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THE EFFECT OF THE FOUR QUADRANTS OF THE COMPETING VALUES
FRAMEWORK ON ELEMENTARY SCHOOL STUDENT ACHIEVMENT

by

Darren Wayne Walker

A Dissertation

Submitted in Partial Fulfillment of the

Requirement for the Degree of

Doctor of Education

Major: Leadership and Policy Studies

The University of Memphis

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Dedication

This dissertation is dedicated to my family. First, I want to thank my wife, Rebecca, for the love and support she gave through this endeavor. I know there were countless nights spent getting Emma, Carter, and Ava to bed without my support. I am looking forward to spending quality time with you and the kids. Thank you for allowing me to follow my dreams and God's direction for my life.

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Next, I want to thank my in-laws, John and Penny Stockstill, thank you for allowing my family to come to Oklahoma without me for the last several years. I am deeply indebted to you for your love and support throughout my journey.

Finally, I want to thank my Lord and Savior, Jesus Christ, for his direction and guidance in my life. If it was not for your interference in my life, I would be on a golf course somewhere working when others were on vacation. Because of You, I have truly found my calling in life and that is to serve in the education world.

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ABSTRACT

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The purpose of this study was to explore the relationships between longitudinal assessments of student achievement at 1187 elementary schools and educators' perceptions of the manner in which their school resolves the "organizational tensions, trade-offs, and conflicts" (Cameron, Quinn, DeGraff, & Thakor, 2006, p. 50) embodied in the Competing Values Framework (CVF). With this end in view, some 24 items were selected from the 2013 state-wide administration of the *Teaching, Empowering, Leading, and Learning* survey in Tennessee (*TELL Tennessee*) and used to represent the eight organizational functions residing in the four quadrants of the CVF. After aggregating person-level observations to that of the institution, the result was merged with information pertinent to student and faculty demographic characteristics and with archived Tennessee Department of Education student achievement data in reading and in mathematics, averaged over three years.

In the five sets of multiple regression analyses subsequently conducted, student demographic characteristics proved to be the most important factors in explaining variation in student achievement, whether measured as three-year averages of students' NCE scores in reading and mathematics or as three-year averages of the percent of students proficient in reading and mathematics. Although higher levels of faculty tenure regularly emerged as a statistically significant, if only slight, influence on student outcomes, no such influence was observed with respect to higher levels of faculty experience.

Over and above these background variables, the Competing Values Framework (CVF) profiles concerning 'balance,' 'stability,' an "external" orientation, and a disposition towards

“rational goals” were all associated with higher NCE scores, but only the CVF “balance” profile was statistically significantly linked to student proficiency scores. While the findings concerning “balance” were consistent with standard CVF expectations and prescriptions, those concerning a disposition towards higher NCE scores and “rational goals” were seen to resonate with the educational reformist literature on magnet schools, charter schools, and the adoption of comprehensive school reform models. Common to all of these strategies is the intent to leverage school improvement by endowing schools with a visible focus and lending their instructional programs a greater coherence.

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Chapter One

Introduction

Emergence of the Problem

During the 1970's and 1980's, schools and school systems began to feel increased pressure for accountability, better leadership, and reform efforts articulated down from the national level. The greater call for accountability has lead practitioners and policy makers to examine research and evidence on best practices in education. In the United States, The What Works Clearinghouse was established in 2002 by the United States Department of Education under the Institute of Education Sciences to help make decisions based on past research evidence to help increase student achievement (Institute of Education Sciences, 2017). In the state of Tennessee, during the early 1990s, Governor Ned McWherter signed the Education Improvement Act (EIA) into law, which included a major increase in funding for education (Sanders & Horn, 1998). With this increase in funding for education, politicians in Tennessee wanted a way to hold school systems, schools, and teachers accountable for student academic achievement. The Tennessee Value-Added Assessment System (TVAAS) was developed to increase accountability and determine school and teacher effectiveness (Sanders & Horn, 1998). The most recent National Assessment of Educational Progress (NAEP) indicated that Tennessee is not measurably different than the national average in mathematics (241 vs. 240) for fourth grade students. Reading (219 vs. 221) and science (157 vs. 153) also do not have a noticeable measureable difference while above the state average (National Center for Education Statistics, 2017). Writing is below the state average (149 vs. 153) (NCES, 2017). Using this data, elementary school achievement in the state of Tennessee is not measurably different than the rest of the United States. The Program for International Student Assessment (PISA) presents a

different story for the United States. Data for the United States on PISA indicated that the United States' fifteen-year-old students fall behind other countries in mathematics literacy, science literacy, and reading literacy. The U.S fell behind twenty-seven other countries and two states in mathematics. The U.S fell behind twenty-two countries and two states in science literacy. The U.S fell behind nineteen countries and two states in reading literacy (NCES, 2017).

The results from the NAEP indicated that Tennessee fourth graders performed acceptably compared to the rest of the nation, but twelfth grade results were below the national average. The PISA confirmed that the United States students' trends did not have significant variations in all three categories of fifteen-year-old students. The decline in student achievement dates to 1977 when the Scholastic Aptitude Test disclosed a decline in student achievement (Dove, Pearson, & Hooper, 2010). This decline in achievement caused the government to connect student achievement to federal dollars (Ruddy & Prusinki, 2010). According to Ruddy & Prusinki (2010), the 1003 (g) School Improvement Fund was developed under NCLB that provided monetary assistance to schools to improve student achievement.

Exploring Academic Achievement in Elementary School

Increasing elementary school achievement is perceived as having the “greatest incremental impact on achievement” (Brookover, Schweitzer, Schneider, Beady, Flood, & Wisenbaker, 1978, p. 302). Recent studies have focused on school size, family factors, cognitive ability, personality, and attitude impact on student academic emphasis and achievement (Neuenschwander, Cimeli, Rothlisberger, & Roebbers, 2013 and Jones & Ezeife, 2011); however, the effects of school organizational conditions (i.e., culture/climate) on elementary school achievement were still unclear. School effectiveness researchers continued to examine the impact of teacher and school factors on student achievement while controlling for students'

socioeconomic backgrounds (Wilms, 2010). Much of the research published to date have been focused on teacher qualifications on student achievement, with little focus on the organizational properties related to school effectiveness or elementary school achievement (Cohen, McCabe, Michelli, & Pickeral, 2009 & Wilms, 2010). The TVAAS model found that student achievement across the whole school for students in third through eighth grade was not related to racial composition, free & reduced lunch percentage, or mean achievement level of the school (Sanders & Horn, 1998). Examining elementary school organizational conditions that influence student achievement was important for assessing the effectiveness of elementary schools. Unfortunately, there was a scarceness of research that examined the important dimensions of school organizational conditions aside from student socioeconomic backgrounds and there consequences on school productivity (Camburn and Han, 2011; Rindermann and Thompson, 2013). This proposed study seeks to address the gap in literature on organizational conditions effecting student achievement.

Previous Research Related to the Problem

The various aspects of working conditions that can have an impact on elementary school achievement have been displayed in many studies. The studies have presented that administrative support, administrative leadership, parental support, student behavior, school climate, teacher autonomy, teacher control, and efficacy were significant factors on student achievement (Brookover, et al., 1978; Cohen, McCabe, Michelli, & Pickeral, 2009; Pianta, Belsky, Vandergrift, Houts, & Morrison, 2008; Thapa, Cohen, Guffey, & D' Alessandro, 2013). Darling and Hammond (1995) suggested that teachers consider the classroom as the pivotal point in a school for student achievement but the involvement of the principals in the classroom was important. Ma and MacMillan (1999) claimed that teachers should view themselves as

contributors to the school as a whole since they influence student satisfaction beyond their individual classrooms. Johnson, Kraft, and Papay (2012) suggested that school improvement starts with the work environment. Research by Johnson et al. (2012) and Borman & Dowling (2008) found that teachers' work environment improved teachers' feelings towards their job and inspired them to contribute to the organization. These findings suggested that the school environment was important to the school as a whole, and the relationship among the educators within the school affected the behavior of each individual.

School climate and school improvement efforts have garnered the attention of The Center for Disease Control and Prevention, The Institute for Educational Sciences, and the U.S Department of Education. According to the National School Climate Council (2007), "A sustainable, positive school climate fosters youth development and learning necessary for a productive, contributive, and satisfying life in a democratic society" (p. 4). To fully analyze teachers' working conditions, research must include all components of school climate, from professional capacity to parent-school-community ties (Bryk, Sebring, Allensworth, Luppescu, & Easton, 2009). Research by Johnson et al. (2012) in Massachusetts found the impact of teaching and learning conditions on student academic achievement. Research by Ladd (2009) conducted in North Carolina, found that "working conditions variables contribute modestly to school-specific differences in student achievement across primary schools" (Ladd, 2009, p. 34). Ladd divided working conditions into five domains; of the five, school leadership was found to have the strongest factor of student mathematics achievement, while facilities and resources had the strongest factor on student reading achievement. Cohen et al. (2009) found that school climate is a powerful factor affecting student achievement. For a meaningful analysis of working

conditions, researchers must take into account the factors that make up a teacher's workplace, from the social and transformative to the concrete and transactional (Johnson et al., 2012).

Statement of the Problem

The School Improvement fund was developed to help school students be academically proficient (Ruddy & Prusinki, 2010). In 2011, the state of Tennessee received funding from the School Improvement fund to help increase student achievement (Ruddy & Prusinki, 2010). The funding was competition-based through the federal government. With the School Improvement funding, Tennessee developed First to the Top. The goal was to be the fastest improving state in the nation by 2015 and close the achievement gap while increasing overall student achievement (TN Department of Education, 2017). Perry (1908), Dewey (1916), and Durkheim (1961) suggested that the culture of the school affected student achievement.

With the increase in funding, school improvement efforts need to consider inter-teacher relations, teachers' influence on each other, and teachers' contributions to working conditions (Darling-Hammond & McLaughlin, 1995, Rosenholtz & Simpson, 1990). Working conditions are complex measurements. Many of the factors appeared in different domains but are related, which made it difficult to perceive the relationships of the variables. Recent studies demonstrated how changes in school climate, school processes, leadership, and school organization generated increases in school improvement (Rowan, 2002). These studies on working conditions have not captured the model of organizational effectiveness that represented the competing demands of elementary school performance. This study filled the gap in research by examining whether elementary school achievement measures were associated with

organizational culture profiles of the competing values framework (CVF), controlling for demographic and school characteristics.¹

The competing values framework was a general organizational model of effectiveness developed and used primarily in the business and management fields but was found to have positive applications in the educational sector (Cameron, Quinn, DeGraff, & Thakor, 2006). Competing Values Framework was widely accepted in the business sector but had limited empirical tests in the educational sector. The CVF, as it relates to teacher workplace conditions, was the primary focus of this study. School climate dimensions were recognized in organizational literature but have not been presented as a single conceptual framework or as a model measuring organizational effectiveness. This study attempted to complement prior studies on organizational culture effectiveness and organizational theory of Total Quality Management (TQM) to point out the importance of organizational culture to the effectiveness of schools.

Purpose of the Study and Research Questions

The purpose of this study was to explore the relationships between longitudinal assessments of student achievement at the elementary level and faculty perceptions of the way their school resolves the “organizational tensions, trade-offs, and conflicts” (Cameron et al., 2006, p. 50) embodied in the Competing Values Framework (CVF). Represented by responses to two dozen items selected from the 2013 state-wide administration of the *Teaching, Empowering, Leading, and Learning* survey in Tennessee (*TELL Tennessee*), the specific CVF dynamics under investigation were embedded in five research questions:

Research Question 1: Controlling for student and faculty characteristics, are there relationships between an elementary school’s exhibiting a “competing values” profile that is

¹ CVF is a widely-used multi-dimensional model of organizational effectiveness that has found its application to education research by way of school climate and working conditions.

² For more details, see TNDOE (2015). "Tennessee Educator Survey Report" is available at

balanced (three or four quadrant scores above the population mean) rather than unbalanced (two or fewer quadrant scores above the population mean) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Research Question 2: Over and above the influence of student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile that is more externally focused (upper and lower left quadrants) than internally focused (upper and lower right quadrants) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Research Question 3: Over and above the influence of student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile more oriented towards structure and control (lower left and right quadrants) than flexibility and openness (upper left and right quadrants) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Research Question 4: Over and above the influence of student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile more disposed towards achieving immediate results (lower-right quadrant) than evolving sustainable solutions (upper-left quadrant) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Research Question 5: Over and above the influence of student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile more inclined towards making incremental improvements (lower-left quadrant) than enacting transformational change (upper-right quadrant) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Significance of this Study

Policy makers investigated teachers' working conditions to help develop relevant policies for educators. Starting in 2011, the Tennessee Department of Education, along with other institutions, have devoted time and resources to implement a statewide survey that examined the working conditions of educators. The New Teacher Center (NTC) and the Tennessee Research Alliance at Vanderbilt University (TERA) were two organizations that administered surveys state-wide looking at licensed educators' perceptions of school climate, culture, and working conditions to help guide policy makers' discussions and decisions. For example, the results of the 2016 Tennessee Educator Survey revealed that 80% of teachers said that they liked being at their school, which is up from the 2014 survey but consistent with the 2015 survey. Eighty-six percent of teachers said that school leaders protect instructional time, up from 82% in 2014 and 84% in 2015. Seventy-eight percent of teachers said they feel appreciated, a slight increase from 77% in 2015, and 72% in 2014 (TNDOE, 2016).² Along with the Tennessee Educator Survey that is administered annually by the Tennessee Department of Education, the New Teacher Center also administers the *Teaching, Empowering, Leading and Learning (TELL)* survey. This survey was administered in 2011 and 2013 as part of the Race to the Top grant. In 2013, 61,341 licensed educators participated in the survey, answered questions on a variety of working conditions (New, Teacher, & Center, Reports for TELL TN 2013, 2013b)

Tennessee wanted to be the leading state in education, thus they have contracted with NTC to administer the *TELL* survey to licensed educators to understand their working conditions. Understanding the licensed educators' perspectives of their working conditions would help policymakers and practitioners develop the best practices to improve working

² For more details, see TNDOE (2015). "Tennessee Educator Survey Report" is available at http://tn.gov/assets/entities/education/attachments/data_survey_report_2015.pdf and <http://tndoe.azurewebsites.net/>

conditions. While the federal government's Elementary and Secondary Education Act (ESEA) supported states in establishing rigorous standards and assessments and developing accountability systems for schools, not much guidance has been provided on how to accomplish these objectives.

Limitations of this Study

The first limitation of this study was the dependence upon educators' self-reporting about their perceptions of organizational culture. According to Stone et al. (2000), self-reporting was prone to many types of responses such as bias and socially desirable responses, which may or may not have reflected upon individuals' actual behaviors. A propensity to give socially acceptable responses might be considered self-reported bias. A similar limitation was the study's reliance on survey data that was prone to unobserved differences across the educators being surveyed. This study does not know whether the teachers were reporting their honest perceptions about their workplace.

Organizational culture perceptions were thought of as measures of feelings or emotional states and were typically measured at a point in time. Teachers with different career aspirations viewed their working conditions differently, which can skew their job satisfaction. The study believed that teachers in special education classes, teachers with excessive loads, middle school teachers, and high school teachers have a powerful effect on teachers' perceptions of working conditions. The school-level aggregated data holds constant all other potential explanations. Likewise, the school level averages for each Competing Values Framework (CVF) item scale allows this study to examine measures of work context not influenced by reporting bias or individual differences (Boyd et al., 2011).

The second limitation of this study was the data used which was a snapshot of topically organized school climate responses. Responses could be compromised from the increase in teacher accountability. In Tennessee, a new teacher evaluation system Tennessee Educator Acceleration Model (TEAM) has provisions with direct implications for teacher satisfaction, such as measures of professional practice that aligned to student growth and achievement gaps. The alignment of growth and achievement to teachers has the potential for teachers to be dismissed for being ineffective according to the TEAM model. Because the state of Tennessee enacted the First to the Top Act of 2010, it required teacher evaluations and student achievement to be tied to teacher and school effectiveness, and implemented in 2011. The TELL survey data during that period might be skewed from this implementation.

Definition of Terms

Competing Values Framework (CVF)-assessment of organizational effectiveness as an exercise grounded in four quadrants: collaborate, compete, create, and control.

School Effectiveness-determined by the Tennessee Value-Added Assessment System.

Tennessee Comprehensive Assessment Program (TCAP)-Tennessee's testing program since 1988. Test are given in grades 3rd-11th in English, Mathematics, Social Studies, and Science. (TN DOE, 2017).

Tennessee Value-Added Assessment System (TVAAS)-is a statistical method to determine the effectiveness of a school systems, schools, and teachers in Tennessee (Sanders & Horn, 1998). It is based on students' academic growth over time.

Organization of this Study

This study is organized into five chapters. Chapter one is the introduction to the study. The chapter includes a background of the study, statement of the problem, purpose of the study,

research questions, significance of the study, limitations, delimitations, assumptions, theoretical framework, definition of terms, organization of the study, and summary.

Chapter two is a review of the relevant literature that relates to elementary school achievement and school organization factors, competing values framework (CVF) and related theories in organizational and school effectiveness, and the primary supporting theory that frames this research.

Chapter three is the proposed methodology. This chapter will display the data that was gathered from the research along with a description of the data, research instrument, reliability and validity procedures, and data analysis.

Chapter four presents an analysis of the data and findings of the study. The chapter is divided into five sections: study design, sample participants and demographics, quantitative findings, and answers to the research questions.

Chapter five will discuss the implications of the findings, provide suggestions for future research recommendations and then a conclusion.

Chapter 2

Review of Literature

The layout for this chapter is in sections that provide an overview of empirical studies that relate to elementary and middle school achievement and school working conditions, the intersections of competing values framework (CVF), and related theories in business, organizational, and school effectiveness, and the primary supporting theory (CVF) that frames this research.

Factors that Effect Elementary Achievement

The Coleman Report changed the way the schoolhouse was viewed from one of inputs to one of academic outputs (Hanushek, 2016). The report led scholars during the 1960's and 1970's to believe that families had a stronger influence over students' academic achievement. This belief in student achievement did not consider the other organizational factors that help or hinder elementary school achievement.

The effectiveness of what matters on elementary school achievement is mixed. One body of research addressed the impact of the class size having a major impact on student achievement (Schanzenbach, 2011). The Student/Teacher Achievement Ratio (STAR) was a project that was commissioned in Tennessee during the mid 1980's that determined if class size matters (STAR Report, 2015). The STAR project found that reducing elementary class size improved student achievement. Research by Pianta (2008) viewed classroom effects on elementary students' achievement. With most research on student achievement focused on class size, teachers' level of education, and on teacher-student and/or student-student interactions, Pianta found that social interactions and instructional interactions affected student achievement. The more positive the interaction, the greater the student achievement. Feyter, Caers, Vigna, & Berings (2012)

examined the big five personality traits that affect academic performance (neuroticism, extraversion, openness, agreeableness, and conscientiousness), focusing mainly on conscientiousness and neuroticism. Furnham & Mosen (2009) studied the effects of personality traits on academic performance. Another body of research declared that the educational climate (belief systems, values, shared meanings) influenced elementary school students' cognitive, social, and psychological development (Anderson, 1982). This type of research led to school effectiveness studies.

School Effectiveness Research

School effectiveness research has evolved through five stages. School effectiveness research began after a report was commissioned by Congress in the Civil Rights Act of 1964, and has continued to evolve year after year (Alexander, 2016). The report commissioned was the Coleman Report and sought to find if schools in the south, mainly minority schools, were devoid of proper resources needed for students' academic success. The report's evidence found that some questions that were posed were answered but revealed new questions that needed to be asked. School improvement research began after the Coleman Report, which "inspired decades of research on school effects" (Alexander, 2016, p. 1). Coleman and Jenck's research concluded that schools have little to no impact on student achievement compared to students' own ability and social background (Reynolds, Sammons, De Fraine, Van Damme, Townsend, Teddlie, & Stringfield, 2014).

The second stage of school effectiveness research started during the 1980's and used multilevel methodologies which began to demonstrate the stability of school effects over time. During this stage, researchers began to look at background characteristics more. The third stage began during the 1990's. The emphasis during this time explored why schools had different

effects on students. Teddlie and Stringfield (1993) conducted an influential study that observed subject-specific departments' effects on student achievement and on school achievement.

The fourth stage was at work presently bringing researchers from two different fields together to study school effectiveness. The researchers developed theories and theoretical methods that look at the moving parts of the educational system working together (Reynolds, et al., 2014). The fifth stage wanted to understand education as fluid, not static. Researchers in this stage wanted to understand the working parts of the educational system working together. The working parts will help researchers develop new analysis to help comprehend relationships not seen in the past.

The Coleman Report started the school effectiveness research and in the last twenty-five years has increased interest in school effectiveness with focus on students' learning outcomes and how they differentiate from the expected performance level (Reynolds, et al., 2014). Research on school effectiveness during the 1980's found that improvement happened at the school level, not at the district level (Hopkins, Harris, Stoll, & MacKay, 2011). Recent research began to focus on student achievement and absolute school effects. School effectiveness researchers' increasing interest in this area was to help inform practitioners and policy makers about best practices. In the 1980's, Tennessee implemented the Tennessee Value-Added Assessment System (TVAAS) to help determine the effectiveness of school systems, schools, and teachers (Sanders & Horn, 1998). Research conducted on TVAAS has indicated numerous times that student achievement was most closely entwined to teacher effectiveness. School effectiveness researchers suggested using two or more data points to measure school and student achievement and using a growth curve model over multiple points. Educational effectiveness researchers were interested in the stability between cognitive and noncognitive

outcomes. School effectiveness, according to Sanders & Horn (1998), Reynolds et al. (2014), and Hopkins et al. (2011), should not be based on one criterion but a combination of criteria. Reynolds et al. (2014) stated that when judging school effectiveness, researchers need to use data from several years over a variety of measures since school effects are stable over time. Research by Teddlie and Reynolds (2000) found that a school effectiveness evaluation based on one criterion only highlighted one aspect of schooling.

Recent research on the effectiveness of schools took into consideration teachers' shared values, attitudes, assumptions, ideologies, and norms that intertwined the school community. Research by Bryk (1996) and colleagues commissioned by the Consortium of Chicago School Research intended to identify the multidimensional aspects of school improvement. The basis of their theory for school organization and improvement was the level of instruction and the level of educational productivity within the classroom. Research by Mortimore et al. (1998) collected information on students, classrooms, and the students' individual background characteristics. From the study, (Mortimore, *The road to improvement: Reflections on school effectiveness*, 1998) (Mortimore, *School effectiveness and the management of effective learning and teaching*, 1993) identified teaching characteristics that were effective in increasing student achievement: teachers responsible for ordering activities during the day for students, students having responsibility for their work, students having independence to work in working sessions, teachers covering one curriculum concentration at one time, having interaction for the whole class was high, teachers providing ample and challenging work, having high levels of student involvement in the classroom, providing a positive atmosphere in the classroom, and teachers demonstrating to students high levels of praise and encouragement. Bryk, Sebring, Allensworth, Luppescu, & Easton (2009) identified four organizational dimensions from their research that impact student

achievement: professional capacity, school learning climate, instructional guidance, and parent/community factors. Each of these dimensions was well grounded in literature but often studied independent of each other. Edmonds (1979) and Reynolds et al. (2014) identified five characteristics that are effective in the educational landscape: strong leadership, emphasis on basic skill acquisition, orderly climate that facilitates learning, high expectations for student achievement, and frequent monitoring of students' progress. Strong effective leadership was firm, instrumentally oriented, and involved in student monitoring and staff replacement (Reynolds et al, 2014). Emphasis on basic skill acquisition demonstrated that teachers were focused on academic outcomes, maximizing learning time, grouping strategies, benchmarking students, and being attentive to students' needs (MacNeil, Prater, & Busch, 2009). An orderly climate that facilitates learning had a positive school and classroom culture, shared vision, positive reinforcement, professional development was site located and integrated with school initiatives. High expectations for student achievement was developed by having high expectations of students and teachers, getting parental involvement to help buffer negative influences, and promoting positive interactions. Frequent student monitoring was done at the school, classroom, and student levels (Witcher, 1993). These five characteristics according to Murnane (1981), Wilms (1986), and Edmonds (1979) were valid measures of the effectiveness of a school.

The elements above defined how to achieve organizational school effectiveness. Cohen et al. (2009) stressed the importance of a strong school climate as the driving force behind successful student achievement. A positive school climate has been found by many scholars to be the driving force that has led to organizational strategies that increased high performance within the schoolhouse.

Total Quality Management (TQM)

Total Quality Management (TQM) was a management approach first developed for the manufacturing sector and was recently applied to the service sector. TQM's focus was to improve products, services, and customer satisfactions (Calabrese & Corbo, 2015). According to Altunay (2016), "TQM is the total of management approach, philosophy, organizational structure, and methods" (p. 2127). TQM was a framework used by organizations to improve the quality of the services of the organization.

In 1949, Japanese scientists, engineers, scholars, and government officials came together to improve the quality of work in Japan (Powell, 1995). Deming, who was credited as the originator of TQM, but never gave his work this label, influenced their work. The Japanese, using the TQM model, developed innovations that helped increase the productivity of their manufacturing. They soon realized that TQM could be applied to other forms of management. In the early 1980's, several U.S businesses took notice of the progress made by the Japanese companies that had incorporated TQM model. Ford, Xerox, and Motorola were the first American companies to implement TQM (Powell, 1995). By the end of the 1980's, a major percentage of U.S manufacturing companies were implementing TQM into their practices.

An exhaustive review of TQM literature by Powell (1995) found twelve factors that were common to TQM: 1) committed leadership, 2) adoption and communication of TQM, 3) closer customer relationships, 4) closer supplier relationships, 5) benchmarking, 6) increased training, 7) open organization, 8) employee empowerment, 9) zero-defects mentality, 10) flexible manufacturing, 11) process improvement, 12) measurement. These factors work for the manufacturing sector, but when TQM was adopted by the education sector, a new approach was

needed. TQM applied to the education setting was a holistic approach, which needed the following seven factors: philosophy, vision, strategy, aptitudes, resources, rewards, and organization (Militaru, Ungureanu, & Chenic, 2013).

A crucial notion in TQM was a culture of continual improvement in the educational sector. A second notion was of the process used to put quality improvement into action (Sallis, 2002). TQM's primary focus was on the quality of the product. When a company focused on the quality of the product, they were continually improving the production system which helped increase the quality. This improvement focus moved an institution away from the short-term results to the long-term continual improvement. The Japanese called this long-term improvement *kaizen*, which means a step-by-step improvement (Sallis, 2002). At the core of *kaizen* was for employees to take projects on in small increments instead of large pieces. Change happened over time, not immediately. Research on TQM in the manufacturing sector found that successful implementation of TQM did not happen overnight, but companies continued to attempt to implement it with sweeping changes.

A hindrance to TQM in education was time. Policy makers in the education sector made sweeping changes to help them assess student achievement. Quality improvement in student achievement was a continual process and reflection of one's practices. For TQM to work in the education sector, it needed long-term commitment from administrators and teachers (Sallis, 2002). With this long-term commitment, a vision, strategic plan, and resources were needed for TQM to be successful for the long-term. When building a quality institution, Deming argued that everyone must be involved in the continuous learning and improvement commitment. TQM in the education sector's primary emphasis was on increasing student achievement. To

successfully implement TQM, Xingxing (2010) suggested that organizations needed to have an appropriate organizational culture.

Organizational Culture

People within an organization acknowledged that they were unaware of the culture of their organization (Denison, 1990). Only when the culture of an organization was challenged would it become apparent. When people were confronted, or challenged, they will make a conscious decision to change. This change involved addressing the core values that individuals adhere to. These core values were shaped by the culture of an organization. To understand organizational culture, one had to understand the difference between culture and organizational climate (Cameron & Quinn, 2011). The culture of an organization was the core characteristics, values, beliefs, and behavioral norms; whereas, climate was the attitudes, feelings, and perceptions of individuals within the organization.

Organizational and educational theorists have suggested that the most important thing for leaders was to pay attention to the culture of the organization (MacNeil et al., 2009). Studies have found that when the organizational culture was not cultivated, organizational initiatives would not succeed (Cameron & Quinn, 2011). Watson (2001) advised that if the culture of the school was not conducive to learning, then student achievement would suffer. The principals of the school were the ones responsible for initiatives in the schoolhouse; therefore, they were responsible for creating a culture of high expectations for teaching and learning within the schoolhouse. Rutter and Maughan (2002) described characteristics of the schoolhouses' culture to include behaviors, social and professional interactions, and their belief and value system. The most important advantage a company has is its organizational culture. The positive influence of

a shared organizational culture was discussed in literature but little research discussed the effectiveness of a prescriptive and holistic nature of organizational culture in elementary schools.

Empirical research has found that a positive organizational culture produces increased organizational performance (Cameron & Quinn, 2011; Denison, 1990; Kotter & Heskett, 1992). Cameron & Quinn (2011) stated that the culture of an organization was the social glue binding the organization together. Schien (1985) implied that organizational culture was the shared assumptions, values, and norms within the organization. Organizational culture research started in the early 1980's when scholars saw a need to pay attention to the culture of organizations (Cameron & Quinn, 2011). Organizational culture scholars have identified four dimensions that increase organizational effectiveness: adaptability, consistency, involvement, and mission (Cameron & Quinn, 2011; Denison, 1990; Zheng, Yang, & McLean, 2010). Cameron and Quinn (2011) implied that since culture described values, assumptions, interpretations, and approaches that defined an organization, then the four dimensions were a reflection of the four culture types. A framework that was developed by Quinn & Rohrbaugh (1983) that measured the overall organizational culture's effectiveness was the Competing Values Framework (CVF). The foundation for the CVF was the assumption that the four quadrants were competing in the organization (Cameron & Quinn, 2011). The four quadrants helped researchers define what people saw as the core values of the organization.

Competing Values Framework

The competing values framework was developed over twenty-five years as a strategic blueprint to help organizations develop a highly effective organizational performance. Competing values framework helped leaders to “identify a set of guidelines that can enable leaders to diagnose and manage the interrelationships, congruencies, and contradictions among

the different aspects of an organizations” (Cameron et al., 2006, p. 6). The research question that competing values research emerged from was based on the effectiveness of an organization (Cameron et al., 2006). From the research on competing values framework, two dimensions emerged that expresses the competing values that all organizations have. The first dimension was flexibility/control, which “differentiates an orientation toward flexibility, discretion, and dynamism from an orientation toward stability, order, and control” (Cameron et al., 2006, p. 8). The second dimension was internal/external, which “differentiates an orientation toward a focus on internal capability and the integration and unity of processes on the one hand, from an orientation toward a focus on external opportunities and differentiation from and rivalry with outsiders on the other hand” (Cameron et al., 2006, p. 9). Four main quadrants arose from the two dimensions. The first quadrant was the upper left quadrant that valued creation and performance criteria with an emphasis on internal organic focus (Cameron, et al., 2006). The second quadrant was the lower right quadrant that values creation and performance criteria with an emphasis on external control focus. The third quadrant was the upper right that valued creation and performance with an emphasis on external, organic focus. The fourth quadrant was the lower left that valued creation and performance with an emphasis on internal control. The four quadrants are labeled as collaborate (upper left), create (upper right), control (lower left), and compete (lower right). These quadrants were labeled based upon their most notable characteristics. The four quadrants also identified the four models of organizational effectiveness, which were human relations, open systems, internal processes, and rational goal (Figure 1).

	Individuality Flexibility	
	Long Term Change	New Change
Internal Positioning	<p>Culture Type: Human Relations</p> <p>Orientation: Collaborate</p> <p>Leader type: Facilitator Mentor Team builder</p> <p>Value Drivers: Commitment Communication Development</p> <p>Theory of Effectiveness: Human Development + high commitment = effectiveness</p>	<p>Culture Type: Open Systems</p> <p>Orientation: Create</p> <p>Leader type: Innovator Entrepreneur Visionary</p> <p>Value Drivers: Transformation Agility Innovative outputs</p> <p>Theory of Effectiveness: Innovation + vision + consistent change = effectiveness</p>
	<p>Culture Type: Internal Process</p> <p>Orientation: Control</p> <p>Leader type: Coordinator Monitor Organizer</p> <p>Value Drivers: Efficiency Timeliness Consistency/uniformity</p> <p>Theory of Effectiveness: Control + efficiency + capable processes = Effectiveness</p>	<p>Culture Type: Rational Goal</p> <p>Orientation: Compete</p> <p>Leader type: Hard driver Competitor Producer</p> <p>Value Drivers: Mark share Goal achievement Profitability</p> <p>Theory of Effectiveness: Aggressive competition + customer focus = Effectiveness</p>
	Stability Control	Fast Change
	Incremental Change	
		External Positioning

Figure 1. Competing Values Quadrants (Cameron & Quinn, 2011)

The collaborate quadrant placed an emphasis on building human capacity, developing people, and solidifying an organizational culture (Cameron et al., 2006). A mantra for this quadrant was “human development, human empowerment, and human commitment” (Cameron, et al., 2006). It stressed internal maintenance and individual flexibility. “The focus is on building cohesion through consensus and satisfaction through involvement” (Cameron et al., 2006, p. 38). Employees in this quadrant felt valued when the organization implemented

programs that enhanced employee retention, fostered teamwork, and encouraged employees to become engaged in their work. Leaders in the collaborate quadrant displayed characteristics such as parent figure, mentor, facilitator, and team builder. The leader placed great value in building the human capacity of the organization. Leader characteristics within this quadrant were patience, caring, selflessness, authenticity, sensitivity, principled, consensus builder, and nurturing. Individuals that exhibit these characteristics were viewed as permissive, indulgent, lenient, detached, weak, and aloof. Schools that lean in this quadrant place a major emphasis on developing teachers through professional development and human resources. Effectiveness criteria measured through the *TELL* survey were mentoring and facilitating item scales.

The create quadrant placed an emphasis on creativity, innovation, and change management (Bruggencate, Luyten, Scheerens, & Slegers, 2012). Words that were synonymous with this quadrant were “create, innovate, and envision the future” (Cameron, et al., 2006). It stressed external maintenance and individual flexibility. Organizations that excelled in this quadrant allowed its employees freedom of thought and action, which broke rules and stretched barriers in order to strengthen the organization. Employees felt valued when they could think outside of the box, be creative, and value autonomy over instruction and resources. According to Cameron (2006b, p. 36), “leaders are aimed at producing new products and services, creating market niches, and producing value by enhancing the process by which entrepreneurship can be enhanced in the organization.” Leadership characteristics within this quadrant were visionary, optimistic, adaptive, receptive, innovative, creative, and problem-solver. Individuals that exhibited characteristics in this quadrant were viewed as impractical, deluded, unrealistic, and air-headed. Schools that leaned in this quadrant placed a major

emphasis on creativity and innovation. Effectiveness criteria measured using the *TELL* survey were innovating and brokering item scales.

The control quadrant placed an emphasis on defining responsibilities, measurement, and documentation (Bruggencate, et al., 2012). The words synonymous with this quadrant were better, cheaper, and surer (Cameron, et al., 2006). Control quadrant stressed internal maintenance and stability control. Organizations that excelled in this quadrant controlled activities that help them function more smoothly such as quality enhancements, cost & productivity improvements, reduction in manufacturing cycle time, and efficiency management. Employees felt valued when certainty was increased and tasks were standardized. For leaders to be effective in this quadrant they need to eliminate errors, increase regularity, increase consistency, and be inwardly focused. Leaders that were most effective in this quadrant tended to be organizers and administrators (Cameron, et al., 2006). Leader characteristics within this quadrant were logical, realistic, practical, secure, assured, consistent, predictable, and careful. Individuals that exhibit characteristics in this quadrant are viewed as skeptical, inflexible, closed, and rigid. Schools that focused on the characteristics of this quadrant placed a major emphasis on the best practices, control, and certainty. Effectiveness criteria measured using the *TELL* survey were coordinating and monitoring item scales.

The compete quadrant placed an emphasis on aggressiveness, speed, and competitiveness (Cameron & et al., 2006). Words synonymous with this quadrant were to compete hard, move fast, and play to win (Cameron & et al., 2006). It stressed external maintenance and stability control. Organizations that excelled in this quadrant were aggressive competitors, fast responders, and customer focused (Cameron & Quinn, 2011). Employees felt valued when they had clear goals connected to objectives. Leaders that were most effective in this quadrant tended to take charge,

move fast, and were aggressive (Cameron et al., 2006). Leader characteristics were considered to be powerful, bold, challenging, assertive, connected, task-oriented, decisive, and competitive. Individuals that exhibited characteristics in this quadrant were viewed as oppressive, overbearing, self-serving, corrupted, and cynical (Cameron & Quinn, 2011). Effectiveness criteria measured using the *TELL* survey were production and direction item scales.

The four quadrants of the competing values framework represented competing assumptions. The four quadrants were in competition with the quadrant diagonally across from it and were on completely opposite spectrums. A person in the collaborate quadrant was perceived as wasting resources to one in the compete quadrant, and a person in the compete quadrant is perceived as oppressive to a person in the collaborate quadrant (Cameron & Quinn, 2011). A person in the control quadrant was perceived as too rigid compared to a person in the create quadrant. The person in the create quadrant was perceived as unrealistic by a person in the control quadrant (Cameron et al., 2006). For a leader to be successful, they should not focus on one side of the quadrant but they should have a balance of the two parallel opposing quadrants. The leader's goal was to create value in the organization by capitalizing on the strengths from each quadrant. The CVF "assists leaders in discovering a new pattern of thinking and a new set of alternative for value creation" (Cameron et al., 2006).

Chapter Three

Methods

The purpose of this study is to explore the relationships between longitudinal assessments of student achievement at the elementary level and faculty perceptions of the way their school resolves the “organizational tensions, trade-offs, and conflicts” (Cameron et al., 2006, p. 50) embodied in the Competing Values Framework (CVF). Represented by responses to two dozen items selected from the 2013 state-wide administration of the *Teaching, Empowering, Leading, and Learning* survey in Tennessee (*TELL Tennessee*), the specific CVF dynamics under investigation are embedded in the five research questions following:

Research Question 1: Controlling for student and faculty characteristics, are there relationships between an elementary school’s exhibiting a “competing values” profile that is balanced (three or four quadrant scores above the population mean) rather than unbalanced (two or fewer quadrant scores above the population mean) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Research Question 2: Over and above the influence of student and faculty characteristics, are there relationships between an elementary school’s exhibiting a “competing values” profile that is more externally focused (upper and lower left quadrants) than internally focused (upper and lower right quadrants) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Research Question 3: Over and above the influence of student and faculty characteristics, are there relationships between an elementary school’s exhibiting a “competing values” profile more oriented towards structure and control (lower left and right quadrants) than

flexibility and openness (upper left and right quadrants) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Research Question 4: Over and above the influence of student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile more disposed towards achieving immediate results (lower-right quadrant) than evolving sustainable solutions (upper-left quadrant) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Research Question 5: Over and above the influence of student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile more inclined towards making incremental improvements (lower-left quadrant) than enacting transformational change (upper-right quadrant) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

The present chapter continues with an explanation of the general methodology employed in this study—specifically, secondary analysis of an existing set of survey data. Immediately following is a description of the *Teaching, Empowering, Leading, and Learning (TELL)* Questionnaire from which this survey data was derived and a discussion of that instrument's psychometric properties. In the next section, an outline is provided of the conditions under which the secondary data specific to this study were collected, supplemented by tables that statistically describe the set of Tennessee educators whose responses constitute the present dataset. Inclusive of a discussion of the source and meaning of the control, independent, and dependent variables employed in this study, the final section of the chapter provides a statement of the analytic strategies to be employed in answering the research questions previously stated.

Overall Methodology

According to Tashakkori and Teddlie (1998), research is usually categorized in terms of its general methodology, as qualitative, quantitative, experimental, or non-experimental. When employing a quantitative approach, questionnaires, tests, records, standardized observation instruments, and existing data bases can serve as appropriate sources for data (Patton, 1997). Common to the quantitative approach is the utilization of data from human samples and the placing of that the data in predetermined categories for statistical analysis, the intended result being an unbiased and objective interpretation of data (Creswell, 2008).

Drawing upon existing data sources, the researcher approached the five research questions posed by this study quantitatively and non-experimentally, working in a mode of inquiry commonly referred to as “analysis of secondary data” or, more simply, “secondary analysis.” According to Hakim (1982), secondary data analysis may be defined as “further analysis of an existing data-set which presents interpretations, conclusions, or knowledge additional to, or different from, those presented in the first report on the data collection and its results” (p. 1). On this definition, specific uses to which such analyses may be put include:

- Condensed reports (such as social area analysis based on selected social indicators)
- More detailed reports (offering additional detail on the same topic)
- Reports which focus on a sub-topic (such as unemployment) or social group (such as ethnic minority)
- Reports angled towards a policy issue or question
- Analyses based on a conceptual framework or theory not applied to the original analysis

- Re-analyses which take advantage of more sophisticated analytical techniques to test hypotheses and answer questions in a more comprehensive and succinct manner than in the original report. (Hakim, 1982, p. 1)

Given the uses Hakim outlined, the present study would appear to be suitable for secondary analysis in at least three respects. The first being to organize the original observations. It employs the Competing Values Framework, “a conceptual framework or theory not applied to the original analysis” (Hakim, 1982, p.1). As is, the *TELL* is simply a loosely-coupled inventory of constructs aimed at measuring climate; use of the tightly-coupled system of ideas that the CFV represents brings to bear a long tradition of research into what factors drive human organization and the metrics employed to assess their effective functioning. Second, in merging the perceptual data derived from the *TELL* instrument with other data sources—specifically those dealing with school demographics and student outcomes—the study enables additional insight into how attention to very specific aspects of the school’s climate in proportional ways might make for a more satisfied, stable, and productive school community. Finally, going past a simple description of questionnaire outcomes in terms of frequencies and percentages, as exemplified by the myriad *TELL* reports that have been published online, the present study applies somewhat “more sophisticated analytical techniques to . . . answer questions” (Hakim, p. 1) that were either not fully addressed or were unaddressed previously.

Instrument

Context and History

A review of the literature indicates that a wide variety of measures of the school environment—whether conceived of under the aegis of “school climate,” “learning environment” “teacher working conditions,” etc.—are in use. Witcher (1993) reviewed several of these

measures and found that those that resulted in the most reliable assessments were those that generated information about multiple aspects of the school—including “an emphasis on academics, an ambience of caring, a motivating curriculum, professional collegiality, and closeness to parents and community.” According to Witcher, these most reliable instruments were also easy for respondents to understand, were appropriate to several levels of schooling and possessed of adequate evidence of psychometric validity and reliability.

A school climate instrument that is widely thought to meet these requirements is the *Teaching, Empowering, Leading and Learning Questionnaire (TELL)*. Originally developed in 2002 by the New Teacher Center (NTC), the instrument made its debut in North Carolina but has since then been administered across 18 states to nearly 1.5 million educators (New Teacher Center, 2016). Currently implemented in six states and in three metropolitan school districts, the *TELL* continues to provide information to both policymakers and practitioners about the following eight research-based constructs:

- Time—Available time to plan, to collaborate, to provide instruction, and to eliminate barriers to maximize instructional time during the school day
- Facilities and Resources—Availability of instructional, technology, office, communication, and school resources to teachers
- Community Support and Involvement—Community and parent/guardian communication and influence in the school
- Managing Student Conduct—Policies and practices to address student conduct issues and ensure a safe school environment
- Teacher Leadership—Teacher involvement in decisions that impact classroom and school practices

- School Leadership—The ability of school leadership to create trusting, supportive environments and address teacher concerns
- Professional Development—Availability and quality of learning opportunities for educators to enhance their teaching
- Instructional Practices and Support—Data and support available to teachers to improve instruction and student learning. (*TELL* Tennessee Research Brief, 2013).

In addition to information about eight climate-related constructs, the *TELL* also provides some synoptic indicators of the respondents' level of satisfaction with the school as "overall . . . a good place to work and learn" as well as sense of the respondents' "immediate professional intentions." These professional intentions embrace such choices as to whether the respondent intends to remain at his/her current school, to transfer to another school or district, or to leave the classroom for another position, either administrative, non-administrative, or entirely outside of education. Perhaps as a way to increase the response rate by preserving anonymity, the *TELL* seeks only a modicum of demographic information respondent (i.e., total years of teaching experience, number years at the school, grades served by the respondents' school).

Evidence of the Validity and Reliability of the *TELL*

Some degree of informal or prima facie evidence of the validity of the *TELL* instrument seems inherent in the instrument's longevity and widespread adoption. This sort of testimonial evidence aside, however, resources provided on the *TELL* Tennessee website not only chart the evolution of the instrument's "content validity" but also report on statistical analyses pertinent to the reliability and "structural validity" of the eight research-based constructs alluded to previously. As summarized in a Spring 2013 research brief published on the *TELL* Tennessee website, the items developed for the first iteration of the instrument originated in part from a

wide-ranging literature review of research on the role of working conditions on teacher dissatisfaction and teacher mobility and in another part from School and Staffing Survey data. Over and above these issues of “content validity,” the same research brief also points to studies done to establish the instrument’s “structural validity.” Using data taken from 400,000 teachers from 5,000 schools in 12 states, Swanlund (2011) used a combination of factor analysis and “Rasch measurement modeling” to examine the dimensionality of the instrument. In his analyses, Swanlund found more constructs (13) than the eight that the instrument purported to measure. However, Swanlund notes that the additional constructs seemed also to fit comfortably within the eight-construct framework, with the additional five clusters of items serving to refine four of the original domains. In an early study of *TELL* Tennessee, data was analyzed using an approach similar to Swanlund’s, the analyst identified 10 constructs, with the Facilities and Resources construct and Instructional Practices and Support construct each splitting into two subsets.

To sum up, all statistical analyses carried out on the *TELL* to date suggest that the original instrument and its variants do in the main “measure what they purport to measure” (Popham, 2016) but that more fine-grained conclusions may be drawn about specific groups of items within two or three of the constructs.

Focus of the Present Study and Description of Sample

Informed by the *TELL*’s precedent use in the legacy Memphis City Schools as an element of the district’s partnership with the Gates Foundation, the Tennessee Department of Education (TDOE) subsequently adopted the *TELL* as its measure of choice with respect to school climate issues. Using school-and-district level online reports derived from the second of two *TELL* administrations sponsored by the TDOE, University of Memphis, Department of Leadership

students and faculty subsequently mounted a series of pilot studies that involved the manipulation of the online *TELL* data and their merging with other TDOE school demographic and student achievement information. When the New Teacher Center personnel were informed of these efforts, they made available to the University of Memphis Leadership students and faculty the entire *TELL* Tennessee dataset for 2013. This dataset was populated with some 61,341 observations linked to 1668 educational institutions.

Demographic Characteristics of Sample: Individual Level

As Table 1 demonstrates, about 44% of the 60,000 plus sample counted themselves as members of elementary institutions, roughly equal proportions linked themselves to middle schools (27.5%) and high schools (27.9%), and less than 1% indicated their connection to some “special” educational site (0.5%). Absent about 2% of all respondents who did not declare what position they occupied at their institution. Nearly 90% of the respondents remaining indicated that they were teachers (89.1%). About equal numbers listed themselves as either principals (1.8%) or assistant principals (2.0), and the rest identified as some “other” education professional. While about 2% of the respondents failed to indicate how long they had been an educator, slightly more than 45% indicated that their careers spanned 10 or fewer years (45.1%), while slightly fewer than 54% indicated that their careers exceeded 10 years (53.6%). With respect to school tenure, more than half of the respondents noted that they had been at their current schools six or fewer years, while a little less than half put their tenure at more than six years.

Table 1

Demographic Characteristics of the Sample at the Individual Level (N = 61341)

Characteristic	<i>f</i>	%
School Level		
Elementary	24185	44.3
High	15130	27.7
Middle	15039	27.5
Special	279	0.5
Position		
Teacher	54633	89.1
Principal	1107	1.8
Assistant Principal	1213	2.0
Other Education Professional	3199	5.2
Not Answered	1189	1.9
Years of Experience		
First Year	3552	5.8
2-3 Years	5698	9.3
4-6 Years	8051	13.1
7-10 Years	9782	15.9
11-20 Years	18412	30.0
20+ years	14471	23.6
Not Answered	1375	2.2
Years at the School		
First Year	8392	13.7
2-3 Years	10906	17.8
4-6 Years	11799	19.2
7-10 Years	10394	16.9
11-20 Years	12194	19.9
20+ years	5686	9.3
Not Answered	1970	3.2

Demographic Characteristics of Sample: Institutional Level

When these data were aggregated to the school level and merged with additional information obtained from the TDOE website, some 1187 institutions serving elementary students were found to have non-missing values on the intake and outcome variables projected for use in this study (see Table 2). With respect to intake variables pertinent to students, TDOE statistics indicated that on average slightly more than 60% of such students qualify for free and reduced lunch (62.25%), a little more than one-quarter could be categorized as being non-White (26.9%) and a little more than 15% might be classified as subject to some sort of learning disability (15.2%). With respect to intake variables pertinent to faculty, responses to TELL items indicated that, on average, somewhat more than half of the educators at these institutions claimed more than 10 years of experience (56.1%) while a somewhat smaller proportion indicated they have been employed at their present school more than six years (50.0%). In terms of future professional intentions, Table 2 also reveals that almost 85% of all TELL respondents indicated on average that they planned to keep working at their present schools (84.9%), as contrasted with the remainder who respectively planned to “move” to another district or school (6.1%) or to “leave” the classroom altogether (9.04%). Consistent with these outcomes, next displayed in Table 2 is that, on being asked whether their school “is a good place to work and learn,” most educators on average selected the “agree” response ($M = 3.17$, $SD = 0.27$), this choice denoting a rather high level of overall satisfaction with how their school functions.

Table 2

Demographic Characteristics of the Sample at the Institutional Level (N = 1187)

Variable	M	SD
Free Reduced Lunch (%)	62.25	21.54
Minority Students (%)	26.92	27.50
Students w/ Disabilities (%)	15.16	5.10
Teachers > 10 Years' Experience (%)	56.06	13.57
Teachers > 6 Years' Tenure (%)	50.02	17.07
Stayers (%)	84.89	11.39
Movers (%)	6.07	8.04
Leavers (%)	9.04	6.89
Mean Satisfaction	3.17	0.27
Percent Proficient Reading 2010-12	47.41	14.23
Percent Proficient Math 2010-12	42.68	14.59
Mean % Proficient in Reading/Math	45.04	13.92
Mean NCE Mathematics 2010-12	55.17	7.42
Mean NCE Reading 2010-2012	52.03	8.22
Mean Reading/Mathematics NCEs	53.60	7.60

In terms of the school's functioning as an academic institution, TDOE accountability data indicates that, averaged across three years, the school-wide percent of students found to be proficient and advanced in reading and mathematics was only about 45% (M = 45.04, SD = 13.92), with many fewer students proficient in mathematics (M = 42.68, SD = 14.59) than in reading (M = 47.41, SD = 14.23). Perhaps because of some very high scoring students, the mean

NCE in reading and mathematics averaged over three years was eight points higher ($M = 53.6$, $SD = 7.60$), with only a slight difference in students' average NCE scores in mathematics ($M = 55.17$, $SD = 7.42$) and reading ($M = 52.03$, $SD = 8.22$).

CVF Profile Scores

As previously mentioned, some twenty-four items were selected from the *TELL* to represent the eight organizational functions nested in turn within the four quadrants comprising the Competing Values Framework. Along with reliability statistics, means and standard deviations pertinent to each these item, function (scale), and quadrant are presented in Table 3 through Table 6.

Once the four quadrant means for all schools had been computed, the different CVF profile scores could be derived. In computing each school's "balance" profile, the school's quadrant mean was compared to the elementary school "norm" for that quadrant, as represented by the mean for that quadrant. These norms were, specifically, the Rational Goal Quadrant ($M = 3.20$, $SD = 0.26$, $a = .96$), the Internal Process Quadrant ($M = 3.09$, $SD = 0.21$, $a = .86$), the Human Relations Quadrant ($M = 3.01$, $SD = 0.28$, $a = .93$), and the Open Systems Quadrant ($M = 3.13$, $SD = 0.20$, $a = .88$). If a school's quadrant score was equal to or exceeded the quadrant "norm," the school received a value of "1" for that quadrant and a value of "0" if it did not meet that threshold. Apropos the CVF literature on "balancing" the competing demands of effectiveness, thus a school's CVF profile was considered to be balanced if the sum across quadrant mean thresholds was either four (perfect) or three (good): a result characterizing somewhat less than half of the schools (44.2%). With respect to unbalanced profiles, some 9.5% of the schools were at or above the quadrant mean on two quadrants, with the 46.3% of schools remaining scoring at or above the quadrant mean either once (11.3%) or not at all (35.0%).

Aside from the “balance” profile, CVF scores reflective of other of the model’s “organizational tensions, trade-offs, and conflicts” were created by subtracting quadrant scores from one another. A representation of the school’s relative responsiveness to environmentally-situated issues and opportunities was enabled by summing across the Rational Goal and Open Systems quadrant scores to arrive at the school’s tendency to be “externally focused,” while a representation of the school’s tendency to be “internally focused,” was derived by summing across the Internal Process and Human Relations quadrant scores. Subtracting the second quantity from the first resulted in a measure of a school’s external versus internal focus.

Similarly, summing across the Rational Goal and Internal Process quadrant scores to create a school “stability” index and the Human Relations and Open Systems quadrants scores to create a school “flexibility” index enabled a representation of a school’s tendency to address problems with a bias towards either centralization or decentralization.

With respect to the school’s comfort level and to the scope of change, the CVF profile was computed by subtracting the school’s Internal Process quadrant score from its Open Systems quadrant score. With respect to the school’s comfort level and to the speed of change, CVF profile was computed by subtracting the school’s Rational Goal quadrant score from its Human Relations quadrant score.

Analysis

For each of the five research questions, hierarchical or “block entry” multiple regression will be employed to arrive at the extent of relationship between the five different CVF profiles just described and two outcome variables: namely,

- the school-level average of students’ standardized test scores in “total” reading and “total” mathematics, each averaged over three years (2010-2012) and expressed as NCEs; and

- the school-level average of the percentage of students deemed proficient or advanced in reading and mathematics, each averaged over three years (2010-2012).

Each of the five multiple regressions will unfold in three blocks. First, entered will be three “student-oriented” variables (Percent Free/Reduced Lunch, Percent Minority, and Percent Students with Disabilities). Next, in the equation will appear two “faculty- oriented” variables (Percent of Faculty with More than 10 Years’ Experience, Percent of Faculty with More than Six Years’ Tenure). Last, the CVF profile at issue will be entered in the final block and its statistical significance noted with respect to explaining the outcome, over and above the contribution of the previous blocks of variables. Where statistical significance is observed, it may be concluded that the CVF profile to some extent heightens or detracts from student achievement; where statistical significance is not observed, it may be concluded that the profile has no impact on student achievement.

Table 3

CVF Means and Standard Deviations: Rational Goal Quadrant

CVF Component	<i>M</i>	<i>SD</i>
Rational Goal Quadrant ($\alpha = .96$)	3.20	0.26
Production Scale ($\alpha = .89$)	3.24	0.25
Q6.1f In this school we take steps to solve problems.	3.13	0.30
Q7.1e Teachers are held to high professional standards for delivering instruction	3.48	0.21
Q7.1k The faculty are recognized for accomplishments.	3.11	0.33
Direction Scale ($\alpha = .91$)	3.15	0.28
Q6.1g Teachers are effective leaders in this school.	3.21	0.27
Q7.1a The faculty and leadership have a shared vision.	3.16	0.31
Q7.1j The school improvement team provides effective leadership at this school.	3.09	0.31

Table 4

CVF Means and Standard Deviations: Internal Process Quadrant

CVF Component	<i>M</i>	<i>SD</i>
Internal Process Quadrant ($\alpha = .86$)	3.09	0.21
Coordination Scale ($\alpha = .89$)	2.86	0.29
Q2.1c Teachers are allowed to focus on educating students with minimal interruptions.	2.90	0.31
Q2.1e Efforts are made to minimize the amount of routine administrative paperwork teachers are required to do.	2.77	0.35
Q2.1g Teachers are protected from duties that interfere with their essential role of educating students.	2.90	0.29
Monitoring Scale ($\alpha = .86$)	3.32	0.19
Q7.1f The school leadership facilitates using data to improve student learning.	3.51	0.21
Q8.1c Professional development offerings are data driven.	3.15	0.23
Q9.1c Teachers in this school use assessment data to inform their instruction.	3.31	0.20

Table 5

CVF Means and Standard Deviations: Human Relations Quadrant

CVF Component	<i>M</i>	<i>SD</i>
Human Relations Quadrant ($\alpha = .93$)	3.01	0.28
Facilitation Scale ($\alpha = .95$)	3.01	0.36
Q6.1e The faculty has an effective process for making group decisions to solve problems.	2.99	0.32
Q7.1b There is an atmosphere of trust and mutual respect.	3.05	0.40
Q7.1c Teachers feel comfortable raising issues and concerns that are important to them.	2.99	0.40
Mentoring Scale ($\alpha = .87$)	3.01	0.25
Q7.1h Teachers receive feedback that can help them improve teaching.	3.24	0.26
Q8.1e Professional development is differentiated to meet the needs of individual teachers.	2.80	0.30
Q8.1j Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices.	2.99	0.27

Table 6

CVF Means and Standard Deviations: Open Systems Quadrant

CVF Component	<i>M</i>	<i>SD</i>
Open Systems Quadrant ($\alpha = .88$)	3.13	0.20
Innovation Scale ($\alpha = .79$)	3.19	0.20
Q8.1h Teachers are encouraged to reflect on their own practice.	3.23	0.20
Q9.1g Teachers are encouraged to try new things to improve instruction.	3.30	0.20
Q9.1i Teachers have autonomy to make decisions about instructional delivery (i.e. pacing, materials and pedagogy)	3.03	0.30
Brokering Scale ($\alpha = .83$)	3.08	0.24
Q4.1b This school maintains clear, two-way communication with parents/guardians and the community.	3.22	0.25
Q4.1c This school does a good job of encouraging parent/guardian involvement.	3.27	0.28
Q8.1g Professional development provides teachers with strategies to involve families and other community members as active partners.	2.76	0.29

CHAPTER FOUR

RESULTS

The purpose of this study is to investigate the relationships between the longitudinally assessed reading and mathematics achievement of elementary students and the manner in which the schools they attend are perceived to have resolved the tensions and tradeoffs illuminated by the Competing Values Framework (CVF). Deriving from this overall purpose are the more specific research questions that follow:

Research Question 1:

Controlling for student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile that is balanced (three or four quadrant scores above the population mean) rather than unbalanced (two or fewer quadrant scores above the population mean) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Research Question 2:

Controlling for student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile that is more externally focused (upper and lower left quadrants) than internally focused (upper and lower right quadrants) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Research Question 3:

Controlling for student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile more oriented towards structure

and control (lower left and right quadrants) than flexibility and openness (upper left and right quadrants) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Research Question 4:

Controlling for student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile more disposed towards achieving immediate results (lower-right quadrant) than evolving sustainable solutions (upper-left quadrant) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Research Question 5:

Controlling for student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile more inclined towards making incremental improvements (lower-left quadrant) than enacting transformational change (upper-right quadrant) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

The chapter commences with an inspection of the descriptive statistics underwriting the multiple regression analyses employed to answer the five research questions. Accompanied by brief discussions, summaries of the aforementioned multiple regression analyses are provided for each research question in turn. A brief synopsis of what was learned from these analyses concludes the chapter.

Descriptive Statistics

Inspection of the zero-order correlation matrix that summarizes the relationships between the five "control" variables and the two dependent variables employed in these analyses suggests

that all five of the controls are relevant to explaining variation in both types of achievement-oriented outcomes (see Table 7). Despite differences in the academic benchmarks being used (one nationally-established, the other state-originated), the averaged three-year NCE scores and averaged three-year proficiency levels are highly correlated ($r = .97, p < .01$). With respect to all three student-oriented demographic variables and student achievement, negative relationships are consistently demonstrated, especially between the percent of students on free and reduced lunch and both NCE scores ($r = -.82, p < .01$) and state proficiency percentages ($r = -.81, p < .01$). Increasing such scores, on the other hand, are the two faculty-oriented demographic variables associated with teaching experience and teacher tenure. As revealed in the table, the percent of faculty with more than 10 years' experience both significantly and positively correlates with NCE scores (at $r = .17, p < .01$) and state proficiency percentages (at $r = .18, p < .01$). Likewise, and to nearly the same extent, the percent of faculty with more than six years' tenure significantly and positively correlates with NCE scores (at $r = .18, p < .01$) and state proficiency percentages (at $r = .17, p < .01$). Insofar as both of these faculty-oriented variables concern teachers persisting over time, the faculty experience and faculty tenure variables are themselves inter-correlated ($r = .65, p < .01$).

It should be noted that while faculty experience and tenure both exercise a positive influence on student academic growth, they are apparently in shorter supply in those places where they are arguably most needed. At those schools with larger percentages of students on free and reduced lunch, the reader will note that the percent of faculty with more than six years' tenure as well as faculty with more than 10 years' experience are both significantly and negatively correlated ($r = -.16, p < .01$ and $r = -.09, p < .05$, respectively). Similarly, at those schools with larger percentages of minority students, the reader will note that faculty tenure as

well as faculty experience are both significantly and negatively correlated ($r = -.18, p < .01$ and $r = -.42, p < .05$, respectively).

Table 7

Matrix of Zero-Order Correlations between Control Variables in the Model and Two Measures of Elementary Student Achievement (N = 1187)

Variable	2	3	4	5	6	7
1. F/R Lunch Students (%)	.40**	.23**	-.16**	-.09*	-.82**	-.81**
2. Minority Students (%)	1	-.18**	-.18**	-.42**	-.46**	-.42**
3. LD Students (%)		1	-.02	.08**	-.13**	-.16**
4. Faculty Experience (%)			1	.65**	.17**	.18**
5. Faculty Tenure (%)				1	.18**	.17**
6. Reading/Math NCEs					1	.97**
7. Student Proficiency (%)						1

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

Suggesting ways that school climate might enable higher student achievement is a second matrix of zero-order correlations highlighting the relationships between the five CVF profiles examined in this study and the control and dependent variables previously considered (see Table 8). Without controlling for other influences at the school, a “balanced” CVF profile appears to be significantly and positively related to both higher NCE scores ($r = .17, p < .01$) and higher student proficiency $r = .17, p < .01$). Likewise, a stronger focus on the “external” environment in general and the school’s “rational goals” it in particular seems to promote not only higher students’ NCE scores ($r = .23, p < .01$ and $r = .21, p < .01$, respectively) but also higher student proficiency percentages ($r = .24, p < .01$ for “external/internal” and $r = .20, p < .01$ for “rational goals/human relations”). While an emphasis on a CVF “open systems” orientation seems also to enable student achievement ($r = -.12, p < .01$ for NCE scores and $r = -.15, p < .01$ for student

proficiency percentages), none of the aforementioned CVF profiles are directionally linked to schools with higher numbers of students on free and reduced lunch. Historically most in need of a climate that abets student achievement, such schools appear more likely to have a climate characterized as follows:

- “unbalanced” in CVF terms rather than “balanced” ($r = -.09, p < .01$);
- more “internally-” than “externally-oriented” ($r = -.24, p < .01$);
- more focused on “human relations” than “rational goals” ($r = -.23, p < .01$);
- more attuned to “internal processes” than “open systems” ($r = .20, p < .01$).

While these correlations are zero-order and do not “partial out” the influence of other variables, these linkages should be kept in mind as the results of the regression analyses are presented below.

Table 8

Matrix of Zero-Order Correlations between CVF Profiles and Other Variables in the Model (N = 1187)

Variable	BAL V UNB	STAB V FLEX	EXT V INT	RG Q V HR Q	IP Q V OS Q
F/R Lunch Students (%)	-.09**	.02	-.24**	-.23**	.20**
Minority Students (%)	-.06*	-.05	-.07*	-.02	-.05
LD Students (%)	.03	.02	.00	-.06*	.06*
Faculty Experience (%)	.02	-.13**	.13**	-.04	-.12**
Faculty Tenure (%)	.03	-.11**	.08**	-.07*	-.08**
NCE Means	.17**	.03	.23**	.21**	-.12**
Student Proficiency (%)	.17**	.00	.24**	.20**	-.15**

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

Outcomes Common to All Five Hierarchical Multiple Regression Analyses

For the two sets of five hierarchical multiple regressions that were conducted to answer the research questions, the statistical outcomes were identical for blocks one and two. They differed only with respect to block three and the inclusion of the CVF profile named for that particular question. In attempting to fit these regression models to the data, procedures outlined by Field (2013, p. 316) were followed to check for linearity and unusual cases and to determine whether the statistical assumptions of homoscedasticity, normality, and independence were tenable. With no violations of these assumptions observed, final regressions were executed with the results following.

Block One Outcomes: Student Demographic Variables

As presented in Tables 9, 11, 13, 15, and 17, the three student demographic variables included in block one collectively explain a statistically significant proportion of the variance in students' NCE scores ($F(3, 1183) = 870.40, p < .001, R^2 = .688$). Inspection of the block statistics reveals the percent of students on free and reduced lunch to have the largest *beta* weight and thus the greatest importance among the three variables ($\beta = -0.76, t = -40.39, p < .001$). Running a distant second in explaining students' NCE scores is the percent of minority students ($\beta = -0.15, t = -8.29, p = .001$); but, at this point in the analysis, the percentage of students with disabilities (LD students) seems not to contribute significantly to the model once the influence of the other two variables is accounted for.

As presented in Tables 10, 12, 14, 16, and 18, much the same results are observed with respect to student demographics and student proficiency percentages. When compared to regression outcomes on NCE scores, the three demographic variables explain a slightly smaller but still statistically significant proportion of the variance in students' proficiency $F(3, 1183) = 799.25, p < .001, R^2 = .670$). Inspection of the block statistics reveals the percent of students on free and reduced lunch to have again the largest *beta* weight and thus the greatest importance among the three variables ($\beta = -0.76, t = -39.48, p < .001$). Likewise, as before, the percentage of minority students ($\beta = -0.11, t = -5.99, p = .001$) proves to be statistically significantly linked to the outcome but not, does the percent of students with disabilities ($\beta = -0.01, t = -0.42, p = .674$).

Block Two Outcomes: Faculty Demographic Variables

Controlling for the student-related demographic variables, inclusion of the faculty-oriented demographic variables in block two makes for a statistically significant but only

marginally substantive increase towards explaining variation in students' NCE scores (F Change (2, 1181) = 5.73, $p = .003$, $R^2 = .691$) and in the percent of students proficient in basic subjects (F Change (2, 1181) = 8.74, $p < .001$, $R^2 = .674$). With respect to student-related demographics and faculty oriented demographics, only the faculty tenure variable appears to be linked to the academic outcome, however, whether that outcome be mean NCE scores ($\beta = 0.07$, $t = 2.94$, $p = .003$) or mean percent proficient ($\beta = 0.08$, $t = 3.42$, $p = .001$). Notwithstanding the contributions of the faculty tenure variable, it is still the percentage of students on free and reduced lunch that, at this point in the analysis, is of the greatest importance in explaining variation in the percent in students' NCE scores ($\beta = -0.77$, $t = -40.13$, $p < .001$) and proficiency levels ($\beta = -0.77$, $t = 36.39$, $p < .001$).

Summary: Block One through Three Outcomes

To sum up the results of the analyses to this point, what appears to be largely determinative of student achievement outcomes are student demographics in general and students' free and reduced lunch status in particular. While faculty tenure seems to promote student achievement, its influence appears to be far below that of the students' free and reduced lunch status and roughly on par with the influence of schools' percent of minority students. What the various CVF profiles may add to the models previously described is presented in turn for each of the analyses following.

Research Question 1:

Controlling for student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile that is balanced (three or four quadrant scores above the population mean) rather than unbalanced (two or fewer quadrant

scores above the population mean) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Of the five control variables entered previously in regression blocks one and two, three of the five are found to be statistically significant once the CVF “balance” profile is included in the block three of the model, whether the achievement measure under consideration is students’ NCE scores (Table 9) or the percent of students proficient in basic skills (Table 10). Of these three control variables and NCE scores, the percent of students on free and reduced lunch is by far the most important ($\beta = -0.76, t = -40.11, p < .001$), followed by the percent of minority students ($\beta = -0.12, t = -6.08, p < .001$), followed by faculty tenure ($\beta = 0.07, t = 2.90, p = .004$). This same pattern is seen with respect to the three control variables and student proficiency, with the percent of students on free and reduced lunch being the most important ($\beta = -0.76, t = -39.34, p < .001$), followed by the percent of minority students ($\beta = -0.08, t = 3.96, p < .001$) and by faculty tenure ($\beta = 0.08, t = 3.39, p < .001$). Including the CVF “balance” profile represents a statistically significant positive addition to explaining variation in students’ NCE scores ($\beta = 0.10, t = 6.03, p < .001$) as well as the percent of such students who are proficient in basic subjects ($\beta = 0.10, t = 6.01, p < .001$). In both cases, however, the magnitude of the contribution is small, amounting in both cases to about a 1% increase in the *R square* statistic.

Research Question 2:

Controlling for student and faculty characteristics, are there relationships between an elementary school’s exhibiting a “competing values” profile that is more externally focused (upper and lower left quadrants) than internally focused (upper and lower right quadrants) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Inspection of the block three statistics revealed in Table 11 reveals outcomes for the addition of the CVF “external/internal” profile on NCE scores that are statistically significant but only of minor influence relative to that of other variables in the model. Again, proving to be of signal importance in explaining the outcome is the percent of students on free and reduced lunch ($\beta = -0.76, t = -38.55, p < .001$), followed by the percent of minority students ($\beta = -0.13, t = -6.17, p < .001$). As with the model involving “balance” and students’ NCE scores, neither the percent of “LD” students nor the percent of faculty with more than 10 years’ experience appear to add anything to understanding students’ achievement in terms of NCEs.

As previously stated, the inclusion of the CVF “external/internal” profile does result in a statistically significant but only fractional, increase in the model R^2 . This small but significant change is registered not only in the block statistics for the “change” in the model ($F(1, 1180) = 6.01, p = .014, R^2 = .693$), but also in the t -test statistics for the individual variable ($\beta = 0.04, t = 2.45, p = .014$).

Table 9

Hierarchical Regression Summary of a “Balanced” Competing Values Framework Profile on Students’ Mean NCE Scores in Reading and Mathematics 2010-12 (N =1187)

Source	B	S.E.B.	β	t	p =
Block 1: Student Demographics					
Model Fit: $F(3, 1183) = 870.40, p < .001, R^2 = .688$					
F/R Lunch Students (%)	-0.27	0.01	-0.76	-40.39	0.000
Minority Students %	-0.04	0.01	-0.15	-8.29	0.000
LD Students (%)	0.03	0.03	0.02	1.28	0.202
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 1181) = 528.70, p < .001, R^2 = .691,$					
F Change (2, 1181) = 5.73, $p = .003$					
F/R Lunch Students (%)	-0.27	0.01	-0.77	-40.13	0.000
Minority Students %	-0.03	0.01	-0.12	-6.02	0.000
LD Students (%)	0.04	0.03	0.02	1.35	0.178
Faculty Experience (%)	-0.01	0.01	-0.01	-0.65	0.514
Faculty Tenure (%)	0.03	0.01	0.07	2.94	0.003
Block 3: Student + Faculty Demographics + CVF Profile					
Model Fit: $F(6, 1180) = 459.86, p < .001, R^2 = .700,$					
F Change (1, 1180) = 36.41, $p < .001$					
F/R Lunch Students (%)	-0.27	0.01	-0.76	-40.11	0.000
Minority Students %	-0.03	0.01	-0.12	-6.08	0.000
LD Students (%)	0.03	0.03	0.02	1.09	0.275
Faculty Experience (%)	-0.01	0.01	-0.01	-0.64	0.521
Faculty Tenure (%)	0.03	0.01	0.07	2.90	0.004
CVF "Balance" Profile	1.48	0.24	0.10	6.03	0.000

Table 10

Hierarchical Regression Summary of a "Balanced" Competing Values Framework Profile on Students' Mean Percent Proficient in Reading and Mathematics 2010-12 (N = 1187)

Source	B	S.E.B.	β	t	p =
Block 1: Student Demographics Model Fit: $F(3, 1183) = 799.25, p < .001, R^2 = .670$					
F/R Lunch Students (%)	-0.49	0.01	-0.76	-39.48	0.000
Minority Students %	-0.06	0.01	-0.11	-5.99	0.000
LD Students (%)	-0.02	0.05	-0.01	-0.42	0.674
Block 2: Student Demographics + Faculty Demographics Model Fit: $F(5, 1181) = 489.32, p < .001, R^2 = .674,$ F Change (2, 1181) = 8.74, $p < .001$					
F/R Lunch Students (%)	-0.50	0.01	-0.77	-39.36	0.000
Minority Students %	-0.04	0.01	-0.08	-3.66	0.000
LD Students (%)	-0.02	0.05	-0.01	-0.33	0.738
Faculty Experience (%)	-0.01	0.02	-0.01	-0.42	0.674
Faculty Tenure (%)	0.07	0.02	0.08	3.42	0.001
Block 3: Student + Faculty Demographics + CVF Profile Model Fit: $F(6, 1180) = 425.91, p < .001, R^2 = .684,$ F Change (1, 1180) = 36.12, $p < .001$					
F/R Lunch Students (%)	-0.49	0.01	-0.76	-39.34	0.000
Minority Students %	-0.04	0.01	-0.08	-3.69	0.000
LD Students (%)	-0.03	0.05	-0.01	-0.61	0.541
Faculty Experience (%)	-0.01	0.02	-0.01	-0.41	0.685
Faculty Tenure (%)	0.07	0.02	0.08	3.39	0.001
CVF "Balance" Profile	2.77	0.46	0.10	6.01	0.000

Somewhat unlike the results obtained for the regression of the CVF “balance” profile on the percent of student proficient in basic subjects, the regression of the CVF “external/internal” profile on that same outcome is not observed to be statistically significant ($\beta = -0.02$, $t = 0.91$, $p = .362$). Inspection of the block three statistics in Table 12 indicates that including the CVF profile contributes neither to the overall “fit” of the model to the data ($F(6, 1180) = 407.84$, $p < .001$) nor to a statistically significant change in the R^2 , over and above what was previously observed. With respect to student proficiency, a “best fitting” model would include only two of the three student demographic characteristics—namely, the percent of students on free and reduced lunch ($\beta = -0.77$, $t = -37.10$, $p < .001$), followed by the percent of minority students ($\beta = -0.08$, $t = -3.76$, $p < .001$)—and the faculty demographic variable related to tenure ($\beta = 0.08$, $t = 3.38$, $p < .001$).

Table 11

Hierarchical Regression Summary of an Externally- versus Internally-Oriented CVF Profile on Students' Mean NCE Scores in Reading and Mathematics 2010-12 (N =1187)

Source	<i>B</i>	<i>S.E.B.</i>	<i>B</i>	<i>t</i>	<i>p</i> =
Block 1: Student Demographics Model Fit: $F(3, 1183) = 870.40, p < .001, R^2 = .688$					
F/R Lunch Students (%)	-0.27	0.01	-0.76	-40.39	0.000
Minority Students %	-0.04	0.01	-0.15	-8.29	0.000
LD Students (%)	0.03	0.03	0.02	1.28	0.202
Block 2: Student Demographics + Faculty Demographics Model Fit: $F(5, 1181) = 528.70, p < .001, R^2 = .691,$ F Change (2, 1181) = 5.73, $p = .003$					
F/R Lunch Students (%)	-0.27	0.01	-0.77	-40.13	0.000
Minority Students %	-0.03	0.01	-0.12	-6.02	0.000
LD Students (%)	0.04	0.03	0.02	1.35	0.178
Faculty Experience (%)	-0.01	0.01	-0.01	-0.65	0.514
Faculty Tenure (%)	0.03	0.01	0.07	2.94	0.003
Block 3: Student + Faculty Demographics + CVF Profile Model Fit: $F(6, 1180) = 443.45, p < .001, R^2 = .693,$ F Change (1, 1180) = 6.01, $p = .014$					
F/R Lunch Students (%)	-0.27	0.01	-0.76	-38.55	0.000
Minority Students %	-0.04	0.01	-0.13	-6.17	0.000
LD Students (%)	0.03	0.03	0.02	1.17	0.241
Faculty Experience (%)	-0.01	0.01	-0.02	-0.79	0.428
Faculty Tenure (%)	0.03	0.01	0.07	2.88	0.004
CVF "External/Internal"	1.95	0.80	0.04	2.45	0.014

Table 12

Hierarchical Regression Summary of an Externally- versus Internally-Oriented CVF Profile on Students' Mean Percent Proficient in Reading and Mathematics 2010-12 (N =1187)

Source	<i>B</i>	<i>S.E.B.</i>	<i>B</i>	<i>t</i>	<i>p</i> =
Block 1: Student Demographics Model Fit: $F(3, 1183) = 799.25, p < .001, R^2 = .670$					
F/R Lunch Students (%)	-0.49	0.01	-0.76	-39.48	0.000
Minority Students %	-0.06	0.01	-0.11	-5.99	0.000
LD Students (%)	-0.02	0.05	-0.01	-0.42	0.674
Block 2: Student Demographics + Faculty Demographics Model Fit: $F(5, 1181) = 489.32, p < .001, R^2 = .674,$ F Change (2, 1181) = 8.74, $p < .001$					
F/R Lunch Students (%)	-0.50	0.01	-0.77	-39.36	0.000
Minority Students %	-0.04	0.01	-0.08	-3.66	0.000
LD Students (%)	-0.02	0.05	-0.01	-0.33	0.738
Faculty Experience (%)	-0.01	0.02	-0.01	-0.42	0.674
Faculty Tenure (%)	0.07	0.02	0.08	3.42	0.001
Block 3: Student + Faculty Demographics + CVF Profile Model Fit: $F(6, 1180) = 407.84 p < .001, R^2 = .675,$ F Change (1, 1180) = 0.831, $p = .362$					
F/R Lunch Students (%)	-0.50	0.01	-0.77	-37.10	0.000
Minority Students %	-0.04	0.01	-0.08	-3.76	0.000
LD Students (%)	-0.02	0.05	-0.01	-0.37	0.713
Faculty Experience (%)	-0.01	0.02	-0.01	-0.43	0.667
Faculty Tenure (%)	0.07	0.02	0.08	3.38	0.001
CVF "External/Internal"	1.33	1.46	0.02	0.91	0.362

Research Question 3:

Controlling for student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile more oriented towards structure and control (lower left and right quadrants) than flexibility and openness (upper left and right quadrants) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

As mentioned previously, the model statistics for the regression of student and faculty characteristics on students' NCE scores assessed in reading and mathematics achievement (see Table 13). When the CVF "stability/flexibility" profile is included in block three, the percent of the student body who are on free and reduced lunch continues to have the strongest link to students' performance ($\beta = -0.77, t = -40.34, p < .001$), followed by the percent of minority students ($\beta = -0.12, t = -5.71, p < .001$). Making a significant but relatively minor contribution to the proportion of variance explained in students' NCE scores is faculty tenure ($\beta = 0.07, t = 3.16, p = .003$), with neither the percent of "LD" students at the school ($\beta = 0.02, t = 1.28, p = .202$) nor the percent of faculty with more than 10 years' experience ($\beta = -0.01, t = -0.51, p = .616$) meeting the significance threshold. Revealing a slight but statistically significant tendency to favor the lower two quadrants of the CVF over the upper two, the addition of the CVF "stability/flexibility" profile makes for a statistically significant increase in the model R^2 . This result is reflected both in the model statistics for block three ($F(1, 1180) = 8.05, p = .005$) as well as in the t -test outcomes for the CVF variable itself ($\beta = 0.05, t = 2.84, p = .005$).

As Table 14 illustrates by contrast, the addition of the CVF "stability/flexibility" profile does not appear significantly to increase the proportion of the variance explained in student proficiency percentages, given the test for the increase in R^2 ($F(1, 1180) = 1.39, p = .239$) and the

t-test for the CVF variable itself ($\beta = 0.02$, $t = 1.18$, $p = .239$). Nearly identical to the results presented for block two, the links between student proficiency percentages and the two student demographic variables are both statistically significant and in the same order of relative importance. Once student demographics have been taken into account, the percent of faculty with more than six years' tenure ($\beta = 0.09$, $t = 3.51$, $p < .001$) remains statistically associated with student proficiency percentages, but as before, the percent of faculty with more than 10 years' experience fails to achieve that status ($\beta = -0.01$, $t = -0.36$, $p = .719$).

Research Question 4:

Controlling for student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile more disposed towards achieving immediate results (lower-right quadrant) than evolving sustainable solutions (upper-left quadrant) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

When regressed on mean NCE scores, the CVF "rational goal/human relations" contrast yields results that are similar to those seen for the CVF "stability/flexibility" profile apropos the previous research question. Denoting on emphasis on getting immediate results versus making incremental improvements, the CVF "rational goal/human relations" contrast examined in Table 15 would seem slightly but positively to enable student achievement measured as NCEs on a standardized test ($\beta = 0.04$, $t = 2.24$, $p = .025$).

Table 13

Hierarchical Regression Summary of a Stability- versus Flexibility-Focused CVF Profile on Students' Mean NCE Scores in Reading and Mathematics 2010-12 (N =1187)

Source	B	S.E.B.	β	t	p =
Block 1: Student Demographics					
Model Fit: $F(3, 1183) = 870.40, p < .001, R^2 = .688$					
F/R Lunch Students (%)	-0.27	0.01	-0.76	-40.39	0.000
Minority Students %	-0.04	0.01	-0.15	-8.29	0.000
LD Students (%)	0.03	0.03	0.02	1.28	0.202
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 1181) = 528.70, p < .001, R^2 = .691,$					
F Change (2, 1181) = 5.73, $p = .003$					
F/R Lunch Students (%)	-0.27	0.01	-0.77	-40.13	0.000
Minority Students %	-0.03	0.01	-0.12	-6.02	0.000
LD Students (%)	0.04	0.03	0.02	1.35	0.178
Faculty Experience (%)	-0.01	0.01	-0.01	-0.65	0.514
Faculty Tenure (%)	0.03	0.01	0.07	2.94	0.003
Block 3: Student + Faculty Demographics + CVF Profile					
Model Fit: $F(6, 1180) = 444.55, p < .001, R^2 = .693,$					
F Change (1, 1180) = 8.05, $p = .005$					
F/R Lunch Students (%)	-0.27	0.01	-0.77	-40.34	0.000
Minority Students %	-0.03	0.01	-0.12	-5.71	0.000
LD Students (%)	0.04	0.03	0.02	1.39	0.165
Faculty Experience (%)	-0.01	0.01	-0.01	-0.51	0.612
Faculty Tenure (%)	0.03	0.01	0.07	3.16	0.002
CVF "Stability/Flexibility"	2.25	0.79	0.05	2.84	0.005

Table 14

Hierarchical Regression Summary of a Stability- versus Flexibility-Focused CVF Profile on Students' Mean Percent Proficient in Reading and Mathematics 2010-12 (N = 1187)

Source	<i>B</i>	<i>S.E.B.</i>	β	<i>t</i>	<i>p</i> =
Block 1: Student Demographics					
Model Fit: $F(3, 1183) = 799.25, p < .001, R^2 = .670$					
F/R Lunch Students (%)	-0.49	0.01	-0.76	-39.48	0.000
Minority Students (%)	-0.06	0.01	-0.11	-5.99	0.000
Students w/ Disabilities (%)	-0.02	0.05	-0.01	-0.42	0.674
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 1181) = 489.32, p < .001, R^2 = .674,$					
F Change (2, 1181) = 8.74, $p < .001$					
F/R Lunch Students (%)	-0.50	0.01	-0.77	-39.36	0.000
Minority Students %	-0.04	0.01	-0.08	-3.66	0.000
Students w/ Disabilities (%)	-0.02	0.05	-0.01	-0.33	0.738
Faculty Experience (%)	-0.01	0.02	-0.01	-0.42	0.674
Faculty Tenure (%)	0.07	0.02	0.08	3.42	0.001
Block 3: Student + Faculty Demographics + CVF Profile					
Model Fit: $F(6, 1180) = 408.13, p < .001, R^2 = .675,$					
F Change (1, 1180) = 1.39, $p = .239$					
F/R Lunch Students (%)	-0.50	0.01	-0.77	-39.38	0.000
Minority Students %	-0.04	0.01	-0.08	-3.52	0.000
Students w/ Disabilities (%)	-0.02	0.05	-0.01	-0.32	0.750
Faculty Experience (%)	-0.01	0.02	-0.01	-0.36	0.719
Faculty Tenure (%)	0.07	0.02	0.09	3.51	0.000
CVF "Stability/Flexibility"	1.76	1.50	0.02	1.18	0.239

However, as with the regression, the contribution of the CVF profile to explaining variation in the outcome is outweighed by two student demographic factors and at least one faculty demographic factor. Consistent with the literature on testing and measuring student achievement, the results for this CVF contrast reveal students' standardized test performance to be to a great extent a function of such students' socioeconomic status ($\beta = -0.76, t = -38.60, p < .001$). As before, the percent of faculty with more than six years' tenure makes a positive difference in student outcomes but its influence, while larger than that of the CVF profile, is smaller than the school's percent of minority students. ($\beta = -0.13, t = -6.15, p < .001$).

Regarding block three of the regression involving the CVF "rational goal/human relations" contrast and the percent of students proficient in basic skills (see Table 16), the strongest link to the latter is, again, the percent of students on free and reduced lunch ($\beta = -0.77, t = -37.95, p < .001$). Lesser than the aforementioned link with student SES but of similar strength are the associations between student proficiency and the percent of minority students ($\beta = -0.08, t = -3.76, p < .001$) and between student proficiency and the percent of faculty with more than six years' tenure ($\beta = 0.08, t = 3.47, p = .001$). The "change" statistics for block three (F Change (1 1180) = 2.97, $p = .085$) and the t -test for the CVF profile variable itself ($\beta = 0.03, t = 1.72, p = .085$) indicate that the contrast between the rational goal and the human relations quadrants does not significantly increase explained variance in student proficiency. As suggested by previous analyses involving other CVF profiles, however, that this model's statistics are positively-signed is consistent with the tendency for higher student achievement to be linked to profiles privileging the external over the internal and the stable over the flexible.

Research Question 5:

Controlling for student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile more inclined towards making incremental improvements (lower-left quadrant) than enacting transformational change (upper-right quadrant) and longitudinally-assessed reading and mathematics achievement, measured as mean NCE scores and mean percent proficient?

Despite the statistically significant, zero-order correlations observed for the CVF "internal process/open systems" variable and this study's two outcomes of interest, (see Table 8), entering that contrast in the final block of the regression demonstrates no increase in the proportion of variance explained in excess of that explained by the five demographic variables (see Tables 17 and 18). With respect to mean NCE scores, the percent of students on free and reduced lunch ($\beta = -0.78$, $t = -39.48$, $p < .001$), followed by the percent of minority students ($\beta = -0.12$, $t = -5.62$, $p < .001$) are the most important in explaining variation in NCE scores, much as they have been in other regression models. While faculty tenure explains a small additional percentage of the variability in NCE scores ($\beta = 0.07$, $t = 3.07$, $p = .002$), the CVF "internal process/open systems" score adds nothing more to the model ($\beta = -0.03$, $t = 1.80$, $p = .071$).

Table 15

*Hierarchical Regression Summary of the Rational Goal/Human Relations Contrast on Students'**Mean NCE Scores in Reading and Mathematics 2010-12 (N = 1187)*

Source	B	S.E.B.	β	t	p =
Block 1: Student Demographics					
Model Fit: $F(3, 1183) = 870.40, p < .001, R^2 = .688$					
F/R Lunch Students (%)	-0.27	0.01	-0.76	-40.39	0.000
Minority Students %	-0.04	0.01	-0.15	-8.29	0.000
LD Students (%)	0.03	0.03	0.02	1.28	0.202
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 1181) = 528.70, p < .001, R^2 = .691,$					
F Change (2, 1181) = 5.73, $p = .003$					
F/R Lunch Students (%)	-0.27	0.01	-0.77	-40.13	0.000
Minority Students %	-0.03	0.01	-0.12	-6.02	0.000
LD Students (%)	0.04	0.03	0.02	1.35	0.178
Faculty Experience (%)	-0.01	0.01	-0.01	-0.65	0.514
Faculty Tenure (%)	0.03	0.01	0.07	2.94	0.003
Block 3: Student + Faculty Demographics + CVF Profile					
Model Fit: $F(6, 1180) = 442.92, p < .001, R^2 = .693,$					
F Change (1, 1180) = 5.03, $p = .025$					
F/R Lunch Students (%)	-0.27	0.01	-0.76	-38.60	0.000
Minority Students %	-0.04	0.01	-0.13	-6.15	0.000
LD Students (%)	0.03	0.03	0.02	1.31	0.192
Faculty Experience (%)	-0.01	0.01	-0.01	-0.58	0.563
Faculty Tenure (%)	0.03	0.01	0.07	3.01	0.003
CVF "R Goal/H Relations"	2.90	1.29	0.04	2.24	0.025

Table 16

*Hierarchical Regression Summary of the Rational Goal/Human Relations Contrast on Students'**Mean Percent Proficient in Reading and Mathematics 2010-12 (N =1187)*

Source	<i>B</i>	<i>S.E.B.</i>	β	<i>t</i>	<i>p</i> =
Block 1: Student Demographics					
Model Fit: $F(3, 1183) = 799.25, p < .001, R^2 = .670$					
F/R Lunch Students (%)	-0.49	0.01	-0.76	-39.48	0.000
Minority Students (%)	-0.06	0.01	-0.11	-5.99	0.000
Students w/ Disabilities (%)	-0.02	0.05	-0.01	-0.42	0.674
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 1181) = 489.32, p < .001, R^2 = .674,$					
F Change (2, 1181) = 8.74, $p < .001$					
F/R Lunch Students (%)	-0.50	0.01	-0.77	-39.36	0.000
Minority Students %	-0.04	0.01	-0.08	-3.66	0.000
Students w/ Disabilities (%)	-0.02	0.05	-0.01	-0.33	0.738
Faculty Experience (%)	-0.01	0.02	-0.01	-0.42	0.674
Faculty Tenure (%)	0.07	0.02	0.08	3.42	0.001
Block 3: Student + Faculty Demographics + CVF Profile					
Model Fit: $F(6, 1180) = 408.94, p < .001, R^2 = .675,$					
F Change (1, 1180) = 2.97, $p = .085$					
F/R Lunch Students (%)	-0.49	0.01	-0.77	-37.95	0.000
Minority Students %	-0.04	0.01	-0.08	-3.76	0.000
Students w/ Disabilities (%)	-0.02	0.05	-0.01	-0.37	0.713
Faculty Experience (%)	-0.01	0.02	-0.01	-0.36	0.716
Faculty Tenure (%)	0.07	0.02	0.08	3.47	0.001
CVF "R Goal/H Relations"	4.21	2.44	0.03	1.72	0.085

With respect to the percentage of students proficient in reading and mathematics, the outcomes are almost identical to those seen for NCE scores. Again, the percent of students on free and reduced lunch ($\beta = -0.77, t = -38.30, p < .001$), followed by the percent of minority students ($\beta = -0.08, t = -3.58, p < .001$) are the most important in explaining variation in percent of students proficient. Faculty tenure explains a small additional percentage of the variability in proficiency percentages ($\beta = 0.08, t = 3.42, p = .001$) but adding the CVF “internal process/open systems” does not significantly increase the proportion of variance explained in the outcome ($\beta = 0.00, t = 0.15, p = .882$).

As with previous regressions involving proficiency scores, the model is dominated by the explanatory power of student demographic characteristics, with the percent of students on free and reduced lunch ($\beta = -0.77, t = -38.30, p < .001$) being the most important variable in explaining the outcome (see Table 18). Of roughly equal importance are the percent of minority students ($\beta = -0.08, t = -3.58, p < .001$) and the percent of faculty with 6 or more years of tenure ($\beta = 0.08, t = 3.42, p < .001$). Not observed to be statistically significant in the final block of the analysis are faculty experience ($\beta = -0.01, t = -0.41, p = .678$), percent of students with disabilities ($\beta = -0.01, t = -0.33, p = .742$), and the CVF “internal process/open systems” profile score ($\beta = 0.00, t = 0.15, p = .882$).

Summary

In the five sets of multiple regression analyses conducted on 1187 elementary schools, student demographic characteristics proved to be the most important factors in explaining variation in student achievement, whether measured as three-year averages of students’ NCE scores in reading and mathematics or as three-year averages of the percent of students proficient in reading and mathematics. Although higher levels of faculty tenure regularly emerged as a

statistically significant, if only slight, influence on student outcomes, no such influence was observed with respect to higher levels of faculty experience.

Over and above these background variables, the Competing Values Framework (CVF) profiles concerning ‘balance,’ ‘stability,’ an ‘external’ orientation, and a disposition towards ‘rational goals’ were all associated with higher NCE scores, but only the CVF ‘balance’ profile was statistically significantly linked to student proficiency scores.

Table 17

*Hierarchical Regression Summary of the Internal Process/Open Systems Contrast on Students'**Mean NCE Scores in Reading and Mathematics 2010-12 (N = 1187)*

Source	B	S.E.B.	β	t	p =
Block 1: Student Demographics					
Model Fit: $F(3, 1183) = 870.40, p < .001, R^2 = .688$					
F/R Lunch Students (%)	-0.27	0.01	-0.76	-40.39	0.000
Minority Students %	-0.04	0.01	-0.15	-8.29	0.000
LD Students (%)	0.03	0.03	0.02	1.28	0.202
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 1181) = 528.70, p < .001, R^2 = .691,$					
F Change (2, 1181) = 5.73, $p = .003$					
F/R Lunch Students (%)	-0.27	0.01	-0.77	-40.13	0.000
Minority Students %	-0.03	0.01	-0.12	-6.02	0.000
LD Students (%)	0.04	0.03	0.02	1.35	0.178
Faculty Experience (%)	-0.01	0.01	-0.01	-0.65	0.514
Faculty Tenure (%)	0.03	0.01	0.07	2.94	0.003
Block 3: Student + Faculty Demographics + CVF Profile					
Model Fit: $F(6, 1180) = 441.97, p < .001, R^2 = .692,$					
F Change (1, 1180) = 3.26, $p = .071$					
F/R Lunch Students (%)	-0.27	0.01	-0.78	-39.48	0.000
Minority Students %	-0.03	0.01	-0.12	-5.62	0.000
LD Students (%)	0.04	0.03	0.02	1.40	0.160
Faculty Experience (%)	-0.01	0.01	-0.01	-0.58	0.560
Faculty Tenure (%)	0.03	0.01	0.07	3.07	0.002
CVF "I Process/O Systems"	1.78	0.98	0.03	1.80	0.071

Table 18

*Hierarchical Regression Summary of the Internal Process/Open Systems Contrast on Students'**Mean Percent Proficient in Reading and Mathematics 2010-12 (N =1187)*

Source	<i>B</i>	<i>S.E.B.</i>	β	<i>t</i>	<i>p</i> =
Block 1: Student Demographics					
Model Fit: $F(3, 1183) = 799.25, p < .001, R^2 = .670$					
F/R Lunch Students (%)	-0.49	0.01	-0.76	-39.48	0.000
Minority Students (%)	-0.06	0.01	-0.11	-5.99	0.000
Students w/ Disabilities (%)	-0.02	0.05	-0.01	-0.42	0.674
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 1181) = 489.32, p < .001, R^2 = .674,$					
F Change (2, 1181) = 8.74, $p < .001$					
F/R Lunch Students (%)	-0.50	0.01	-0.77	-39.36	0.000
Minority Students %	-0.04	0.01	-0.08	-3.66	0.000
Students w/ Disabilities (%)	-0.02	0.05	-0.01	-0.33	0.738
Faculty Experience (%)	-0.01	0.02	-0.01	-0.42	0.674
Faculty Tenure (%)	0.07	0.02	0.08	3.42	0.001
Block 3: Student + Faculty Demographics + CVF Profile					
Model Fit: $F(6, 1180) = 407.23, p < .001, R^2 = .674,$					
F Change (1, 1180) = 0.022, $p = .882$					
F/R Lunch Students (%)	-0.50	0.01	-0.77	-38.30	0.000
Minority Students %	-0.04	0.01	-0.08	-3.58	0.000
Students w/ Disabilities (%)	-0.02	0.05	-0.01	-0.33	0.742
Faculty Experience (%)	-0.01	0.02	-0.01	-0.41	0.678
Faculty Tenure (%)	0.07	0.02	0.08	3.42	0.001
CVF "I Process/O Systems"	0.28	1.85	0.00	0.15	0.882

Chapter 5

Discussion

The literature on the Competing Values Framework and its impact that it has on an organization was prevalent in the business sector. While limited research has been done with CVF in the education sector, there was extensive research on school effectiveness and what an effective school resembles. Research by Coleman, Edmond, and Bryk found that school effectiveness was impacted by external and internal factors. The Coleman Report detailed how external factors like socioeconomic status, home life, and community involvement influenced the effectiveness of schools. Research revealed that external factors were correlated to the effectiveness of schools, there were internal factors that schools should be aware of. Schools that focus on internal factors— such as strong leadership, high expectations, orderliness, a quiet and pleasant atmosphere, and a strong emphasis on pupil acquisition – demonstrate an increase in student achievement (Weber, 1979). Ronald Edmond (1979) acknowledged the correlation between the external factors found in the Coleman Report, but he placed a stronger emphasis on the internal factors in which schools could develop to help increase student achievement.

The purpose of this study was to explore the relationships between longitudinal assessments of student achievement at the elementary level and faculty perceptions of the way their school resolved the “organizational tensions, trade-offs, and conflicts” (Cameron, Quinn, DeGraff, & Thakor, 2006, p. 50), which was embodied in the Competing Values Framework (CVF). In this study, the CVF was used to determine if balance played a factor in school effectiveness as it related to student achievement derived from math and reading NCE scores and student proficiency. This study also utilized the CVF to determine the relationship between academic achievement and the CVF’s organizational effectiveness orientations represented by

the four quadrants (human relations, open systems, rational goal, and internal process). It also delineated the two-orthogonal bipolar opposite dimensions (a flexibility focus versus a control focus, and an internal focus versus an external focus).

This study is guided by the following research questions:

Research Question 1: Controlling for student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile that is balanced (three or four quadrant scores above the population mean) rather than unbalanced (two or fewer quadrant scores above the population mean) and longitudinally-assessed reading and mathematics achievement measured as mean NCE scores and mean percent proficient?

Research Question 2: Over and above the influence of student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile that is more externally focused (upper and lower left quadrants) than internally focused (upper and lower right quadrants) and longitudinally-assessed reading and mathematics achievement measured as mean NCE scores and mean percent proficient?

Research Question 3: Over and above the influence of student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile more oriented towards structure and control (lower left and right quadrants) than flexibility and openness (upper left and right quadrants) and longitudinally-assessed reading and mathematics achievement measured as mean NCE scores and mean percent proficient?

Research Question 4: Over and above the influence of student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile more disposed towards achieving immediate results (lower-right quadrant) than evolving

sustainable solutions (upper-left quadrant) and longitudinally-assessed reading and mathematics achievement measured as mean NCE scores and mean percent proficient?

Research Question 5: Over and above the influence of student and faculty characteristics, are there relationships between an elementary school's exhibiting a "competing values" profile more inclined towards making incremental improvements (lower-left quadrant) than enacting transformational change (upper-right quadrant) and longitudinally-assessed reading and mathematics achievement measured as mean NCE scores and mean percent proficient?

Summary: Control Variables (Student, Faculty, Institutional Demographics)

The positive impact of control variables such as student demographics, faculty attributes and school characteristics were similar to previous achievement studies in that schools with a high percentage of historically disadvantaged student sub-groups (i.e., low-income students) have a negative effect on achievement scores as observed through reading and math NCE scores and student proficiency. It has been established in research literature that one of the most influential factors of academic performance was a student's family socioeconomic status (SES), which was affirmed by Sirin's (2005) meta-analysis of 74 studies focusing on the relationship between SES and academic achievement. Schools with a high SES level exhibited a pattern of producing higher average scores than schools with low level SES. In this study, schools that had a high percentage of minority students are observed to have lower achievement scores. However, students with learning disabilities did not have a significant impact on student achievement. Faculty experience and tenure were both positively correlated to student achievement. Of all the control variables considered in this study, the percentages of free and reduced students have the strongest negative influence on student achievement.

Effect of “Balanced” versus Unbalanced CVF Profile on NCE scores and Percent

Proficiency – Question 1

The first question examined the organizational culture of an elementary school based on if its balance versus unbalance on the CVF profiles factors into student achievement as it related to NCE scores and percent proficiency. When an organization was “balanced” it was committed to having a combination of value-drivers (commitment, communication, and development; innovation, transformation, and agility; efficiency, timeliness, and consistency; and market share, goal achievement, and profitability) from three of the four quadrants. This was consistent with research by Cameron & Quinn (2011), explaining that for organizations to remain effective they should have a “balanced” CVF profile. Cameron & Quinn (2011) also implied that organizations that were unbalanced (leaning towards one quadrant) would not be as effective as organizations that were more balanced (incorporated 2 or more quadrants).

Effect of Externally Focused versus Internally focused CVF Profile on NCE scores and Percent Proficiency – Question 2

The second question examined the impact of schools that were externally (upper and lower left quadrants) focused rather than internally (upper and lower right quadrants) focused. The regression revealed that the “external/internal” CVF profile was statistically significant on NCE scores. The external CVF profile consisted of the create and compete quadrant (open systems/rational goal). An organization that focused on the external profile side of the CVF exhibited characteristics such as: innovation, transformation, agility, goal achievement, and profitability.

A group of school effectiveness researchers have demonstrated that public schools that were more externally focused were more likely to produce gains in student achievement.

Cameron & Quinn (2011) suggested that organizations that put more organizational focus into one quadrant over another quadrant were not as effective. From their own statistical meta-analysis, school effectiveness researchers Sammons, Hillman, & Mortimore (1995) have found eleven factors for effective schools that require a predominantly external orientation and a disposition towards rationality. These eleven factors were: 1) professional leadership; 2) shared vision and goals; 3) a learning environment; 4) concentration on teaching and learning; 5) purposeful teaching; 6) high expectations; 7) positive reinforcement; 8) monitoring progress; 9) pupil rights and responsibilities; 10) home-school partnership; and 11) a learning organization.

Effect of Stability versus Flexibility CVF Profile on NCE scores and Percent Proficiency – Question 3

The third question examined the relationship between a school exhibiting a CVF profile of stability (lower left and right quadrants) versus flexibility (upper left and right quadrants). Results from the hierarchical regression model, revealed that the “stability/flexibility” CVF profile was statistically significant in explaining student achievement based on NCE scores. The correlation matrix revealed that more stable organizations had higher achievement scores as measured by NCE scores. The correlation matrix revealed that an organization that was more stable than flexible was more efficient at increasing student achievement.

These findings were consistent with literature concerning the organizational culture as viewed through the Competing Values Framework. Cameron & Quinn found that higher education institutions were more effective when they balanced the stability profile with the flexibility profile. This profile was practical when schools should look at change. To become effective, schools must make changes, and to “change without stability is chaos” (Cameron & Quinn, 2011, p. 1403).

Effect of Opposing Quadrants, Compete versus Collaborate CVF Profile on NCE scores and Percent Proficiency – Question 4

The fourth question examined the relationship between a school exhibiting a CVF profile of achieving immediate results (compete/rational goal) over sustainable change (collaborate/human relations). Results from the regression model revealed that compete/collaborate (rational goal/human relations) were statistically significant at explaining student achievement as measured by NCE scores and student proficiency.

When the results were compared on the zero-order correlation, one could see that the compete (rational goal) quadrant has more influence than the collaborate (human relations) quadrant on student achievement. Value drivers in the compete quadrant were measured by market share, goal achievement, and profitability. The value drivers led organizations to aggressively compete with a focus on customers to produce effectiveness. Cameron & Quinn recommended an organization to have a balance between the two quadrants. Sammons, Hillman, & Mortimore's (1995) eleven factors for effective schools identified more factors that were collaborative in nature. When schools were more collaborative, students had higher achievement scores.

Effect of Opposing Quadrants, Control versus Create CVF Profile on NCE scores and Percent Proficiency – Question 5

The fifth question examined the relationship between control/internal process (lower Left quadrant) versus create/open systems (upper right quadrant) CVF profiles measured as mean NCE scores and percent proficiency. Results from the regression tables revealed that the control/create profile (internal process/open systems) was statistically significant as measured on NCE scores. Results from the zero-order correlation revealed that control was more statistically

significant than create. Similar to questions 1 – 4, students' socioeconomic status has the greatest influence on student achievement.

Value drivers in the control quadrant were efficient, timely, consistent, and uniform. Schools that acknowledged that they were focused on the control quadrants revealed that they were not effective at increasing student achievement.

Overall, the study revealed that the organizational climate of a school influences student achievement. Schools that are “unbalanced”, “internally oriented”, “human relations” focused, and attuned to the internal process are in more of a need for a climate that supports student achievement. Schools that were found to have the previous CVF profiles revealed that they had low student achievement scores. According to Cameron & Quinn (2014), the competing values framework used to help identify aspects of managerial and organizational behavior. When the climate of an organization and the leadership styles were identified, the climate helped leaders guide the organization to higher levels of performance. This was much more effective than a climate that was unidentified, which often was unbalanced. The dominant quadrant that emerged from the research was the compete (rational goal) quadrant. This type of organization was oriented to the external environment versus the internal environment and control versus flexibility. Schools that had a goal do better than schools without a goal. Ultimately, schools that are “balanced”, “externally oriented”, focused on “rational goals”, and more attuned to “open systems” have a climate that was conducive to student achievement.

Cameron and Quinn (2011) claimed that organizations that placed equal emphasis on all four culture profiles without overemphasizing one over the other, tended to be effective organizations. School effectiveness researchers argued that external factors affected student achievement over internal, while others contended that internal factors affected student

achievement over external factors. The research revealed that the external CVF profile (the compete/create quadrants) affected students' achievement scores more than the internal CVF profile, but this contradicted the Coleman Report which indicated that the external environment decreased a student's achievement.

Implications for Practice

This study was designed to explore the effect of the four quadrants of the competing values framework on student achievement. The results demonstrated that schools that were more oriented towards the compete quadrant increased student achievement more than other quadrants. The statistical meta-analysis by Sammons, Hillman, & Mortimore's (1995) has identified eleven predictable 'effectiveness factors' which were said to have an evidence-based correlation with improved student achievement. These factors complemented the values, climate, culture and performance orientations within the four-quadrant CVF framework, namely stability, external profile, and the rational goal quadrant. The regression analysis of the study revealed a statistically significant relationship between these quadrants and student achievement based on NCE scores. In addition, it should be noted that the two profiles (stability and external) were characteristics of the rational goal quadrant. These findings helped confirm the Coleman report and the school effectiveness paradigm would later corroborate: that schools do matter and that schools have major effects upon student academic performance.

Based on the findings, the following recommendations were offered:

1. Develop and implement goals for the school. Research has revealed that schools with a high percentage of free and reduced students did better when they had a set of goals to achieve. When schools have a goal, they do better than schools without a goal.

2. Focus on what increases student achievement. Student achievement is directly impacted by teachers; therefore, schools need to focus on hiring quality teachers who have high expectations for their students.
3. Focus on creating a “balanced” profile based upon the Competing Value Framework. A balanced profile reaches into three or more quadrants instead of one or two.

Suggestions for Future Research

The current study focused on the effect of the four quadrants of the Competing Values Framework on student achievement. Recommendations for further research are based on survey instrument and data collection. The following suggestions for future research are offered:

1. This study could be replicated by adopting the Organizational Culture Assessment Instrument (OCAI), which measures the organizational culture based on the CVF. Instead of imposing a generalized competing values framework to the TELL Tennessee school climate survey, future research could explore the use of the OCAI to examine the relationship between school climate/culture and school performance. The OCAI instrument is built on Cameron and Quinn's competing values framework. This instrument assesses the six dimensions of the culture and is based on how organizations work and the values they hold, such as: dominant cultural characteristics, organizational leadership, management of staff, organizational glue, strategic emphasis, and criteria for success. This instrument would help researchers identify the exact CVF quadrant that a school focuses on and get a better picture into the balance or unbalanced nature of the school.
2. It is often difficult and time-consuming to conduct teacher-level analysis of school performance and working conditions, yet future research could move beyond an analysis

of teachers' responses to the TELL survey based on aggregated data to the school level conducted in this study. Specifically, future research could obtain teacher TVAAS scores and link them to individual teacher perceptions of school climate and working conditions. Such an analysis would provide a more precise examination of organizational factors that influence the effectiveness of schools.

In sum, the ultimate goal of education and educators is to make a difference in school effectiveness. This study helped to identify CVF profiles that increase student achievement. Schools that are increasing student achievement should focus on the hiring of quality teachers and administrators. While the administrators have an indirect effect on student achievement, they ultimately develop the culture and climate of the schoolhouse. The culture and climate of the school affects the teachers who have a direct affect on student achievement. When the schoolhouse has a more balanced CVF profile, the effect of the profile has been demonstrated to increase student achievement across state and national tests.

The control variable that had the greatest negative impact on student achievement was the percent of students on free and reduced lunch, which corroborates with the Coleman Report. For schools to combat against the negative effects of free and reduced lunch status, they need to work on getting the climate of the school to a more balanced, externally-oriented, rational goal focused, and more attuned to open systems CVF profile. When the schoolhouse climate becomes more oriented in the profiles mentioned previously, it will begin to see student achievement increase incrementally.

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