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EXAMINING THE RELATIONSHIP BETWEEN HIGH SCHOOL ACHIEVEMENT AND
THE COMPETING VALUES FRAMEWORK

by

Phillip Wayne Nelson, Jr.

A Dissertation

Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Major: Leadership and Policy Studies

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Dedication

This is dedicated to my wife, Christine Nelson, and my children: Parker, Jennifer, Jack, and Jeremiah. These have held me up, sacrificed and encouraged me throughout the process. They all can count on one hand the number of years they have known me to not be in school. Thank you all for your support and encouragement. I love you!

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There are numerous people that I would like to acknowledge for completing this work. First, all the faculty that were part of my dissertation committee. Dr. Charisse Gulosino, my chair, for giving me the idea to use the Competing Values Framework in an educational setting and constantly urging me to do better because I was better. Dr. Louis Franceschini for helping me to better understand what my stats were telling me. Dr. Barbara Davis of the Fogelman College of Business and Economics for stepping out of her realm of expertise to assist with knowledge and input of the Total Quality Management Framework and Competing Values Framework to assist and give insight into this dissertation. Finally, I would like to acknowledge Dr. Reginald Green. Dr. Green's knowledge and insight have been a source of knowledge and inspiration for the last 14 years that I have been in and out of the program. I took my first graduate level course under Dr. Green. The most important take away from his class that year was "Attitude reflects leadership." I learned how to lead people and care for them at the same time. I am still learning.

Next, I would like to acknowledge my Grandma and Paw-Paw Griesheimer. I was their passion for ensuring all their grandchildren received the best education possible that began this journey over 35 years ago.

Finally, I would like to acknowledge my parents, family, and friends that have pushed me along the way towards completion. My parents, Phil and Susan Nelson, had a constant belief that I was better than the effort that I put forth educationally and pushed me to attain more than a four-year degree. My brother, Tommy Nelson, for his constant humor but believing in me even when I didn't necessarily believe in myself. Finally, my friend and mentor Nick Manning for convincing me that I could do this work and to enroll in and complete a doctorate program.

Abstract

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The purpose of this study was to investigate the relationships between student achievement assessed longitudinally in terms of ACT composite scores and state-mandated tests of proficiency and the perceived manner in which high schools resolve the tensions and tradeoffs illuminated by the Competing Values Framework (CVF). To answer the study's five research questions, a secondary analysis that applied hierarchical multiple regression to an existing dataset was undertaken. The dataset in question combined information from the 2013 administration of the *Teaching, Empowering Leading, and Learning (TELL)* survey in 287 Tennessee high schools with concurrent school demographic and student achievement data archived on the Tennessee Department of Education (TDOE) website.

In the ten multiple regression analyses conducted, student demographic characteristics proved to be the most important factors in explaining variation in student achievement, whether measured as three-year averages of ACT composite scores or three-year averages of student EOC assessments in Algebra and English. Although faculty demographic characteristics appeared to be directly linked to ACT composite scores, no such direct links were observed with respect to student proficiency scores. Over and above these background variables, the Competing Values Framework (CVF) profiles concerning "balance," an "external" orientation, and a disposition towards "rational goals" were all associated with higher ACT composite scores, but only the CVF "balance" profile was significantly linked to student proficiency scores.

Table of Contents

Chapter		Page
1	Introduction	1
	Emergence of the Problem	1
	Exploring Academic Achievement in High Schools	2
	Previous Research Related to the Problem	2
	Statement of the Problem	4
	Purpose of the Study and Research Questions	6
	Significance of this Study	7
	Limitations of this Study	8
	Definitions of Terms	10
	Organization of the Study	11
2	Review of Literature	13
	Factors that Affect High School Achievement	13
	School Effectiveness Research	14
	Total Quality Management (TQM)	17
	Organizational Culture	21
	Competing Values Framework (CVF)	23
3	Methodology	32
	Overall Methodology	34
	Instrument	35
	Context and History	35
	Evidence of the Validity of the TELL	37
	Focus on the Present Study and Description of Sample	38
	Demographic Characteristics of the Sample: Individual Level	39
	Demographic Characteristics of the Sample: Institutional Level	41
	CVF Profile Scores	43
	Analysis	49
4	Results	50
	Descriptive Statistics	51
	Outcomes Common to All Five Hierarchical Regression Analysis	54
	Block One: Student Demographic Variables	55
	Block Two: Faculty Demographic Variables	56
	Summary: Block One through Three Outcomes	57
	Summary	72

Table of Contents (Continued)

Chapter	Page
5	76
Summary and Conclusions	
Effect of Student Demographics on EOC Proficiency in Algebra I and English II and ACT Composite Scores (Regression 1)	78
Effect of Student and Faculty Demographics on EOC Proficiency In Algebra I and English II and ACT Composite Scores (Regression 2)	79
Effect of a “Balanced: CVF Profile on ACT Composite Scores and EOC Proficiency in Algebra I and English II (Question 1)	80
Impact of Stability vs. Flexibility Focused CVF Profile on ACT Composite Scores and EOC Proficiency in Algebra I and English II (Question 2)	81
Impact of an Externally vs. Internally Focused CVF Profile on ACT Composite Scores and EOC Proficiency in Algebra I and English II (Question 3)	81
Contrast of the Rational Goal vs. Human Relations Orientations on ACT Composite Scores and EOC Proficiency in Algebra I and English II (Question 4)	82
Contrast of the Internal Process vs. Open Systems Orientations on ACT Composite Scores and EOC Proficiency in Algebra I and English II (Question 5)	82
Implications	83
Recommendations	85
Recommendations for Further Research	86
References	88

List of Tables

Table		Page
1	Demographic Characteristics of the Sample at the Individual Level (N = 61341)	40
2	Demographic Characteristics of the Sample at the Institutional Level (N = 287)	42
3	CVF Means and Standard Deviations: Rational Goals Quadrant	45
4	CVF Means and Standard Deviations: Internal Process Quadrant	46
5	CVF Means and Standard Deviations: Human Relations Quadrant	47
6	CVF Means and Standard Deviations: Open Systems Quadrant	48
7	Matrix of Zero-Order Correlations between Control Variables and Two Measures of High School Student Achievement (N = 287)	53
8	Matrix of Zero-Order Correlations between CVF Profiles and Other Variables in the Model (N = 287)	55
9	Hierarchical Regression Summary of a “Balanced” Competing Values Profile on 2010-2012 ACT Composite Scores (N = 287)	59
10	Hierarchical Regression Summary of a “Balanced” Competing Values Profile on 2010-2012 Mean Proficiency Scores in Algebra I and English II (N = 287)	60
11	Hierarchical Regression Summary of an Externally-versus-Internally-Oriented Competing Values Framework Profile on 2010-2012 ACT Composite Scores (N = 287)	63
12	Hierarchical Regression Summary of an Externally-versus-Internally-Oriented Competing Values Framework Profile on 2010-2012 Mean Proficiency Scores in Algebra I and English II (N = 287)	64
13	Hierarchical Regression Summary of a Stability-versus-Flexibility-Focused Competing Values Profile on 2010-2012 ACT Composite Scores (N = 287)	66
14	Hierarchical Regression Summary of a Stability-versus-Flexibility-Focused Competing Values Profile on 2010-2012 EOC Mean Proficiency Scores in Algebra I and English II (N = 287)	67

List of Tables (Continued)

Table		Page
15	Hierarchical Regression Summary of Contrasting the Rational Goal versus Human Relations Orientations on 2010-2012 ACT Composite Scores (N = 287)	70
16	Hierarchical Regression Summary of Contrasting the Rational Goal versus Human Relations Orientations on 2010-2012 EOC Mean Proficiency Scores in Algebra I and English II (N = 287)	71
17	Hierarchical Regression Summary of Contrasting the Internal Process versus Open Systems Orientations on 2010-2012 ACT Composite Scores (N = 287)	74
18	Hierarchical Regression Summary of Contrasting the Internal Process versus Open Systems Orientations on 2010-2012 EOC Mean Proficiency Scores in Algebra I and English II (N = 287)	75

Chapter 1

Introduction

Emergence of the Problem

The recent steady decline in American College Testing (ACT) scores and generally stagnant results from high schools on federal/state tests and other measures reflect a troubling shortcoming of education-reform efforts. The ACT test is designed to measure academic preparation and is oriented toward the general content areas of college and high school instructional programs (ACT, 2015a). Tennessee is one of 18 states requiring all high school students to take the ACT, and nationally, 65% of graduates took the test in 2016 (ACT, 2016; Boehnke, 2016).¹ National results also show students are graduating high school unprepared for college, as just 38 percent of senior students across the nation hit the college-prepared benchmarks in at least three of the four tested subjects (math, science, reading, and English). To be considered college-ready, students must meet a specific benchmark score in each of the four tested subjects. That means several hundred thousand students, especially those who grew up poor and minority, are leaving school every year. Historically, data from the National Center for Education Statistics (Bohrnstedt, Kitmitto,, Ogut,, Sherman & Chan, 2015) showed improvements in high school achievement across core subjects by minority groups through the 1970s and 1980s but slowed down in the 1990s. For example, African American ACT scores, like their white counterparts, have increased over three decades, even though nearly twice as many African American students have taken the tests (Caldas & Bankston, 2007). However, opponents of standardized testing are often quick to point out that it is family and student background that is often the strongest predictor of test scores in high school.

¹ The ACT tests math, science, reading and English, and a student's composite score is considered during the admissions process at many colleges.

Exploring Academic Achievement in High School

Bolstering students' high school achievement is one of the primary objectives of to help prepare students for college, career, and life. Although recent studies have found a positive link between academic emphasis and student achievement (Hoy & Woolfolk, 1993; Hoy & Tarter, 1997), the effects of school organizational conditions (i.e., culture/climate) on high school achievement are still unclear. While scholars since the Coleman Report (collectively known as school effectiveness research) have continued to examine the unique impact of teacher and school factors on student achievement after controlling for student and family background (Wilms, 2010), research published to date has been dominated by studies of teacher qualifications on student outcomes, with very little research on organizational properties related to school effectiveness or high school achievement (Bol & Berry, 2005; Desimone, 2002). While the value-added measures suggest a great variation in teacher quality, observable teacher characteristics, such as years of teaching experience, licensure status, and educational level, have shown little or weak predictive power in students' high school achievement gains (Goldhaber & Brewer, 1997; Sharkey & Goldhaber, 2008). Examining what school organization conditions influence high school achievement has important implications for assessing productivity of individual high schools. Unfortunately, there remains a paucity of research that holistically examines the important dimensions of school organizational conditions aside from student and family factors, and their consequences for school productivity (Camburn & Han, 2011; Rindermann & Thompson, 2013). This proposed study seeks to address this gap in the literature.

Previous Research Related to the Problem

The varied aspects of working conditions that can impact high school achievement have been shown in many well-documented studies. Significant factors include administrative support

and leadership, student behavior and school atmosphere, parental support, teacher autonomy and control, and efficacy (Culver, Wolfe, & Cross, 1990; Lee, Dedrick, & Smith, 1991; Ma & MacMillan, 1999; Perrachione, Rosser, & Peterson, 2008; Renzulli, Parrott, & Beattie, 2011; Reyes and Pounder, 1993; Weiss, 1999). While numerous studies (Darling-Hammond, 1995) assert that teachers consider classrooms as the focal point of a school and that extensive involvement from principals at the classroom level is important, other scholars claim that teachers' perceptions of themselves as contributors to the whole school is also important because they influence the satisfaction level beyond their classroom (Ma, 1999; Ma & MacMillan, 1999). Rosenholtz and Simpson (1990) suggested that in order to improve schools, a work environment that enhances school performance should be provided. When a supportive work environment is fostered, teachers are more likely to feel positively toward their job and motivated to contribute to organizational performance and success (Ingersoll, 2003). These empirical findings signify the importance of the school environment in terms of the aspects of schools as institutions/organizations and the relations among people within schools that affect the behavior of each individual (i.e., teacher) affiliated with the school.

Some of the most important research that elucidates the relationship between school climate and school improvement efforts has emerged from a multi-year study of schools in Chicago (Bryk, Sebring, Allensworth, Luppescu, & Easton, 2010). Bryk and Schneider (2002) concluded that the degree of "relational trust" (good social relationships) between teachers, and between teachers and students, is related to achievement. Clearly, any meaningful analysis of teachers' working conditions must recognize the full range and interdependence of the factors that define the specific components of school climate, from professional capacity to instructional guidance and parent-school-community ties (Bryk & Shneider, 2002; Bryk et al., 2010). More

recent large-scale empirical studies by Ladd (2009), Johnson, Kraft, and Papay (2012), and Ferguson and Hirsch (2014) for the MET Project utilized survey data from various states to estimate the impact of teaching and learning conditions on academic achievement. Using school-level value-added scores and TELL Survey data, Ladd (2009) found that working conditions predict school-level value-added scores in mathematics and, to some extent, in reading, over and above the variation explained by school-level student and teacher demographic characteristics. Of the five working conditions that Ladd examined, school leadership emerged as the most important factor of achievement in mathematics, whereas teachers' ratings of facilities had the strongest association with reading achievement. Johnson et al. (2012) found that in disadvantaged schools, better-perceived teaching conditions are associated with higher student academic outcomes. Finally, Ferguson and Hirsch's (2014) evaluation of the Bill & Melinda Gates Foundation's MET project found significant connections between the four areas of teaching conditions in the TELL survey (namely, student conduct management, demand on time, professional autonomy and professional development) and student value-added gains. These empirical studies demonstrate that teachers' ability to deliver effective instruction and facilitate learning for their students is deeply affected by the context in which they work, but also that this context may vary greatly from one school to another.

Statement of the Problem

There is increasing recognition that school improvement efforts must be holistic, addressing the processes through which teachers form relations with one another and influence one another as they contribute to the construction of working conditions (Darling-Hammond & McLaughlin, 1995, Rosenholtz & Simpson, 1990). Measuring working conditions is complex, with many of the factors in the different domains appearing to be interrelated, making it difficult

to understand relationships between variables. More recent empirical studies have sought to identify and include a wide range of factors such as school processes and school climate items when examining school-level outcomes (i.e., ACT scores) (Johnson et al. 2012). However, features of the working conditions in these studies have not captured an integrated model of organizational effectiveness that embodies the paradoxes and competing demands of high school performance. This study seeks to begin to fill the gap in research by examining whether high school achievement measures are associated with particular organizational culture profiles of the competing values framework (CVF), controlling for demographic and school characteristics.²

The competing values framework (CVF) is a general organizational model of effectiveness which has been used in the management field especially in corporation communication, public relations and public affairs, human resources, business and management, and public policy (Quinn & Rohrbaugh, 1983). The framework is widely accepted but it has limited empirical tests/applications in a broad range of organizational research, particularly school settings. The CVF, as it relates to teacher workplace condition, is the primary focus of this study. On the other hand, school climate dimensions have been recognized individually in organizational literature, but they have never been presented as integrated elements of a single conceptual framework and as a model to measure organizational effectiveness. This dissertation proposal complements prior studies on organizational culture effectiveness and related business and organizational theories (i.e., Total Quality Management or TQM) that point out the importance of organizational culture to the effectiveness of organizations.

² 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.

Purpose of the Study and Research Questions

The purpose of this study is to explore the relationships between student achievement assessed longitudinally in terms of ACT composite scores and state-mandated assessments of high school proficiency and faculty 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). 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:

1. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

2. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

3. Over and above the influence of student and faculty characteristics, are there relationships between a high school’s exhibiting a “competing values” profile more oriented towards concerns about structure and control (lower left and right quadrants) than flexibility and

openness (upper left and right quadrants) and longitudinally measured student achievement as ACT composite scores and end-of-course assessment performance?

4. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

5. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

Significance of this Study

In Tennessee, working conditions are found to play an important role in the state's policy development guidance.³ Over the past several years, the Tennessee Department of Education, as well as partner institutions, has invested in large statewide surveys of all teachers that generate rich data on teachers' perceptions of their working conditions. The New Teacher Center (NTC) and Vanderbilt University's Peabody College of Education are the two organizations contracting survey administrations and vested in the expansion of working conditions surveys across the state, therefore independent examination of data have added valuable insight. For example, the results of the 2015 Tennessee Educator Survey led by the Vanderbilt team reveal that 80 percent

³ For more details, see TNDOE (2011) "TELL Tennessee" survey results set standard and strategy available at <https://news.tn.gov/node/7103>.

of teachers at their school are satisfied and like being there, up from 67 percent in 2014. Seventy-seven percent of teachers declare that they feel appreciated, a modest increase from 72 percent in 2014 (TNDOE, 2015).⁴ In addition, the Tennessee Department of Education sponsored the New Teacher Center's TELL (Teaching, Empowering, Leading and Learning) Survey in 2011 and 2013 as part of the Race to the Top grant. Over 60,000 teachers participated in the survey in 2013, weighing in on a variety of work conditions (New Teacher Center, 2013a).

Tennessee is arguably one of the leading states that have invested in large-scale, teacher working conditions surveys. Knowing the perspectives of teachers concerning teaching and learning condition and the support and environment within their school can help policymakers and practitioners understand what it will take to improve. While federal and state accountability mandates are clear about high school performance results that schools are expected to achieve, they often do not provide the schools with much guidance in terms of how to accomplish these objectives.

Limitations of this Study

There are a number of limitations to be noted regarding this study. First, the reliance on self-report data about perceptions of organizational culture has been suggested as prone to many kinds of response bias and socially desirable responses (Stone et al., 2000). A combination of actual behavior and propensity to give socially desirable responses might be considered to fully account for self-report bias. A related limitation is the study's reliance on survey data which is often prone to unobserved heterogeneity. This study does not know, for example, whether teachers report their honest perceptions about their workplace. Perceptions of organizational

⁴ 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/>

culture can be thought of as measures of particular feelings or emotional states, and they are typically measured with reference to a particular point in time. The study assumes that teachers with different career intentions view working conditions differently — which can have consequences for their overall judgment of satisfaction. The study suspects that out-of-field assignments, teachers in special education classrooms, teachers with excessive loads, as well as elementary and middle school teachers can have powerful impact on teachers' perceptions of working conditions – and subsequently on their perceptions. The school-level aggregate data holds constant all other potential explanations. Likewise, the school-level averages for each CVF item scale allows this study to examine measures of the work context that are not influenced by reporting bias or individual differences (Boyd et al., 2011).

Second, the data employed here is a snapshot of topically organized school climate responses. Longitudinal data linking teachers to schools as they remain in the same schools would allow for analysis of how the same teachers respond to school climate items tied to balanced CVF profiles. Longitudinal data would also make it possible to examine the implications of time varying factors on school climate. Besides increasing accountability pressures on teachers, the new teacher evaluation system (Tennessee Educator Acceleration Model or "TEAM") contains a number of provisions with direct implications for teacher satisfaction, including use of multiple measures of professional practice aligned to student growth and achievement gaps, which could result in the loss of teaching positions for some schools, and the potential for teacher dismissals for those who are considered ineffective. Because the state enacted the First to the Top Act of 2010 that required teacher evaluations and implemented state-wide in school 2011, the TELL survey data coincide the time period in which schools could feel the direct effects of many of these provisions.

Thirdly, the TELL Survey is not a requirement for teachers to submit. There is a myriad of non-responders to the survey. The way this is combated by the New Teacher Center (NTC) is by requiring a certain percentage of the faculty complete the survey for the survey to be statistically valid. That number is to exceed 50 percent in each school (TELLMNPS, 2017). The results are then tallied and given to administrators if the correct number of teachers fills it out (New Teachers Center, 2012).

Fourthly, there is a chance that only certain employees (i.e., more motivated and committed teachers) may fill out the survey. As previously mentioned, the way the TELL attempts to combat this is by requiring a minimum of the staff (exceeding 50 percent) complete the survey. (TELLMNPS, 2017) Additionally, the TELL-TN gives steps on how to better use the data from the survey to get a more encompassing picture of the school.

The survey results are perceptual data from educators about the presence of important teaching conditions, and educators' perceptions are their reality. This does not mean the data is not "valid" or as important as other data sources. Educator perceptions of the culture and context of their school have been linked to student learning, future employment plans, efficacy and motivation. Analyzing and using this information to improve schools is critical and needs to be a part of reform efforts at the school and district levels. However, other data should be used to triangulate these findings and provide additional understanding of these perceptions such as instructional expenditures, proportion of teachers working out of field, teacher/pupil ratio, etc.

Definition of Terms

ACT-The acronym stands for American College Test. In relation to the study, the ACT will be used as a standard of measure to better understand school effectiveness in having students that are college-ready. (ACT, 2015)

End of Course Test (EOC)-These are tests given in the state of Tennessee yearly in English (I-IV), Mathematics (Algebra I, Algebra II, and Geometry), Science (Biology and Chemistry), and United States History to help measure a school's effectiveness in teaching students. The test results are used to both measure a teacher's effectiveness and school's effectiveness. (TN General Assembly, 2011)

School Effectiveness-This is determined by a combination of EOC and ACT scores to determine if the school is successful in teaching students the yearly material needed to learn (EOC) and preparing students to be college-ready (ACT). (TN General Assembly, 2011)

Organization of this Study

This study is organized into five chapters. Chapter 1 is the introduction to the study. The chapter includes a background of the study, a 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 a summary.

Chapter 2 consists of a review of literature as it relates to high school achievement and school organizational factors, the legislative search for school effectiveness and reform, 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.

Chapter 3 focuses on the proposed methodology. To analyze the data, the study provides a description of the data, research instrument, reliability/validity procedures, and data analysis.

Chapter 4 presents an analysis of the data and findings of the study. The chapter is divided into the following sections: study design, sample of participants and demographics, and quantitative findings and answers to research questions.

Chapter 5 includes the following: the discussion and implications of the findings, the relationship of the study to prior research, implications of limitations, recommendations for practice, recommendations for future research, and a conclusion.

Chapter 2

Review of Literature

This chapter is presented in sections that provide an overview of empirical studies that relate high 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 Affect High School Achievement

Large-scale studies dating to the Coleman Report (Borman & Dowling, 2010; Bryk & Schneider, 1996; Coleman et al., 1966) have indicated a relatively strong correlation between student/family characteristics and academic outcomes. Educational scholars during the early 1960s and 1970s subscribed to the belief that individual schools made very little difference in student achievement (Coleman, 1966; Jencks, 1972). This partitioning of the variation in student achievement according to variations in underlying factors (schools, teachers, and student background) gives little indication of whether, and under what set of organizational indicators helps or hinders high school academic achievement.

The evidence on the effectiveness of various approaches that matter to high school achievement is a mixed bag. One body of research addresses the impact of student body composition, social psychological factors, and socioeconomic background within schools, thus minimizing the influence of school-based factors (i.e., educational climate) on students' academic achievement (Alexander & Eckland, 1975; Jessor & Jessor, 1977). The incidence of mobility among high school students and the contextual effects of student-body composition (i.e., behavior incidents, friend's factors, drugs or alcohol abuse) have contributed to yearly drop in students' academic performance (Lagenkamp, 2016). An earlier study by Hauser, Sewell, and

Alwin (1974) found only small effects of high schools on achievement and aspiration in Nashville, Tennessee. On the other hand, another body of research claims that aspects of the educational climate (i.e., belief systems, values, and shared meanings) interact in complex ways to influence high school students' cognitive, social and psychological development (Anderson, 1982). This line of research is known as school effectiveness studies.

School Effectiveness Research

While scholars since the Coleman Report have continued to examine the unique impact of teacher and school factors on student achievement after controlling for student and family background (Wilms, 2010), research published to date has been dominated by studies on observable inputs and easily quantifiable outputs, with very little research on the relationship between school productivity and organizational conditions (Bol & Berry, 2005; Desimone, 2002). Current effectiveness school research adds the factors of teachers' shared values, ideologies, attitudes, assumptions, and norms that knit a school community together.

Ronald Edmonds is possibly the most renowned author on school effectiveness in the past 30 years. Edmonds (1979) believed that there was more that could potentially impact the effectiveness of a school, although he did not go forward to completely discount and discredit the Coleman Report. Quite the contrary, Edmonds found that external students' socioeconomic background has an impact on school effectiveness. Although he did not find as many effective schools in the inner-cities, he also found pockets of schools that would be deemed effective using the criteria of achievement tests. Therefore, Edmonds believed that there had to be more that played into the factors of school effectiveness than just external factors (Edmonds & Frederiksen, 1979). Edmonds set out with the mindset that all students can be taught and taught effectively. Therefore, to a larger extent, Edmonds is one of the pioneer researchers on school

effectiveness, particularly early attempts to explain the unexpectedly high performance of low-socioeconomic status students in high-poverty schools during the 1970s.

In their seminal work, Edmonds and Frederiksen (1979) set out to find a set of characteristics common to effective schools that typically included the following items: instructional leadership, schoolwide focus on instruction, orderly and safe environment, high expectations for student achievement, and use of student achievement for decision making and planning. All five of these characteristics deal with the internal culture of the school. Subsequent research like the one conducted by Olson, Swanson, Adam-Manning, and Byrd (2016) concur with this idea that an orderly environment, free of distractions would lead to greater school effectiveness. Their research showed a link between a reduction in the number of suspensions being linked to teachers' collegiality and collaboration in planning lessons. Therefore, if a classroom is focused on the instruction taking place, starting with the teachers and filtering down to the student in the class, then distractions are reduced, suspensions are reduced, and the school as a whole is more effective (Olson, et al., 2016).

In 1979, the concept of using standardized tests like the Stanford Achievement Test to assess what a student has learned was seen as radical and revolutionary nearly 40 years ago. This belief is probably the most common held characteristic of not just effective schools, but highly effective schools. This concept of monitoring standardized assessment results is common place in the vast majority of schools today. Research has been conducted by researchers like DuFour and Esker (1998) have not only confirmed this as a best practice, but have expanded this part of the organization's culture to include professional learning communities (PLCs) that disaggregate the data and make instructional plans. Bambrick-Santoyo (2010) has also written expansively on the effectiveness of what is now called data-driven decision making or data driven instruction.

As can be clearly seen, the idea of monitoring student progress through standardized test monitoring has been widely accepted in most schools in the United States, particularly effective schools.

Research by Lezotte (2001) reveals that in the effective school, there is a climate of high expectations in which the school believes and demonstrates that all students can obtain mastery of the school's essential curriculum. Following the effectiveness schools research that Edmonds started in the 1970s, Lezotte added two more characteristics of effective schools, namely is positive home-school relations and opportunity to learn. A positive home-school relation is a general term used to describe a myriad of activities that different stakeholders can offer to support student learning in schools. He claims that students learn what they spend the most of their time learning. Opportunity to learn implies that each of the teachers in the school has a clear understanding of what the essential learner objectives are, grade-by-grade and subject-by-subject. (Lezotte, 2001).

Perhaps the largest and best-known contemporary study of school effectiveness is the longitudinal project (1990-1996) by Bryk and colleagues at the Consortium on Chicago School Research aimed at identifying the multifaceted dimensions of school improvement. The crux of their theory of school organization and improvement is the technical core of instruction, which involves the classroom dynamics (teachers and students engaged in subject matter), the amount of effective learning time for these classroom dynamics, and the effectiveness of supplemental resources supporting these classroom dynamics. The extent of educational productivity within the classroom (and school) depends on what happens in this technical core (referred to as the classroom black box). Bryk et al. (2010) describe four organizational dimensions that directly impact the technical core: professional capacity, school learning climate, instructional guidance,

and parent/community factors. The parent and community dimension is supported by previous research on family inputs in academic achievement. The instructional guidance dimension highlights the school-wide supports concerning curriculum and instruction. The professional capacity dimension follows a long line of research that has explored how supportive interactions among teachers and teachers' adoption of effective instructional practices are related to student achievement. The learning climate dimension includes administrator and teacher perceptions, values and expectations of schools. Each of these dimensions is well-grounded in prior literature (i.e., school effectiveness literature), but they are examined often in isolation of each other.

Applied in other settings, the above elements define the conceptual nature of organizational culture effectiveness. Deal and Kennedy (1982) asserted that a strong culture is associated with performance and that a strong culture has almost always been the driving force behind continuing success in American business. Numerous scholars have also found that a culture supportive of organizational strategies leads to high performance within the organization. Nadler and Tushman (1980) stated that other things being equal, the greater the total degree of congruence or fit between the various components, the more effective will be the organizational behavior at multiple levels.

Total Quality Management (TQM)

Total Quality Management (TQM) is a holistic management approach, which uses the scientific method and the contribution of everyone in the organization to continuously improve everything the organization does in order to consistently meet or exceed its desired targets and needs (Calbrese & Corbo, 2015). As a systems model, TQM looks not only within the organization, but also to the entire process from suppliers to customers to design, monitor, and improve everything the organization does. Combining the strength of statistical analysis and

research within the power of listening to the employees closest to the processes, TQM gives a framework for improving our systems to optimize the potential of the organization and all those within it.

Not only does TQM focus on the immediacy of systems and procedures to improve the quality on the inside of the organization and its culture, TQM focuses on the outside of the organization as well (i.e. the customer and his/her satisfaction, as well as the suppliers to the organization). TQM looks for ways to improve relations and process with the faculty and staff (inside) as well as relationships and processes with the customer and suppliers (outside) (DeFeo, 2015; Deming, 1982 ; Hansen & Ghare, 1987; Hradesky, 1995; Ishikawa, 1985). Part of the downside to TQM is that many companies continue to focus in on the data driven part of the framework (Hopper, 1969). The literature is extensive in how to apply statistical value to the work of TQM (Cameron & Quinn, 2011; Deming, 1982; Hansen & Ghare, 1987; Hopper, 1969; Hradesky, 1995; Ishikawa, 1985). However, when this becomes the primary focal point of the framework, many of the other initiatives of the company seem to fall to the waste side and the organization is not as successful in implementing TQM (Cameron & Quinn, 2011). This appears to be true in educational literature as well. Many schools tend to focus on the school turnaround data piece of the job. They forget that the school is an open system and that there are other key pieces to the puzzle that enables a school to fully turnaround from low performing to high performing. Schools (particularly high schools), as part of the culture, must include those external parts of the open systems to reach the highest levels of turnaround (Green, 2005 and 2010).

TQM has developed into an innovative management paradigm in a variety of organizations. Deming is recognized as the originator of TQM, though he has never applied this

particular label to his work. Research on TQM has expanded over the last ten years into the areas of organizational climate, administrative skills, learning, and culture (Powell, 1995). In 1993, Garvin (1993) captured the premise of the TQM values within the purview of the underlying organizational characteristics: clarity of mission and vision, leadership, experimentation, transferring of knowledge, and teamwork. Applied to education settings, TQM relies on 1) support of leadership, 2) a change in the culture of the school, 3) customer focus, 4) the use of the scientific method and data for decision-making 5) an emphasis on teamwork and communication, and 6) an understanding of the interrelationship of the processes that make up the education system.

A crucial part of TQM is the examination of elements and processes to determine if they do indeed add value to the system (Calbrese & Corbo, 2015). Systems thinking is exemplified in Deming's "85-15" rule, that is, the belief that 85% of all production problems are attributable to system rather than employee error. Continuous improvement in the production system is the means by which quality is constantly improved. The integration of elements in a system generates synergy and thus the potential to add value to the system. Betts (1992) states that "the relationship among the elements is maintained by an exchange of energy" (p. 38-39). He further states that a healthy system is constantly searching for a dynamic balance through self-regulating mechanisms. It is the tension created by the flux of energy within and between processes that creates improvement. Through homeostasis, systems attempt to maintain their proper function and balance. The idea of balance suggests that what happens in a system does not happen in a vacuum because what happens in one part of the system will likely have some impact on other parts of the system.

Taking the systems point of view carries the idea of customers and needs yet further. While the needs of external customers (families/students) are of paramount importance to everyone within the organization, every work process has a customer and a supplier, whether internal to the organization or external. Examples from education may clarify how the school system is made up of many sub-processes, all contributing to the broader goals of the school. Several additional concepts that have correspondence to Deming's work can be applied in the school settings: formulating goals, setting priorities, and students and staff needs. The needs of the students and school staff, as seen from the quality perspective, are the starting point of quality improvement. Deming (1986) described improvement efforts as "aimed at the needs of the consumer, present and future" (p. 5).

Inspired by Deming's work, Michael Fullan (1991) links the concept of quality movement to school improvement. While discussing how to reform schools at the local level, Fullan gives five school characteristics that feed into both the student and teacher commitment to the change or reform. The first of these is relevance, also referred to as "sense of purpose". The second characteristic discussed is that of affiliation. Affiliation is that sense of being connected to their surroundings especially relating to how students are treated by teachers and vice versa. The next characteristic is support. Teachers and students need support. Teachers need support from their colleagues and administration; students need support from their teachers in achieving the goals presented to them to learn as well as administration and other students within the school. Support is also defined by fair practices for both the teachers and the students. The fourth characteristic is that of expectations. Expectations refers to a variety of results, whether student, teacher or organizational, but generally focuses on the extent of improvement according to specified criteria. The final factor described is that of influence. In the research, influence is

described as influence over policy. In both Deming (1982) and Fullan (1991), improving the system is intended to narrow the amount of variation within it. For student achievement, this means raising the mean of achievement while reducing variation. From TQM's perspective, the primary emphasis in school improvement is on raising the academic performance. Deming's intent is that everyone be involved in a continuous program of learning and improvement. This increases teachers' ability through improvement and innovation to the school and its external environment.

Organizational Culture

Fueled by Rutter's (1979) seminal work on high school characteristics and student success, greater emphasis and attention has been placed on the ethos of the school as a determinant of student achievement. Rutter continues by describing components of the school's ethos to include elements of patterns of behaviors, social and professional interactions, and the school's belief and value system (Rutter & Maughan, 2002). While the literature does provide evidence for the positive influence of a shared culture, very little research addresses the prescriptive and holistic nature of organizational culture effectiveness as applied in high school settings.

Quinn (1988) stated that culture could be thought of as the expression of the most important principles of an organization. The study of organizational culture has become one of the most major domains of organizational research, and some scholars contend that it has become the single most influential line of research in the field, eclipsing studies of other organizational issues such as formal structure, organization-environment research, and bureaucracy (Ouchi & Wilkins, 1985; Owens, 1998).

Organizational culture has been defined as a "pattern of basic assumptions invented, discovered or developed by a given group as it learns to cope with its problems of external and internal integration that has worked well enough to be considered valid and therefore, to be taught to members as the correct way to perceive, think, and feel in relation to those problem" (Schein, 1985, p. 9). Many scholars have identified a variety of dimensions related to the term culture. These dimensions are important because they serve as a base upon which theories can be built in the future (Cameron & Ettington, 1988; Cameron & Quinn, 2011). Examples of the various dimensions proposed by culture researchers include the flexibility/control focus dimension, the internal/external focus dimension, the long-term/fast change focus dimension, and the incremental/new change focus dimension. Various authors have developed categories that help identify the different frameworks individuals utilize when organizing assumptions, interpretations, and values related to culture (Cameron & Ettington, 1988; Cameron & Quinn, 2011).

Another key piece of organizational culture is having the right people in the right places to move the organization forward. Essentially, Collins (2001) equates this to having the right people on the bus. But this concept appears to go much deeper than this initial idea. Collins goes on to explain that not only does a company have to have the right people on the bus, the company must have these people in the correct place. For this to happen there has to be three underlying principles when working with the right people: 1) "When in doubt, don't hire-keep looking." 2). "When you know you need to make a people change, act." And 3). "Put your best people on your biggest opportunities, not your biggest problems."(Collins, 2001, pp. 54-58). These principles help to move and shape the culture of the organization and build its effectiveness by ensuring both the organization has the right people on the bus and that these

people are in the correct place on the bus. Shaping organizational culture with the right people is a vast majority of the battle in creating a successful organization (Collins, 2001; Collins & Hansen, 2011; DeFoe, 2015; Deming, 1982; Roth, 1992).

Organizational culture is a key part of the TQM framework discussed earlier in the review. In TQM, the practices that are designed through Six Sigma, Kaizen, and other strategies the organization uses to both monitor the quality of the product as well as using survey information from the customer and suppliers to better the product become engrained in the culture of the organization and part of the lasting endurance of the effectiveness of the organization (Collins & Hansen, 2011; DeFoe, 2015; Roth, 1992)

One of these frameworks was originally developed by Quinn and Rohrbaugh (1983) in the development of a model of organizational culture effectiveness called the Competing Values Framework (CVF). The foundation of this theoretical framework is the assumption of competition among four potential outcomes in organizations (Buenger, Daft, Conlon, & Austin, 1996). The model proposes that all four outcomes may be equally important depending on the particular situation faced by the organization. The framework can be utilized as a strategic tool not only to develop effective goals and objectives that directly address the issue of concern but it can also be used to aid organizations in diagnosing their current or desired culture (Quinn & Rohrbaugh, 1983).

Competing Values Framework (CVF)

The competing values framework (CVF) views the assessment of organizational effectiveness as an exercise grounded in eight goals, roles and functions, namely: mentor, facilitator, broker, innovator, monitor, coordinator, director, and producer (Quinn & Rohrbaugh 1983). These roles are based upon four dimensions representing competing organizational

values, assumptions and orientations namely: individuality/flexibility versus stability/control (top and bottom), internal guidance versus external focus (left and right), fast change versus long-term change (lower right and upper left), and new change versus incremental change (upper right and lower left). The CVF creates four quadrants on the organizational level. The quadrants are labeled rational goal, internal process, open system and human relations. In order to analyze the culture/climate, the CVF labels each of the four quadrants by its dominant characteristic. The four types of culture/climate that result from this setting are called Clan, Hierarchy, Adhocracy, and Market. When TQM is implemented primarily as a framework to improve or turn a company around, many organizations have fallen flat and not been successful. TQM has to be applied as a piece of the organizational culture to see successful implementation (Cameron and Quinn, 2011). The relationship between the factors of Quinn's Competing Values Framework (CVF) and TQM is seen in Figure 1 which it taken from Cameron and Quinn (2011).

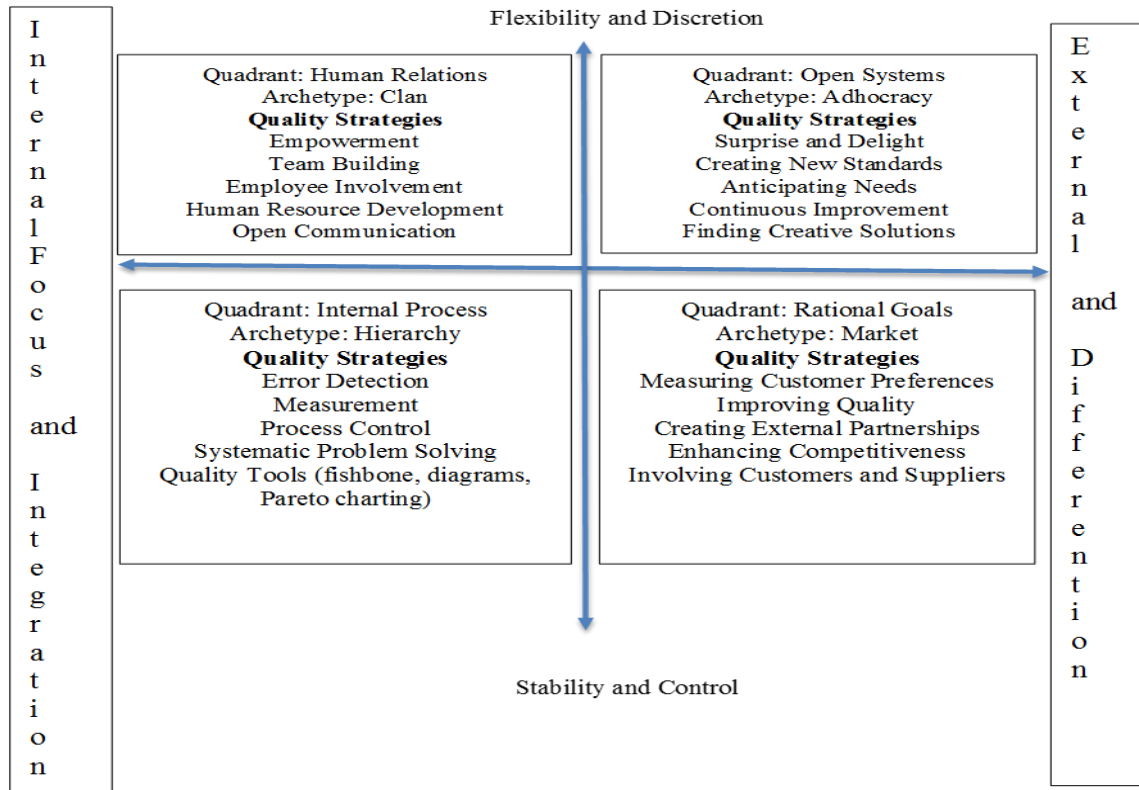


Figure 1. The Competing Values of Total Quality Management

(Cameon K. & Quinn, R. 2011. *Diagnosing and Changing Organizational Culture Based on the Competing Values Framework*. p. 57)

When looking at TQM through a CVF lens, one can see that the focuses of TQM compact succinctly within the four quadrants of the CVF framework.

The rational goal quadrant (Quadrant 1) emphasizes productivity, performance, goal fulfillment and achievement (Cameron et al., 2006). It stresses control and has an external orientation. The premise is that a clear direction leads to growth and achievement. Within the TQM framework, there is an emphasis on measuring customer performance, improving productivity, creating external partnerships, enhancing competitiveness, and involving customers and suppliers. (Cameron & Quinn, 2011). The purpose of schools with emphases on the rational goal tends to be the pursuit and attainment of well-defined objectives. Because of this quadrant's

focus on considerations of the "bottom line", the culture/climate animating it is most often described in economic terms, as that of the "market" (Cameron & Quinn, 2011). Value drivers in a market culture are market share, goal achievement, and profitability. Effectiveness criteria measured using the TELL survey are production and direction item scales.

The internal process goal quadrant (Quadrant 2) emphasizes measurement, internal efficiency, documentation, uniformity, information management, coordination and evaluation (Cameron et al., 2006). The organization sets up "monitoring" mechanisms to ensure that all of its parts work dependably and in a timely manner. The organizational norms are associated with a hierarchy culture/climate. Value drivers in a hierarchy culture are efficiency, timeliness and consistency and uniformity. With regards to TQM, this quadrant focuses on error detection, measurement, process control, systematic problem solving and quality tools (Cameron & Quinn, 2011). The effectiveness criteria are continuity and stability, based on the premise that clear definition of procedures and practices guarantees stability. The purpose of schools with emphases on the internal process goal is on maintaining stability and implementing rules and regulations. Teachers are given well-defined roles and are expected to follow rules that outline what they do. Effectiveness criteria measured using the TELL survey are coordination and monitoring item scales.

The human relations quadrant (Quadrant 3) emphasizes cohesiveness, trust, morale, participation, and human resource development, implying that commitment will contribute to effort (Cameron & Quinn, 1999). It stresses flexibility, and is internally oriented. The organizational norms are associated with a clan culture/climate. Value drivers in a clan culture are commitment, communication and development. The TQM drivers that encompass this quadrant are empowerment, team building, employee involvement, human resource

development, and open communication (Cameron & Quinn, 2011). The purpose of schools with emphases on the human relations goal tends to be on human resources and training. Teachers tend to be participative, considerate, and supportive, and they facilitate interaction through teamwork and mentoring. Effectiveness criteria measured using the TELL survey are facilitation and mentoring item scales.

Finally, the open systems goal quadrant (Quadrant 4) maintains a primary focus on external support, growth, resource acquisition and adaptation to the external environment (Cameron & Quinn, 2011). It emphasizes flexibility/change, and is externally oriented. Quinn refers to the climate/culture of Quadrant 4 as "adhocratic" in nature. Value drivers in an adhocratic culture are innovative outputs, transformation and agility. The effectiveness criteria are adaptability, readiness, growth, external support and resource acquisition. The TQM strategies that are best associated with this quadrant are surprise and delight, creating new standards, anticipating needs, continuous improvement, and finding creating solutions. (Cameron & Quinn, 2011) The purpose of schools with emphases on the open system goal tends to be on nurturing creativity and other skills for innovation, while maintaining external legitimacy and obtaining external resources. Here teachers foster improvements in teaching, learning, and assessment. Teachers are given discretion and autonomy over their tasks and resources. Effectiveness criteria measured using the TELL survey are innovation and brokering item scales.

Several assumptions underlie the competing values framework (CVF). First, each quadrant has two adjacent/parallel sides (two complementary quadrants) and a polar opposite (a highly contrasting quadrant). The vertical axis runs from flexibility at the top to control at the bottom. The horizontal axis runs from internal focus at the left to external focus at the right. The human relations and open system quadrants share the value of flexibility; the internal process and

rational goal quadrants share an emphasis on control; the human relations and internal process share the value of internal focus; the open system and rational goal have a common emphasis on external focus. On the other hand, the CVF has two polar opposites. The rational goal quadrant, emphasizing control and external focus runs opposite to the human relations quadrant, which stresses flexibility and internal focus. The internal process quadrant, which is characterized by control and internal focus, runs counter to the open systems quadrant, which emphasizes flexibility and external focus. The intersection of the two axes marks the spot where there is a need to exercise balance among the four quadrants.

Second, the four quadrant goals described should be thought of as a set of "common criteria" for benchmarking the effectiveness of organizations (Cameron & Quinn, 2006). Schools are unlikely to reflect one quadrant; rather, we would expect to find combinations of each quadrant goal, while some quadrant goals being more dominant than others. As Battle for Kids (2010) and others have found, paradoxical combinations of goals and values are often found in schools. Especially as it speaks to "mastering the paradoxes and competing demands of high performance" (Quinn, 1988), the CVF approach may be of particular benefit to those teachers interested in a more nuanced sense of their strengths and weaknesses for reforming "the school in its entirety" (Levin, 2002, p. 71) and for "getting to scale with good educational practice" (Elmore, 1996). Quinn's (1988) competing values framework (CVF) subscribes to the idea that the effectiveness of teachers increases when they display more types of behavior. Prior studies by Cameron and Quinn (2011) have noted that most organizations are dominated by one or two of CVF's quadrant goals. An extensive review of 17 models of organizational effectiveness by Steers (1975) reveals that not all roles in the CVF's quadrant goals are pursued with equal effort, and he suggests differential weights on various roles depending on the running goals of an

organization. This study contends that teachers experience paradoxical demands or conflicting roles in their schools, and the effective teacher is able to meet these demands by displaying roles that are situated in at least two different quadrants. Thus, teachers could no longer depend on one type of teacher role behavior to cope with all the demands of the school environment. Teachers are faced with competing demands and expectations and the most effective teachers are the ones able to perform several role behaviors. Therefore, the framework implies that the definition of an effective teacher does not imply being either a mentor, or a broker or a producer, but to be able to perform each of these roles when necessary. Inside each quadrant there are two role behaviors with total eight role behaviors which should be possible to perform by effective teachers. In other words, the concept of the paradoxical nature of organizational effectiveness is assumed in this study.

A third underlying assumption of the CVF is the importance of balance. Since there is a continuous flow of different forces competing for the teacher's attention, teachers find themselves working, consciously or not, to balance these competing demands in order to optimize the school's effectiveness. When one quadrant is overemphasized (internal vs. external; flexibility vs. control), teachers may become dysfunctional and the strengths of the quadrant may even become weaknesses. For example, too much flexibility or spontaneity can lead to arbitrary results; too much uniformity and structure can lead to stagnation and rigidity; too much external focus can result in neglect of internal efficiencies; and too much internal focus can result in teachers being insulated from developments in the profession. The CVF emphasizes that the pursuit of a single criteria of organizational effectiveness is less likely to become effective than is a broader and a more balanced approach. The CVF stops short of the normative prescription that the most effective school is one that has integrated the characteristics of all goal quadrants,

but nonetheless recognizes that balance represents the capacity to respond to a wide set of environmental conditions.

When one combines the school effectiveness literature with the CVF literature, there appears to be a disconnect or misalignment between 'school effectiveness' and 'school improvement' and the concept of balance in CVF (See Figure 2). For example, when placed in the various quadrants and culture archetypes of the Competing Values Framework, the seven correlates of school effectiveness given by Edmonds and Frederiksen (1979) and Lezotte (2001) seem to run contrary to the assumption of balance.



Figure 2. The Competing Values of School Effectiveness (Cameron & Quinn, 2011; Coleman, 1966; Edmond and Frederiksen, 1979; Lezotte, 2001)

Figure 2 shows where each of the correlates would place on the Competing Values Framework. Within the Human Relations Quadrant, the correlates would be: instructional leadership, climate of high expectations, and clear and focused mission. The Internal Process Quadrant would contain: safe and orderly environment, frequent monitoring of student progress, and opportunity to learn and student time on task. There is only one possible correlate in the Open Systems Quadrant, that is, positive home-school relations. One might make the argument that even this could be placed in the Human Relations Quadrant. None of the correlates are found in the Rational Goals Quadrant. Therefore, there is a strong internal focus on the correlates as it pertains to effective schools that serve highly impoverished students. Six out of the seven correlates are placed in internal focus quadrants (Human Relations and Internal Process) and only one is placed in the external focus quadrants (Open Systems-1 and Rational Goals-0). If one assigns the positive home-school relations in the Human Relations Quadrant, then there are zero correlates in the external focus quadrants. This is a stark contrast between the assumption of balance, and what is needed for school effectiveness in high poverty schools (Cameron & Quinn, 2011; Edmonds & Frederiksen, 1979, Lezotte, 2001).

Thus, this study utilizes teachers' judgment about organizational climate/culture to determine whether indicators of academic achievement differ for high schools with different CVF profiles. The study also aggregates to the school level teachers' responses to the dimensions of school climate to determine how much variance in high school performance measures is a function of a school's CVF profiles, controlling for the influence of student and faculty characteristics.

Chapter 3

Methodology

The purpose of this study is to explore the relationships between student achievement assessed longitudinally in terms of ACT composite scores and state-mandated assessments of high school proficiency and faculty perceptions of the manner in which 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:

1. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

2. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

3. Over and above the influence of student and faculty characteristics, are there relationships between a high school’s exhibiting a “competing values” profile more oriented towards concerns about structure and control (lower left and right quadrants) than flexibility and

openness (upper left and right quadrants) and longitudinally measured student achievement as ACT composite scores and end-of-course assessment performance?

4. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

5. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

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 these survey data were 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 particular sub-topic (such as unemployment) or social group (such as ethnic minority)
- Reports angled towards a particular 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 lend itself to secondary analysis in at least three respects. First, as a way 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 more a satisfied, stable, and productive school community. Finally, going beyond 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 in order 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 aforementioned 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 TN* 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 TN* website,

the items developed for the first iteration of the instrument originated in one 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 went on to note 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. When an early wave 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, it made available to the U of M Leadership students and faculty the entire *TELL* Tennessee dataset for 2013, this dataset populated with some 61,341 observations linked to 1668 educational institutions.

Demographic Characteristics of Sample: Individual Level

As Table 1 shows, about 44% of the 60,000 plus sample counted themselves as being from 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 as some “other” education professional. While about 2% of the respondents also 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 287 secondary institutions were found to have non-missing values on the intake and outcome variables that were 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 50% of such students qualify for free and reduced lunch (53.1%), a little less than one-quarter could be categorized as being non-White (23.0), and a little more than 10% might be classified as subject to some sort of learning disability (12.1%). With respect to intake variables pertinent to faculty, responses to *TELL* items indicated that, on average, somewhat more than half of educators at these institutions claimed more than 10 years of experience (55.3%) while a somewhat smaller proportion indicated their having been employed at their present school more than six years (50.5%). 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 (84.0%), as contrasted with the remainder who respectively planned to “move” to another district or school (5.0%) or to “leave” the classroom altogether (11.0%). Consistent with these outcomes, next shown 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 ($M = 3.10$, $SD = 0.22$), 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 = 287)

Characteristic	<u>All</u> (N = 287)	
	<i>M</i>	<i>SD</i>
Free Reduced Lunch (%)	53.1	17.80
Minority Students (%)	23.0	26.14
Students w/ Disabilities (%)	12.1	5.85
Teachers w/ more than 10 Years' Experience (%)	55.3	11.15
Teachers w/ more than 6 Years' Tenure (%)	50.5	13.98
Respondents 'Staying' (%)	84.0	8.49
Respondents 'Moving' (%)	5.0	5.60
Respondents 'Leaving' (%)	11.0	6.01
Overall Satisfaction	3.1	0.22
Three Year Average Proficiency in English (%)	60.0	13.64
Three Year Average Proficiency in Math (%)	48.9	14.91
Three Year Average ACT Composite	19.0	1.97

In terms of the school's functioning as an academic institution, TDOE accountability data indicates that, averaged across three years, the percent of students proficient and advanced approached 50% in Algebra ($M = 48.9\%$, $SD = 14.91$) and 60% in English ($M = 60.0\%$, $SD = 13.64$). Consistent with this figure, the three-year ACT composite for these high schools was 19.0, significantly less than the national ACT composite norm of 21.0 (ACT, 2015b)

CVF Profile Scores

As previously mentioned, some 24 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 "norm" for that quadrant, as represented by the mean for that quadrant. These norms were, specifically, the Rational Goal Quadrant ($M = 3.17$, $SD = 0.26$), the Internal Process Quadrant ($M = 3.07$, $SD = 0.22$), the Human Relations Quadrant ($M = 2.99$, $SD = 0.28$), and the Open Systems Quadrant ($M = 3.12$, $SD = 0.20$). 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 slightly less than half of the schools (44.8%). With respect to unbalanced profiles, some 8.3% of the schools were at or above the quadrant mean on two

quadrants, with the 47% of schools remaining scoring at or above the quadrant mean either once (13.3%) or not at all (33.7%).

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. Summing across the Rational Goal and Open Systems quadrant scores to arrive at the school’s tendency to be “externally focused” and the Internal Process and Human Relations quadrant scores to arrive at the school’s tendency to be “internally focused” enabled a representation of the school’s relative responsiveness to issues and opportunities in its environment, as opposed to those occurring within itself. 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 with respect to the scope and speed of change, the CVF profile concerned with the former was computed by subtracting the school’s Internal Process quadrant score from its Open Systems quadrant score, while CVF profile concerned with the latter was computed by subtracting the school’s Rational Goal quadrant score from its Human Relations quadrant score.

Table 3

CVF Means and Standard Deviations: Rational Goal Quadrant

CVF Component	<i>M</i>	<i>SD</i>
Rational Goal Quadrant ($\alpha = .95$)	3.07	0.23
Production Scale ($\alpha = .88$)	3.13	0.22
Q6.1f In this school we take steps to solve problems.	3.01	0.26
Q7.1e Teachers are held to high professional standards for delivering instruction.	3.33	0.19
Q7.1k The faculty are recognized for accomplishments.	3.04	0.29
Direction Scale ($\alpha = .94$)	3.02	0.25
Q6.1g Teachers are effective leaders in this school.	3.08	0.23
Q7.1a The faculty and leadership have a shared vision.	3.02	0.28
Q7.1j The school improvement team provides effective leadership at this school.	2.95	0.27

Table 4

CVF Means and Standard Deviations: Internal Process Quadrant

CVF Component	<i>M</i>	<i>SD</i>
Internal Process Quadrant ($\alpha = .84$)	2.99	0.19
Coordination Scale ($\alpha = .91$)	2.84	0.28
Q2.1c Teachers are allowed to focus on educating students with minimal interruptions.	2.86	0.30
Q2.1e Efforts are made to minimize the amount of routine administrative paperwork teachers are required to do.	2.81	0.33
Q2.1g Teachers are protected from duties that interfere with their essential role of educating students.	2.85	0.29
Monitoring Scale ($\alpha = .85$)	3.14	0.17
Q7.1f The school leadership facilitates using data to improve student learning.	3.33	0.19
Q8.1c Professional development offerings are data driven.	3.03	0.20
Q9.1c Teachers in this school use assessment data to inform their instruction.	3.03	0.20

Table 5

CVF Means and Standard Deviations: Human Relations Quadrant

CVF Component	<i>M</i>	<i>SD</i>
Human Relations Quadrant ($\alpha = .92$)	2.88	0.25
Facilitation Scale ($\alpha = .96$)	2.89	0.32
Q6.1e The faculty has an effective process for making group decisions to solve problems.	2.81	0.30
Q7.1b There is an atmosphere of trust and mutual respect.	2.96	0.36
Q7.1c Teachers feel comfortable raising issues and concerns that are important to them.	2.91	0.35
Mentoring Scale ($\alpha = .85$)	2.87	0.21
Q7.1h Teachers receive feedback that can help them improve teaching.	3.10	0.23
Q8.1e Professional development is differentiated to meet the needs of individual teachers.	2.67	0.26
Q8.1j Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices.	2.84	0.23

Table 6

CVF Means and Standard Deviations: Open Systems Quadrant

CVF Component	<i>M</i>	<i>SD</i>
Open Systems Quadrant ($\alpha = .85$)	3.03	0.16
Innovation Scale ($\alpha = .75$)	3.15	0.15
Q8.1h Teachers are encouraged to reflect on their own practice.	3.12	0.17
Q9.1g Teachers are encouraged to try new things to improve instruction.	3.22	0.16
Q9.1i Teachers have autonomy to make decisions about instructional delivery (i.e. pacing, materials and pedagogy).	3.09	0.22
Brokering Scale ($\alpha = .78$)	2.92	0.19
Q4.1b This school maintains clear, two-way communication with parents/guardians and the community.	3.07	0.21
Q4.1c This school does a good job of encouraging parent/guardian involvement.	3.10	0.23
Q8.1g Professional development provides teachers with strategies to involve families and other community members as active partners.	2.60	0.25

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, ACT composite scores averaged over three years and the average of the three-year averages of the English and algebra proficiency scores.

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.

Chapter 4

Results

The purpose of this study is to investigate the relationships between student achievement assessed longitudinally in terms of ACT composite scores and state-mandated tests of proficiency and the perceived manner in which high schools resolve the tensions and tradeoffs illuminated by the Competing Values Framework (CVF). Deriving from this overall purpose are the more specific research questions that follow:

1. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

2. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

3. Over and above the influence of student and faculty characteristics, are there relationships between a high school's exhibiting a "competing values" profile more oriented towards concerns about structure and control (lower left and right quadrants) than flexibility and openness (upper left and right quadrants) and longitudinally measured student achievement as ACT composite scores and end-of-course assessment performance?

4. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

5. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

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 achievement-oriented outcomes (see Table 7). Despite differences in the academic "norms" being used (one national, the other state), the three-year ACT composite scores and the averaged three-year "end-of course" (EOC) proficiency levels in English II and Algebra I are very highly correlated ($r = .86$, $p < .01$). With respect to all three student-oriented variables and student achievement, negative relationships are consistently demonstrated, especially between the percent of students on free

and reduced lunch and both ACT composite scores ($r = -.85, p < .01$) and state proficiency scores ($r = -.75, p < .01$). Raising such scores, on the other hand, are faculty-oriented characteristics associated with teaching experience and teacher tenure. On the one hand, the percent of faculty with more than 10 years' experience both significantly and positively correlates with ACT composite scores (at $r = .31, p < .01$) and state proficiency scores (at $r = .28, p < .01$). On the other, the percent of faculty with more than six years' tenure significantly and positively correlates with ACT composite scores (at $r = .25, p < .01$) and state proficiency scores (at $r = .25, p < .01$). Insofar as both of these faculty-oriented variables concern teachers persisting over time, the faculty experience and faculty tenure variables are themselves inter-correlated ($r = .67, p < .01$).

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, 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 ($r = -.19, p < .01$ and $r = -.13, p < .05$, respectively). Similarly, at those schools with larger percentages of minority students, faculty tenure as well as faculty experience are both significantly and negatively correlated ($r = -.29, p < .01$ and $r = -.48, p < .05$, respectively).

Table 7

Matrix of Zero-Order Correlations between Control Variables in the Model and Two Measures of High School Student Achievement (N = 287)

Variable	2	3	4	5	6	7
1. F/R Lunch Students (%)	.36**	.28**	-.19**	-.13*	-.85**	-.75**
2. Minority Students (%)	1	.01	-.29**	-.48**	-.33**	-.44**
3. Students w/ Disabilities (%)		1	.02	.05	-.33**	-.35**
4. Faculty Experience (%)			1	.67**	.31**	.28**
5. Faculty Tenure (%)				1	.25**	.27**
6. ACT Composite					1	.86**
7. Student EOC Proficiency						1

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

Suggesting ways that school climate might enable higher student achievement is the 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 does not by itself appear to be related to either higher ACT composite scores ($r = -.03$, $p = .489$) or higher scores on state accountability tests ($r = .02$, $p = .264$). At the same time, a stronger focus on the “external” environment in general and the school’s “rational goals” it in particular seems to promote not only ACT composite scores ($r = .30$, $p < .01$ for both profiles), but also student EOC proficiency ($r = .14$, $p < .05$ for “external/internal” and $r = .17$, $p < .05$ for the “rational goals/human relations”). While an emphasis on a CVF “open systems” orientation seems also to enable ACT student achievement ($r = -.19$, $p < .01$), 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 embrace CVF profiles that are more “internally- “than “externally-oriented” ($r = -.32, p < .01$), more about “human relations” than “rational goals” ($r = -.31, p < .01$), and more about “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, those linkages should be kept in mind as the results of the regression analyses are presented below.

Outcomes Common to All Five Hierarchical Multiple Regression Analyses

For the 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 five 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.

Table 8

*Matrix of Zero-Order Correlations between CVF Profiles and Other Variables in the Model**(N = 287)*

Variable	UNB V BAL	STAB V FLEX	EXT V INT	RG Q V HR Q	IP Q V OS Q
F/R Lunch Students (%)	.10	-.02	-.32**	-.31**	.20**
Minority Students (%)	-.02	-.16**	.25**	.10	-.25**
Students w/ Disabilities (%)	.10	-.04	-.05	-.08	.01
Faculty Experience (%)	.04	-.03	-.01	-.03	-.01
Faculty Tenure (%)	.01	.07	-.15*	-.08	.14*
ACT Composite Scores	-.03	.03	.30**	.30**	-.19**
Student EOC Proficiency	.02	.05	.14*	.17*	-.06

* $p < .05$, two-tailed; ** $p < .01$, two-tailed.**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 explains a statistically significant proportion of the variance in students ACT composite scores. $F(3, 283) = 269.05, p < .001, R^2 = .73$) 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 ($\beta = -0.80, t = -23.05, p < .001$). Running a distant second in explaining students' ACT scores is the percent of students with disabilities ($\beta = -0.11, t = -3.46, p = .001$); but, at this point in the analysis, the percentage of

minority 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, and 14, 16, and 18, much the same results are observed with respect to student demographics and student EOC proficiency scores. When compared to regression outcomes on ACT scores, the three demographic variables explain a smaller but still statistically significant proportion of the variance in students' proficiency $F(3, 283) = 160.70, p < .001, R^2 = .63$). 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 ($\beta = -0.63, t = -15.62, p < .001$). However, in this instance, both the percentage of minority students ($\beta = -0.22, t = -5.55, p = .001$) as well as the percent of students with disabilities ($\beta = -0.17, t = -4.48, p < .001$) prove to be statistically significantly linked to the outcome.

Block Two Outcomes: Faculty Demographic Variables

Over and above the student-related demographic variables, including the two faculty-oriented demographic variables in block two explains an additional 3% of the variation in students' ACT composite scores (F Change (2, 281) = 16.78, $p < .001$) and an additional 2% in students' EOC proficiency scores (F Change (2, 281) = 5.71, $p = .004$). With respect to ACT composite scores, both faculty-oriented demographic variables are statistically significant and of roughly equal importance, given the *beta* weights observed ($\beta = 0.09, t = 2.33, p = .020$ for teacher experience compared to $\beta = 0.11, t = 2.62, p = .009$ for faculty tenure). Notwithstanding the contributions of these two faculty-oriented variables, it is still the percentage of students on free and reduced lunch that, at this point in the analysis, is the variable of greatest importance to

explaining variation in the percent in students' ACT performance however ($\beta = -0.79, t = -23.78, p < .001$).

As previously noted, the addition of the two-faculty oriented variables in the regressions involving EOC proficiency scores is linked to a statistically significant increase in the model R^2 . At the same time inspection of the block statistics reveals that the contributions of the percent of faculty with more than 10 years' experience ($\beta = -0.06, t = -1.29, p = .198$) and the percent of faculty with more than 6 years' tenure ($\beta = -0.08, t = -1.60, p = .111$) are not significantly different from zero. Rather, the three student-oriented variables dominate the block, with the greatest importance in explaining variation in EOC scores observed for the percent of students on free and reduced lunch ($\beta = -0.63, t = -15.56, p < .001$), followed by the percent of students with disabilities ($\beta = -0.18, t = -4.73, p < .001$), followed by the percent of minority students ($\beta = -0.16, t = -3.65, p < .001$).

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 characteristics of the faculty seem to promote higher ACT composite scores, no direct effect of such characteristics was observed with respect to student EOC proficiency scores. What the various CVF profiles may add to the models previously described is presented in turn for each of the analyses following.

Of the five control variables entered previously in regression blocks one and two, four of the five are found to be statistically significant once the CVF "balance" profile is included in the block three of the model (see Table 9). Of these four control variables, the percent of students on free and reduced lunch is by far the most important in explaining the students ACT composite

scores ($\beta = -0.80, t = -24.13, p < .001$), followed by the percent of students with disabilities ($\beta = -0.13, t = -4.17, p < .001$). While the percent of faculty with more than 10 years' experience ($\beta = 0.09, t = 2.14, p = .034$) and the percent of faculty with more than six years' tenure ($\beta = 0.12, t = 2.85, p = .005$) seem significantly and positively to impact student scores, their contribution to explaining variation in ACT scores is minor relative to the student oriented variables. Likewise, minor but statistically significant is the contribution made by the CVF "balance" profile ($\beta = 0.07, t = 2.52, p = .012$). While the inclusion of the profile does not enhance the "fit" of the model to the data ($F(6, 280) = 149.86, p < .001$), its inclusion does result in a fractional increase (that is, less than 1%) in the proportion of variance explained in the outcome ($F(1, 280) = 6.36, p = .012, R^2 = .76$).

Results similar to the ones previously described are observed with respect to student end-of-course (EOC) proficiency scores (see Table 10). As with ACT scores, the inclusion of the CVF "balance" profile results in a fractional increase in the proportion of variance explained in the outcome ($F(1, 280) = 7.98, p = .005, R^2 = .65$) but no improvement in the overall "fit of the model to the data ($F(6, 280) = 88.37, p < .001$). The percent of students on free and reduced lunch is again the most important factor in explaining students' proficiency scores ($\beta = -0.64, t = -15.93, p < .001$), followed by the percent of students with disabilities ($\beta = -0.18, t = -4.99, p < .001$) and the percent of minority students ($\beta = -0.15, t = -3.48, p < .001$). Neither of faculty-oriented variables appear to contribute significantly to explaining student proficiency scores in the presence of the other four variables.

Table 9
*Hierarchical Regression Summary of a "Balanced" Competing Values Framework Profile on
 2010-2012 ACT Composite Scores (N = 287)*

Source	<i>B</i>	<i>S.E.B.</i>	β	<i>t</i>	<i>p</i> =
Block 1: Student Demographics					
Model Fit: $F(3, 283) = 269.05, p < .001, R^2 = .73$					
F/R Lunch Students (%)	-0.09	0.00	-0.80	-23.05	0.000
Minority Students (%)	0.00	0.00	-0.05	-1.38	0.169
Students w/ Disabilities (%)	-0.04	0.01	-0.11	-3.46	0.001
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 281) = 175.22, p < .001, R^2 = .76,$ F Change (2, 281) = 16.78, $p < .001$					
F/R Lunch Students (%)	-0.09	0.00	-0.79	-23.78	0.000
Minority Students %	0.00	0.00	0.03	0.95	0.342
Students w/ Disabilities (%)	-0.04	0.01	-0.12	-3.95	0.000
Faculty Experience (%)	0.02	0.01	0.09	2.33	0.020
Faculty Tenure (%)	0.02	0.01	0.11	2.62	0.009
Block 3: Student + Faculty Demographics + CVF Profile					
Model Fit: $F(6, 280) = 149.86, p < .001, R^2 = .76,$ F Change (1, 280) = 3.36, $p = .012$					
F/R Lunch Students (%)	-0.09	0.00	-0.80	-24.13	0.000
Minority Students %	0.00	0.00	0.04	1.14	0.255
Students w/ Disabilities (%)	-0.04	0.01	-0.13	-4.17	0.000
Faculty Experience (%)	0.01	0.01	0.08	2.13	0.034
Faculty Tenure (%)	0.02	0.01	0.12	2.85	0.005
CVF "Balance" Profile	0.30	0.12	0.07	2.52	0.012

Table 10

Hierarchical Regression Summary of a “Balanced” Competing Values Framework Profile on 2010-2012 Mean Proficiency Scores in Algebra I and English II (N = 287)

Source	<i>B</i>	<i>S.E.B.</i>	β	<i>t</i>	<i>p</i> =
Block 1: Student Demographics					
Model Fit: $F(3, 283) = 160.70, p < .001, R^2 = .63$					
F/R Lunch Students (%)	-0.47	0.03	-0.63	-15.62	0.000
Minority Students (%)	-0.11	0.02	-0.22	-5.55	0.000
Students w/ Disabilities (%)	-0.38	0.09	-0.17	-4.48	0.000
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 281) = 101.91, p < .001, R^2 = .65$					
F Change (2, 281) = 5.71, $p = .004$					
F/R Lunch Students (%)	-0.47	0.03	-0.63	-15.56	0.000
Minority Students %	-0.08	0.02	-0.16	-3.65	0.000
Students w/ Disabilities (%)	-0.40	0.08	-0.18	-4.73	0.000
Faculty Experience (%)	0.07	0.06	0.06	1.29	0.198
Faculty Tenure (%)	0.08	0.05	0.08	1.60	0.111
Block 3: Student + Faculty Demographics + CVF Profile					
Model Fit: $F(6, 280) = 88.37, p < .001, R^2 = .65$					
F Change (1, 280) = 7.98, $p = .005$					
F/R Lunch Students (%)	-0.47	0.03	-0.64	-15.93	0.000
Minority Students %	-0.08	0.02	-0.15	-3.48	0.001
Students w/ Disabilities (%)	-0.42	0.08	-0.18	-4.99	0.000
Faculty Experience (%)	0.06	0.06	0.05	1.06	0.288
Faculty Tenure (%)	0.09	0.05	0.10	1.84	0.066
CVF "Balance" Profile	2.75	0.97	0.10	2.83	0.005

Inspection of the block three statistics shown in Table 11 reveals outcomes for the addition of the CVF “external/internal” profile on ACT composite scores that are similar in virtually all respects for the addition of the CVF “balance” profile on ACT composite scores. Again, proving to be of signal importance in explaining the outcome is the percent of students on free and reduced lunch ($\beta = -0.76, t = -20.55, p < .001$), followed by the percent of students with disabilities ($\beta = -0.13, t = -4.14, p < .001$). While the percent of faculty with more than 10 years’ experience ($\beta = 0.09, t = 2.24, p = .026$) and the percent of faculty with more than six years’ tenure ($\beta = 0.12, t = 2.73, p = .007$) seem significantly and positively related to students’ ACT scores, their contribution to explaining variation in those scores is minor relative to the student demographic variables. While the contribution of the CVF “external/internal” profile is also minor, its inclusion does result in a statistically significant, if 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 ($F(1, 280) = 4.73, p = .030, R^2 = .76$), but also in the t -test statistics for the individual variable ($\beta = 0.07, t = 2.17, p = .030$).

Somewhat unlike the results obtained for the regression of the CVF “balance” profile on student proficiency scores, the regression of the CVF “external/internal” profile on students’ EOC proficiency is not observed to be statistically significant ($\beta = -0.02, t = -0.51, p = .607$). 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 ($F(6, 280) = 84.75, p < .001$) nor to a statistically significant change in the R^2 , over and above what was previously observed. With respect to student EOC proficiency scores, a “best fitting” model would include only the three student demographic characteristics, namely, the percent of students on free and reduced lunch ($\beta = -0.63, t = -15.62, p < .001$), followed by the percent of minority students ($\beta = -0.22, t = -$

5.55, $p < .001$), followed by the percent of students with disabilities ($\beta = -0.17$, $t = -4.48$, $p < .001$).

Table 11

*Hierarchical Regression Summary of an Externally- versus Internally-Oriented Competing**Values Framework Profile on 2010-2012 ACT Composite Scores (N = 287)*

Source	<i>B</i>	<i>S.E.B.</i>	β	<i>t</i>	<i>p</i> =
Block 1: Student Demographics					
Model Fit: $F(3, 283) = 252.66, p < .001, R^2 = .73$					
F/R Lunch Students (%)	-0.09	0.00	-0.80	-23.05	0.000
Minority Students (%)	0.00	0.00	-0.05	-1.38	0.169
Students w/ Disabilities (%)	-0.04	0.01	-0.11	-3.46	0.001
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 281) = 175.22, p < .001, R^2 = .76,$					
F Change (2, 281) = 16.78, $p < .001$					
F/R Lunch Students (%)	-0.09	0.00	-0.79	-23.78	0.000
Minority Students %	0.00	0.00	0.03	0.95	0.342
Students w/ Disabilities (%)	-0.04	0.01	-0.12	-3.95	0.000
Faculty Experience (%)	0.02	0.01	0.09	2.33	0.020
Faculty Tenure (%)	0.02	0.01	0.11	2.62	0.009
Block 3: Student + Faculty Demographics + CVF External/internal					
Model Fit: $F(6, 280) = 148.74, p < .001, R^2 = .76,$					
F Change (1, 280) = 4.73, $p = .030$					
F/R Lunch Students (%)	-0.08	0.00	-0.76	-20.55	0.000
Minority Students %	0.00	0.00	0.00	0.11	0.909
Students w/ Disabilities (%)	-0.04	0.01	-0.13	-4.14	0.000
Faculty Experience (%)	0.02	0.01	0.09	2.24	0.026
Faculty Tenure (%)	0.02	0.01	0.12	2.73	0.007
CVF External/Internal	0.89	0.41	0.07	2.17	0.030

Table 12

*Hierarchical Regression Summary of an Externally- versus Internally-Oriented Competing**Values Framework Profile on 2010-2012 Mean Proficiency Scores in Algebra I and English II**(N = 287)*

Source	<i>B</i>	<i>S.E.B.</i>	β	<i>t</i>	<i>p</i> =
Block 1: Student Demographics					
Model Fit: $F(3, 283) = 160.70, p < .001, R^2 = .63$					
F/R Lunch Students (%)	-0.47	0.03	-0.63	-15.62	0.000
Minority Students (%)	-0.11	0.02	-0.22	-5.55	0.000
Students w/ Disabilities (%)	-0.38	0.09	-0.17	-4.48	0.000
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 281) = 101.91, p < .001, R^2 = .65$					
<i>F</i> Change (2, 281) = 5.71, $p = .004$					
F/R Lunch Students (%)	-0.47	0.03	-0.63	-15.56	0.000
Minority Students %	-0.08	0.02	-0.16	-3.65	0.000
Students w/ Disabilities (%)	-0.40	0.08	-0.18	-4.73	0.000
Faculty Experience (%)	0.07	0.06	0.06	1.29	0.198
Faculty Tenure (%)	0.08	0.05	0.08	1.60	0.111
Block 3: Student + Faculty Demographics + CVF External/Internal					
Model Fit: $F(6, 280) = 84.75, p < .001, R^2 = .65,$					
<i>F</i> Change (1, 280) = 0.265, $p = .607$					
F/R Lunch Students (%)	-0.47	0.03	-0.64	-14.18	0.000
Minority Students %	-0.08	0.02	-0.15	-3.22	0.001
Students w/ Disabilities (%)	-0.39	0.08	-0.17	-4.66	0.000
Faculty Experience (%)	0.08	0.06	0.06	1.31	0.191
Faculty Tenure (%)	0.08	0.05	0.08	1.57	0.117
CVF External/Internal	-1.74	3.38	-0.02	-0.51	0.607

As mentioned previously, the model statistics for the regression of student and faculty characteristics on students' scores on students' ACT scores are the same for blocks one and two (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 ($\beta = -0.79, t = -23.75, p < .001$), followed by the percent of students with disabilities ($\beta = -0.12, t = -3.95, p < .001$). Making significant but relatively minor contributions to the proportion of variance explained in students' ACT scores are both faculty experience ($\beta = 0.11, t = 2.33, p = .020$), and faculty tenure ($\beta = 0.11, t = 2.59, p = .010$). However, like the percent of minority students at the school ($\beta = 0.04, t = 1.01, p = .315$), the addition of the CVF "stability/flexibility" profile neither contributes to the overall "fit" of the model to the data ($F(6, 280) = 88.37, p < .001$), nor makes for a statistically significant increase in the model R^2 . This result is reflected both in the model statistics for block three ($F(1, 280) = 0.214, p = .644$) as well as for the t -test for the CVF variable itself ($\beta = 0.01, t = 0.46, p = .644$).

Likewise, as Table 14 shows, the addition of the CVF "stability/flexibility" profile does not appear significantly to increase the proportion of the variance explained in student proficiency scores, given the test for the increase in R^2 ($F(1, 280) = 0.032, p = .858$) and the t -test for the CVF variable itself ($\beta = 0.01, t = 0.18, p = .858$). Identical in all respects to the results shown for block two, the links between student proficiency scores and all three student demographic variables are both statistically significant and in the same order of relative importance. In contrast, neither the percent of faculty with more than 10 years' experience ($\beta = 0.06, t = 1.30, p = .195$) nor the percent of faculty with more than six years' tenure ($\beta = 0.08, t = 1.58, p = .115$) appear to be statistically associated with the student proficiency scores, once student demographics have been taken into account.

Table 13

*Hierarchical Regression Summary of a Stability- versus Flexibility-Focused Competing Values**Framework Profile on 2010-2012 ACT Composite Scores (N = 287)*

Source	<i>B</i>	<i>S.E.B.</i>	β	<i>t</i>	<i>p</i> =
Block 1: Student Demographics					
Model Fit: $F(3, 283) = 269.05, p < .001, R^2 = .73$					
F/R Lunch Students (%)	-0.09	0.00	-0.80	-23.05	0.000
Minority Students (%)	0.00	0.00	-0.05	-1.38	0.169
Students w/ Disabilities (%)	-0.04	0.01	-0.11	-3.46	0.001
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 281) = 175.22, p < .001, R^2 = .76,$					
F Change (2, 281) = 16.78, $p < .001$					
F/R Lunch Students (%)	-0.09	0.00	-0.79	-23.78	0.000
Minority Students %	0.00	0.00	0.03	0.95	0.342
Students w/ Disabilities (%)	-0.04	0.01	-0.12	-3.95	0.000
Faculty Experience (%)	0.02	0.01	0.09	2.33	0.020
Faculty Tenure (%)	0.02	0.01	0.11	2.62	0.009
Block 3: Student + Faculty Demographics + CVF Stability/Flexibility					
Model Fit: $F(6, 280) = 145.646, p < .001, R^2 = .76,$					
F Change (1, 280) = 0.214, $p = .644$					
F/R Lunch Students (%)	-0.09	0.00	-0.79	-23.75	0.000
Minority Students %	0.00	0.00	0.04	1.01	0.315
Students w/ Disabilities (%)	-0.04	0.01	-0.12	-3.92	0.000
Faculty Experience (%)	0.02	0.01	0.09	2.36	0.019
Faculty Tenure (%)	0.02	0.01	0.11	2.59	0.010
CVF Stability/Flexibility	0.20	0.43	0.01	0.46	0.644

Table 14

Hierarchical Regression Summary of a Stability- versus Flexibility-Focused Competing Values Framework Profile on 2010-2012 Mean Proficiency Scores in Algebra I and English II (N = 287)

Source	<i>B</i>	<i>S.E.B.</i>	β	<i>t</i>	<i>p</i> =
Block 1: Student Demographics					
Model Fit: $F(3, 283) = 160.70, p < .001, R^2 = .63$					
F/R Lunch Students (%)	-0.47	0.03	-0.63	-15.62	0.000
Minority Students (%)	-0.11	0.02	-0.22	-5.55	0.000
Students w/ Disabilities (%)	-0.38	0.09	-0.17	-4.48	0.000
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 281) = 101.91, p < .001, R^2 = .65$					
<i>F</i> Change (2, 281) = 5.71, $p = .004$					
F/R Lunch Students (%)	-0.47	0.03	-0.63	-15.56	0.000
Minority Students %	-0.08	0.02	-0.16	-3.65	0.000
Students w/ Disabilities (%)	-0.40	0.08	-0.18	-4.73	0.000
Faculty Experience (%)	0.07	0.06	0.06	1.29	0.198
Faculty Tenure (%)	0.08	0.05	0.08	1.60	0.111
Block 3: Student + Faculty Demographics + CVF Stability/Flexibility					
Model Fit: $F(6, 280) = 84.64, p < .001, R^2 = .65,$					
<i>F</i> Change (1, 280) = 0.032, $p = .858$					
F/R Lunch Students (%)	-0.47	0.03	-0.63	-15.52	0.000
Minority Students %	-0.08	0.02	-0.16	-3.58	0.000
Students w/ Disabilities (%)	-0.40	0.08	-0.18	-4.70	0.000
Faculty Experience (%)	0.07	0.06	0.06	1.30	0.195
Faculty Tenure (%)	0.08	0.05	0.08	1.58	0.115
CVF Stability/Flexibility	0.62	3.49	0.01	0.18	0.858

When regressed on ACT composite scores, the CVF “rational goal/human relations” contrast on ACT composite scores yields results that are similar to those seen for the CVF “balance” profile (in Research Question 1) and the CVF “external/internal profile (in Research Question 2). 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 on the ACT ($\beta = 0.07, t = 2.26, p = .025$). However, as with the other two regressions, the contribution of the CVF profile to explaining variation in the outcome is outweighed not only by student demographic factors but by faculty demographic statistics as well. Most important to explaining achievement on a standardized test like the ACT is the percent of students on free and reduced lunch ($\beta = -0.76, t = -21.54, p < .001$). Of lesser importance are the percent of students with disabilities ($\beta = -0.12, t = -4.05, p < .001$), the percent of faculty with more than 10 years’ experience ($\beta = 0.10, t = 2.43, p = .016$), and the percent of faculty with more than six years’ tenure ($\beta = 0.12, t = 2.62, p = .025$). Least in importance would seem to be an emphasis on a “rational goal,” immediate results orientation but one that nevertheless seems to enable student achievement more than an emphasis on a CVF “human relations” orientation.

As regards block three of the regression involving student EOC proficiency and the CVF “rational goal/human relations” contrast (see Table 16), the percent of students on free and reduced lunch are again observed to have the strongest link to students’ performance ($\beta = -0.63, t = -14.60, p < .001$). This link is in turn followed by the percent of students with disabilities ($\beta = -0.18, t = -4.71, p < .001$) and the percent of minority students ($\beta = -0.18, t = -4.71, p < .001$). As with previous regressions involving EOC scores, neither faculty experience ($\beta = 0.06, t = 1.28, p = .203$) nor faculty tenure ($\beta = 0.08, t = 1.60, p = .111$) appear to be directly linked to the

outcome. That the inclusion of the CVF rational goal/human relations” contrast also fails to increase explained variance in the outcome is suggested both by the “change” statistics for block three (F Change (1 280) = 0.086, p = .769) and the t -test for the CVF profile variable itself (β = -0.01, t = -0.29, p = .769).

Table 15

Hierarchical Regression Summary of Contrasting the Rational Goal versus Human Relations

Orientations on 2010-2012 ACT Composite Scores (N = 287)

Source	<i>B</i>	<i>S.E.B.</i>	β	<i>t</i>	<i>p</i> =
Block 1: Student Demographics					
Model Fit: $F(3, 283) = 269.05, p < .001, R^2 = .73$					
F/R Lunch Students (%)	-0.09	0.00	-0.80	-23.05	0.000
Minority Students (%)	0.00	0.00	-0.05	-1.38	0.169
Students w/ Disabilities (%)	-0.04	0.01	-0.11	-3.46	0.001
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 281) = 175.22, p < .001, R^2 = .76,$					
F Change (2, 281) = 16.78, $p < .001$					
F/R Lunch Students (%)	-0.09	0.00	-0.79	-23.78	0.000
Minority Students %	0.00	0.00	0.03	0.95	0.342
Students w/ Disabilities (%)	-0.04	0.01	-0.12	-3.95	0.000
Faculty Experience (%)	0.02	0.01	0.09	2.33	0.020
Faculty Tenure (%)	0.02	0.01	0.11	2.62	0.009
Block 3: Student + Faculty Demographics + CVF RG/HR Quadrants					
Model Fit: $F(6, 280) = 148.75, p < .001, R^2 = .76,$					
F Change (1, 280) = 5.10, $p = .025$					
F/R Lunch Students (%)	-0.08	0.00	-0.76	-21.54	0.000
Minority Students %	0.00	0.00	0.02	0.48	0.635
Students w/ Disabilities (%)	-0.04	0.01	-0.12	-4.05	0.000
Faculty Experience (%)	0.02	0.01	0.10	2.43	0.016
Faculty Tenure (%)	0.02	0.01	0.11	2.62	0.009
CVF RG /HR Quadrants	1.60	0.71	0.07	2.26	0.025

Table 16

*Hierarchical Regression Summary of Contrasting the Rational Goal and Human Relations**Orientations on 2010-2012 Mean Proficiency Scores in Algebra I and English II (N = 287)*

Source	<i>B</i>	<i>S.E.B.</i>	β	<i>t</i>	<i>p</i> =
Block 1: Student Demographics					
Model Fit: $F(3, 283) = 160.70, p < .001, R^2 = .63$					
F/R Lunch Students (%)	-0.47	0.03	-0.63	-15.62	0.000
Minority Students (%)	-0.11	0.02	-0.22	-5.55	0.000
Students w/ Disabilities (%)	-0.38	0.09	-0.17	-4.48	0.000
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 281) = 101.91, p < .001, R^2 = .65$					
F Change (2, 281) = 5.71, $p = .004$					
F/R Lunch Students (%)	-0.47	0.03	-0.63	-15.56	0.000
Minority Students %	-0.08	0.02	-0.16	-3.65	0.000
Students w/ Disabilities (%)	-0.40	0.08	-0.18	-4.73	0.000
Faculty Experience (%)	0.07	0.06	0.06	1.29	0.198
Faculty Tenure (%)	0.08	0.05	0.08	1.60	0.111
Block 3: Student + Faculty Demographics + CVF RG/HR Quadrants					
Model Fit: $F(6, 280) = 84.66, p < .001, R^2 = .65,$					
F Change (1, 280) = 0.086, $p = .769$					
F/R Lunch Students (%)	-0.47	0.03	-0.63	-14.60	0.000
Minority Students %	-0.08	0.02	-0.16	-3.51	0.001
Students w/ Disabilities (%)	-0.40	0.08	-0.18	-4.71	0.000
Faculty Experience (%)	0.07	0.06	0.06	1.28	0.203
Faculty Tenure (%)	0.08	0.05	0.08	1.60	0.111
CVF RG /HR Quadrants	-1.71	5.81	-0.01	-0.29	0.769

Despite the zero-order correlation observed for the CVF “internal process/open systems” variable and ACT composite scores (see Table 8), addition of that variable in the final block of the hierarchical multiple regression shown in Table 17 shows no increase in the proportion of variance explained over and above that explained by the five demographic variables. As with the regression analyses previously described, the percent of students on free and reduced lunch ($\beta = -0.78$, $t = -22.22$, $p < .001$), followed by the percent of students with disabilities ($\beta = -0.12$, $t = -4.03$, $p < .001$) are the most important in explaining variation in ACT composite. While faculty experience ($\beta = 0.09$, $t = 2.23$, $p = .027$) and faculty tenure ($\beta = 0.12$, $t = 2.68$, $p = .008$) explain a small additional percentage of the variability in students’ ACT scores, the CVF “internal process/open systems” score adds nothing more to the model ($\beta = -0.03$, $t = -1.08$, $p = .282$).

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 ($\beta = -0.63$, $t = -14.87$, $p < .001$) being the most important variable in explaining the outcome (see Table 18). Of roughly equal importance are the percent of minority students ($\beta = -0.22$, $t = -5.55$, $p < .001$) and the percent of students with disabilities ($\beta = -0.17$, $t = -4.67$, $p < .001$). Not observed to be statistically significant in the final block of the analysis are faculty experience ($\beta = 0.06$, $t = 1.32$, $p = .188$), faculty tenure ($\beta = 1.57$, $t = 1.57$, $p = .111$), and the CVF “internal process/open systems” profile score ($\beta = 0.02$, $t = 0.43$, $p = .665$).

Summary

In the five sets of regression analyses conducted on 287 high schools, student demographic characteristics proved to be the most important factors in explaining variation in student achievement, whether measured as three-year averages of ACT composite scores or three-year averages of student EOC assessments in algebra and English. Although faculty

demographic characteristics appear to be directly linked to ACT composite scores, no such direct links were observed with respect to student proficiency scores. Over and above these background variables, the Competing Values Framework (CVF) profiles concerning ‘balance,’ an “external” orientation, and a disposition towards “rational goals” were all associated with higher ACT composite scores, but only the CVF “balance” profile was significantly linked to student proficiency scores.

Table 17

*Hierarchical Regression Summary of Contrasting the Internal Process and Open Systems**Orientations on 2010-2012 ACT Composite Scores (N = 287)*

Source	<i>B</i>	<i>S.E.B.</i>	β	<i>t</i>	<i>p</i> =
Block 1: Student Demographics					
Model Fit: $F(3, 283) = 269.05, p < .001, R^2 = .73$					
F/R Lunch Students (%)	-0.09	0.00	-0.80	-23.05	0.000
Minority Students (%)	0.00	0.00	-0.05	-1.38	0.169
Students w/ Disabilities (%)	-0.04	0.01	-0.11	-3.46	0.001
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 281) = 175.22, p < .001, R^2 = .76,$					
F Change (2, 281) = 16.78, $p < .001$					
F/R Lunch Students (%)	-0.09	0.00	-0.79	-23.78	0.000
Minority Students %	0.00	0.00	0.03	0.95	0.342
Students w/ Disabilities (%)	-0.04	0.01	-0.12	-3.95	0.000
Faculty Experience (%)	0.02	0.01	0.09	2.33	0.020
Faculty Tenure (%)	0.02	0.01	0.11	2.62	0.009
Block 3: Student + Faculty Demographics + CVF IP/OS Quadrants					
Model Fit: $F(6, 280) = 146.29, p < .001, R^2 = .76,$					
F Change (1, 280) = 1.16, $p = .282$					
F/R Lunch Students (%)	-0.09	0.00	-0.78	-22.22	0.000
Minority Students %	0.00	0.00	0.02	0.57	0.572
Students w/ Disabilities (%)	-0.04	0.01	-0.12	-4.03	0.000
Faculty Experience (%)	0.02	0.01	0.09	2.23	0.027
Faculty Tenure (%)	0.02	0.01	0.12	2.68	0.008
CVF IP /OS Quadrants	-0.56	0.52	-0.03	-1.08	0.282

Table 18

*Hierarchical Regression Summary of Contrasting the Internal Process and Open Systems**Orientations on 2010-2012 Mean Proficiency Scores in Algebra I and English II (N = 287)*

Source	<i>B</i>	<i>S.E.B.</i>	β	<i>t</i>	<i>p</i> =
Block 1: Student Demographics					
Model Fit: $F(3, 283) = 160.70, p < .001, R^2 = .63$					
F/R Lunch Students (%)	-0.47	0.03	-0.63	-15.62	0.000
Minority Students (%)	-0.11	0.02	-0.22	-5.55	0.000
Students w/ Disabilities (%)	-0.38	0.09	-0.17	-4.48	0.000
Block 2: Student Demographics + Faculty Demographics					
Model Fit: $F(5, 281) = 101.91, p < .001, R^2 = .65$					
<i>F</i> Change (2, 281) = 5.71, $p = .004$					
F/R Lunch Students (%)	-0.47	0.03	-0.63	-15.56	0.000
Minority Students %	-0.08	0.02	-0.16	-3.65	0.000
Students w/ Disabilities (%)	-0.40	0.08	-0.18	-4.73	0.000
Faculty Experience (%)	0.07	0.06	0.06	1.29	0.198
Faculty Tenure (%)	0.08	0.05	0.08	1.60	0.111
Block 3: Student + Faculty Demographics + CVF IP/OS Quadrants					
Model Fit: $F(6, 280) = 84.71, p < .001, R^2 = .65,$					
<i>F</i> Change (1, 280) = 0.187, $p = .665$					
F/R Lunch Students (%)	-0.47	0.03	-0.63	-14.87	0.000
Minority Students %	-0.08	0.02	-0.15	-3.33	0.001
Students w/ Disabilities (%)	-0.40	0.08	-0.17	-4.67	0.000
Faculty Experience (%)	0.08	0.06	0.06	1.32	0.188
Faculty Tenure (%)	0.08	0.05	0.08	1.57	0.118
CVF IP /OS Quadrants	1.84	4.25	0.02	0.43	0.665

Chapter 5

Summary and Conclusions

The predominant literature analyzing the impact of the various quadrants of the Competing Values Framework (CVF) and the significance of balance relies on studies that have been done in the business sector. There is very little literature in the realm of the public sector, including the education sector. As it pertains to the educational sector, there is extensive research on school effectiveness and what that entails. The predominant literature on school effectiveness shows that there are both external and internal factors that play into school effectiveness. The Coleman Report details how external factors like socioeconomic status and home life factor into the effectiveness of a school. Ronald Edmond and others discuss the fact that although there is no denying that effectiveness of schools is correlated to the previously mentioned factors, there are internal controls that schools can set up and establish that will help increase school effectiveness, particularly as it relates to poor, minority students in inner-city schools. In this study, the CVF is used to determine if balance plays a factor in school effectiveness as it relates to student achievement (proficiency) in End of Course (EOC) testing in Math and Reading and ACT composite scores. Additionally, this study uses the CVF to determine if there is a correlation between more of a focus on the internal vs external quadrants of CVF on EOC scores and ACT scores and the influence of the individuality vs control quadrants of the CVF framework. Since CVF is an overall organizational culture model, the ultimate goal of the study is to use the CVF to see a correlation between organizational culture and school effectiveness as measured by EOC proficiency and ACT composite scores.

This study is guided by the following research questions:

1. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

2. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

3. Over and above the influence of student and faculty characteristics, are there relationships between a high school's exhibiting a "competing values" profile more oriented towards concerns about structure and control (lower left and right quadrants) than flexibility and openness (upper left and right quadrants) and longitudinally measured student achievement as ACT composite scores and end-of-course assessment performance?

4. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

5. Over and above the influence of student and faculty characteristics, are there relationships between a high 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 measured student achievement as ACT composite scores and end-of-course assessment performance?

In summary, the goals of this study are to: 1) determine if balance within the organizational culture as it pertains to CVF is a significant factor in determining school effectiveness with regards to EOC proficiency in Math and Reading and ACT composite scores, 2) analyze if school effectiveness with regards to EOC proficiency in Math and Reading and ACT composite scores is more correlated with internally or externally focused schools as well as if more individuality or control factors, 3) investigate if one particular quadrant of the "competing" component of CVF is predominant in determining school effectiveness with regards to EOC proficiency in Math and Reading and ACT composite scores.

Effect of Student Demographics on EOC Proficiency in Algebra I and English II and ACT Composite Scores (Regression 1)

The initial regression model is set to determine the impact of student demographics such as free and reduced lunch percentage, percentage of minority students in the school and the percentage of students in the school that are classified with a learning disability. This regression shows that student demographics like the ones mentioned hold a significant influence in student achievement for ACT Composite scores and EOC proficiency in Algebra I and English II. The regression also shows that the percentage of free and reduced lunch students has a significant influence into student achievement as it pertains to ACT Composite scores and EOC proficiency in Algebra I and English II. Additionally, there is a negative correlation between the percentage of free and reduce lunch and ACT Composite scores and EOC proficiency.

This regression shows that students that have federally recognized disabilities have a significant impact on student achievement as it pertains to EOC proficiency and ACT Composite

scores. Once again, there is a negative correlation between students that have a federally recognized disability and ACT Composite scores and EOC proficiency. Although there is no significance in the impact of the percentage of minority students to ACT Composite score, there is significance in the percentage of minority students to EOC proficiency.

There is a negative correlation between the percentage of minority students with ACT Composite scores and EOC proficiency. The regression attributed 73% of the change in ACT Composite score to the student demographics listed; compared to 63% of the variance in EOC proficiency on Algebra I and English II scores. Of all factors considered in this study, the percentage of free or reduced lunch has the strongest negative correlation.

These findings are consistent with the finding of the Coleman Report (Bryk, et al., 2010; Coleman et al., 1966) in stating that a student's home life (i.e., socioeconomic status, having a federally recognized disability, ethnic status, etc.) has a large impact on student achievement. Since Tennessee high school effectiveness is ultimately determined by ACT Composite scores and EOC proficiency scores, Tennessee high school effectiveness is negatively impacted by these conditions as well.

Effect of Student Demographics and Faculty Demographics on EOC Proficiency in Algebra I and English II and ACT Composite Scores (Regression 2)

The second regression factors in the impact of various teacher demographics with the student demographics. The factors include the experience of the faculty and the tenure of the faculty (in percentages). When these factors are added into the regression model, they showed a significant impact on both ACT Composite scores and EOC proficiency in Algebra I and English II. When looking at each factor individually, faculty experience is significant as it pertains to ACT Composite scores, but not significant in EOC proficiency. The same could be said for the

percentage of teachers that have received tenure in the school. This is a significant factor for ACT Composite and not significant for EOC proficiency. Both factors show a very slight positive correlation in both ACT composite scores and EOC proficiency. The addition of these factors to the regression attributed 76% of the change in ACT Composite score to the student demographics listed; compared to 65% of the variance in EOC proficiency on Algebra I and English II scores. This is a small increase in the amount of variance when teacher demographic features are included.

This regression is consistent with literature that states the importance of the teacher in the classroom. Having a high quality teacher in the classroom parallels with the work of Edmonds and Frederiksen (1979) as well as Lezotte (2001). The importance of a high quality teacher cannot be misunderstood and the higher the percentage of experienced/tenured teachers does have a significant impact on school effectiveness as it pertains to ACT Composite and EOC proficiency. This also shows that the teachers in the building have a greater impact on the academic culture of the building than nearly anything or anyone else in the school organization.

Effect of a "Balanced" CVF Profile on ACT Composite Scores and EOC Proficiency in Algebra I and English (Question 1)

The first question proposed in the study looks at the organizational culture piece of if the Competing Values Framework (CVF) balance profile factors into student achievement as it relates to ACT Composite scores and EOC proficiency. The addition to the regression shows that the CVF balanced profile has a statistical significance in relation to ACT Composite and EOC proficiency.

This is consistent with literature from Cameron and Quinn (2011) that details the importance of creating balance within the organizational culture. Additionally, this regression

runs parallel to the literature in Total Quality Management (TQM) principles that state the importance of focusing on both the internal quality (production and price) and the external quality (customer and supplier satisfaction) of performance (Cabrese & Corbo, 2015; DeFeo, 2015; Dean & Bowen, 1994; Deming, 1982).

Impact of a Stability vs Flexibility Focused CVF Profile on ACT Composite Scores and EOC Proficiency in Algebra I and English II (Question 2)

The second question considers the impact of a school that was more focused on the stability quadrants as compared to the flexibility quadrants of the Competing Values Framework. The results of the regression fail to show a significant impact on ACT Composite scores and on EOC proficiency.

These findings are consistent with the literature concerning the organizational culture of the Competing Values Framework that states there must be a balance in at least three of the four quadrants (Cameron and Quinn, 2011; Quinn, 1983). Additionally, one cannot simply have stability without the innovation needed for teachers to be effective in preparing students for college and career (Fullan & Steiglbauer, 1991; Green; 2001).

Impact of an Externally vs Internally Focused CVF Profile on ACT Composite Scores and EOC Proficiency in Algebra I and English II (Question 3)

Question three examines the effect of the externally focused quadrants as compared to the internally focused quadrants of the Competing Values Framework. The results are mixed with this question. The regression shows that there is a positive correlation in schools that are externally focused and there is significance when compared with ACT Composite scores. Yet, when the same factors are used with EOC proficiency the findings show a negative correlation towards the internal quadrants and no significance.

Once again, this is consistent with the literature that shows the need for balance within the quadrants for the organizational culture for effectiveness (Cameron & Quinn, 2011; Quinn, 1983). This also speaks to the importance within TQM to focus on the external factors of the TQM framework (DeFoe, 2015; Deming, 1982).

Contrast of the Rational Goal vs Human Relations Orientations on ACT Composite Scores and EOC proficiency in Algebra I and English II (Question 4)

The fourth question attempts to see if two of the Competing Values Frameworks had a greater impact on student achievement than the other. The first quadrants studied are Rational Goals quadrant as compared to the Human Relations quadrant. This regression reveals that there is a positive correlation and significance. As with the third question, there is a negative correlation leaning toward more of the Human Relations quadrant and no significance for EOC proficiency.

Contrast of the Internal Process vs. Open Systems Orientations on ACT Composite Scores and EOC Proficiency in Algebra I and English II (Question 5)

The final question in the study compares the effects of the Internal Process quadrant and the Open Systems quadrants for schools that are oriented more towards one of these quadrants. This part of the study has generated different results compared to the previous question (Question 4). The regression fails to show significance for a school that has an orientation toward either quadrant as it relates to ACT Composite or EOC proficiency. Additionally, there is a negative correlation towards an open systems orientation in ACT Composite scores as compared to EOC proficiency that has a positive correlation towards Internal Systems orientated schools.

Once again, this is consistent with the CVF literature that shows that the organization will not be effective if the organizational culture is geared or orientated towards one quadrant as opposed to having a balance (three or more quadrants) (Cameron & Quinn, 2011; Quinn, 1983). This also shows the importance of schools recognizing the importance of them being open systems and adjusting the culture of the organization to reflect that fact (Fullan 1995, 2005; Fullan & Steiglbauer, 1991; Green, 2001, 2010).

Overall, the study emphasizes the need for school to focus on more of the external factors of the school organization. It is important to focus on the internal quadrants (Human Relations and Internal Process) that give more control and stability because these are factors that school can directly impact and influence in a short amount of time. However, for schools as an organization to be fully effective and build sustainability in their effectiveness (particularly high schools), they must have a focus on the external quadrants (Rational Goals and Open Systems) as an emphasis as well. By having a balance within the CVF, a high school can improve its effectiveness and culture.

Implications

Although this study is designed to analyze the impact of various organizational culture pieces as it relates to the Competing Values Framework, there is an undeniable link between the high percentage of students that receive free and reduced lunch and the student achievement of these students and, in turn, the effectiveness of the school. The correlation is both the strongest (*B range* $-.76$ - $-.80$) and negative. This indicates that the higher the percentage of free and reduced lunch students there are in a school, the lower the test scores. This is true for both ACT scores as well as EOC proficiency in Algebra I and English II. This shows that Coleman's (1966) initial report as well as Bryk's (1996) research are correct in assuming that school

effectiveness, to an extent, is determined by the outside factors a student in the school faces like poverty. Yet, even though poverty is a strong factor in determine school effectiveness, all is not lost. Edmonds (1979) and Lezotte (2001) developed correlates that have been proven to be successful in determining how to be effective given these circumstances. The only issue is that these correlates only focus on the internal quadrants (Human Relations and Internal Process) of the Competing Values Framework. Therefore, there would not be a balance within the framework culturally and balance is needed for true organizational effectiveness.

Lezotte (2001) discusses and adds a correlate to Edmonds' work that includes more time on task/learning. The reasoning behind this correlate is that a student learns more when there is more time for an effective teacher to teach these students. This is backed up by Hopkins, et al (2010) when they determine that the teacher in the classroom has a greater impact on student achievement than the leader or culture of the school. That is not to say that culture is not significant. To retain effective teachers, the culture has to meet particular criterion. The data confirm the relationship between the teacher in the classroom and positive student achievement. The studied showed an increase in variance between the students' demographics factored into students' achievement ($R^2=.73$ to $R^2=.76$ for ACT Composite and $R^2=.63$ to $R^2=.65$ for EOC proficiency). This is a 2-3% increase in the variance that teachers with high levels of experience and tenure have on student achievement. However, the percent of variance remains the same for both ACT composite and EOC proficiency when the cultural aspects of the CVF are added to the regression as compared to when the faculty demographics were added.

Apart from the final question that analyzed the contrast between schools that are more orientated to the Internal Process quadrant or Open Systems quadrant of CVF, all ACT Composite results as it relates to CVF are significant. The exact opposite is true when

comparing the various questions of CVF to EOC proficiency in Algebra I and English II. The only CVF question that shows significance as it pertained to EOC proficiency is the question of balance within the framework. Not only are the results not significant, but also there is a large discrepancy as it relates to EOC proficiency. This may be attributed to the fact that there is a national norm score for the ACT. However, proficiency is determined from state to state and is not nationally normed like the ACT.

The results indicate that there is a correlation between EOC proficiency and the internal quadrants of the Competing Values Framework; however, there is no significance to determining EOC proficiency. This finding echoes what is found in the literature concerning high poverty schools, inner-city schools. Researchers such as Edmonds and Frederiksen (1979) and Lezotte (2001) give correlates that are primarily focused on the internal quadrants of CVF. Refer again to Figure 2.2 that shows the correlation of the correlates of Edmonds, Frederiksen and Lezotte and how they fit within the Competing Values Framework. As one can see, six of the seven correlates developed by combining Edmonds and Frederiksen's (1979) work and Lezotte's (2001) are found within the left quadrants (Human Relations and Internal Process). The opposite is true when focusing on the nationally normed ACT Composite scores. These results are correlated to the external quadrants of CVF and show statistical significance (except for contrasting Internal Process vs. Open System).

Recommendations

The recommendations stemming from this study attempt to place the correct balance within the Competing Values Framework to provide a school culture that emphasizes the importance of student achievement and, in turn, drive school effectiveness.

1. There is a large focus, particularly in inner-city schools with a large percentage of economically disadvantaged children that are deemed ineffective on processes that ensure strong instructional leadership, monitoring the quality of instruction, and building capacity in the school (i.e. professional development). However, the results show a negative correlation to student achievement when this is the sole focus. This research suggests building on the studies of Edmonds and Lezotte that focus on the internal quadrants of CVF (Human Relations and Internal Process) and add to it the ideas of Fullan that focus more on the external quadrants (Rational Goals and Open Systems) to include more of the systems learning approach for education that includes all members of the learning community.
2. Focus on what appears to truly move the needle of student achievement, quality teachers in the classroom. In education, this equates on improving hiring practices that focus on finding high quality teachers that have high expectations for their students, set goals for themselves and their students, implements processes to ensure they are moving to those goals, and have positive relations with the family and community.
3. Although the TELL questions from this study are placed and aligned with the various quadrants of CVF, a new instrument should be used that requires teachers to complete anonymously that is directly aligned with CVF.

Recommendations for Further Research

Recommendations for further research based on the findings of this study are based in areas of outcome measures and survey form. The researcher recommends that schools surveyed utilize a survey that is geared more to diagnose the various quadrants of the Competing Values Framework. This culture analysis survey will allow a better picture into the balance or lack of

balance within the school. Additionally, the researcher recommends that schools that are focused on utilizing this diagnostic tool be focused on inner-city schools that have a high level of free and reduced lunch. Many of the schools that are deemed ineffective are still schools that are in the inner-city with large percentages of free and reduced lunch, minority students, and students with disabilities. All three of these student demographic categories have a negative correlation with student achievement in the study. Focusing on these schools and utilizing a sound diagnostic tool that is derived from the Competing Values Framework will allow future researchers to determine if balance within CVF lends itself to having more effective schools based on student achievement. It will also help diagnose the quadrants that the school is more focused and orientated with for both those effective and ineffective schools and make any needed changes to ensure the ineffective schools can move their culture to resemble one of effective schools.

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