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The Impact of Leadership on School Culture and Student Achievement

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THE IMPACT OF LEADERSHIP ON SCHOOL CULTURE
AND STUDENT ACHIEVEMENT

A Dissertation
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy
Educational Leadership

by
Matthew Joseph Piotrowsky
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Accepted by:
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ABSTRACT

This study examined the predictive relationship of school leadership on school culture. Given the demands of standards based education reform, the goal of every school is student achievement. The literature review examines the previous studies showing significance of leadership on culture, leadership on teacher retention, and leadership and school culture on student achievement. This study uses the School Culture Survey developed by Gruenert and Valentine (1998). It is a 35-item Likert-scale survey defining six variables; Collaborative Leadership, Teacher Collaboration, Professional Development, Unity of Purpose, Collegial Support, and Learning Partnerships.

The survey was distributed electronically to an upstate South Carolina school district's elementary school. The analysis of the responses was done with stepwise multiple regression and hierarchical linear modeling. By using the combination of these methods it was confirmed that leadership does have a statistically significant impact on school culture. A Post hoc test was used to determine the relationship between school culture and teacher retention and school culture and student achievement. A positive relationship was found to exist between schools with a Culture of Learning Partnerships and teacher retention and between schools with a Culture of Learning Partnerships and student achievement. Recommendations for future research and for practice are offered.

DEDICATION

I dedicate this first of all to my parents. There never was an option other than school. That being the case, I seem to have made education my life. I chose it as a career and I have spent more time as a student than one-third of the population that is alive.

Dad: I so wish you were here to see the conclusion of this degree. I know you are watching, but I wish I could shake your hand again as I finalize these words and walk. I remember your attempt to define “potential” to me as a young boy. You always said I had it and I never knew what it was. Thus, you tried to explain it by describing the water behind a dam. Well, I get it now. It’s because of you that we ended up here. It’s because of you I went to Clemson. And it’s because of you I have never quit. That was never an option and thank you for teaching me that. I love you.

Mom: you have always been loving and taught me patience. Your quiet perseverance of life and its obstacles is as stoic as it is stubborn. Through all of my life’s obstacles, I’ve persevered from your example and love. It has made me a stronger person and patient and loving man.

To family: Grandma, Michael, Carol Ann, Marsel, Tyler, Chris, Angelique, and all of my other Aunts, Uncles and cousins, I love and appreciate all of you.

Davis, son, I hope I can teach you as much as my parents taught me. I love you and enjoy everyday I get with you.

To all of my friends: the fact that you are still my friends after all this says everything! Thank you for your support and I Love Y’all BONCHES.

Dr. Knoeppel: To bring this around full circle, thank you for recognizing my intellectual and professional potential.

To the rest of my committee: Dr. Marion, Dr. Avery and Dr. Nesbitt, thank you all for coming together to help make this happen. I truly appreciate your time and efforts.

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CHAPTER ONE

INTRODUCTION

Background

In their seminal report *The Principal's Role in Shaping School Culture*, Deal and Peterson (1990) describe the pressures facing educational leaders regarding school improvement and student achievement. As noted by the authors, calls for education reform have been ongoing. For example, national education goals were released in 1990 under the leadership of President George H.W. Bush and the 50 state governors. Later, in 2000, policymakers agreed that children in the United States should enter school ready to learn, graduate from school at a rate of 90 percent, demonstrate competence in challenging subject matter and be prepared for citizenship, rise to first in the world in mathematics and science, attend safe, disciplined, and drug free schools, and join the workforce as literate adults and responsible citizens (Deal & Peterson, 1990). Later, in 2001, the reauthorization of the Elementary and Secondary Education Act, known as the No Child Left Behind Act (NCLB) of 2001, required that states establish standards and assessments of basic skills. The Act required that these assessments be administered on a yearly basis and that schools demonstrate progress toward proficiency on the standards. In addition, NCLB included provisions for teacher quality. Most recently in the latest reauthorization of ESEA, the Every Child Succeeds Act (ESSA) was signed in to law on December 10, 2015. ESSA still requires that states establish challenging curriculum standards and yearly testing of students, but the law gives more control to states over accountability goals and assessment plans.

In considering strategies for school reform, Deal and Peterson (1990) introduced five specific strategies for school improvement. Included in this list was what the authors titled the school culture or ethos approach. This approach focuses on behavioral patterns and the values, beliefs and norms that define those patterns. According to the authors, this approach is premised on that assumption that teachers and students are heavily influenced by morale, routines, and conscious or unconscious conventions about how things are done in their respective schools. Schools experience difficulties when ineffective practices become accepted as conventions in schools. Reform and change in a school can be accomplished through a focus on changing school culture.

Bolman and Deal (2008) define culture as the glue that binds an organization, unites people, and helps an organization accomplish a desired goal. In order for each student to receive the opportunity for a high-quality education, high-quality teachers must be recruited and retained (Baker-Doyle, 2010). School leadership has been linked to school culture and teacher commitment. In turn school culture and teacher retention have been linked to student performance (Bradshaw, Waasdorp, Debnam, & Johnson, 2014, Leithwood & Beatty, 2008, Helterbran, 2010, and Hulpia, Devos & Van Keer, 2010).

School culture has been shown to be a major component of success at the school, teacher and student level (Creemers & Kyriakides, 2010 and Yahaya, Yahaya, Ramli, Hashim & Zakariya, 2010). Lumby and Foskett (2011) defined the concept of school culture as a tool to assist with the process of making sense of people by providing a mechanism for categorizing, simplifying, and describing the human state. Their research was focused on the impact of school leadership on school culture. Bolman and Deal

(2008) stated that leaders who understand how to evoke spirit and soul can shape a more cohesive and effective organization.

Quality teachers must be recruited, retained and equally distributed throughout classrooms in order to ensure all children have an opportunity to learn. The No Child Left Behind Act described a highly qualified teacher as one who has a minimum of a bachelor's degree, meets full state certification requirements, and demonstrates subject-matter mastery in each subject taught (Paige, 2004). Boe, Cook and Sunderland (2008) estimated from Teacher Follow-up Survey data from 2000-2001 that 25.5% of teachers leave within the first three years of employment. In order to combat this "crisis" (Gujarati, 2012) suggested implementing administrator-supported activities such as mentoring and school and district level induction programs (Conway, Krueger, Robinson, Haack, & Smith, 2002; Ingersoll, 2004; Kent, Feldman, & Hayes, 2009). Furthermore, Prather-Jones (2011) found that administrative support had a connection to teachers' career decisions.

"The efforts or behaviors of those providing leadership are among the most powerful direct sources or influences on teachers' working conditions and both direct and indirect sources of influence on teacher emotions" (Leithwood & Beatty, 2008, p. 11). Leadership styles such as distributive leadership, instructional leadership, collaborative leadership, and even transformational leadership have all been shown to be statistically significant predictors of school culture (Arbabi & Mehdinezhad, 2015; Fusarelli, Kowalski, & Petersen, 2011; Ross & Gray, 2006; Sahin, 2011). Successful educational leaders understand the goals of public education in the 21st century and act

collaboratively to develop a shared vision of success; they regularly reflect on their beliefs and values with regard to the purpose of education and act to create a culture and climate that supports student achievement (Darling-Hammond, 2007).

Leadership and culture have been shown to correlate directly to student achievement (Helterbran, 2010, Perilla, 2014, Wilhem, 2016, and Yahaya, Yahaya, Ramli, Hashim, & Zakariya, 2010). Establishing collaborative and congenial working relationships with administrators and teachers and nurturing teacher-teacher relationships through support of professional learning communities has been found to be effective in closing the achievement gap for learners (Leithwood, 2010). That type of school culture and climate can directly influence school performance (Adeogun & Olisaemeka, 2011).

Purpose of the Study

The purpose of this study was to examine the influence of leadership on school culture. Given the demands of standards based education reform, the goal of every school is student achievement. Teachers have been identified as the most important school level resource that impacts student achievement. As such, the recruitment and retention of quality teachers is of paramount importance. Current research supports the claim that a positive school culture can increase teacher retention and increase student achievement.

For the purposes of this study, culture was initially defined as teacher collaboration, professional development, collegial support, and learning partnerships. Leadership was defined as collaborative leadership and unity of purpose

Significance of the Study

The significance of this study is to contribute to the scholarship of the impact of school leadership on school culture. Data collection for the study included responses from teachers in four elementary schools on the School Culture Survey (Gruenert & Valentine, 1998). The data were analyzed using hierarchical linear modeling (HLM) and a stepwise multiple regression. The choice to use hierarchical linear modeling allowed the researcher to consider the nested nature of culture. As such, data collected for use in the study was at two levels, school and teacher. Conclusions were drawn about the predictive nature of school leadership on school culture. Research has shown that leadership can have a statistically significant impact on culture (Arbabi & Mehdinezhad, 2015; Fusarelli, Kowalski, & Petersen, 2011; Ross & Gray, 2006; Sahin, 2011) and that school culture can have an impact on student achievement (Adeogun & Olisaemeka, 2011). The study will conclude by attempting to make a connection between the effect of leadership and culture on teacher retention and test scores.

Theoretical Framework

To better understand the predictive nature of leadership on culture and the impact on student achievement, the theoretical framework in the study was created using the current literature on educational leadership, culture, teacher retention, and educational opportunity. Current policy in schools requires accountability for performance; one purpose of the Elementary and Secondary Education Act, Title 1, Part A of Public Law 107-110 was to enable schools to provide opportunities for all children to acquire the knowledge and skills contained in the challenging state content (U.S. Department of

Education, 2016). The demonstration of proficiency on state defined content standards was thought to be a measure of opportunity which would ensure that students were prepared to enter the workforce and become productive citizens of society.

Isbister (2001) stated that equality is central to the notions of social justice and opportunity. The author reasoned that the provision of equal access to resources can give individuals equal opportunities to achieve their desired goals. Over time, the effects of achieving equal outcomes are cumulative; achievement of equal outcomes can and does advance the possibility of equal opportunity. Because the teacher has been identified as the single most important school level resource that impacts student achievement, the retention of quality teachers becomes a matter of critical importance. Educational leaders are tasked with the creation of learning organizations that are aligned to meet the demands of providing educational opportunity. This begins with a focus on culture (Sullivan & Glanz, 2006; Zmuda, Kulis, & Kline, 2004).

Collaborative Leadership has been shown to have a positive correlation to teacher efficacy (Arbabi & Mehdinezhad, 2015) and is an initial driver in school improvement (Heck & Hallinger, 2010). Positive teacher efficacy and teacher retention has been linked to actions taken by the administrator to create a positive school culture (Leithwood & Beatty, 2008). “Schools in which teachers have more control over key school wide and classroom decisions have fewer issues with student misbehavior, show more collegiality and cooperation among teachers and administrators, have a more committed and engaged teaching staff, and do a better job of retaining their teachers” (Ingersoll,

2007, p.24). The opportunity to improve student achievement lies within school culture and leadership (Wilhem, 2016; Yahaya, Yahaya, Ramli, Hashim & Zakariya, 2010).

Based on this literature, the theoretical framework was created. The theoretical framework appears in Figure 1.1. Leadership is defined as collaborative leadership and unity of purpose. Leadership is predictive of culture which can be defined as teacher collaboration, professional development, collegial support, and learning partnerships.

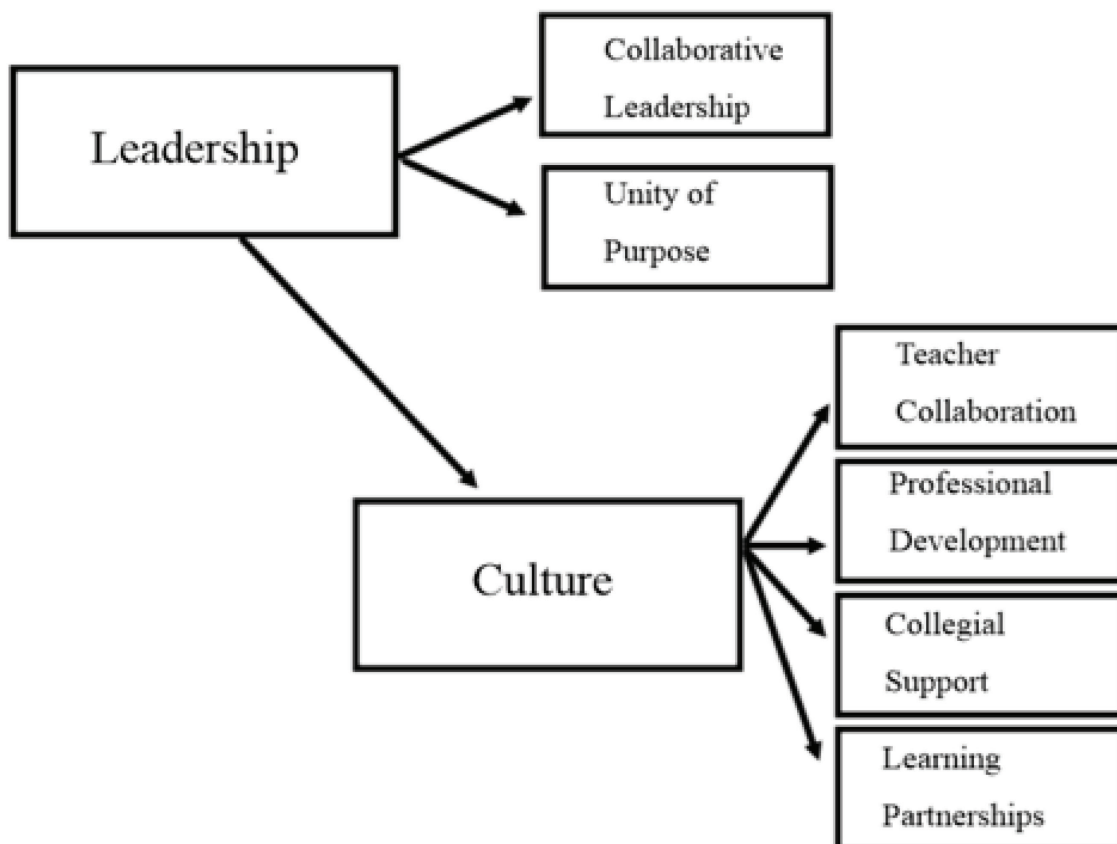


Figure 1.1: Theoretical Framework Model of School Leadership

Definitions of Terms

The following definitions are provided to offer clarity of the terms used throughout this study:

ACT Aspire - A standards-based system of assessments to monitor progress toward college and career readiness from grade 3 through early high school, connecting each grade level to the next (ACT Aspire LLC, 2016).

Attrition - Leaving the profession or changing schools (Johnson, 2004).

Bartlett's Test - A procedure that tests the null hypothesis that the variables in the population correlation matrix are uncorrelated and used for factor analysis with small samples (Mertler & Vannatta, 2010).

Climate - The set of internal characteristics that distinguish one school from another and influence the behaviors of each school's members (Hoy & Miskel, 2005).

Collaborative Leadership - The degree to which school leaders establish and maintain collaborative relationships with school staff (Gruenert & Valentine, 1998).

Collegial Support - The degree to which teachers work together effectively (Gruenert & Valentine, 1998).

Culture - The totality of the organizational experience (Marion, 2002).

Distributive Leadership - Leadership that diffuses leadership throughout the whole organization thus making the school or organization less dependent on individual leaders (Fusarelli, Kowalski, & Petersen, 2011).

Eigen Value- The amount of total variance explained by each factor (Mertler & Vannatta, 2010).

Factor Analysis - A mathematical model created resulting in the estimation of factors in contrast with the principal component analysis (Mertler & Vannatta, 2010).

Hierarchical Linear Modeling (HLM) - A complex form of ordinary least squares regression that is used to analyze variance in the outcome variables when the predictor variables are at varying hierarchical levels. HLM applies when the observations in a study form groups and when those groups are in some way randomly selected (Raudenbush & Bryk, 2002).

Learning Partnerships - The degree to which teachers, parents, and student work together for the common good of the student (Gruenert & Valentine, 1998).

Multiple Regression - Identifies the best combination of predictors (independent variables) of the dependent variable and is used when there are several independent quantitative variables and one dependent variable (Mertler & Vannatta, 2010).

Poverty Index - The percent of students participating in Medicaid, SNAP, or TANF; homeless, foster or migrant students.

Principal Component Analysis (PCA) - PCA is used for extracting factors in factor analysis and when the original variables are transformed into a new set of linear combinations by extracting the maximum variance for the data set with each component (Mertler & Vannatta, 2010).

Professional Development - The degree to which teachers value continuous personal development and school-wide improvement (Gruenert & Valentine, 1998).

Retention - Teachers staying at their school and in the teaching profession.

School Improvement - Teachers, students, parents and leaders working together to value school advancement.

Scree Plot - A plot that graphs the magnitude of each Eigen value placed on the vertical axis and plotted against their ordinal numbers on the horizontal axis (Mertler & Vannatta, 2010).

Stepwise Multiple Regression – a procedure to determine which specific independent variables make a meaningful contribution to the overall prediction by entering them in the equation in order (Mertler & Vannatta, 2010).

Teacher Collaboration - The degree to which teachers engage in constructive dialog that furthers the educational vision of the school (Gruenert & Valentine, 1998).

Unity of Purpose - The degree to which teachers work toward a common mission for the school (Gruenert & Valentine, 1998).

Limitations and Delimitations

The purpose of this study was to explore the predictive capacity of leadership on school culture. In order to have adequate power in running a successful HLM, large samples are normally required. The survey was distributed to the instructional staff of the four elementary schools within one district. There are approximately 111 classroom

teachers employed by these four schools. If there were 100% return rate on the survey, that would still give a small sample. Thus, more responses and schools would obviously help the overall power of the results.

Delimitations of this study would include the fact that only the elementary schools were chosen to take part in the survey. This left out the middle school and high school that were also a part of the district. The middle school was purposely excluded due to the fact that the researcher is employed there. The high school was left out due to the fact that the ACT Aspire test results would cover the smallest portion of their student body.

Summary

The purpose of this chapter was to introduce the critical role of the principal in achieving the goals of school improvement. Culture was introduced as one strategy for school improvement. The chapter included a brief synopsis of the literature describing the relationship between leadership and culture; this literature was used to create a theoretical framework for the study.

Chapter two includes a review of the literature on leadership and school culture. Chapter three includes an explanation of the proposed methodology of the study as well as the plan for data collection and data analysis. Chapter four includes a presentation of findings. Chapter five situates findings from the study within the existing literature and includes recommendations for future research and practice.

CHAPTER TWO

LITERATURE REVIEW

Introduction

The purpose of this study was to examine the influence of leadership on school culture. Given the demands of standards based education reform, the goal of every school is student achievement. One strategy for improving schools is to improve the culture of the school. Teachers have been identified as the most important school level resource that impacts student achievement. As such, the recruitment and retention of quality teachers is of paramount importance. Current research supports the claim that a positive school culture can increase teacher retention and increase student achievement.

The literature review will discuss education reform and the purpose of schools, leadership during a time of standards based reform, the importance of a quality teacher, culture, retention behaviors/variables, the relationship of leadership and the impact of poverty on school culture. Further, the chapter includes a synthesis of the literature base describing the relationship of school culture and school leadership. The chapter concludes with a review of literature on how the leader can have a positive effect on the school's culture.

This quote from Darling-Hammond (2007) succinctly introduces the review of literature, "It is the work they do that enables teachers to be effective—as it is not just the traits that teachers bring, but their ability to use what they know in a high-functioning organization, that produces student success. And it is the leader who both recruits and retains high quality staff—indeed, the number one reason for teachers' decisions about

whether to stay in a school is the quality of administrative support—and it is the leader who must develop this organization” (p. 17).

Standards, Student Achievement, and School Leadership

Education reform in the United States has been ongoing for the past four decades. Scholars have traced the standards based reform movement to the publication of *A Nation at Risk* in 1983. This report linked the decline in American competitiveness to a perceived lack of rigor in public schools and resulted in the adoption of learning standards in all fifty states. According to Linn (2000), standards-based education reform challenged past practices in education that differentiated both content and instruction based on teacher perceptions of student ability. By changing the process of instruction and offering rigorous content to all students, it was thought that an increase student achievement would result. As such, schools and school districts were tasked with designing appropriate instructional practices and strategies that meet the needs of all learners across content areas in return for accountability as measured by student performance (Goertz, 2001; Spillane & Seashore Louis, 2002; Weiss, Knapp, Hollweg & Burrill, 2001). The standards based reform movement highlighted the need for policies and procedures that would lead to school improvement.

Current research suggests that the role of the principal has changed from manager to leader as a result of the standards movement. Leader is defined as change agent, facilitator, and consensus builder (Beck & Murphy, 1993). Successful educational leaders understand the goals of public education in the 21st century and act collaboratively to develop a shared vision of success; they regularly reflect on their beliefs and values with

regard to the purpose of education and act to create a culture and climate that supports student achievement (Darling-Hammond, 2007). Authentic leaders who are committed to their core values can inspire followership and trust. In so doing, the leader is able to articulate a shared vision for their schools and create learning organizations that focus on continuous improvement (Kouzes & Posner, 2002; Fullan, 2001; Blase & Kirby, 2000; Evans, 1996).

Previous leadership theory is thought to be insufficient to address the current demands of education. The change in the notion of school leadership begins with a focus on culture (Sullivan & Glanz, 2006; Zmuda, Kulis, & Kline, 2004). Effective schools of the 21st century are characterized by a culture wherein there is a shared purpose, decisions are made collaboratively, responsibilities are distributed among teacher leaders and capacity exists to create and sustain change through a process of data driven decision making. Successful schools are organizations that make use of an ethical decision making framework that guides practice. Leaders of 21st century schools focus on the most important facet of the schooling process: instruction (Leithwood & Riehl, 2005; Marzano, Waters & McNulty, 2005). After facilitating shared purpose and changing school culture, educational leaders must establish new norms for behavior that establish learning communities wherein the expertise of all members of the faculty are maximized to support the school's mission.

Teacher Quality

Current school improvement initiatives focus on teacher quality issues as critical to ensuring academic achievement for all students. In early 1998, national legislation and

state requirements for teacher testing began to give increased attention to teacher quality (Ramirez, 2003). Reauthorization of the Higher Education Act in 1998 required state and higher education accountability for preparing teachers who are highly skilled pedagogically and highly competent in their academic teaching content area.

Secretary of Education Paige (2004), in the Third Annual Report on Teacher Quality, noted that “highly qualified teachers matter” and that “research evidence now emerging supports the belief that teachers are an important determinant of the quality of education in the nation’s schools” (p.1). Students taught by good teachers have been shown by research to progress academically at greater rates than students in classrooms with poor teachers (Sanders, 2000; Sanders & Horn, 1998; Sanders, Wright, & Ross, 1999; Topping & Sanders, 2000). In describing the critical role played by teachers in the school’s influence on student learning, Hodge (2003) reported that “research has consistently shown that teacher effect accounts for 55% to 80% of the variance associated with student achievement.” However, identifying the characteristics of a quality teacher is more difficult than it may appear.

The No Child Left Behind Act described a highly qualified teacher as one who has a minimum of a bachelor’s degree, meets full state certification requirements, and demonstrates subject-matter mastery in each subject taught (Paige, 2004). Thus, NCLB legislation identified teaching skills and subject knowledge as two essential elements of teacher quality. Researchers have examined effects of a variety of variables on student achievement: teacher preparation (Wilson, Floden, & Ferrini-Mundy, 2002), major or minor in a subject area (Goldhaber & Brewer, 1997; Hawk, Coble, & Swanson, 1985;

Monk & King, 1994), teachers' advanced degrees (Goldhaber & Brewer, 2000), and National Teacher Exam (NTE) scores (Quirk, Witten, & Weinberg, 1973). Although there have been mixed results in some areas of study, generally, subject content knowledge seems to matter, particularly in teaching complex, higher levels of subject matter. However, after a threshold of competency is attained, pedagogical teacher training may be more important to student success than content knowledge (Laczko-Kerr & Berliner, 2002).

Measurable variables drive policy with regard to teacher quality. Ferguson and Ladd (1996); Greenwald, Hedges, and Lange (1996); and Murnane and Phillips (1981) examined teaching experience as a measurable variable in student achievement. Based on a review of these studies, King Rice (2003) proposed that teaching experience appears to have a relationship to student achievement. However, at the elementary level, the relationship is strongest during the first several years of teaching and then drops off (Ferguson, 1991; Hanushek, 1997). Research indicates that positive effects on student achievement reemerge after 8 to 14 years of teaching experience (Ferguson, 1991). Teaching experience has a more sustained effect on student achievement at the high school level than elementary, and the teaching experience effect for high school students compared to elementary continues later in teachers' careers (Ferguson, 1991).

Results of primarily qualitative studies of teacher preparation programs showed mixed results about program contributions to teacher competence and student achievement (King Rice, 2003). Adams and Krockover (1997) indicated a positive influence on novice teachers' framework for organizing, understanding, and reflecting on

their classroom experiences. Hollingsworth found that subject-specific pedagogy and classroom management appeared to be the most important teacher preparation components (as cited in King Rice, 2003).

Teacher certification has shown a positive effect on high school mathematics achievement when the teacher's certification is in mathematics (Goldhaber & Brewer, 1997; Hawk, Coble, & Swanson, 1985). Teacher coursework, both in pedagogy (Adams & Krockover, 1997; Ferguson & Womack, 1993; Monk & King, 1994) and the subject taught (Monk & King, 1994), contributes to positive student results. Course content in the subject taught appears to be most important at the high school level. Teachers' verbal skills or literacy levels appear to be correlated with student achievement (Bowles & Levin, 1968; Ehrenberg & Brewer, 1993; Hanushek, 1971). Studies of the National Teacher Examination (Quirk, Witten, & Weinber, 1973) and other state-mandated tests of basic skills and/or teaching skills showed less consistent results as teacher performance predictors than did literacy or verbal skills (Ferguson, 1991).

Rivkin, Hanushek, and Kain (2005) used a value-added model to examine school resource effects on achievement. Study results showed significant effects of class size on both mathematics and reading achievement gains, but the effect declined as students progressed through school. The effect became smaller and was less significant in reading than in mathematics. They did not find evidence that having a master's degree improved teacher skills. Important gains in teaching quality appeared to take place in the first year of teaching, and smaller gains occurred over the next few years. These researchers concluded that schools and teachers play an important role in promoting equity and that

school policy can be a tool for raising achievement of low-income students. A succession of good teachers could help close achievement gaps, but more must be known about how to provide consistently high quality teachers. In addition, quality teachers must be recruited, retained, and equally distributed throughout classrooms in order to ensure that all children have an opportunity to learn; improved culture is one way to ensure teacher retention and increased student achievement.

Culture, Climate and School Improvement

Deal and Peterson (1990) introduced five strategies for school improvement. Culture and ethos was introduced as one of the strategies to improve educational outcomes. According to the authors, improving schools consists of something in addition to improving the skills of the staff, setting clearly defined goals, placing faculty in the right roles. Certainly, these are important issues, but Deal and Peterson (1990) noted that there was something else about a school that is critical to performance and improvement. Schools have their own character or feel (Deal & Peterson, 1990) which can be felt immediately upon entering a school. The authors argued that climate and ethos were used to describe this feeling in a school. However, in their report, they call it culture.

School culture describes the character of a school “as it reflects deep patterns of values, beliefs, and traditions that have been formed over the course of its history” (Deal & Peterson, 1990 p. 7). Deal and Peterson (1990) explained that school culture is often taken for granted although it underlies and gives meaning to the actions of members of the school community. School culture is transmitted through symbolic language; it can shape beliefs and behavior over time.

There are no universally accepted definitions of culture. Marion (2002) stated, “culture is influenced by the totality of the organizational experience” (p. 227). Lumby and Foskett (2011) defined the concept of culture as a tool to assist with the process of making sense of people by providing a mechanism for categorizing, simplifying, and describing the human state. Another definition was offered by Bolman & Deal (2008) who stated, “Culture forms the superglue that bonds an organization, unites people, and helps an enterprise accomplish desired ends.” Lumby and Foskett’s (2011) focused on culture the perspective of an educational leader. They noted that the leader’s decisions and actions have a direct impact on the school’s culture. The goal of school leadership should be to positively influence culture for raising student achievement (Lumby & Foskett, 2011). Bolman and Deal (2008) stated that leaders who understand the significance of symbols and know how to evoke spirit and soul can shape more cohesive and effective organizations. According to Bolman and Deal, “Culture anchors an organization’s identity and sense of itself” (p. 278).

Climate is component of culture. Hoy and Miskel (2005) defined school climate as “the set of internal characteristics that distinguish one school from another and influence the behaviors of each school’s members” (p. 185). Bradshaw, Waasdorp, Debnam, and Johnson (2014) referred to school climate as “shared beliefs, values, and attitudes that shape interactions between students, teachers, and administrators and set the parameters of acceptable behavior and norms for the school. School climate is a product of teacher and student social interactions, and is influenced by educational and social values” (p. 594). Using this definition, Bradshaw et al. (2014) drew conclusions from

the results of a survey of over 25,000 high school students. The authors analyzed results from the Maryland Safe and Supportive School Climate Survey and found that a positive school climate can show productive conditions for learning, which predict positive outcomes for student achievement (Bradshaw et al., 2014).

Collie, Shapka and Perry (2011) found that school climate was a significant predictor of a teacher's commitment to stay. Their research used a survey design that included variables measuring School Climate and Social-Emotional Learning (SEL). Included in the School Climate variable were the sub variables of collaboration, student relations, school resources, decision making, and instructional innovation. Included in the Social-Emotional Learning variable were SEL Comfort, SEL Commitment, SEL Culture, and SEL Integration. Using binary logic regression, Collie et al. (2011) concluded that a positive school climate, one that includes good student relations, greater collaboration among teachers and input on decision making, resulted in greater teacher commitment. According to the authors, "Teachers who feel greater well being in their teaching may have greater commitment to the profession" (Collie et al., 2011, p. 1045).

Prather-Jones (2011) found three emergent themes from teacher interviews regarding administrative support in conjunction to their career decisions. The first theme was teachers looking to administrators for support when delivering consequences on student misconduct. The second theme was that teachers felt more supported when administrators showed respect and appreciated their efforts in the classroom. The third theme was that teachers looked to administrators to help develop supportive relationships from other teachers that can assist with classroom needs. These three themes that

Prather-Jones (2011) reported from her research were aspects of culture and climate that could be attributed to actions taken by the administrator.

Retention Behaviors/Variables

Gruenert and Valentine (1998) indentified six variables that are related to retention from the survey that was used in this study. They include:

Collaborative Leadership: the degree to which school leaders establish and maintain collaborative relationships with school staff.

Arbabi and Mehdinezhad (2015) defined collaborative leadership as “the participation of employees in different levels in the organization to identify problems, analyze solutions and achieve solutions, so they can assist their managers and headquarters in solving problems” (p. 126). This style of leadership aids in promoting and developing organizations. Arbabi and Mehdinezhad (2015) were able to prove a statistically significant positive correlation between a principal’s collaborative leadership style and a teacher’s self-efficacy. Their research made use of the Tschannen-Moran & Woolfolk self-efficacy questionnaire and the Washington University Turning Point Collaborative Leadership Questionnaire. The direction of the correlation was positive and direct.

Collaborative leadership has been shown to have other positive effects on schools other than teachers’ self-efficacy. Heck and Hallinger (2010) concluded that collaborative leadership was an initial driver in school improvement. In their study, Heck and Hallinger (2010) found that collaborative leadership had a direct impact on school achievement. It makes sense that Valentine and Gruenert’s School Culture Survey

(1998) included the most questions relating to collaborative leadership in relation to a positive school culture.

Teacher Collaboration: the degree to which teachers engage in constructive dialog that furthers the educational vision of the school.

Poulos, Culberston, Piazza, and D'Entremont (2014) said “teachers universally point to the impact of teacher collaboration on student learning by improving classroom practice, promoting data use, increasing academic rigor, and supporting students’ non-academic needs” (p. 31). This statement summarizes the value of teacher collaboration on a school’s culture for improvement. Their findings “highlight the value of establishing school-wide structures and collaborative cultural norms to school leaders and teachers committed to working together” (p. 31).

Professional Development: the degree to which teacher’s value continuous personal development and school-wide improvement.

Main, Pendergast, and Virture (2015) stated that for continuous professional development to be effective and for transformative learning to take place, participants must understand the topic in terms of what to do, how it works, and why it is important. They concluded that continuous professional development that increases teacher effectiveness and improves pedagogical practices has a strong connection to teachers’ self-efficacy.

Main, Pendergast and Virture (2015) showed why continuous professional development is important. Goodwin’s (2015) research explained how to make professional development effective. He stated “effective PD requires follow-up support

focused not on *adoption* but rather on *adaption*—helping teachers apply better practices with their own students instead of bird-dogging program implementation” (p. 83).

Goodwin concluded by saying the elements of professional development that are employed by a leader need to be cohesive in the areas of need of the school and faculty.

Unity of Purpose: the degree to which teachers work toward a common mission for the school. “Teachers who are more committed to the values of an organization and to its members are more likely to adopt instructional practices recommended by the organization, assist colleagues, and work harder to achieve organizational goals” (Ross & Gray, 2006, p. 802).

The way that Freed (2014) defined a shared purpose is insightful. She stated: “a well-functioning school is one in which the school leadership—especially the head of the school—is able to manage the complex network of people focused on a shared mission—whatever it may be” (p. 105). Freed’s study and organizational analysis emphasized the importance of the shared purpose to “create more empathy and build connection among adults in school community, but also to recognize where systemic issues need to be addressed in order to inform long-lasting personal and organizational change and growth” (p. 105). In summary, effective leaders articulate a shared purpose; that purpose needs to be well defined. According to Freed (2014), “Everyone is accountable to the big picture—the mission—and everyone needs leadership’s ongoing support to serve the mission in his or her designated way” (p. 106). In order for the unity of purpose to be successful, leadership needs to clearly define what the team is, who the team members are, what their roles are, and most importantly what they are all working toward.

Collegial Support: the degree to which teachers work together effectively.

LaPlant (1986) and Paquette (1987) both researched the impact of collegial support among teachers. Their research found that teachers that work and plan together, as well as celebrate their accomplishments seem to have a positive impact on their overall view of the culture of the school. By working and planning together, teachers built relationships; this led to a benefit for the students and the schools.

Learning Partnership: the degree to which teachers, parents, and the students work together for the common good of the student.

An important component of establishing learning partnerships is to help students understand how academics relate to them, who they are, and what the world means to them. Teachers need to show how lessons are relatable but it is on the student to make the material personal (Blodget, 2016). “This is how they become productive, moral citizens of the world” (Blodget, 2016, p. 72).

Vantine (2016) provided an example of learning partnerships by describing an all girls’ school in Massachusetts serving grades 5-12 who shifted to a school-wide collaborative academic support paradigm. The three elements of this model were: “(1) giving teachers agency of academic support process, (2) changing the language we use to communicate about students’ struggles, and most importantly, (3) giving our students voice to write their own learning narratives” (Vantine, 2016, p. 102). This gives the students the ability to develop self-awareness, self-advocacy, and self-efficacy (Vantine, 2016). In summary the learning partnerships is important for the students to develop meaning for their educational process.

Leadership and Culture

“The single greatest advantage any company can achieve is organizational health. Yet it is ignored by most leaders even though it is simple, free, and available to anyone who wants it” (Lencioni, 2012, p. 1). Leadership is the direct link to teacher retention and school culture. Leithwood and Beatty (2008) created a flow chart (Figure 2.1) that linked leadership to the teachers’ emotional state within each school. Their diagram showed that school working conditions and classroom working conditions fall under the umbrella of leadership. Teachers’ thoughts and feelings develop based on working conditions. Next, teachers’ school wide practices, teachers’ classroom practices and teachers’ engagement in the profession all lead to the end goal of student success. “The efforts or behaviors of those providing leadership are among the most powerful direct sources or influences on teachers’ working conditions and both direct and indirect sources of influence on teacher emotions” (Leithwood & Beatty, 2008, p. 11). The authors further stated that the teachers’ perception of leadership determined their commitment. As a result, the teachers’ school and classroom practices improved and ultimately improved student achievement.



Figure 2.1: Leithwood’s model of leadership to student learning. (www.tcdsb.org)

With regard to leadership, Ingersoll (2007) noted that “Schools in which teachers have more control over key school wide and classroom decisions have fewer student misbehavior, show more collegiality and cooperation among teachers and administrators, have a more committed and engaged teaching staff, and do a better job of retaining their teachers” (p. 24). This is consistent with the way that Gruenert and Valentine (1998) defined collaborative leadership. Collaborative leadership was a variable measured in the survey that was used in this study.

A principal must accomplish five main tasks: provide the school community with a vision of academic success for students; create a climate that is safe, welcoming, cooperative, and that places student success as its top priority; develop the staff around them by distributing their leadership and thus creating buy-in; provide instructional

leadership in the form of direct coaching of teachers by instituting systems that facilitate improving teachers' instructional practice; and set up systems and processes to collect and analyze data in order to drive school improvement (Mendels, 2012). Leithwood and Beatty (2008) noted that a teacher's perception of leadership and climate are factors that are directly correlated to their commitment. The paradox is that a leader can think they are doing everything according to plan and everything is fluid, however, the teachers' needs are not being met and their perception of the leadership declines. By becoming more involved in the school and acting in a manner that sends positive signals to students and teachers, a principal can aide poorly performing individuals, teachers and students, by helping them believe that they can achieve more (Ware & Kitstantas, 2011, and Sahin, 2011).

Leadership is not a one size fits all when hiring. Ware and Kistantas (2011) warn superintendents and school boards to be aware of the best interest of the students as well as the school and to match the efficacy beliefs of the existing staff when placing new leaders in school. "A mismatch could lead to departures of existing staff" (p. 191) and have a great influence on the culture and climate of a school. This can be directly correlated to the retention of teachers that are considering leaving.

Leadership styles and their impact on culture

Research supports three leadership styles as being correlated to school culture: distributive leadership, instructional leadership and transformational leadership.

Distributive Leadership

What leadership styles best support productive school cultures and teacher retention? Fusarelli, Kowalski, and Petersen (2011) suggested that distributive leadership can play a key role in school improvement. Distributive leadership diffuses leadership throughout the whole organization thus making the school or organization less dependent on individual leaders. This type of leadership can be more stable and lead to less attrition because the overall operations are not tied to an individual. Even when the leader leaves the school, leadership stays intact through the various networks (Fusarelli et al., 2011).

A study done by Hulpia, Devos and Van Keer (2010) suggested that distributive leadership contributes to organizational commitment. Hulpia et al. (2010) developed a Distributed Leadership Inventory that was used with another organizational commitment questionnaire to collect data for the dependent variable in their study. Their research design employed a hierarchical multileveled approach with teachers in level-1 and school level data in level-2. This design recognized the fact that teachers are nested within schools. A similar design is used in this study. Hulpia et. al (2010) concluded that the formal distribution of supportive leadership among the leadership team had a positive impact on teachers' commitment at the school level. Teachers who believe support is equally distributed among the leadership team will have a higher organizational commitment than teachers who believe that support is provided by one person on the leadership team (Hulpia et al., 2010).

In describing democratic public education, Maxcy (1995) articulated several elements of the concept. Among them were the worth and importance of individuals,

participation in decision making, and that individuals, working together within communities of learning, are capable of engaging in strategic planning and problem solving. Distributive leadership helps “create democratic learning communities in which power is shared and there is a mutual belief in working together for the common good” (Kochan & Reed, 2005, p. 72). These findings from Maxcy (1995), Kochan and Reed (2005) echo the findings of Tschannen-Moran and Barr (2004) who concluded that shared responsibilities in school decisions can lead to better teacher self efficacy.

Instructional Leadership

Instructional leadership has a statistically significant influence upon all factors of school culture (Sahin, 2011). The study conducted by Sahin (2011) was a likert-type questionnaire distributed to teachers with the following variables: Length of Service, Teaching Level, Academic Achievement, Gender and Socio-Economic Statuses. The researchers used SPSS to calculate the arithmetic means and standard deviations on each variable. Analysis of variance (one-way ANOVA) and t-test were used to draw inferences about differences between group means. Sahin (2011) concluded by stating “there is positive relationship between instructional leadership and all the dimensions of school culture” (p. 1924).

Transformational Leadership

Conversely, the results of a study done by Ross and Gray (2006) found that transformational leadership had no direct effect on student achievement. Instead, they found that transformational leadership is related to Collective Teacher Efficacy, Commitment to School Mission, Commitment to Professional Community, and

Commitment to Community Partnerships. The Collective Teacher Efficacy was simplified to three commitment variables. The three commitment variables were found to be predictors of student achievement in grades 3 to 6. The model was used to demonstrate that teacher commitment is a predictor of student achievement. Thus, transformational leadership indirectly effects achievement according to Rodd and Gray's (2006) study. However, it is because of the influence of transformational leadership that student achievement was improved.

Poverty and School Culture

Children living in poverty often times attend the lowest performing schools as evidenced by lagging test scores. The literature is clear that these schools face multiple and interlocking problems such as poor literacy skills, high rates of absenteeism and transience, as well as difficulty attracting high quality experienced teachers (Almay & Tooley, 2012; Berliner, 2006; Lee & Burkham, 2002; Rothstein, 2004). While it is challenging to improve academic performance at a low achieving, high poverty school, research suggests that it can be done (Carter, 2000). Among the many factors that have been found to be predictors of success in high poverty schools is a culture of high expectations that is shared by the principal, teachers, students and staff. Culture has been found to be the necessary or dominant theme in research examining high poverty schools that were successful (Barth et al, 1999; Kannapel & Clements, 2005; Ragland et al, 2002).

In successful high poverty schools, the principal establishes a culture of high expectations for themselves; similarly teachers and staff set high expectations. The

process of continual learning is modeled (Kannapel & Clements, 2005). Furthermore, the leader sets measurable goals and communicates their expectations in tangible ways (Carter, 2000; Kannapel & Clements, 2005; Ragland et al, 2002). This culture of expectations in turn creates unity of purpose (Jesse et al, 2004). Lastly, the culture of high expectations is found in a caring and nurturing environment where adults and children treat one another with respect (Kannapel & Clements, 2005).

Sheehan and Rall (2011) said that students from poverty feel that they can't achieve because they think that education will not release them from poverty. They studied the De La Salle School, a Catholic school in Freeport, NY. This school has a small enrollment (65) and only has male students of color. The focus at De La Salle School is hope. There is a correlation that goes both ways between hope and emotional and behavioral engagement, and hope and achievement. Educators there use strategies centered on hope to give the students the skills and mental strength to become "hopeful students." The head of school and teachers have all bought into the positive social-emotional climate, and the school is producing students that have better self-awareness, self management, social awareness, and relationship management (Sheehan & Rall, 2011). Poverty isn't a controllable condition, but leadership and school culture both can be manipulated.

Summary

This chapter provided a review of relevant literature. The chapter began with a summary of the current pressures facing educational leaders to increase student achievement. A different leadership paradigm for schools in an era of standards based

education was explored. The teacher was found to be the most important school level resource that can impact student achievement. As such, educational leaders must make every attempt to recruit and retain quality teachers in schools. Culture was introduced as a strategy for school improvement and studies linking leadership to culture were synthesized. An indirect effect of teacher retention and student achievement was explored in the literature. The chapter concluded with a brief review of school culture in high poverty schools.

CHAPTER THREE

METHODS

Introduction

This chapter will outline the method used in this study. The purpose of this study was to examine the predictive capacity of leadership on school culture. The goal was to show that effective leadership is a strategy for creating and maintaining a positive school culture. This could possibly lead to teachers staying at a particular school and could lead to an increase in student achievement. The research question proposed in the study was: does school leadership predict school culture?

Method

This study used Hierarchical Linear Modeling (HLM) method and stepwise multiple regression to test the research question: does school leadership predict school culture? This question was analyzed by using the six variables defined from the School Culture Survey: collaborative leadership, teacher collaboration, professional development, unity of purpose, collegial support, and learning partnership. Poverty index, test scores, and retention percentages for each of the schools were used in the model as well as covariates. Data were acquired from the yearly school report card made available from the South Carolina Department of Education (www.ed.sc.gov). HLM is a popular statistical method across many domains of social sciences, especially in education settings (Woltman, Feldstain, MacKay, & Rocchi, 2012). HLM applies when the observations in a study form groups and when those groups are in some way randomly selected (Raudenbush & Bryk, 2002).

Hierarchical Linear Modeling is a complex form of ordinary least squares regression that is used to analyze variance in the outcome variables when the predictor variables are at varying hierarchical levels. For example, the variables used in the survey would all be teacher level variables in the model and the test scores, poverty index and retention percentages would be school level predictor variables. HLM accounts for the shared variance in hierarchically structured data. The technique accurately estimates lower-level slopes and their implementation in estimating higher-level outcomes (Hofmann, 1997). In this study, the lower-level would be teacher level responses from the survey on school culture and the higher-level would be the school level data from the school report card.

“HLM takes into consideration the impact of factors at their respective levels on an outcome of interest. It is the favored technique for analyzing hierarchical data because it shares the advantages of disaggregation and aggregation without introducing the same disadvantages” (Woltman, et al., 2012, p. 55-56). HLM is great for analyzing nested data because it shows the relationship between the predictor and outcome variables by taking both level-1 and level-2 regression relationships into account.

A disadvantage of HLM is that in order to have adequate power, a large sample is required. This is normally true when detecting the effects at level-1. Higher-level effects are more sensitive to increases in groups than to increases in observations per group. HLM can handle missing data at level-1 and removes groups with missing data at level-2 or above. For these reasons, it is advantageous to increase the number of groups as opposed to the number of observations per group. For example, a study with thirty

groups with thirty observations giving an n=900, can have the same power as one hundred fifty groups with five observations each giving an n=750 (Hofman, 1997).

Research Hypothesis

This research question was considered when developing the research hypothesis: does school leadership as defined as Collaborative Leadership and Unity of Purpose predict school culture as defined as Teacher Collaboration, Professional Development, Collegial Support and Learning Partnerships? The study included two independent variables measuring leadership (Collaborative Leadership and Unity of Purpose) and four dependent variables measuring school culture (Teacher Collaboration, Professional Development, Collegial Support and Learning Partnerships). I hypothesize that school leadership as defined as Collaborative Leadership and Unity of Purpose will predict culture as defined as Teacher Collaboration, Professional Development, Collegial Support and Learning Partnerships. The questions used to compose the dependent and independent variable were from Gruenert and Valentine’s (1998) School Culture Survey are displayed in Table 3.1.

Table 3.1. Survey questions grouping by variable

Dependent Variables Culture	Teacher Collaboration	<ul style="list-style-type: none"> • Teachers have opportunities for dialog and planning across grades and subjects • Teachers spend considerable time planning together • Teachers take time to observe each other teaching • Teachers are generally aware of what other teachers are teaching • Teachers work together to develop and evaluate programs and projects • Teaching practice disagreements are voiced
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		openly and discussed
	Professional Development	<ul style="list-style-type: none"> • Teachers utilize professional networks to obtain information and resources for classroom instruction • Teachers regularly seek ideas from seminars, colleagues and conferences • Professional development is valued by the faculty • Teachers maintain a current knowledge base about the learning process • The faculty values school improvement
	Collegial Support	<ul style="list-style-type: none"> • Teachers trust each other • Teachers are willing to help out whenever there is a problem • Teachers' ideas are valued by other teachers • Teachers work cooperatively in groups
	Learning Partnerships	<ul style="list-style-type: none"> • Teachers and parents have common expectations for student performance • Parents trust teachers' professional judgments • Teachers and parents communicate frequently about student performance • Students generally accept responsibility for their schooling, for example they engage mentally in class and complete homework assignments
Independent Variables Leadership	Collaborative Leadership	<ul style="list-style-type: none"> • Leaders value teachers' ideas • Leaders in this school trust the professional judgments of teachers • Leaders take time to praise teachers that perform well • Teachers are involved in the decision-making process • Leaders in our school facilitate teachers working together • Teachers are kept informed on current issues in the school • My involvement in policy or decision making is taken seriously • Teachers are rewarded for experimenting with new ideas and techniques • Leaders support risk-taking and innovation in teaching • Administrators protect instruction and planning

		time
		<ul style="list-style-type: none"> • Teachers are encouraged to share ideas
	Unity of Purpose	<ul style="list-style-type: none"> • Teachers support the mission of the school • The school mission provides a clear sense of direction for teachers • Teachers understand the mission of the school • The school mission statement reflects the values of the community • Teaching performance reflects the mission of the school

Data Collection and Sample

The study was conducted using a 35 item Likert-scale School Culture Survey developed by Gruenert and Valentine (1998) analyzing school culture from six variables; Collaborative Leadership (11 items), Teacher Collaboration (6 items), Professional Development (5 items), Unity of Purpose (5 items), Collegial Support (4 items) and Learning Partnerships (4 items). Reliability coefficients for the Gruenert and Valentine's (1998) School Culture Survey appear in Table 3.2.

Table 3.2. Cronbach's Alpha factor reliability for School Culture Survey variables

Collaborative Leadership:	0.91
Teacher Collaboration:	0.83
Professional Development:	0.82
Unity of Purpose:	0.87
Collegial Support:	0.80
Learning Partnerships:	0.66

The Cronbach's Alpha factor reliability coefficient is a measure of internal consistency. It comprises a number of items that make up a scale designed to measure a single construct, and it determines the degree to which all the items being measured are

of the same construct. Strong reliability using the Cronbach's Alpha are values that are close to 1.0, weaker ones are closer to 0.0 (Cronk, 2010). The values for the items within each variable in the survey are close to 1.0, showing a strong reliability.

The survey was distributed to the Superintendent of the school district via email using Survey Monkey, who in turn distributed the survey to the principals of the participating elementary schools. The school level principals then forwarded the electronic survey to their faculty for completion. The survey was distributed at the end of January; data collection was completed during the first week of February 2016. The participants in the survey were from the four elementary schools in a school district located in the upstate of South Carolina; Elementary School 1, Elementary School 2, Elementary School 3 and Elementary School 4. There are approximately 111 classroom teachers in all of these schools. Of the 111 possible respondents, 80 returned surveys, for a response rate of 72%. However, only 68 of the 80 surveys included answers to all survey questions.

Table 3.3. Response Number and Rate by School.

School	Responses	Response Rate
Elementary 1	17	25%
Elementary 2	17	25%
Elementary 3	22	32.35%
Elementary 4	12	17.65%
Total	68	100%

The scores were downloaded from Survey Monkey into a Microsoft Excel spreadsheet. Afterwards, the spreadsheet was cleaned up by deleting unnecessary columns and rows. Next, the elementary schools were coded into numbers to maintain anonymity. Next, columns were added for the following data that was retrieved from each school report card: Teachers’ Retention Percentage, Poverty Index, ACT Aspire English, ACT Aspire, Reading, ACT Aspire Mathematics, and ACT Aspire Writing scores. For the ACT Aspire subject scores, the levels of “exceeding” and “ready” were combined to create one score.

The demographics of each school are shown in Table 3.4. A brief description of each school follows.

Table 3.4. School report card characteristics by school.

School	Retention Percentage	ACT English	ACT Writing	ACT Reading	ACT Math	Poverty Index
Elementary 1	75.7	64.4	29.9	29.4	42.4	81.3
Elementary 2	87.8	82	27.1	40.6	60.4	64.3
Elementary 3	75.9	76.3	23.2	40	56.5	52.1
Elementary 4	96.5	78.3	37.3	45	57.3	76.2

Elementary School 1 consists of 418 students in grades Pre-Kindergarten to Sixth Grade and is the most urban of the four schools. All four schools are still considered in a rural school district. Elementary School 1 has a first-year principal. The new principal was employed at the school during data collection. Because state accountability scores

lag one year, the current principal was not the leader of the school during testing that appears on the current school report card. The previous principal had been at the school for a total of 3 years. This school offers a Montessori program for its students. The percentage of teachers with advanced degrees is 53.1. Due to changes in how schools are rated in South Carolina, the most recent ratings for schools are from 2014. In 2014 Elementary School 1 received an Average Absolute Rating and an At-Risk Growth rating. Schools will be given new ratings beginning in 2017.

Elementary School 2 serves 421 students in grades Pre-Kindergarten to sixth grade. This school incorporates the Focus 5 areas of arts integration: music, writing, drama, art, and dance. The principal at this school has been in place for 8.5 years. The percentage of teachers with advanced degrees is 72.4. The 2014 state report card ratings show that Elementary School 2 had an Absolute Rating of Excellent and a Growth Rating of Below Average.

Elementary School 3 serves the most students in the study with 490 and it is the newest of the buildings in the district. It serves grades Pre-Kindergarten to Sixth Grade; this is the principal's second year there. Previously, the principal had retired and was there from its opening of the school. Elementary School 3 is the home for STEM (Science, Technology, Engineering, and Math) instruction. This is the first elementary school in the country to receive STEM certification from AdvancED. The percentage of teachers in this school with advanced degrees is 46.7 and the school has the lowest average teacher salary. This correlates to a relatively young teaching staff. The 2014

state report card ratings for Elementary School 3 are Good for Absolute Rating and At-Risk for Growth Rating.

Elementary School 4 is the most rural of the four schools and it is the smallest school in the study. Currently, Elementary School 4 serves 286 students in grades Pre-Kindergarten to Sixth Grade. This school utilizes The Leader In Me as a school-wide philosophy, which emphasizes a culture of student empowerment and helps each student to reach their full potential. The principal has been at this school for 12 years. This school has the longest serving administrator in the school district as well as the highest teacher retention percentage of the district. The percentage of teachers with advanced degrees is 80; this school also has the highest average teacher salary in the study. The 2014 state report card gives Elementary School 4 an Absolute Rating of Excellent and a Growth Rating of Good.

One last contextual factor that could have an impact on all four schools is that the district leadership experienced turnover as well. The Superintendent retired and a new one was appointed by the district's Board of Education in 2015. In a district this small with six total schools, a change at the district level can easily be felt in the schools. The district and school leadership operate closely, thus the beliefs and values at the central office level easily trickle down to each school.

After the data were cleaned in Excel, the statistical analysis was performed using JPM software. Once the data was imported to JMP an imputation was run to fill in the missing survey scores. This allowed the researcher to increase the number of survey

responses. The imputation is a way to take available information for complete and incomplete data points to predict the value of a specific missing data point.

The first step in the data analysis was to run a principal component analysis. Principal component analysis is used for extracting factors in factor analysis. The original variables are transformed into a new set of linear combinations by extracting the maximum variance for the data set with each component (Mertler & Vannatta, 2010). An easy way to think about PCA is that it is an exploratory data analysis used to identify the possible numbers of factors. A PCA was run for all of the questions in the dependent and independent variables from the survey. The questions were entered according to their specific groups, DV or IV identifiers.

Once the PCA was run the Eigen value and Bartlett's test were examined to determine the number of existing factors. The Eigen value is the amount of total variance explained by each factor (Mertler & Vannatta, 2010). All factors over 1 were taken into consideration. The Bartlett's test is a procedure that tests the null hypothesis that the variables in the population correlation matrix are uncorrelated and used for factor analysis with small samples (Mertler & Vannatta, 2010). To further reduce the number of factors identified by the PCA, the next step was to examine the scree plot. The scree plot is a graph of the magnitude of each Eigen value placed on the vertical axis and plotted against their ordinal numbers on the horizontal axis (Mertler & Vannatta, 2010). Three factors were observed based from the curve of the plot.

Upon completion of the exploratory analysis of the data, a factor analysis was run. A factor analysis is a mathematical model that results in the estimation of factors in

contrast with the principal component analysis (Mertler & Vannatta, 2010). When running the factor analysis, three factors were used to determine the results. From this point three new factors were determined and renamed. These three factors were still represented in the culture dependent variable.

A factor analysis was also run on the leadership independent variables of collaborative leadership and unity of purpose. The results were rotated same as the dependent variable results. The factor analysis confirmed the two factors of collaborative leadership and unity of purpose.

The factor analysis was used to identify the dependent and independent variables for use in testing the research hypothesis. The chosen methodology was hierarchical linear modeling. The HLM was run using teacher level variables as level 1 (the culture variables as the dependent variable and the leadership variables as the independent variables) and school level variables as level 2 (demographics, student performance). Because the results from the HLM suggested that all variance was explained at the teacher level, this method was abandoned in favor of using a stepwise multiple regression. The fact that all variance was explained at the teacher level suggested that the data were not nested and that there were not differences across the schools. As such, a more appropriate method to test the research hypothesis was required.

Next a stepwise multiple regression was run to determine the predictive nature of leadership on culture using the factors identified in the factor analysis. A stepwise multiple regression allows the ability to determine which specific independent variables make a meaningful contribution to the prediction of the dependent variable. A multiple

regression identifies the best combination of predictors (independent variables) of the dependent variable. It is used when there are several independent quantitative variables and one dependent variable (Mertler & Vannatta, 2010). The stepwise multiple regression was run three times, once for each of the newly created dependent variables from the factor analysis (Culture of Collegiality, Culture of Learning Partnerships and Culture of School Improvement).

Summary

This chapter introduced the research question and the research hypothesis that was tested in the present study. A detailed explanation of the method, research variables, data collection and sample were provided for this study. In addition, the methodology and data analysis procedures were explained and supported with literature. The results of the analysis will be presented in chapter four.

CHAPTER FOUR

RESULTS

Introduction

This chapter will present the results of the study. The purpose of this study was to examine the predictive capacity of leadership on school culture by using hierarchical linear modeling and multiple regression. The research question posed in the study was: does school leadership predict school culture? The data was collected using Gruenert and Valentine's (1998) School Culture Survey (see Appendix A). The data from the survey was then downloaded into Microsoft Excel and then transferred into JMP. Once it was in JMP all of the analyses were run.

Data Collection and Processing

The School Culture Survey (Gruenert & Valentine, 1998) was distributed to the instructional staff of four elementary schools in a school district in the upstate region of South Carolina. The survey was distributed to a total of 111 teachers; 80 responses were collected for a response rate of 72%. Although 80 individuals submitted a survey, 12 of the surveys had no data or had missing data. That left 68 complete responses that were available to be used for the data analysis. Using data imputation, some of the missing responses were able to be recovered. Imputation is a way to take available information for complete and incomplete data points to predict the value of specific missing data points by estimating the value based on available information. The use of imputation increased the total number of complete surveys to 73. The remaining seven surveys were

discarded. This left an adjusted usable response rate of: 65.8%. The updated response table is below:

Table 4.1. Adjusted responses and rate after imputation.

School	Responses from school	Percentages from school
Elementary 1	21	28.77%
Elementary 2	18	24.66%
Elementary 3	22	30.13%
Elementary 4	12	16.44%
Total	73	100%

Data Analysis – Independent Variables

A principal component analysis was run on both sets of questions for the independent (leadership) and dependent (culture) variables. First the PCA was run for the independent variables. According to the results from the PCA, there was no difference in the factors identified by Gruenert and Valentine’s (1998) School Culture Survey so data analysis moved directly to the use of the factor analysis. The factor analysis for the independent variable question set confirmed the groupings of the two variables of Collaborative Leadership and Unity of Purpose. A factor analysis is a mathematical model created resulting in the estimation of factors in contrast with the principal component analysis (Mertler & Vannatta, 2010). As seen in the table, the value in each factor that is bolded carries the weight of significance. The questions are bolded within each factor according to participant responses. The factor loadings represent how

questions were related to one another according to participant responses. Factors scoring 0.4 and greater were considered significant for a factor score. As previously stated the independent variables were grouped as predicted. The rotated factor analysis is shown in Table 4.2.

Table 4.2. Factor Analysis of the Leadership and Unity of Purpose variables

	Factor 1	Factor 2
Leaders value teachers' ideas	0.47	0.26
Leaders in this school trust the professional judgements of teachers	0.75	0.37
Leaders take time to praise teachers that perform well	0.44	0.21
Teachers are involved in the decision-making process	0.64	0.24
Leaders in our school facilitate teachers working together	0.53	0.32
Teachers are kept informed on current issues in the school	0.42	0.39
My involvement in policy or decision making is taken seriously	0.55	0.31
Teachers are rewarded for experimenting with new ideas and techniques	0.62	0.18
Leaders support risk-taking and innovation in teaching	0.72	0.38
Administrators protect instruction and planning time	0.48	0.28
Teachers are encouraged to share ideas	0.78	0.18
Teachers support the mission of the school	0.30	0.59
The school mission provides a clear sense of direction for teachers	0.39	0.60
Teachers understand the mission of the school	0.27	0.66
The school mission statement reflects the values of the community	0.39	0.63
Teaching performance reflects the mission of the school	0.16	0.86

The first 11 questions of the School Culture Survey were all originally contained in the Collaborative Leadership section of the survey. The last 5 questions of the School Culture Survey were all contained in the Unity of Purpose section of the survey. The factor analysis confirmed that the questions should be grouped together as designed by Gruenert and Valentine (1998). Collaborative Leadership scored the highest (0.91) in the Cronbach's Alpha factor reliability coefficient measured from Gruenert and Valentine (1998). Unity of Purpose scored the third highest (0.82) in the Cronbach's Alpha factor reliability coefficient. The Cronbach's Alpha factor reliability coefficient is a measure of consistency. Strong reliability consists of measurements that are close to 1.0, weaker ones are closer to 0.0 (Cronk, 2010).

Data Analysis – Dependent Variables

After completing the data analysis for the independent variables, the same process was used to examine the dependent variables. A Principal Component Analysis was conducted using the 19 questions that originally composed the dependent variables measuring culture included: teacher collaboration, professional development, collegial support, and learning partnerships. Initially, the Principal Component Analysis identified more than four dependent variables. To reduce the number of factors, the Eigen values and Bartlett's test were calculated. The Eigen value is the amount of total variance explained by each factor (Mertler & Vannatta, 2010). The Eigen value was calculated for all 19 questions; a score greater than 1 was used as a cutoff to identify different factors. Based on the results from the Eigen values, 7 factors were found to have scores greater than 1. In order to reduce that number, a Bartlett's test was conducted. The Bartlett's

test is a procedure that tests the null hypothesis that the variables in the population correlation matrix are uncorrelated and used for factor analysis with small samples (Mertler & Vannatta, 2010). The Bartlett's test narrowed the field to three scores based off the Prob>ChiSq reading. Prob>ChiSq is the probability of obtaining a greater Chi-square value by chance alone if the specified model fits no better than the model that includes only intercepts. The Eigen values and Bartlett's test are shown in Figure 4.1.

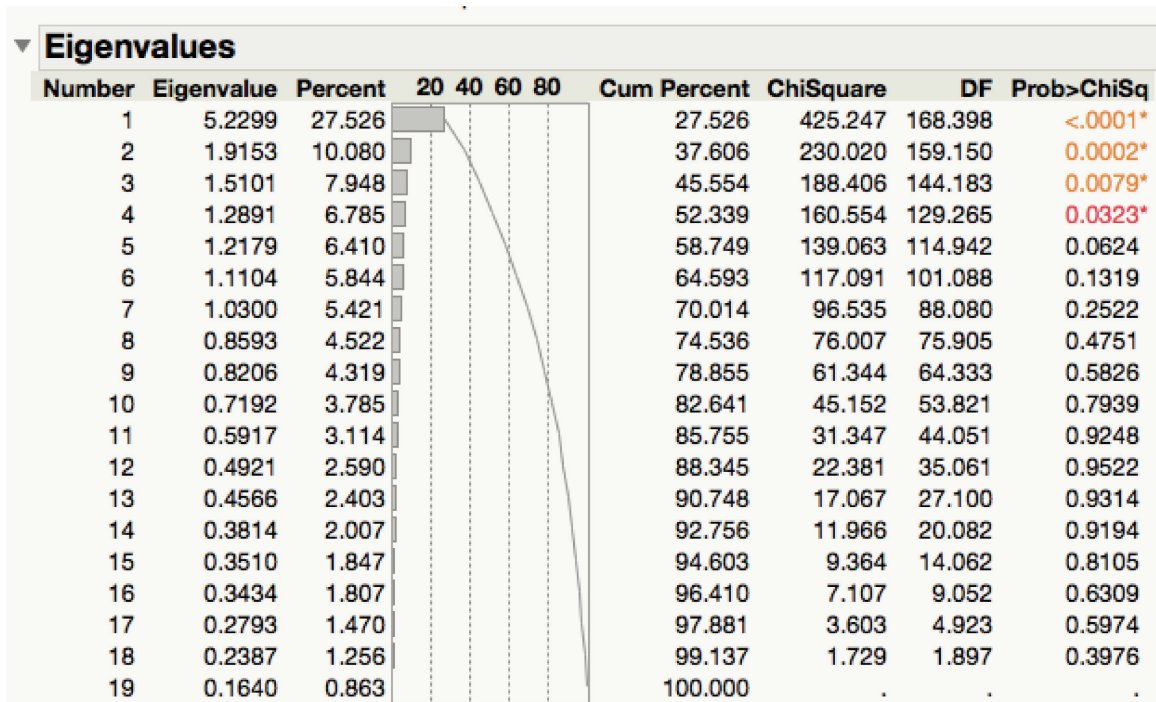


Figure 4.1: Eigenvalues and Bartlett's Test for dependent variables.

The next step was to view the scree plot. The scree plot is a graph of the magnitude of each Eigen value placed on the vertical axis and plotted against their ordinal numbers on the horizontal axis (Mertler & Vannatta, 2010). The target of the observation of the scree plot was to see a slope from vertical to horizontal. There were three observable breaks in the scree plot. The scree plot is shown in Figure 4.2.

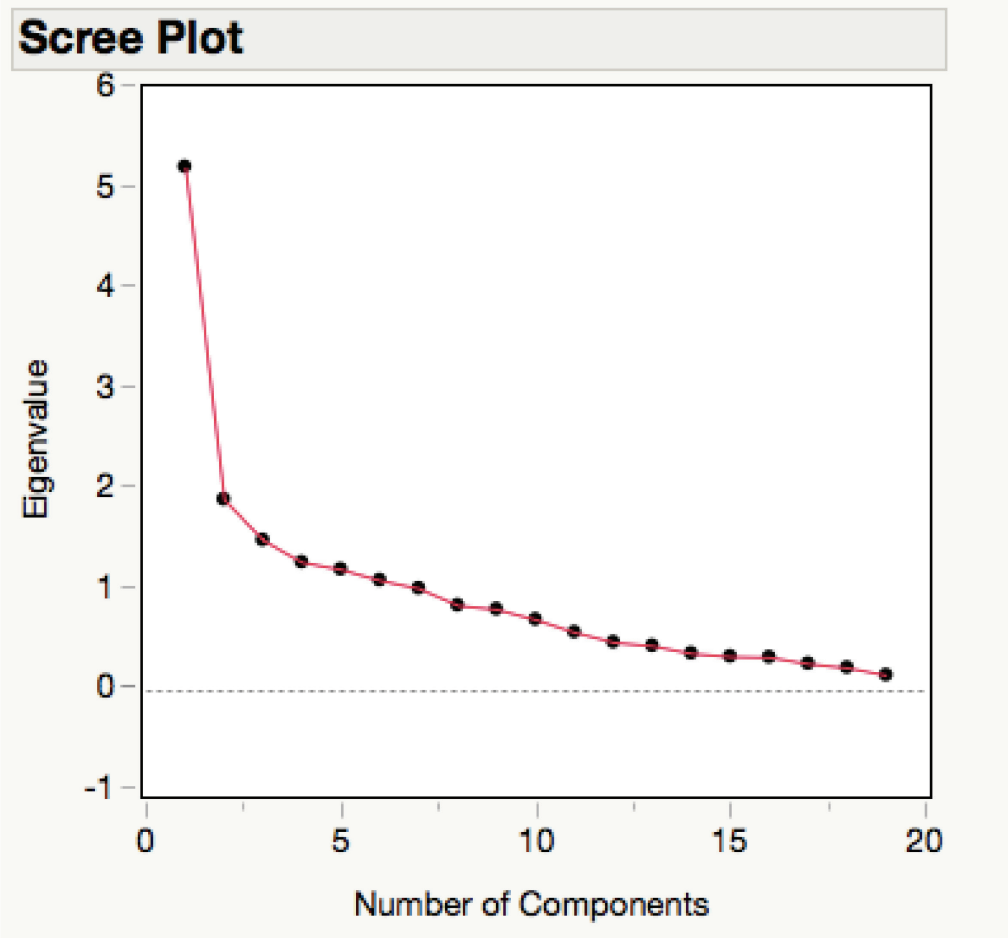


Figure 4.2: Scree Plot of dependent variables after factor analysis

Results from the scree plot confirmed the decision to run three factors for the factor analysis of the dependent variables. A factor analysis is a mathematical model created resulting in the estimation of factors in contrast with the principal component analysis (Mertler & Vannatta, 2010). Results that are bolded describe the weight of significance and were used to regroup the variables according to participant responses. In the dependent variable factor analysis the respondents grouped the questions in different clusters than the authors of the survey. Factors scoring 0.35 and greater were considered

significant for a factor score. This is different than the independent variable score acceptance because there were three factors calculated. The rotated factor analysis is shown in Table 4.3.

Table 4.3. Factor analysis for the three new dependent variables chosen

	Factor 1	Factor 2	Factor 3
Teachers have opportunities for dialog and planning across grades and subjects	0.54	-0.05	0.04
Teachers spend considerable time planning together	0.56	0.31	0.09
Teachers take time to observe each other teaching	0.50	0.06	-0.07
Teachers are generally aware of what others are teaching	0.19	0.98	-0.08
Teachers work together to develop and evaluate programs and projects	0.50	0.20	0.01
Teachers practice disagreements are voiced openly and discussed	0.61	0.31	0.09
Teachers utilize professional networks to obtain information and resources for classroom instruction	0.01	0.31	0.13
Teachers regularly seek ideas from seminars, colleagues, and conferences	0.52	0.10	0.03
Professional development is valued by the faculty	0.01	0.27	0.22
Teachers maintain a current knowledge base about the learning process	-0.05	-0.11	-0.36
The faculty values school improvement	0.12	0.44	0.89
Teachers trust each other	0.55	-0.04	0.12
Teachers are willing to help out whenever there is a problem	0.55	-0.06	0.30
Teachers' ideas are valued by other teachers	0.48	0.22	0.28

	Factor 1	Factor 2	Factor 3
Teachers work cooperatively in groups	0.44	-0.27	-0.12
Teachers and parents have common expectations for student performance	0.68	-0.08	0.08
Parents trust teachers' professional judgements	0.46	0.23	0.17
Teachers and parents communicate frequently about student performance	0.09	-0.05	0.39
Students generally accept responsibility for their schooling, for example they engage mentally in class and complete homework assignments	0.66	-0.02	0.12

Based on the groupings of the rotated factor analysis the dependent variables were regrouped into 3 variables and label as: Culture of Learning Partnerships for factor 1, Culture of Collegiality for factor 2 and Culture of School Improvement for factor 3. Some of the questions were included in more than one group and some questions eliminated all together. The first factor was labeled Culture of Learning Partnerships. The questions that formed this factor were centered around the notions of common planning, trust, parent support of the teaching and learning process, collaboration, teacher communication, and teacher willingness to assist others. Factor 1 included one question regarding the use of ideas from seminars but all other questions related to professional development were eliminated. The culture of collegiality was named because it included factors such as teachers are aware of instruction that is taking place in other classrooms. Two questions that were originally found in the four original factors measured in the survey were found in the newly formed Factor 2. For example, Survey respondents grouped the following two questions together: Teachers are generally aware of what

other teachers are teaching and the faculty values school improvement. These two questions were originally contained within the teacher collaboration and professional development variable question set. Factor 3 was labeled culture of School Improvement and contained questions focused on school improvement and regular communication about student progress. Overwhelmingly, the largest number of questions fell in Factor 1. Teachers in this rural school district saw culture as Learning Partnerships and defined the concept as collaboration, common planning, effective communication, and support of one another. The new groupings of the questions are shown in Table 4.4.

Table 4.4. New question groupings for dependent variables

Culture of Learning Partnerships	<ul style="list-style-type: none"> • Teachers have opportunities for dialog and planning across grades and subjects • Teachers spend considerable time planning together • Teachers take time to observe each other teaching • Teachers work together to develop and evaluate programs and projects • Teaching practice disagreements are voiced openly and discussed • Teachers regularly seek ideas from seminars, colleagues, and conferences • Teachers trust each other • Teachers are willing to help out whenever there is a problem • Teachers' ideas are valued by other teachers • Teachers work cooperatively in groups • Teachers and parents have common expectations for student performance • Parents trust teachers' professional judgements • Students generally accept responsibility for their schooling, for example they engage mentally in class and complete homework assignments
Culture of Collegiality	<ul style="list-style-type: none"> • Teachers are generally aware of what other teachers are teaching. • The faculty values school improvement
Culture of School Improvement	<ul style="list-style-type: none"> • Teachers maintain a current knowledge base about the learning process • The faculty values school improvement • Teachers and parents communicate frequently about student performance.

Redesigned Theoretical Framework

The principal component analysis and factor analysis helped in regrouping and renaming the dependent variables. This in turn led to the need to redesign the theoretical framework. The redesigned theoretical framework reflects the changed definition of culture using the newly named dependent variables: Culture of Learning Partnerships, Culture of Collegiality, and Culture of School Improvement. The leadership independent variables remained the same as the original theoretical framework and included Collaborative Leadership and Unity of Purpose. Figure 4.3 illustrates the revised theoretical framework.

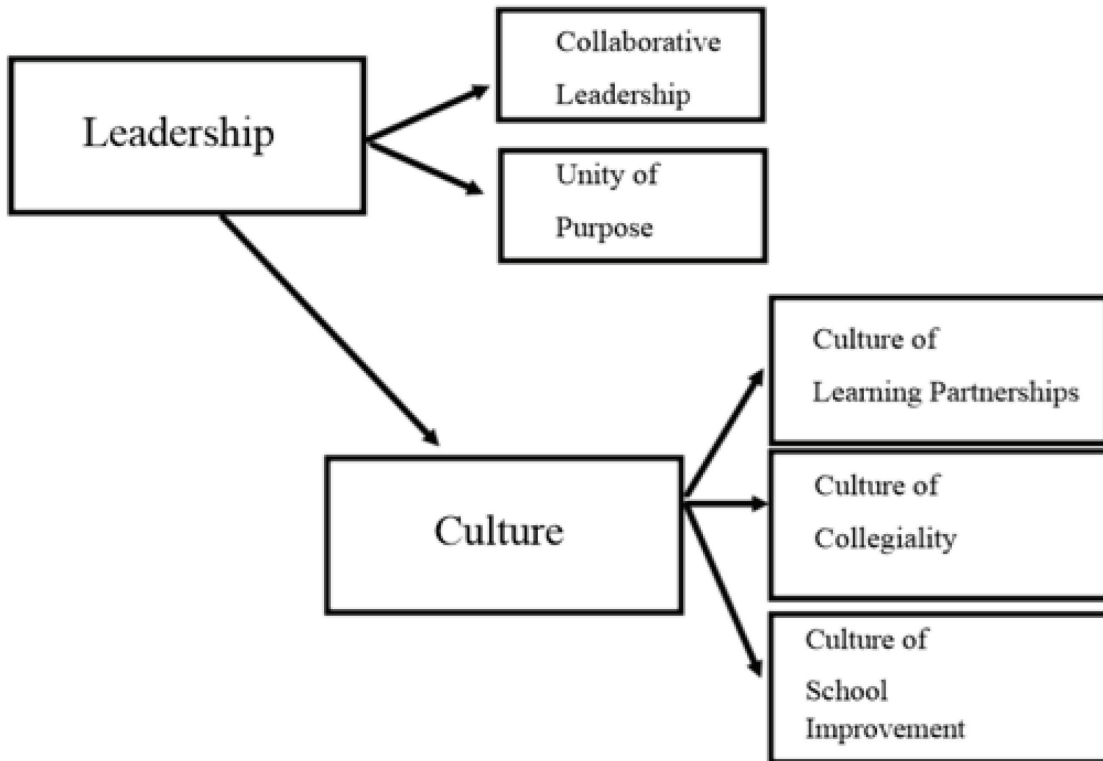


Figure 4.3: Redesigned Theoretical Framework Model

Results of the HLM

After confirming the independent and dependent variables, the next step in the data analysis was the hierarchical linear modeling. The HLM was run using teacher level variables as level 1 (the culture variables as the dependent variables and the leadership variables as the independent variables) and school level variables as level 2 (demographics, performance). The reason that that HLM was chosen at this point was because it is a method that allows for nested data. Since the data is from four different schools, it was assumed that the teachers would be nested by schools. Initially, it was expected to include all of the dependent, independent and school related factors in the model. This was not possible because of the small sample size. When computing the HLM, only one school level variable was included in level 2. The level 1 variables included all three dependent variables measuring school culture and both independent variables measuring leadership. In level 2, only one school measure was included (Poverty Index) because there would not have been enough degrees of freedom to run the model with all school level factors. Poverty index was set as random to run the HLM.

In examining the results of the HLM, the leadership independent variables were found to explain 7.3% of the variance in Culture of Learning Partnership. No probability test was calculated because all of the variance was explained in the residual. In level 2 of the model, 0.0% was explained by the school level factors. A finding of 100% of residual suggests that all of the effects were at the teacher level.

The next HLM examined the relationship between leadership with a Culture of Collegiality. Again, the Poverty Index was random. In the second HLM, leadership was

found to explain 6.3% of the variance in Culture of Collegiality. As with the first HLM, no probability test was calculated because nearly all of the variation in responses in the model was found to exist at the teacher level.

The final HLM examined the predictive relationship of leadership with a Culture of School Improvement. The Poverty Index was used as a random variable. This model was found to explain 5.7% of the variance in the measure of school culture. Again, all variation in responses was found to exist at the teacher level rather than the school level.

Since the teachers were nested within the schools, HLM was used with the anticipation of accounting for a higher variance. However, what happened is that none of the variance was explained at the school level and all of it fell in the residual, or teacher level. This was due to the schools consistently reporting collaborative leadership as the primary style of all four principals, thus leaving no variance at the school-level. This completely eliminated one of the levels in the model. Thus it was determined that HLM was not the appropriate method to answer the research question.

Multiple Regression—Stepwise

After running the HLM, it was found that there was no variance explained at the school level; all of the variance in responses was being explained in the residual, or at the teacher level. As such, it was decided that a stepwise multiple regression would be used to answer the research question. A stepwise multiple regression allows the ability to determine which specific independent variables make a meaningful contribution to the prediction of the dependent variable (Mertler & Vannatta, 2010). In the multiple regression models the first thing that was observed was the coefficient of determination

or R squared. R^2 is a number that indicates how well the data fits the statistical model on a line or a curve. An R^2 value of 1 means that the regression line seamlessly fits the data points. An R^2 value of 0 means that the regression line does not fit the at all. A value close to 0 can be explained due to the fact that the data is random (Ott & Longnecker, 2001). The next value that was observed was the p -value. The p -value helps to determine the significance of the results. Hypothesis tests are used to test the validity of a claim made about a population. This claim is called the null hypothesis (Ott & Longnecker, 2001). For the following multiple regressions the p -value used for analysis was $p \leq 0.1$. This value was chosen because of the sample size.

The stepwise multiple regression allowed the researcher to test the effects of each independent variable in order. Variables that are found to statistically insignificant in predicting the dependent variable are removed from the analysis. The first test conducted included Culture of Learning Partnerships as the dependent variable. Poverty Index, Collaborative Leadership, and Unity of Purpose were included in the model as independent variables. Results of the stepwise linear multiple regression suggested that neither Poverty Index nor Collaborative Leadership were significant predictors of a culture of Learning Partnerships. The independent variable Unity of Purpose was found to be a statistically significant predictor of a Culture of Learning Partnerships. Unity of Purpose was found to explain 6.8% of the variance in Culture of Learning Partnerships with a p -value of 0.026. The beta weight for Unity of Purpose was 0.262. Interestingly, the two independent variables (Poverty Index and Collaborative Leadership) that were removed from the model because they did not explain a significant amount of variance in

the dependent variable, had a negative beta weight suggesting an inverse relationship between the variables. What this means is, as the Poverty Index and Collaborative Leadership increase, then Culture of Learning Partnerships decreases.

The next two stepwise multiple regressions used the same steps for the independent variables but used Culture of Collegiality and Culture of School Improvement respectively. Both tests had no statistically significant findings. As such, leadership was not found to be a statistically significant predictor of Culture of Collegiality or Culture of School Improvement.

The results of stepwise multiple regression revealed that Unity of Purpose was the only statistically significant predictor of a Culture of Learning Partnerships. To better understand the results of the models, one final exploratory analysis was done of the data to understand patterns of the relationship between leadership and culture. A fit model regression plot graphing Unity of Purpose on the X-axis and the three measures of culture on the Y-axis was plotted.

The first graph shows Learning Partnerships against Unity of Purpose. In this graph Schools 2, 3 and 4 all show as unity increases, so does learning partnerships. However, in this model School 1 shows as unity increases, learning partnerships decrease. The graph is shown in Figure 4.4.

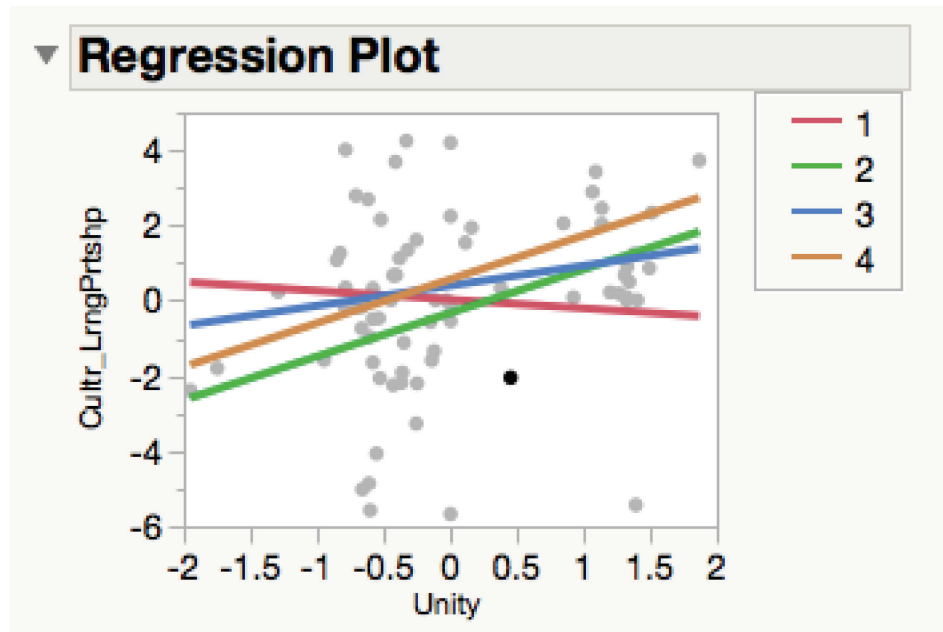


Figure 4.4: Regression plot of Unity of Purpose vs. Culture of Learning Partnerships with all four schools.

The second regression plot displayed Collegiality against Unity of Purpose. In this graph School 2 shows a strong positive correlation between unity and collegiality. School 3 shows a very faint increase of collegiality as unity increases. Schools 1 and 4 show a slight negative correlation between unity and collegiality. The regression plot is shown in Figure 4.5.

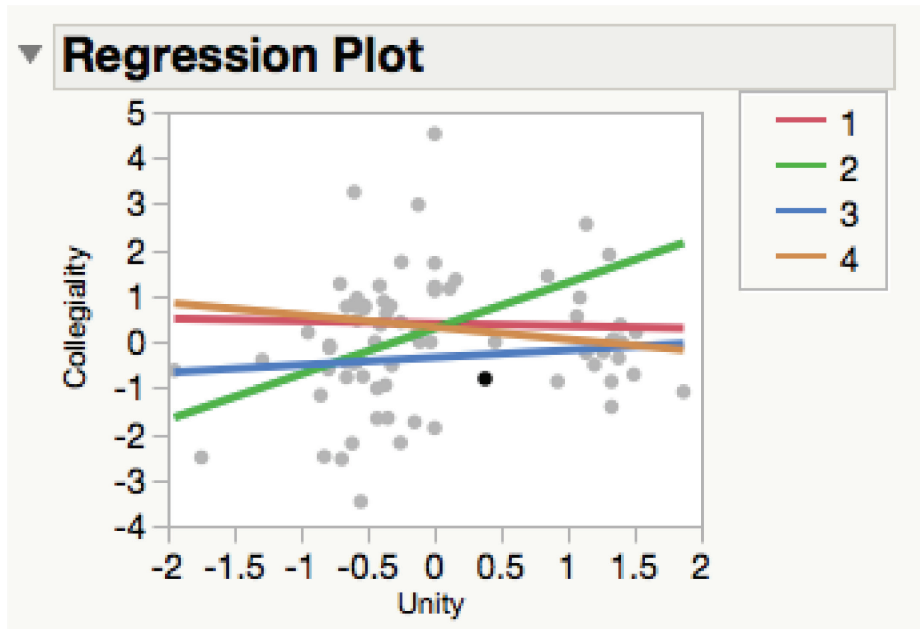


Figure 4.5: Regression plot of Unity of Purpose vs. Culture of Collegiality with all four schools.

The third regression plot graphed Unity of Purpose against School Improvement. This graph clearly shows Schools 1 and 3 having a positive correlation between unity and improvement. It also shows very clearly a negative correlation between unity and improvement for Schools 2 and 4. The graph is shown in Figure 4.6.

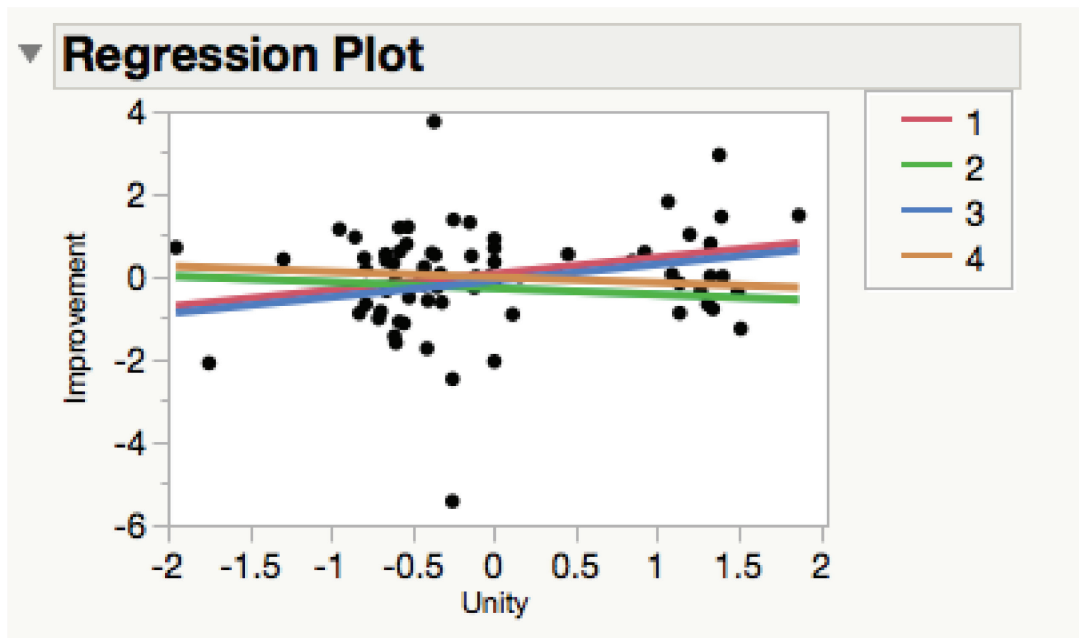


Figure 4.6: Regression plot of Unity of Purpose vs. Culture of School Improvement with all four schools.

Summary

This chapter included findings from the multiple analyses conducted in the study in an attempt to answer the research question. To define culture, three new dependent variables were constructed based on the results from the PCA and the factor analysis. The variables were relabeled and regrouped and the theoretical framework was adjusted. After running the HLM it was found that nearly all of the variance was being explained by the residual or teacher level and not the school. As such, stepwise multiple regression was selected as a more appropriate method of analysis. Results from the stepwise multiple regression suggest that Unity of Purpose was the only significant factor in predicting Culture of Learning Partnerships. Using one final method of analysis, a regression plot, the relationship of leadership and culture was plotted for the four schools

using Unity of Purpose as the Independent Variable and all three dependent variables, Culture of Learning Partnerships, Culture of Collegiality, and Culture of School Improvement.

CHAPTER FIVE

DISCUSSION AND IMPLICATIONS

Introduction

The purpose of this study was to examine the effect of leadership on school culture. This chapter includes a discussion of findings from the study. Findings of this study will be situated in existing literature. Using a post hoc test, the indirect effect of leadership and culture on teacher retention and student achievement will be examined in this chapter. Finally, recommendations for practice are offered as well as suggestions for future research

Summary of the Study

The research question posed in this study was does school leadership as defined as Collaborative Leadership and Unity of Purpose predict school culture as defined as Teacher Collaboration, Professional Development, Collegial Support and Learning Partnerships? As described in the literature review, repeated calls for improved outcomes for students have resulted in new models of leadership in schools. Culture was identified as a school improvement strategy. Of particular interest is the culture of high performing, high poverty schools. School culture has been shown to be a major component of success at the school, teacher and student level (Creemers & Kyriakides, 2010 and Yahaya, Yahaya, Ramli, Hashim & Zakariya, 2010).

Based on the review of relevant literature, a theoretical framework was created and used to write the research hypothesis. Data for the study was collected from four elementary schools in one school district in the upstate of South Carolina. In these four

schools 111 teachers were asked to complete the 35 item Likert-scale School Culture Survey developed by Gruenert and Valentine (1998). Data analysis included principal component analysis, factor analysis, hierarchical linear modeling, and stepwise multiple regression. Results from the principal component analysis and factor analysis of the independent variables resulted in no change in those variables. As such, the leadership predictor variables included in the study were identified as Collaborative Leadership and Unity of Purpose.

Results from the principal component analysis and factor analysis of the dependent variables measuring culture suggested changes to the number of factors to be included in the study. Based on patterns of responses on the survey, three new measures of culture were identified and labeled Culture of Learning Partnerships, Culture of Collegiality, and Culture of School Improvement. Due to the need to rename the dependent variables, a new theoretical framework was developed and the research question was revised to read does school leadership as defined as Collaborative Leadership and Unity of Purpose predict school culture as defined as Learning Partnerships, Collegiality, and School Improvement?

After the independent variables and dependent variables were identified, data analysis proceeded with hierarchical linear modeling. The small sample size coupled with the finding that all variation in responses were found at the teacher level led to the conclusion that a more appropriate method of analysis was required. As such, a stepwise linear regression was calculated. Results from the stepwise multiple regression are reviewed in this chapter and the results are situated in the literature base.

Research Question Answered with Statistical Support

The research question for this study was: does school leadership, defined as Collaborative Leadership and Unity of Purpose, predict school culture, defined as Culture of Learning Partnerships, Culture of Collegiality, and Culture of School Improvement? Results from the multiple analyses conducted in the study allowed me to conclude that Unity of Purpose is a significant predictor of Culture of Learning Partnerships. Therefore, leadership, as defined as Unity of Purpose is a predictor of culture, as defined as Learning Partnerships.

Initially an HLM was used to answer the research question, but found that this method was inappropriate because all three of the HLM models showed that 100% of the variance in responses was found in the residual. What this means is that there was no school level effect; all variation in responses was found at the teacher level.

Because the data were not nested, it was determined that a more appropriate method of analysis would be stepwise multiple regression. Results from the stepwise multiple regression suggested that Unity of Purpose a statistically significant predictor of Culture of Learning Partnerships. The stepwise test revealed that neither Poverty Index nor Collaborative Leadership were statistically significant predictors of a Culture of Learning Partnerships. The model explained 6.8% of the variance with a p -value of 0.026. The variance explained by the model was considered statistically significant.

Two other stepwise multiple regressions were calculated using the remaining two dependent variables Culture of Collegiality and Culture of School Improvement. None of the independent variables, Collaborative Leadership or Unity of Purpose were found to

be statistically significant predictors of Culture of Collegiality of Culture of School Improvement.

To further show how the leadership variable Unity of Purpose impacted each of the culture variables, Culture of Learning Partnerships, Culture of Collegiality, and Culture of School Improvement, regression plots were drawn graphing Unity of Purpose on the X Axis and Culture on the Y Axis. These graphs showed the results by school with mostly positive correlations. As Unity of Purpose increases, the culture variables also increased. This suggests that it is important for a leader to clearly establish a mission and to communicate that mission to all stakeholders. When a leader clearly articulates school goals and obtains buy-in from teachers, school culture improves.

The regression plots also revealed instances where there was a negative relationship between leadership and culture. For example, on the first regression plot Unity of Purpose was graphed against Culture of Learning Partnerships. Schools 2, 3, and 4 all showed a positive slope. However, School 1 showed a negative slope. This seems to say that as the leadership encouraged unity and shared purpose, the culture score for the school declined. This could be that the common goal differed from their own personal goals.

The second regression plot graphed Unity of Purpose with Culture of Collegiality. This graph showed a strong positive correlation for School 2 as compared to the others. This implies they work well together. School 3 had a slight positive slope as well. However, both School 1 and 4 had a negative slope. This explains that the teachers don't do well in working together as leadership encourages unity.

The third regression plot graphed Unity of Purpose versus Culture of School Improvement. Schools 1 and 3 had a positive correlation, explaining that the leadership and faculty both are working towards overall school improvement. Schools 2 and 4 had a negative slope. This predicts that the faculty's perception of leadership is not congruent with their own for school improvement.

The stepwise multiple regression and regression plots all showed, in different ways how school leadership predicts school culture. This concept has repeatedly appeared in the literature. Specifically so with Leithwood and Beatty (2008) who stated, "the efforts or behaviors of those providing leadership are among the most powerful direct sources or influences on teachers' working conditions and both direct and indirect sources of influence on teacher emotions" (p. 11). As noted in the literature review, research exists that demonstrates that leadership impacts culture and that culture has been suggested as a school improvement strategy. Deal and Peterson (1990) argued that research across different kinds of organizations, including schools, suggests that organizations perform best when people are committed to commonly held values and beliefs. When commitment increases, individuals become bonded to one another and to the organization by key symbols. Principals can encourage a strong culture that improves education by articulating these values and by using effective symbols (Deal & Peterson, 1990). Because this study found a relationship between leadership and culture, an examination of the literature on culture and teacher retention and culture and student achievement shows final conclusions focused on how the leader can impact culture and therefore improve performance.

Retention and Achievement

As noted by Deal and Peterson (1990), the culture of an organization can impact performance. The authors argued that there is reason to believe that just as improved culture impacts high performance in business, the same expectations can be set for educational institutions. Deal and Petersen (1990) drew comparisons between the literature on school culture and effective schools and concluded that effective organizations have a strong culture with shared ways and values of how things are done; leaders who embody core values; widely shared beliefs about the mission; employees who represent core values; ceremonies, traditions and rituals centered on events; balance between innovation and tradition, autonomy and authority; and employee participation in decisions about their own work.

Because teachers have been identified as the most important school level resource that predicts student achievement, the recruitment and retention of quality teachers becomes of paramount importance. Improving culture by clearly stating a mission for the school and allowing teachers to interact with one another to improve their skills and take ownership of programs to achieve the mission of the school is seen as an important strategy to improve schools. The results from this study suggested that leadership does predict school culture. To situate the findings in the current literature, a brief review of the relationship between culture and teacher retention and culture and student achievement is offered.

Teacher Retention

As noted in the literature review, current education policy in the United States is focused on school improvement and enhanced student performance for all children. In order for each student to receive the opportunity for a high-quality education, high-quality teachers must be recruited and retained. The issue of recruitment was examined by Baker-Doyle (2010). Her work used a labor market perspective, defined as financial and human capital incentives, to attract and retain high quality teachers. Baker-Doyle (2010) specifically named financial incentives such as larger base pay, bonuses, and tuition reimbursement to lure and keep teachers in schools. Alternatively she found that the bonuses were a good recruitment tool, but lacked stability for retaining teachers.

The human capital part of recruitment, according to Baker-Doyle (2010) included changes to entry requirements for people interested in becoming teachers as well as a provision that would allow individuals to use professional experience as viable resource to use in the classroom for temporary replacement of teaching credentials as they work toward certification. An example of how this policy might work is South Carolina's Program of Alternative Certification for Educators or PACE. This program was designed to recruit people who have not have not completed a traditional four-year teacher education program but have spent years in business or industry. This allows South Carolina to recruit teachers and put them through a three-year training program for full licensure while teaching in their content area (South Carolina Department of Education, 2016).

Gujarati (2012) stated that teacher retention has become a national crisis that is not limited to the recruitment of highly qualified teachers; a plan must be in place to keep these teachers in the classrooms. The most common tools used to combat teacher attrition are induction programs and mentoring. Over the years the two terms have been used synonymously since most induction programs rely heavily on mentoring. Smith and Ingersoll (2004) defined mentoring as “the personal guidance provided, usually by seasoned veterans, to beginning teachers in school” (p. 683). “Teachers’ organizational commitment was mainly related to teachers’ perceptions concerning the cooperation of the leadership team and the support received from the leadership team” (Hulpia, Devos, & Van Keer, 2010, p. 47). A similar study conducted by Hulpia, Devos and Rosseel (2009) revealed that a cohesive leadership team and the maximum possible amount of teacher support from that team are critical variables associated with job commitment and satisfaction.

Another administrator-supported activity is using mentors and a school or district level induction program. “Induction refers to a program provided to a beginning teacher that includes professional development that is specific to beginning teachers. Many induction programs include the assigning of a mentor” (Conway, Krueger, Robinson, Haack, & Smith, 2002, p. 9). “It is the responsibility of the mentoring program to provide knowledgeable mentors who will engage in the clinical supervision of prospective teachers; and to provide future teachers with the appropriate content knowledge necessary for teaching any and all subjects covered in school today” (Kent, Feldman, & Hayes, 2009, p. 75).

Kent, Feldman, and Hayes' (2009) research on a mentor teacher program showed positive results upon completion of the mentoring program. In their study, first year teachers reported that they "felt better prepared to meet the challenges of today's students;" the authors concluded "these first year teachers are very much ahead of traditional first year teachers" (p. 87). Smith and Ingersoll's (2004) study stated that their "analysis found a strong link between participation in induction programs and reduced rates of turnover" (p. 706).

Attrition

Boe, Cook and Sunderland (2008) defined teacher attrition simply as "leaving employment." According to the TFS (Teacher Follow-up Survey) data for 2000-2001, 8.5% of public school teachers with one to three years of full-time teaching experience left teaching employment annually (Boe et al., 2008, p. 9). Based on this data, the estimated rate of attrition during the first three years was 25.5% (Boe et al., 2008, p. 9). When these numbers are coupled with the 30% yearly retirement rate (Boe et al., 2008), a significant gap is left in the teaching force.

Attrition, according to Johnson (2004), is defined as completely leaving the profession or changing schools as a result of several factors like: conflicts with principals, unfair assignments and challenging working conditions. Buchanan (2010) also identified workload as being a contributing factor to attrition. Attrition is expensive. "Turnover carries substantial financial costs associated with recruiting, hiring, inducting, and professionally training replacement teachers" (Fall, 2010, p. 76). These factors point to the necessity to retain teachers.

Ingersoll (2007) reported that 60% of teachers who leave their jobs indicated dissatisfaction with working conditions as their primary reason for leaving. One of the working conditions leading to teacher attrition was later defined as lack of support from school administration. Drago-Severson (2012) further claimed that healthy school climates can help to retain qualified principals and teachers by preventing burnout.

Ladd (2011) used surveys to investigate the gap between teacher attrition, school culture and student achievement. Ladd's conclusions found two resounding concepts that predicted teacher departures. One was leadership. The teachers' perceived quality of the leadership and the teachers' probability of attrition was negatively correlated. Simply stated, as the quality of the leadership decreases, the probability of the teachers leaving increases. Another highly predictive variable for teachers leaving according to Ladd (2011) was working conditions. Again, as perceived by the teachers, the working conditions and probability of departure were negatively correlated. Ladd said working conditions were defined as leadership, expanded roles, time factor, professional development, facilities, and evaluation. As the teachers' perceived that working conditions were deteriorating, the probability for attrition increased. Ladd (2011) concluded that working conditions were predictive of a teacher's motivation to stay or leave, but the dominant factor was the quality of the school leadership.

Ladd's (2011) findings of the quality of a school's leadership were consistent with a transformational model of leadership that she proposed. She was able to show the "correlations between the factors are such that when the leadership factor is eliminated from the planned departure models, many of the other factors emerge more clearly as

predictors of departure” (p. 256). This means “leadership works in part through providing opportunities for professional development, giving teachers more roles and providing time for collaboration and planning” (Ladd, 2011, p. 256). The predictors of teachers’ commitment have been linked to teacher efficacy by Tschannen-Moran and Barr (2004). One of the predictors that links teacher efficacy and commitment is having a shared responsibility in school decisions. It is important for teachers to have input in what and how things happen. When this occurs in schools, the teachers tend to form a more cohesive unit. “They roll up their sleeves and get the job done” (Tschannen-Moran and Barr, 2004, p. 47).

Student Performance

To stress the effect of collaborative leadership on student achievement, Terry Wilhem (2016) stated, “shared leadership empowers teacher leaders to begin, side-by-side with the principal, to shoulder the responsibilities for significant work toward improving student achievement, through the process of the principal’s modeling, co-planning, co-facilitating, and debriefing leadership experiences” (p. 26). The research done by Yahaya, Yahaya, Ramli, Hashim and Zakariya (2010) found that there is a significant relationship between a school’s formal culture and learning style with students’ academic performance. This research was a descriptive survey about the relationship between school culture and student learning styles to student’s academic performance. “It is expected that school-level factors influence the teaching-learning situation by developing and evaluating the school policy on teaching and the policy on creating a learning environment at the school” (Creemers & Kyriakides, 2010, p. 264).

The relationship of leadership to student achievement is also articulated by Helderbran (2010), who argued, “sustained, effective school leadership substantially strengthens student achievement” (p. 364). “Leaders are almost always responsible for improving the technical core of their organizations’ work; in the case of school leaders, an unrelenting demand to focus on improving the achievement of all students make contemporary school leaders’ attention to instructional quality the highest priority for their work” (Sun & Leithwood, 2012, p. 440). Establishing collaborative and congenial working relations with administrators and teachers and nurturing teacher-teacher relationships through support of professional learning communities has been found to be effective in closing the achievement gap for learners (Leithwood, 2010). Similarly, Adeogun and Olisaemeka (2011) found that school climate could directly influence school performance.

To summarize this section and further show the leaders’ impact on student achievement Perilla (2014) discussed research done by Robert Marzano; “60 percent of the impact a school has on its students’ academic achievement is the direct result of efforts by teachers and principals, and of that, 25 percent of the school’s academic achievement depends solely on the principals actions. This means a single person can determine one-fourth of a school’s overall impact on students” (p. 61).

Post Hoc Test

Based on the literature on the relationship between culture and teacher retention and culture and student achievement, a post hoc test was conducted to determine the relationship of culture with teacher retention and student achievement in the district under

study in order to draw conclusions for practice and future research. In order to conduct the post hoc test, the raw data from excel was analyzed. Responses from the survey were on a 5 point Likert scale, with 1 being strongly disagree and 5 being strongly agree for each question.

The question responses were averaged for each of the variables for each school.

The questions were grouped by variable as seen in Table 5.1.

Table 5.1. Survey questions grouped by variable used in post hoc average test

Collaborative Leadership	<ul style="list-style-type: none"> • Leaders value teachers’ ideas • Leaders in this school trust the professional judgments of teachers • Leaders take time to praise teachers that perform well • Teachers are involved in the decision-making process • Leaders in our school facilitate teachers working together • Teachers are kept informed on current issues in the school • My involvement in policy or decision making is taken seriously • Teachers are rewarded for experimenting with new ideas and techniques • Leaders support risk-taking and innovation in teaching • Administrators protect instruction and planning time • Teachers are encouraged to share ideas
Unity of Purpose	<ul style="list-style-type: none"> • Teachers support the mission of the school • The school mission provides a clear sense of direction for teachers • Teachers understand the mission of the school • The school mission statement reflects the values of the community • Teaching performance reflects the mission of the school
Culture of Learning Partnerships	<ul style="list-style-type: none"> • Teachers have opportunities for dialog and planning across grades and subjects • Teachers spend considerable time planning together • Teachers take time to observe each other teaching • Teachers work together to develop and evaluate programs and projects • Teaching practice disagreements are voiced openly and discussed • Teachers regularly seek ideas from seminars, colleagues, and conferences • Teachers trust each other • Teachers are willing to help out whenever there is a problem • Teachers’ ideas are valued by other teachers • Teachers work cooperatively in groups • Teachers and parents have common expectations for student performance

	<ul style="list-style-type: none"> • Parents trust teachers’ professional judgments • Students generally accept responsibility for their schooling, for example they engage mentally in class and complete homework assignments
Culture of Collegiality	<ul style="list-style-type: none"> • Teachers are generally aware of what other teachers are teaching. • The faculty values school improvement
Culture of School Improvement	<ul style="list-style-type: none"> • Teachers maintain a current knowledge base about the learning process • The faculty values school improvement • Teachers and parents communicate frequently about student performance.

The question responses were averaged and then grouped by school and school level factor. These data appear in Table 5.2.

Table 5.2. Post hoc question analysis and school grouping from raw data

	School 1	School 2	School 3	School 4
Collaborative Leadership	4.09	3.87	4.23	4.04
Unity of Purpose	4.39	4.06	4.39	4.37
Culture of Learning Partnerships	3.60	3.59	3.91	3.86
Culture of Collegiality	4.09	4.03	4.14	4.29
Culture of School Improvement	3.76	4.02	4	4.06
Poverty Index	81.3	64.3	52.1	76.2
ACT Aspire Math Scores	42.4	60.4	56.5	57.3
Retention Percentage	75.7	87.8	75.9	96.5

To briefly summarize the results from the original analysis, Unity of Purpose was found to be a statistically significant predictor of a Culture of Learning Partnerships. No difference was found across schools in any of the dependent or independent variables

except for Unity of Purpose. According to the results from the HLM, no variance was explained at the school level; the only differences in responses were found the teacher level. According to the data in Table 5.2, differences exist in the demographics of the schools as well in measures of student achievement. In examining the data in Table 5.2, it is important to remember that there is new leadership in Elementary School 1 which could be the cause of the difference in culture score when compared with the other three elementary schools.

To better understand the data presented in the post hoc analysis, a Pearson correlation was done. A Pearson correlation is the appropriate measure of correlation when variables are expressed as scores. Findings from the Pearson correlation added to the understanding of the relationship between leadership and culture as well as the relationship between culture and retention and culture and achievement. Further, the Pearson correlations confirmed other findings.

A negative relationship was found to exist between poverty and test scores ($r = -0.61$); the relationship was not found to be statistically significant at the $p \leq .05$ level. This suggests that as poverty increases, the test scores would decrease. The stepwise multiple regression also explained that poverty did not predict culture. Poverty was not statistically significant in relation to teacher retention, but had an $r = 0.27$. With this slight positive relationship, retention slightly increases with poverty. There was also a positive relationship of Unity of Purpose and poverty with an $r = 0.19$. These two results help explain that poverty doesn't predict culture in these cases; it's the leader setting the direction that overcomes poverty (Almay & Tooley, 2012). One important factor that

was found in high poverty high achieving schools was a clearly defined goal of high expectations for teachers and students.

One of the more interesting findings in the Pearson correlation was that the Poverty Index had a negative relationship with Collaborative Leadership ($r=-0.30$). This suggests means that as poverty increases, collaborative leadership decreases. Results from the study suggest that leaders have done a good job setting direction and obtaining consensus from stakeholders on the mission of schools but that work needs to be done on building a culture of collaborative leadership, especially in schools with higher concentrations of poverty. Strategies to accomplish this would include involving teachers in decision making in the building, increasing time for planning, and facilitating the creation of relationships build upon trust.

Conclusions from this table are well supported in the literature. First, School 1 had the lowest score in the culture variable and also had the lowest retention percentage. Alternatively, School 4 scored the highest average in the culture variables and had the highest percentage of retention. According to Collie, Shapka and Perry (2011), “teachers who feel greater well being in their teaching may have a greater commitment to the profession” (p. 1045).

Another finding from this table that is supported by the literature is that culture predicts both teacher retention and student achievement. Adeogun and Olisaemeka (2011) found that school culture had a direct influence on school performance. Schools 2 and 4 both had the highest retention percentages and they both had the highest ACT Aspire Math scores.

In summary, leadership predicts culture, culture predicts teacher retention, and teacher retention predicts student achievement. Helterbran (2010) summarized it simply as “sustained, effective school leadership substantially strengthens student achievement” (p. 364).

Implications for Practice and Future Study

As noted, one limitation of the current study was the sample size. The study must be replicated in a larger school district containing more schools in order to analyze the data using hierarchical linear modeling. In so doing, it would be more likely to find differences across schools. Using hierarchical linear modeling to study the relationship between leadership and culture could help the researcher to better explain the relationship between these two constructs of nested variables. It’s also important to note that the results from this study are not generalizable; they are representative of this small district in the upstate of South Carolina. Teachers in this study had different definitions of school culture. Overwhelmingly, teachers in the district defined culture as Learning Partnerships. Their responses revealed similar patterns in answering questions focused on collaboration, problem solving, support for one another, and communication. Absent from conversations about culture were questions about professional development and creating a culture of improvement focused on the instructional process. A larger sample might yield a different grouping of the questions and allow for varied definitions of culture that were more aligned with the variables as defined by the creators of the survey. Different definitions of culture could lead to different findings with regard to the importance of leadership and creating a positive culture.

A larger sample would also eliminate the bias that resulted from the leadership change in one of the elementary schools. Recalling that the principal in Elementary School 1 was a first year principal is important. This leader was only in the building for six months at the time that the survey was administered. The scores on culture were correlated with performance measures from the previous year which may account for the negative relationship between culture and student achievement.

In terms of practice, results of this study suggest that the most important behavior of a leader is to set direction; this finding is supported by the literature. (Leithwood & Beatty, 2008). As defined by the survey, Unity of Purpose included establishing a mission, clearly communicating the mission to teachers, gaining stakeholder buy-in of the mission and teaching performance matches the mission of the school. We know that collaborative leadership matters although we didn't find it in this study due to the small sample. We know from the literature that Collaborative Leadership is viable for a healthy school and teacher efficacy (Arbabi & Mehdinezhad, 2015 and Heck & Hallinger, 2010). However, there was a negative correlation between collaborative leadership and poverty – in those schools the leader needs to focus on; valuing teachers' ideas, trusting the professional judgment of teachers, praising teachers that perform well, involving teachers in decision-making, facilitating teachers working together, keeping teachers informed about current issues, rewarding teachers for experimenting with new ideas and techniques, supporting risk-taking and innovation in teaching, and protecting instruction and planning time.

Summary

This chapter included a discussion of the results of the study. Study results were situated in the literature in order to inform findings. The research question was answered using results from multiple methods, supported and confirmed by the literature. As a result of the findings of the study, a new model for how leadership impacts culture was proposed. Because collaborative leadership was not found to be a predictor of culture in any of the analyses conducted in the study, one final post hoc analysis was conducted using descriptive statistics. The descriptive statistics confirmed the relationship between leadership, culture, and student achievement.

APPENDICES

APPENDIX A

School Culture Survey

School Culture Survey

Indicate the degree to which each statement describes conditions in your school.

Please use the following scale:

1=Strongly Disagree 2=Disagree 3=Undecided 4=Agree 5=Strongly Agree

		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1.	Teachers utilize professional networks to obtain information and resources for classroom instruction.	①	②	③	④	⑤
2.	Leaders value teachers' ideas.	①	②	③	④	⑤
3.	Teachers have opportunities for dialogue and planning across grades and subjects.	①	②	③	④	⑤
4.	Teachers trust each other.	①	②	③	④	⑤
5.	Teachers support the mission of the school.	①	②	③	④	⑤
6.	Teachers and parents have common expectations for student performance.	①	②	③	④	⑤
7.	Leaders in this school trust the professional judgments of teachers.	①	②	③	④	⑤
8.	Teachers spend considerable time planning together.	①	②	③	④	⑤
9.	Teachers regularly seek ideas from seminars, colleagues, and conferences.	①	②	③	④	⑤
10.	Teachers are willing to help out whenever there is a problem.	①	②	③	④	⑤
11.	Leaders take time to praise teachers that perform well.	①	②	③	④	⑤
12.	The school mission provides a clear sense of direction for teachers.	①	②	③	④	⑤
13.	Parents trust teachers' professional judgments.	①	②	③	④	⑤
14.	Teachers are involved in the decision-making process.	①	②	③	④	⑤
15.	Teachers take time to observe each other teaching.	①	②	③	④	⑤

- | | | | | | | |
|-----|---|---|---|---|---|---|
| 16. | Professional development is valued by the faculty. | ① | ② | ③ | ④ | ⑤ |
| 17. | Teachers' ideas are valued by other teachers. | ① | ② | ③ | ④ | ⑤ |
| 18. | Leaders in our school facilitate teachers working together. | ① | ② | ③ | ④ | ⑤ |
| 19. | Teachers understand the mission of the school. | ① | ② | ③ | ④ | ⑤ |
| 20. | Teachers are kept informed on current issues in the school. | ① | ② | ③ | ④ | ⑤ |

Please continue on the back of this survey.



- | 1=Strongly Disagree 2=Disagree 3=Undecided 4=Agree 5=Strongly Agree | | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|---|--|-------------------|----------|-----------|-------|----------------|
| 21. | Teachers and parents communicate frequently about student performance. | ① | ② | ③ | ④ | ⑤ |
| 22. | My involvement in policy or decision making is taken seriously. | ① | ② | ③ | ④ | ⑤ |
| 23. | Teachers are generally aware of what other teachers are teaching. | ① | ② | ③ | ④ | ⑤ |
| 24. | Teachers maintain a current knowledge base about the learning process. | ① | ② | ③ | ④ | ⑤ |
| 25. | Teachers work cooperatively in groups. | ① | ② | ③ | ④ | ⑤ |
| 26. | Teachers are rewarded for experimenting with new ideas and techniques. | ① | ② | ③ | ④ | ⑤ |
| 27. | The school mission statement reflects the values of the community. | ① | ② | ③ | ④ | ⑤ |
| 28. | Leaders support risk-taking and innovation in teaching. | ① | ② | ③ | ④ | ⑤ |
| 29. | Teachers work together to develop and evaluate programs and projects. | ① | ② | ③ | ④ | ⑤ |
| 30. | The faculty values school improvement. | ① | ② | ③ | ④ | ⑤ |
| 31. | Teaching performance reflects the mission of the school. | ① | ② | ③ | ④ | ⑤ |
| 32. | Administrators protect instruction and planning time. | ① | ② | ③ | ④ | ⑤ |
| 33. | Teaching practice disagreements are voiced openly and discussed. | ① | ② | ③ | ④ | ⑤ |




- | | | | | | | |
|-----|--|---|---|---|---|---|
| 34. | Teachers are encouraged to share ideas. | ① | ② | ③ | ④ | ⑤ |
| 35. | Students generally accept responsibility for their schooling, for example they engage mentally in class and complete homework assignments. | ① | ② | ③ | ④ | ⑤ |

Steve Gruenert and Jerry Valentine, Middle Level Leadership Center, University of Missouri, 1998.
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APPENDIX B

Permission to use the School Culture Survey

RE: Permission to use SCS requirements Inbox x  

 **Steve Gruenert** <Steve.Gruenert@indstate.edu> 12/8/15 ☆  

to me, Jerry, Robert ▾

Thank you for taking the time to complete the form.

We wish you good luck with your study.

You have permission to use the instrument.

thanks

Steve Gruenert
Chair, Educational Leadership
Indiana State University
[812-237-2902](tel:812-237-2902)

From: Matthew Piotrowsky [mpiotrow@anderson4.org]
Sent: Tuesday, December 8, 2015 8:37 PM
To: Steve Gruenert; Jerry Valentine
Cc: Robert Knoeppel
Subject: Permission to use SCS requirements

Dr. Valentine and Dr. Gruenert,

Please find the attachment containing the listed requirements for using the SCS. I look forward to hearing back from you soon. Let me know if you need any more information.

Thank you and Sincerely,

Matt

--
Matthew Piotrowsky
8th Grade Math
Co-Athletic Director
Assistant Football C-Team

Figure B-1: Screen shot of the email confirming permission to use the survey

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