated parameter estimates. In the future, a larger sample size would strengthen the quality of model testing.

Second, the data normality was not ideal. Several of the variables approached univariate non-normality, and multivariate normality was not supported by Mardia's coefficient. Methodological limitations likely contributed to this non-normality (i.e., self-selection, timing, social desirability, Likert scale instruments) as well as the small sample size. While an alternate estimation method such as the asymptotic distribution-free (ADF) method (Byrne, 2010) is often preferred for non-normal data, it requires large sample sizes that exceeded this study. Alternatively, test statistics can be corrected. Most popular is Satorra and Bentler's (1988, 1994) scaling correction to chi-square; however, this was not available in the AMOS software, and future researchers would be advised to use software that allows test corrections, especially for small sample sizes.

Lastly, the reliability of the intention to quit instrument was lower (.532) than previous studies indicating values in the .80-.85 range (Cammann, Fichman, Jenkins, & Klesh, 1983; Glazer & Kruse, 2008; Harris, Kacmar, & Witt, 2005; Kim, Lee, & Carlson, 2010). Again, the economy may have been a factor. As the United State's depression rivaled the Great Depression of the 1930s, no studies could be found that occurred during similar or even comparable economic conditions. This instrument may not be adequate for future use when high unemployment and poor financial conditions exist.

Implications

While overall model fit was not supported, the comparative model findings as well as parameter estimates and correlations have practical implications. Of the three models, the first represented the best-fit and positioned psychological capital as a driving factor rather than an outcome of stress or workplace affect. This was consistent with other works indicating the antecedent role of PsyCap (for a summary see Avey, Reichard,

Luthans, & Mhatre, 2011; Newman, Ucbasaranm Zhu, & Hirst, 2014; Rus & Baban, 2013). Given that high PsyCap represents a lower likelihood of stress and higher satisfaction and commitment with lower turnover intention, educators would be advised to explore opportunities to develop and strengthen teacher PsyCap. As Hargreaves (1998) noted, “Good teaching is charged with positive emotions. Good teachers are not just well-oiled machines. They are emotional, passionate beings who connect with their students and fill their work and their classes with pleasure, creativity, challenge and joy” (p. 835).

Luthans et al. (2006, 2008) investigated early methods for increasing individual PsyCap through web-based and face-to-face training interventions. More recently, Luthans, Avey, Avolio, and Peterson (2011) developed a more robust PsyCap Intervention (PCI) using exercise and group discussions targeting individual’s hope, optimism, self-efficacy, and resiliency. The training consisted of a 2-hour seminar focused on eight PsyCap related developmental dimensions: 1) Goals and Pathways, 2) Implementing Obstacle Planning, 3) Building Efficacy/Confidence, 4) Developing Positive Expectancy, 5) Experiencing Success and Modeling Others, 6) Persuasion and Arousal, 7) Building Assets/Avoiding Risk, and 8) How to Affect the Influence Process. Using an experimental design, Luthans et al. (2011) measured PsyCap as well as individual performance before and after the training intervention. Findings indicated a statistically significant difference between the control and experimental group in improved post-training PsyCap and on-the-job performance. Furthermore, using an ANCOVA, they accounted for pre-training levels in the experimental group and were able to demonstrate that the PCI incrementally influenced student’s PsyCap levels as a result of the training.

With the large percentage of unexplained variance in the models, administrators and educators need to look beyond individual teachers (workers) to consider factors of PsyCap at the work and workplace levels. It is not sufficient to merely rely on the attributes of teachers to predict their workplace affect and turnover intentions. Likewise, simply focusing on improving teacher PsyCap is likely to only result in halfway solutions. Consistent with Lewin's (1951) field theory, teacher behavior and affect is a compilation of the individual's attributes and the environment. In terms of education, the environment includes the work itself (e.g. processes, procedures, tools, information) as well as the workplace (e.g., climate, culture).

While little has been done with regards to work processes and PsyCap, several studies provided practical implications to the workplace that complement the findings of this study. First, Liu (2013) concluded that employees that experienced greater supervisor support were more likely to also have higher PsyCap. For teachers, stronger quality relationships with school and district administrators will likely correspond with increased PsyCap and therefore lower stress and lower turnover intention. Consistent with the Pygmalion effect (Eden & Shani, 1982) that links subordinates self-efficacy with the actions of their superiors, Story, Youssef, Luthans, Barbuto and Bovaird (2013) discovered that supervisor PsyCap positively related to subordinate PsyCap and that the quality of the leader-member relationship mediated the strength of the PsyCap relationship. Similarly, a supportive organizational climate fully mediated the relationship between PsyCap and performance (Luthans, Norman, et al., 2008), and again demonstrates the important role of the workplace to PsyCap. Furthermore, Walumbwa, Luthans, Avey, and Oke (2011) have expanded PsyCap beyond the individual to include

a collective team PsyCap that mediates the relationship between leadership and the team's performance and positive behaviors. School administrators seeking to increase PsyCap at their school should look to create opportunities for increased interaction and sharing between supervisors and subordinates as well as between teachers. The same administrators should also reflect on their attitudes and seek development opportunities to strengthen their communication skills and own PsyCap.

Recommendations

Four areas of future study are presented. First, the large degree of unexplained variance in the models creates opportunities for lines of research targeting workers, the work, and the workplace as it relates to teacher PsyCap, workplace affect, and turnover intention. Most notable is the role of workplace relationships. Evidence already supports higher affect and lower turnover intention when strong relationships exist between individuals and their supervisor and team members (Hamilton, 2007; Major, Kozlowski, Chao, & Gardner, 1995). This should be explored further to assess the effect of PsyCap on those relationships. Specifically, PsyCap may moderate those relationships such that higher levels of PsyCap correspond with higher degrees of exchange between individuals and within teams. Or conversely, those with low PsyCap may experience poorer relationships as work that in turn contributes to lower satisfaction and commitment with greater likelihood of quitting. Extending the effects of these relationships to school climate and/or school district culture is also an interesting line of inquiry. Studies could explore how teachers with varying degrees of PsyCap function and flourish (or not) within a variety of different workplace climates and organizational cultures. Most interesting would be whether PsyCap insulates teacher from negative or destructive

forces (e.g., toxic leaders, poor organizational supports, caustic team or group norms).

The design of the work is also an area ready for further study within primary education and with the introduction of PsyCap. Hackman and Oldham's (1974) job characteristics model establishes a framework around which PsyCap and education research could be structured. The influence and role of PsyCap in skill variety, task identity, task significance, autonomy, and feedback creates ample opportunities for future research. Notably, the role of feedback and sharing information seems especially important to education when considering the pressures on standardized testing results and the numerous stakeholders who have direct access to teachers (i.e., students, parents, other teachers, administrators, unions). Establishing and maintaining a positive and healthy perspective would be instrumental to processing and addressing feedback as well as clarifying roles, responsibilities, and individual development of new skills and opportunities to implement them.

The second area of future study spawns from the finding that the model with the best fit placed PsyCap as an antecedent rather than an outcome of workplace affect and stress. In fact, most PsyCap research has focused on PsyCap as a predictor, mediator, or moderator; however, following Avey's (2014) call for greater research into the antecedents of PsyCap, the unexplained variance in the models could be explained by other influences generating PsyCap. Avey noted three areas consistent with other research agendas discussed previously, but shifted from outcomes or effects of PsyCap to drivers of PsyCap: 1) individual differences, 2) relationships with supervisor or leader, and 3) job characteristics. As the first two have been discussed to some degree already, job characteristics pose a worthy study in the context of primary education. The degree to

how administrators structure teachers as individuals, groups, or teams could have an influence on their PsyCap. Walumbwa, Luthans, Avey, and Oke (2011) have already shown that stronger PsyCap at the team level has a direct relationship with team outcomes. As teachers are often grouped together to teach grade levels and/or subjects, future research would benefit from exploring the role of team construction, management, and performance on both individual and team PsyCap. Likewise, individual differences (e.g., personality) could also have an interweaving effect on both individual and team. This raises further questions about other behaviors, emotions, or affect of teachers that may be contributing to their PsyCap. For example, studies could explore physical fitness, diet, mental health, mindfulness, happiness, or wisdom.

In the third area of future work, researchers should investigate the relationship or impact on other valued outcomes within education that were beyond the scope of this study. Considering the structure and organization of schools, researchers may want to explore team cohesion and cooperation, leader-member exchanges, and possibly teacher and administrator physical and mental health as predictors or outcomes of PsyCap. There is also growing interest in the role and application of mindfulness in individual and organizational performance. At the individual level, it would be interesting to explore the relationship between teacher PsyCap and student PsyCap, satisfaction, commitment, and drop out rates. There is also the possibility that teachers with too high of PsyCap may be vulnerable to negative effects due to an overly positive outlook. For example, teachers may delay intervention into a bad situation hoping it would resolve itself, show over confidence in student abilities due to extreme optimism, responding too quickly or unequally to student academic needs as a result of hyper-resilience, or over assessing

student abilities based on their own high self-efficacy.

Finally, there is a call for multilevel research in PsyCap (Newman et al., 2014), and as the previous discussions have noted, this study also raises these questions. This is especially evident in the unexplained variance in the models that calls for the inclusion of additional variables and likely from multiple levels of the education organizations. Future studies could serve to address the multi-level, mediating, and/or moderating effects of empowerment, job complexity, leadership behaviors, social networks, organizational structure, and team behaviors in primary education.

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APPENDIX A
INSTITUTION REVIEW BOARD APPROVAL

April 8, 2013

Approved Application Number 201302027

Dr. Cindy Tomovic
Department of STEM Education and Professional Studies

Dear Dr. Tomovic:

Your Application for Exempt Research with Scott S. Casad entitled, "Effect of Psychological Capital on Elementary Teacher Stress and Work Affect," has been found to be EXEMPT from IRB review by the Human Subjects Review Committee of the Darden College of Education, and you may begin your research project when you are ready. You will receive a signed copy of this letter in the campus mail.

On your informed consent form, please revise the following paragraph as indicated:

"If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should contact Dr. Theodore P. Remley, Jr., the current Chair of the Darden College of Education Human Subjects Committee, at tremley@odu.edu."

The determination that this study is EXEMPT from IRB review is for an indefinite period of time provided no significant changes are made to your study. If any significant changes occur, notify me or the chair of this committee at that time and provide complete information regarding such changes.

In the future, if this research project is funded externally, you must submit an application to the University IRB for approval to continue the study.

Best wishes in completing your study.

Sincerely,

Theodore P. Remley, Jr., J.D., Ph.D.
Professor and Batten Endowed Chair in Counseling
Department of Counseling and Human Services
ED 110
Norfolk, VA 23529

Chair

Darden College of Education Human Subjects Review Committee
Old Dominion University
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APPENDIX B

DATA COLLECTION INSTRUMENTS

Psychological Capital (Luthans, Avolio, Avey, & Norman, 2007)

Below are statements that describe how you may think about yourself right now. Use the following scales to indicate your level of agreement or disagreement with each statement.

1. I feel confident analyzing a long-term problem to find a solution.
2. I feel confident helping to set targets/goals in my work area.
3. I feel confident contacting people outside the school to discuss problems.
4. At the present time, I am energetically pursuing my work goals.
5. There are lots of ways around any problem.
6. When I have a setback at school, I have trouble recovering from it, moving on. (R)
7. I usually manage difficulties one way or another at work.
8. I feel I can handle many things at a time at school.
9. When things are uncertain for me at school, I usually expect the best.
10. If something can go wrong for me work-wise, it will. (R)
11. In this job, things never work out the way I want them to. (R)
12. I approach this job as if "every cloud has a silver lining."

Scale:

- 1 – Strongly Disagree strongly
- 2 - Disagree
- 3 – Somewhat Disagree
- 4 – Somewhat Agree
- 5 - Agree
- 6 – Strongly Agree

Role Ambiguity (Rizzo, House, & Lirtzman, 1970)

As a teacher, rate your agreement with the following statements.

1. I know exactly what is expected of me. (R)
2. I know that I have divided my time properly. (R)
3. Explanation is clear of what has to be done. (R)
4. I feel certain about how much authority I have. (R)
5. I know what my responsibilities are. (R)
6. Clear, planned goals and objectives exist for my job. (R)

Scale:

- 1 - Disagree strongly
- 2 - Disagree
- 3 - Disagree slightly
- 4 - Neutral
- 5 - Agree slightly

6 - Agree

7 - Agree strongly

Role Conflict (Rizzo, House, & Lirtzman, 1970)

As a teacher, rate your agreement with the following statements.

1. I have to do things that should be done differently.
2. I have to buck a rule of a policy in order to carry out an assignment.
3. I receive incompatible requests from two or more people.
4. I do things that are apt to be accepted by one person and not accepted by others.
5. I work on unnecessary things.
6. I work with two or more groups who operate quite differently.
7. I receive assignments without the manpower to complete them.
8. I receive assignments without adequate resources and material to execute them.

Scale:

1 - Disagree strongly

2 - Disagree

3 - Disagree slightly

4 - Neutral

5 - Agree slightly

6 - Agree

7 - Agree strongly

Role Overload (Thiagarajan, Chakrabarty, & Taylor, 2006)

As a teacher, rate your agreement with the following statements.

1. I have to do things that I do not really have the time and energy for.
2. I need more hours in the day to do all the things that are expected of me.
3. I cannot ever seem to catch up.
4. I do not ever seem to have any time for myself.
5. There are times when I cannot meet everyone's expectations.
6. I seem to have more commitments to overcome than other teachers I know.

Scale:

1 - Disagree strongly

2 - Disagree

3 - Disagree slightly

4 - Neutral

5 - Agree slightly

6 - Agree

7 - Agree strongly

Teacher Stress (Boyle et al., 1995)

At your school, how great a stress are the following to you?

1. Poor career structure (e.g., poor promotion prospects)
2. Difficult class
3. Lack of recognition for good teaching
4. Responsibility for students (e.g., testing success)
5. Noisy students
6. Too short rest periods (mid-morning break, mid-day break)
7. Students' poor attitudes to work
8. Inadequate salary
9. Too much work to do (e.g. lesson preparation and grading)
10. Having a large class (i.e., many students)
11. Maintaining class discipline
12. Administrative work (e.g., filling out paperwork)
13. Pressure from parents
14. Ill-defined curriculum (e.g., not detailed enough)
15. Lack of time to spend with individual students
16. Shortage of equipment and poor facilities
17. Attitudes and behavior of other teachers
18. Students impolite behavior
19. Pressure from school administrators
20. Having extra students because of absent teachers

Scale:

- 1 – None
- 2 – Mild
- 3 – Moderate
- 4 – Much
- 5 – Extreme

Job Satisfaction (Hackman & Oldham, 1980)

In your current teaching position, rate your agreement with the following statements.

1. Generally speaking, I am very satisfied with this job.
2. I am generally satisfied with the kind of work I do in this job.
3. Most people on this job are very satisfied with the job.

Scale:

- 1 - Disagree strongly
- 2 - Disagree
- 3 - Disagree slightly
- 4 - Neutral
- 5 - Agree slightly
- 6 - Agree
- 7 - Agree strongly

Organizational Commitment (Meyer, Allen, & Smith, 1993)

In your current teaching position, rate your agreement with the following statements.

1. I would be very happy to spend the rest of my career with this school.
2. I really feel as if this school's problems are my own.
3. I feel a strong sense of "belonging" to my school.
4. I feel "emotionally attached" to this school.
5. I feel like "part of the family" at my school.
6. This school has a great deal of personal meaning for me.

Scale:

- 1 - Disagree strongly
- 2 - Disagree
- 3 - Disagree slightly
- 4 - Neutral
- 5 - Agree slightly
- 6 - Agree
- 7 - Agree strongly

Intention to Quit (Cammann, Fichman, Jenkins, & Klesh, 1983)

In your current teaching position, rate your agreement with the following statements.

1. I could find a job with another employer with about the same pay and benefits I now have.
2. I will probably look for a new job in the next year.
3. I often think about quitting.

Scale:

- 1 - Disagree strongly
- 2 - Disagree
- 3 - Disagree slightly
- 4 - Neutral
- 5 - Agree slightly
- 6 - Agree
- 7 - Agree strongly

Demographics

1. Which gender do you identify with?
 - Male
 - Female
2. What is your race?
 - American Indian or Alaska Native
 - Asian
 - Black or African American
 - Native Hawaiian or Other Pacific Islander

White
Hispanic

3. What is your age?
[open]
4. How many years have you been a teacher?
[open]
5. How many years have you been a 3rd grade teacher?
[open]
6. What is the name of your current school where you teach?
[open]
7. How many years have you been at your current school?
[open]
8. What grade level do you teach at your current school?
[open]
9. How many students are in your 2012-13 classroom?
[open]

APPENDIX C

PCQ-24 PERMISSION APPROVAL

Scott Casad



To whom it may concern,

This letter is to grant permission for Scott Casad to use the following copyright material:

Instrument: ***Psychological Capital (PsyCap) Questionnaire (PCQ)***

Authors: ***Fred Luthans, Bruce J. Avolio & James B. Avey.***

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for his/her thesis/dissertation research.

Three sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation.

The entire instrument may not be included or reproduced at any time in any other published material.

Sincerely,

A handwritten signature in black ink, appearing to read "Fred Luthans", written in a cursive style.

Mind Garden, Inc.
www.mindgarden.com

APPENDIX D

SCHOOL DISTRICT COVER LETTER

Good day, Dr. [insert name].

You have received my letter in hopes of obtaining your approval to conduct research with elementary teachers in your district.

To introduce myself, I am Scott Casad and a doctoral candidate at Old Dominion University in the College of Education. For almost 20 years, I have served on active duty with the U.S. Coast Guard, and during the past three years have been working on my doctorate part time. I completed my comprehensive exams and prospectus defense this past fall and will collect data during the spring of 2013.

My study focuses on the implications of teacher positive psychological capital, which consists of optimism, hope, resilience, and self-efficacy. From the emergence of positive psychology over the past two decades, research has solidified psychological capital as a valid and reliable construct associated with individual performance, health, attitudes, and citizenship behaviors. In my study, I intend to look at the effect of psychological capital on teacher stress, satisfaction, commitment, and intention to quit.

With your concurrence, I would like to administer an electronic survey to third, fourth, and fifth grade teachers in your school district during spring of 2013. The survey collects data on psychological capital, satisfaction, commitment, turnover intention, and demographics. The survey is primarily Likert-based, and I estimate it will take approximately 20-minutes to complete. Since it will be administered electronically, I will not physically disrupt your schools and will be able to manage all contact with teachers via email. With the exception of possible assistance in obtaining county email addresses for the teachers, I anticipate little or no impact to you and your staff. At the end of the research, I will be more than glad to share and discuss my findings with you.

This brief letter certainly does not provide a comprehensive overview of my research, so I am more than willing to meet at your convenience to further discuss the study with you and/or your staff. I can be reached at the contact information below. Additionally, the principal investigator and my dissertation chair, Dr. Cindy Tomovic, is also available to talk about any concerns you may have.

I appreciate you considering my request, and I look forward to hearing from you. To help keep me on track, I will follow-up with you next week by phone and email.

Best Regards,

Scott Casad

APPENDIX E

DATA COLLECTION SURVEY

Email Cover	<p>Good day. You have received this email in hopes of you participating in a research study of teachers' psychological capital consisting of hope, optimism, resilience, and self-efficacy. You will have an opportunity to receive one of three \$100 gift cards.</p> <p>To introduce myself, I am Scott Casad and a doctoral candidate at Old Dominion University in the College of Education. For the past three years, I have been serving on active duty with the U.S. Coast Guard and working on my doctorate part time. I have now reached the dissertation phase.</p> <p>Psychological capital is associated with higher individual performance, health, attitudes, and citizenship behaviors. In my study, I am looking at psychological capital's relationship with stress, satisfaction, commitment, and turnover intention. As a part of the positive psychology movement, psychological capital has not been looked at in primary education settings, so the information you are providing will help develop a better understanding of this emerging concept. All information you provide will be confidential and only reported in aggregate with all study participants. No identifying information will be reported.</p> <p>Prior to sending you this email, I discussed the research with your Superintendent, and we have agreed the study will be limited to only 3rd-5th grade elementary teachers, so you are among a small group of study participants. The link provided in this email will take you to a questionnaire, which I estimate should take you approximately 20-minutes to complete. Those who complete the survey may enter a random drawing for one of three \$100 Amazon gift certificates.</p> <p>I greatly appreciate you taking the time to consider my request to participate in this research study, and I hope you will be able to complete the short 20-minute survey.</p> <p>Warmest Regards,</p> <p>Scott</p>
Page 1	[insert Informed Consent – Appendix X]
Page 2	As a teacher, rate your agreement with the following statements.

	<ol style="list-style-type: none"> 1. I know exactly what is expected of me. 2. I know that I have divided my time properly. 3. Explanation is clear of what has to be done. 4. I feel certain about how much authority I have. 5. I know what my responsibilities are. 6. Clear, planned goals and objectives exist for my job. 7. I have to do things that should be done differently. 8. I have to buck a rule of a policy in order to carry out an assignment. 9. I receive incompatible requests from two or more people. 10. I do things that are apt to be accepted by one person and not accepted by others. 11. I work on unnecessary things. 12. I work with two or more groups who operate quite differently. 13. I receive assignments without the manpower to complete them. 14. I receive assignments without adequate resources and material to execute them. 15. I have to do things that I do not really have the time and energy for. 16. I need more hours in the day to do all the things that are expected of me. 17. I cannot ever seem to catch up. 18. I do not ever seem to have any time for myself. 19. There are times when I cannot meet everyone's expectations. 20. I seem to have more commitments to overcome than other teachers I know. <p>Scale:</p> <ol style="list-style-type: none"> 1 - Disagree strongly 2 - Disagree 3 - Disagree slightly 4 - Neutral 5 - Agree slightly 6 - Agree 7 - Agree strongly
Page 3	<p>At your school, how great a stress are the following to you?</p> <ol style="list-style-type: none"> 1. Poor career structure (e.g., poor promotion prospects) 2. Difficult class 3. Lack of recognition for good teaching 4. Responsibility for students (e.g., testing success) 5. Noisy students 6. Too short rest periods (mid-morning break, mid-day break) 7. Students' poor attitudes to work 8. Inadequate salary 9. Too much work to do (e.g. lesson preparation and grading) 10. Having a large class (i.e., many students)

	<p>11. Maintaining class discipline 12. Administrative work (e.g., filling out paperwork) 13. Pressure from parents 14. Ill-defined curriculum (e.g., not detailed enough) 15. Lack of time to spend with individual students 16. Shortage of equipment and poor facilities 17. Attitudes and behavior of other teachers 18. Students impolite behavior 19. Pressure from school administrators 20. Having extra students because of absent teachers</p> <p>Scale: 1 – None 2 – Mild 3 – Moderate 4 – Much 5 – Extreme</p>
Page 4	<p>In your current job, rate your agreement with the following statements.</p> <p>1. Generally speaking, I am very satisfied with this job. 2. I am generally satisfied with the kind of work I do in this job. 3. Most people on this job are very satisfied with the job. 4. I would be very happy to spend the rest of my career with this school. 5. I really feel as if this school's problems are my own. 6. I feel a strong sense of "belonging" to my school. 7. I feel "emotionally attached" to this school. 8. I feel like "part of the family" at my school. 9. This school has a great deal of personal meaning for me. 10. I could find a job with another employer with about the same pay and benefits I now have. 11. I will probably look for a new job in the next year. 12. I often think about quitting.</p> <p>Scale: 1 - Disagree strongly 2 - Disagree 3 - Disagree slightly 4 - Neutral 5 - Agree slightly 6 - Agree 7 - Agree strongly</p>
Page 5	<p>Below are statements that describe how you may think about yourself right now. Use the following scales to indicate your level of agreement</p>

	<p>or disagreement with each statement.</p> <ol style="list-style-type: none"> 1. I feel confident analyzing a long-term problem to find a solution. 2. I feel confident helping to set targets/goals in my work area. 3. I feel confident contacting people outside the school to discuss problems. 4. At the present time, I am energetically pursuing my work goals. 5. There are lots of ways around any problem. 6. When I have a setback at school, I have trouble recovering from it, moving on. 7. I usually manage difficulties one way or another at work. 8. I feel I can handle many things at a time at school. 9. When things are uncertain for me at school, I usually expect the best. 10. If something can go wrong for me work-wise, it will. 11. In this job, things never work out the way I want them to. 12. I approach this job as if "every cloud has a silver lining." <p>Scale:</p> <ol style="list-style-type: none"> 1 – Strongly Disagree strongly 2 - Disagree 3 – Somewhat Disagree 4 – Somewhat Agree 5 - Agree 6 – Strongly Agree 7 - Agree strongly
Page 5	<ol style="list-style-type: none"> 1. Which gender do you identify with? Male Female 2. What is your race? American Indian or Alaska Native Asian Black or African American Native Hawaiian or Other Pacific Islander White 3. What is your age? [open] 4. How many years have you been a teacher? [open] 5. In which school district do you currently teach? [open] 6. How many years have you been at your current school? [open] 7. What grade level do you teach at your current school? [open] 8. How many students are in your 2012-13 classroom?

	[open]
Page 6	<p>Thank you. Your participation in this study and completion of the survey is greatly appreciated. The information you have provided will be instrumental to better understanding psychological capital of teachers and it's application in elementary schools.</p> <p>If you would like to be entered into the random drawing for one of three \$100 Amazon gift cards, please enter your email address below. Your email will only be used for the drawing and will be permanently stored separately from your survey responses.</p> <p>[open]</p>
Follow-Up #1	<p>Good day. I hope all is well. Last week, you received an email from me requesting your participation in a research study I am conducting as part of my doctoral studies at Old Dominion University. The study explores the relationships between team psychological capital (hope, optimism, resilience, and self-efficacy) and teacher stress and attitudes.</p> <p>I have received responses to my initial email, and I am following-up this week to encourage those who have not completed the online survey to consider doing so. The survey should take approximately 20-minutes to complete, and given the study is limited to 3rd-5th grade teachers, you are part of a small group chosen to participate. Those completing the survey may also enter to win one of three \$100 Amazon gift cards. The link below will take you to the online survey.</p> <p>I greatly appreciate you taking the time to consider my request to participate in this research study, and I hope you will be able to complete the short 20-minute survey.</p> <p>Warmest Regards,</p> <p>Scott</p>
Follow-Up #2	<p>Good day. During the past two weeks, you received emails from me requesting your participation in a research study I am conducting as part of my doctoral studies at Old Dominion University. The study explores teacher psychological capital (hope, optimism, resilience, and self-efficacy) in elementary schools.</p> <p>This is the last week the online survey will be open. The responses so far have been steady, and I want to ensure everyone who wants to participate has an opportunity. With a focus solely on 3rd-5th grade teachers, only a small number of teachers have been invited, so your</p>

	<p>participation is very much appreciated. The survey is expected to only take 20-minutes, and those completing the survey may enter to win one of three \$100 Amazon gift cards. The link below will take you to the online survey.</p> <p>I greatly appreciate you taking the time to consider my request to participate in this research study, and I hope you will be able to complete the short 20-minute survey.</p> <p>Warmest Regards,</p> <p>Scott</p>
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APPENDIX F

INFORMED CONSENT

OLD DOMINION UNIVERSITY

PROJECT TITLE: Effect of Psychological Capital on Elementary Teacher Stress and Work Affect.

INTRODUCTION

The purposes of this informed consent are to give you information that may affect your decision whether to say YES or NO to participation in this research, and to record the consent of those who say YES. The Effect of Psychological Capital on Elementary Teacher Stress and Work Affect research seeks to collect data via this electronic survey you have received. Before gaining access to the full survey, you must be aware of this informed consent.

RESEARCHERS

Responsible Principal Investigator

Dr. Cindy Tomovic, PhD

Old Dominion University

Department of STEM Education and Professional Studies (STEMPS)

Investigator

Scott Casad

Old Dominion University

DESCRIPTION OF RESEARCH STUDY

Several studies have been conducted looking into the subject of psychological capital, which consists of an individual's hope, optimism, resilience, and self-efficacy. Psychological capital has been directly associated with individual performance, health, attitudes, and citizenship behaviors. None of the prior studies have explored psychological capital in primary education settings. The purpose of this research is to investigate the relationship of psychological capital of elementary teachers with teacher job stress, job satisfaction, school commitment, and intention to quit. It is believed teachers with higher psychological capital will have lower stress, higher satisfaction and commitment, and lower intention to quit.

If you decide to participate, then you will join a study involving research using an electronic online survey. The survey consists of 64 study questions plus nine demographic questions. Primarily, you will be required to rate your response on a scale of 1-7 based on your agreement with a statement. Once you have completed the survey, no additional data will be collected from you. If you say YES, then your participation will last for approximately 20-minutes while you complete this online survey. Only third, fourth, and fifth grade teachers from Spotsylvania, Stafford, Caroline, King George,

Westmoreland, Culpepper, Orange, Fauquier, Louisa, and Hanover counties will be participating in this study.

EXCLUSIONARY CRITERIA

No criteria have been identified that would exclude any elementary teachers from the selected school districts from participating in this study.

RISKS AND BENEFITS

RISKS: If you decide to participate in this study, then you may face a risk of anxiety from or discomfort with sharing information that may reflect negatively on your attitudes and beliefs about your current work environment. The researcher tried to reduce these risks by maintaining confidentiality of all data collected and using valid and reliable data collection instruments that have been used numerous times in other research. And, as with any research, there is some possibility that you may be subject to risks that have not yet been identified.

BENEFITS: The main benefit to you for participating in this study is a satisfaction that you are contributing to new knowledge regarding the application of positive psychology in primary education and the role of psychological capital in teacher stress and attitudes. Others may benefit by future application of this new knowledge to improve learning and work conditions in elementary schools, which may contribute to enhanced academic performance, student achievement, and teacher success.

COSTS AND PAYMENTS

The researchers are unable to give every participant payment for participating in this study. However, participants who are willing to share an email address with the researchers will be entered into a random drawing for one of three \$100 Amazon gift cards.

NEW INFORMATION

If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

CONFIDENTIALITY

The researchers will take reasonable steps to keep private information, such as survey responses, confidential. Confidential means that only the investigators will know who provided the data. This differs from anonymous, which means no one (including the investigator) would know who provided the data. The researcher will remove all identifying information from the final report and destroy all research data five years after completion of the research. During the active research, all data will be stored on the investigator's password protected personal computer. The results of this study may be used in reports, presentations, and publications; but the researcher will not identify you. Data will be reported in aggregate. Of course, your records may be subpoenaed by court order or inspected by government bodies with oversight authority.

WITHDRAWAL PRIVILEGE

It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study -- at any time.

COMPENSATION FOR ILLNESS AND INJURY

If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm or injury arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in any research project, you may contact the responsible principal investigator or investigators at the following phone numbers 757-683-5228 (Dr. Tomovic) or 202-475-5479 (Scott Casad), or Dr. George Maihafer the current IRB chair at 757-683-4520 at Old Dominion University, or the Old Dominion University Office of Research at 757-683-3460 who will be glad to review the matter with you

VOLUNTARY CONSENT

By electronically signing this form by selecting 'Agree', you are saying several things. You are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, then the researchers should be able to answer them:

Dr. Cindy Tomovic
757-683-5228
ctomovic@odu.edu

Scott Casad
202-475-5479
scasa002@odu.edu

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call Dr. George Maihafer, the current IRB chair, at 757-683-4520, or the Old Dominion University Office of Research, at 757-683-3460.

And importantly, by signing below (selecting 'Agree'), you are telling the researcher YES, that you agree to participate in this study. For your records, a copy of this form is available from the investigators.

VITA

Scott Stephen Casad
 Old Dominion University
 Department of STEM Education
 228 Education Building, Norfolk, VA 23529

Education

Old Dominion University <i>Doctoral Candidate, Doctorate of Education</i>	2009-Present
Boise State University <i>Master of Science in Instructional and Performance Technology</i>	2006-2007
Old Dominion University <i>Master of Science in Occupational and Technical Studies</i>	2004-2005
U.S. Coast Guard Academy <i>Bachelor of Science in Marine Environmental Science</i>	1993-1997

Experience

U.S. Coast Guard Force Readiness Command, Washington, DC <i>Chief, Mission Support Training Branch</i>	2011-Present
U.S. Coast Guard Headquarters, Washington, DC <i>Performance Consultant</i>	2007-2011
U.S. Coast Guard Training Center, Yorktown, VA <i>Instructional Specialist</i>	2003-2006
U.S. Coast Guard Marine Safety Office Puget Sound, Seattle, WA <i>Marine Inspector and Investigator</i>	1999-2003
CGC POLAR SEA, Seattle, WA <i>Deck Watch Officer</i>	1997-1999

Publications/Presentations

Casad, S. S. (2012). Implications of job rotation literature for performance improvement practitioners. <i>Performance Improvement Quarterly</i> , 25(2), 27-41. doi: 10.1002/piq.21118	2012
Casad, S. S. (2012). [Review of the book <i>Applied positive psychology: Improving everyday life, health, schools, work, and society</i> , by S. Donaldson, M. Csikszentmihalyi, & J. Nakamura]. <i>Performance Improvement</i> , 51(1), 43-45. doi: 10.1002/pfi.21240	2012
<i>Financial, Social, Human Capital? No, Psychological Capital</i> , International Society for Performance Improvement, Toronto, Canada	2012