Organizational citizenship behaviors, collective teacher efficacy, and student achievement in elementary schools

Jeffrey C. Jackson
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ORGANIZATIONAL CITIZENSHIP BEHAVIORS, COLLECTIVE TEACHER EFFICACY, AND STUDENT ACHIEVEMENT IN ELEMENTARY SCHOOLS

A Dissertation
Presented to
The Faculty of the School of Education
The College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree
Doctor of Education

by
Jeffrey C. Jackson
November 2009
DEDICATION

This work is dedicated to my family. To my wife Charmaine, you inspire me to become more than I thought I could ever become. Your courage and strength remind me that no obstacle is too great to overcome. Without your love and support, this work would not have been possible.

To my children Robert, Katrina, and Spencer, you are my greatest blessing. You are my pride and joy. Thank you for putting up with the papers strewn all over the tables, daddy hogging the computer all weekend, and the nights away from home.

Finally, to my mother, thank you for your patience and your faith in me. I am who I am because of you.
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ABSTRACT

This study sought to examine relationship between teacher organizational citizenship behaviors (OCB), collective teacher efficacy (CTE), and student achievement in urban elementary schools. A convenience sample of 1,327 teachers from 35 elementary schools from a single urban school district completed surveys designed to measure OCB and CTE. Student achievement data were based on performance on the Virginia Standards of Learning exams for grade 3 and 5 mathematics and reading.

Pearson correlation statistics revealed a significant positive relationship between OCB and CTE. Significant positive relationships were found between OCB and student achievement scores in grade 3 mathematics, grade 5 mathematics, and grade 5 reading. CTE demonstrated a significant positive relationship with student achievement scores in grade 3 reading, grade 5 reading, and grade 5 mathematics.

Regression analysis revealed that student socioeconomic status had a negative relationship with student achievement on all measures within each of the three models. Within the model that considered OCB, SES, and student achievement, OCB was found to be a significant predictor of student achievement on the grade 3 mathematics, grade 5 mathematics, and grade 5 reading SOL exams. Within the model that considered CTE, SES, and student achievement, CTE was found to be a significant predictor of student achievement on the grade 3 reading, grade 5 mathematics, and grade 5 reading SOL exams. When all variables were considered simultaneously, OCB was found to be a
significant predictor of student achievement on the grade 3 mathematics SOL exam. CTE was not a significant predictor of student achievement on any achievement measure.

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ORGANIZATIONAL CITIZENSHIP BEHAVIORS,

COLLECTIVE TEACHER EFFICACY,

AND

STUDENT ACHIEVEMENT IN ELEMENTARY SCHOOLS
CHAPTER 1: THE PROBLEM

Introduction

In January of 2002, the Elementary and Secondary Schools Act was reauthorized as the No Child Left Behind Act [NCLB]. NCLB legislation calls for stronger accountability for student achievement, more flexibility for states and communities in structuring schools, use of education programs that are scientifically proven to be effective, and more educational choices for parents (United States Department of Education, 2004). Under NCLB, schools are held accountable for ensuring that students meet established benchmarks for achievement and failure to meet those benchmarks may lead to sanctions. For Virginia public schools, compliance with NCLB benchmarks for student achievement is largely measured based on student performance on the Virginia Standards of Learning (SOL) exams. The exams are administered annually and are based on standards adopted by the Board of Education of the Commonwealth of Virginia (Virginia Department of Education, 2005). Schools are required to ensure that student scores in identified core areas increase at a specified rate, culminating with a 100 percent pass rate by 2014 (Virginia Department of Education, 2003). It is with this understanding of mandated, universal proficiency that administrators and staff plan for meeting these goals. In order to meet these benchmarks, school leaders must be cognizant of factors that have been shown to impact student achievement and work diligently to create an environment that promotes such positive influences.

What are some factors affecting student success? The Coleman Report (Coleman, et al., 1966) and subsequent studies (Sirin, 2005) indicated that differences in student achievement were largely due to factors related to students' family backgrounds and
socioeconomic status (SES). The report went on to conclude that "only a small part of 
student achievement] is the result of school factors" (Coleman et al., 1966, p. 297). If the 
claims put forth in this report are true, then schools are now faced with the task of 
ensuring that all students achieve at an acceptable rate when the overriding factor that 
influences achievement is largely beyond the influence of educators.

While the conclusions drawn in the Coleman Report (Coleman et al., 1966) may 
be discouraging, it is not acceptable for school officials to adopt the position that the 
charge of ensuring all students to achieve is unattainable. In order to meet the mandates 
put forth by NCLB, educators must focus on addressing factors that are within their 
control. Effective schools research such as the work of Edmonds (1979, 1982) provides 
the baseline for understanding the factors that contribute to successful schools, even 
when controlling for student SES. Educators can concentrate on proven practices such as 
promoting strong leadership from the principal and high quality instruction, maintaining 
safe and orderly schools, ensuring student mastery of basic skills, and frequently 
monitoring of student progress (Edmonds, 1982). Addressing those factors can help 
schools improve and certainly can move student achievement toward desired 
achievement levels.

Beyond the areas identified by effective schools research are additional factors 
that need to be considered. As student achievement levels improve, the more subtle 
influences need to be considered in the push for proficiency. Examples of those more 
subtle influences would include the behaviors and beliefs of the classroom teachers. Let 
us consider the case of a hypothetical teacher. Within her school, all teachers are 
expected to assist in the administration of standardized tests, but she resents being asked
to complete tasks that require her to deviate from her usual schedule. Although this is her first year in a new school, she is an experienced teacher and should be aware that sometimes teachers are called upon to perform duties that extend beyond classroom instruction. When she interviewed for the position, she gave the principal the impression that she would be a team-player and that she would bring a refreshing level of energy and enthusiasm to the staff. Instead, she prefers to work in relative isolation, and generally limits her interactions with peers to mandatory activities. Her unwillingness to play a role in the school beyond the minimal expectations without complaint leaves an unfavorable impression on her supervisors as well as on many of her colleagues. Our hypothetical teacher demonstrates behaviors that are reflective of poor organizational citizenship.

Besides her resistance to performing tasks beyond her job description, this teacher also believes that she and her colleagues have little chance of successfully teaching her students. “They send me to all of these training sessions,” she mutters, “but it doesn’t matter. As soon as they go home, they’ll just play video games and watch television. They don’t care what I have to say so they aren’t even going to try.” Her perception of her circumstances is shared by her colleagues. They not only feel that their personal efforts are futile, they think that the goals established by governing bodies for student success education are unattainable. “The government passes laws that say we have to teach these kids no matter what. They should make a law that tells parents they should have to raise their kids to respect their teachers and do what they are told. They also need to make parents spend time with their kids and take them to a museum or a library sometime. How am I supposed to teach them when no one at home cares if they learn?”

Our fictional teacher and her associates have little faith in their ability to perform their
jobs at an effective level. They also feel that educators in general are not able to meet the instructional needs of their students. They view themselves as victims of circumstance with little control over their charges. Our fictional staff demonstrates a weak sense of collective teacher efficacy.

Conceptual Framework

Organizational Citizenship Behaviors (OCB) and Collective Teacher Efficacy (CTE) are constructs that are the subject of a growing body of research in education. OCB include extra-role behaviors that an individual displays in the work environment that exceed the required tasks associated with their position. For teachers, it includes those extra tasks that help ensure that a school operates more effectively in working toward meeting operational and instructional goals such as serving on committees, helping their colleagues prepare for class, or staying late to help students prepare for a test (DiPaola, Tarter, & Hoy, 2005). CTE represents a belief system or a set of dispositions. It describes how a group of teachers perceive their combined effectiveness in a school (Bandura, 1997). Both OCB and CTE have been independently linked to multiple favorable outcomes in the school setting. As such, it would be logical to assume that it would be advantageous for school faculties to demonstrate high levels of collective efficacy while at the same time practicing strong OCB. Unfortunately, there are only a few studies available that explore the relationship between OCB and any level of teacher efficacy (Dussault, 2004; Wagner, 2008).

Organizational Citizenship Behaviors

Organizational citizenship behaviors include “beneficial behavior that was not prescribed but occurred freely to help others achieve the task at hand” (DiPaola et al.,
Early research regarding OCB in the business and corporate sector identified five distinct categories of behaviors: altruism, conscientiousness, sportsmanship, courtesy, and civic virtue (Organ, 1988). DiPaola and Tschannen-Moran (2001) noted that the amount of research addressing OCB in schools was limited. Still, the body of research has started to grow and OCB has been related to multiple factors in education. Some of the research focuses on the impact of leadership styles on the manifestation of OCB (Somech & Ron, 2007) while others study the relationship between OCB and trust (Tschannen-Moran, 2003). OCB has been shown to have a positive relationship with student achievement (DiPaola et al., 2005; Jurewicz, 2004; DiPaola & Hoy, 2005).

Schools are such unique social settings that certain extra role behaviors are necessary for the smooth and efficient operation of the organization. Many teachers volunteer to serve on committees, help their colleagues when they need a hand, stay after school to assist struggling students, grade papers and plan lessons at home, and attend sporting events to support their schools. These behaviors do not require extraordinary effort, but they do typically exceed teachers’ basic job descriptions. If teachers refused to exhibit such citizenship behaviors, the quality of the school environment would diminish (DiPaola et al., 2005).

**Teacher Efficacy and Collective Teacher Efficacy**

Self-efficacy theory is a component of social cognitive theory that centers on the belief in one’s own ability to effectively accomplish a given task or obtain a desired outcome (Bandura, 1997). The construct of efficacy is rooted in Rotter’s (1966) Social Learning Theory and in Bandura’s (1977) Social Cognitive Theory. For teachers, self-
efficacy describes the belief that they can help a student regardless of circumstance (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977, p. 135). It is the conviction in their own ability to impart desired educational outcomes regardless of the influence of other mitigating factors. 

The construct of teacher self-efficacy has been related to many aspects of education. For example, a strong feeling of self-efficacy has been shown to have a positive correlation with a teacher’s willingness to try different instructional approaches with their students (Berman et al., 1977; Gibson & Dembo, 1984). In an era of high-stakes testing and increasing student accountability, it is essential that teachers appreciate the significance of their role and the level of control they exercise over student learning. As schools promote effective research-based instructional practices in an effort to improve student learning, it is important for teachers to be willing to adjust their instructional practices and incorporate in their classrooms techniques that have proven effective.

Collective teacher efficacy is defined as “the perceptions of teachers in a school that the efforts of the faculty as a whole will have a positive effect on students” (Goddard et al., 2000, p.480). It is more than just the additive sum of the individual self-efficacy ratings of teachers in a school; it is a unique group-level characteristic that is influenced by the relationships between group members and the circumstances the group encounters (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Instead of centering on the impact of the individual teacher, collective efficacy focuses on the capacity of the entire faculty to help students achieve learning goals.
As with teacher self-efficacy, collective teacher efficacy has been found to have a positive correlation with student achievement (Goddard, Hoy, & Woolfolk Hoy, 2000; Ross, Hogaboam-Gray, & Gray, 2004; Tschannen-Moran & Barr, 2004). Although a causal link has not been established, researchers did find that as levels of collective teacher efficacy increased, student achievement in math and reading correspondingly increased. Based on these findings, school administrators would be wise to maintain a school environment that fostered the development of a sense of strong collective efficacy among teachers on staff.

*The Little Engine That Could* (Piper, 1930) may only be a children’s story, but it clearly illustrates the importance of a positive mindset when an individual works toward a desired goal. The engine’s mantra “I think I can, I think I can, I know I can, I know I can” (Piper, 1930, p.17) is a clear indicator of its individual self-efficacy as it relates to the task of climbing the mountain. For teachers, individual self-efficacy describes the strength of their personal faith in their ability to accomplish a specific task. For the staff as a whole, the collective teacher efficacy is the belief of the staff in their capacity to achieve desired outcomes, regardless of intervening factors. In the collective sense, the mantra shifts to “we know we can, we know we can.”

According to the Coleman Report (Coleman et al., 1966), students’ family backgrounds and SES are the most powerful factors impacting student achievement. Simply put, students that come from poverty are less likely to succeed in school than students that come from wealth. More disturbingly, the report also concludes that the efforts of school have little overriding impact on this condition (Coleman et al., 1966). More recent research reveals that OCB and CTE are constructs that have been independently found to
have a positive relationship to student achievement when controlling for SES. As such, school officials would be well served to establish a climate that encourages staff members to be highly efficacious and to exhibit strong OCB. Unfortunately, there is little literature describing the potential relationship between collective teacher efficacy and OCB. If a positive correlation between the two constructs exists, the school leaders should be confident that engaging in behaviors that promotes one construct should have a reciprocal effect on the other.

Figure 1

*Conceptual Framework*

*The Relationship between Organizational Citizenship Behaviors and Collective Teacher Efficacy*

![Diagram of the relationship between Organizational Citizenship Behaviors, Collective Teacher Efficacy, Student Achievement, and Student Socioeconomic Status.]
This study measured the strength of the relationship between OCB and CTE. The Teacher’s Collective Efficacy Beliefs Scale to be used for this study was developed as an adaptation of the Teacher Sense of Efficacy Scale (TSES) (Tschannen-Moran & Barr, 2004) and the OCB measure is the Organizational Citizenship Behavior in Schools Scale (OCB Scale) (DiPaola, Tarter, & Hoy, 2005). Both measures have been found to be valid and reliable when properly administered. The model for the conceptual framework illustrated below presumes that since there are strong independent correlations between OCB and student achievement and CTE and student achievement, there should be a significant correlation between collective teacher efficacy and OCB.

Statement of the Problem and Purpose of the Study

Within the instructional setting, there are certain beliefs, dispositions, and behaviors that are desired of school staff that contribute to the smooth and efficient operation of the school. These citizenship behaviors and efficacy beliefs have been shown to have a positive correlation to student achievement (Tschannen-Moran & Barr, 2004; DiPaola et al., 2005; Jurewicz, 2004; DiPaola & Hoy, 2005). NCLB legislation holds schools accountable for ensuring that students meet certain levels of achievement regardless of their personal circumstance. In the current climate of accountability, administrators must be mindful of factors that have been shown to be related to achievement and to understand the relationships among those factors. For this study, the specific relationships to be examined are the relationship between collective teacher efficacy and OCB in the school setting as well as the individual and combined relationships of these constructs to student achievement.
Research Questions

The proposed study will attempt to address the following questions:

1. What is the relationship between organizational citizenship behaviors and collective teacher efficacy in elementary schools?
   a. What is the relationship between OCB and CTE centered on perceptions of instruction?
   b. What is the relationship between OCB and CTE centered on perceptions of discipline?

2. What is the relationship between OCB and student achievement when controlling for SES?

3. What is the relationship between CTE and student achievement when controlling for SES?
   a. What is the relationship between CTE centered on perceptions of instruction and student achievement when controlling for SES?
   b. What is the relationship between CTE centered on perceptions of discipline and student achievement when controlling for SES?

4. What are the relative contributions of OCB and CTE in explaining variance in student achievement when controlling for SES?

Definition of Terms

For the purpose of this study, the following definitions of terms apply:

- **Altruism**: A dimension of OCB that describes helping behaviors and includes all behaviors in which an individual assists someone complete organizationally related tasks (Organ, 1988).
• Civic Virtue: A dimension of OCB which describes behaviors related to members contributing to organizational governance (Organ, 1988).

• Collective Teacher Efficacy: "(T)he collective self-perception that teachers in a given school make an educational difference to their students over and above the educational impact of their homes and communities" (Tschannen-Moran & Barr, 2004, p. 190).

• Collective Teacher Efficacy Centered on Perceptions of Discipline: Collective teacher efficacy that describes the self-perception of teachers in a given school of how well they can influence student behavior through established rules and procedures to the end of influencing student learning (Tschannen-Moran & Barr, 2004).

• Collective Teacher Efficacy Centered on Perceptions of Instruction: Collective teacher efficacy that describes the self-perception of teachers in a given school of how well their instructional practices and selected strategies influence student learning (Tschannen-Moran & Barr, 2004).

• Conscientiousness: A dimension of OCB that includes behaviors related to individuals exceeding minimum expectations (Organ, 1988).

• Courtesy: A dimension of OCB that is manifested in the consideration of others (Organ, 1988).

• Elementary School: For the purpose of this study, an elementary school is a school that serves students in grades kindergarten through grade 5.

• General Compliance: A dimension of OCB that includes obeying organizational rules for the sake of the organization. (Smith, Organ, & Near, 1983)
• Helping Behavior: A type of OCB similar to altruism which describes behaviors related to one person assisting other individuals (Smith et al., 1983).

• Locus of Control: The extent to which individuals believe that they can control the events that impact their lives (Rotter, 1966).

• Organizational Citizenship Behavior (OCB): “Individual behavior that is discretionary, not directly or explicitly recognized by the formal rewards system, ... that in the aggregate promotes effective functioning of the organization” (Organ, 1988, p. 4).

• Self-Efficacy: A construct that describes an individual’s perception of how well they can perform a task (Bandura, 1997).

• Socioeconomic Status (SES): The state that describes students’ income or poverty level. For this study, SES is a school level attribute represented by the percentage of students receiving free or reduced priced lunch (FRL). SES data will be collected from the local school division and the Virginia Department of Education (VDOE).

• Sportsmanship: A dimension of OCB that includes the capacity to accept minor inconveniences in the work-place without complaining (Organ, 1988).

• Student Achievement: For the purpose of this study, student achievement will be measured based on student performance on the Virginia Standards of Learning grade 3 math and reading and grade 5 math and reading tests. These are criterion referenced tests administered to all Virginia elementary school students at the end of third and fifth grade. Students are considered proficient if they earn a scaled score ≥ 400.

• Teacher Self-Efficacy: A teacher’s belief that they can help a student regardless of circumstance (Berman et al., 1977, p. 135).
Assumptions

Data for this study were collected through surveys administered to teachers at elementary schools in an urban school district in Virginia at regularly scheduled faculty meetings. The survey items used have been found to be valid and reliable measures of the constructs and will be fully described in Chapter 3.

Data regarding student achievement and rates of students receiving free or reduced lunch (FRL) were collected from the Virginia Department of Education and the local school district. It is understood that families apply for FRL and that, while application rates are higher for elementary schools than for secondary schools, not all eligible families may choose to apply. It is assumed that all testing and FRL data will be accurately reported by the local school district and the VDOE.

Limitations and Delimitations

This study was limited to a convenience sample collected from teachers at urban elementary schools within a specific school district in the Commonwealth of Virginia. As such, the reader should be cautious when attempting to generalize the findings to secondary schools or to other elementary schools in or outside of Virginia. This study also focused exclusively on the correlational relationships between CTE, OCB, and student achievement when controlling for SES. As such, there cannot be any assumption of a causal nature of one construct on the other based on the findings.

Achievement data for this study were limited to student performance on the Virginia Standards of Learning exams for grade 3 math and reading and grade 5 math and reading. These criterion reference assessments are minimum competency tests used to measure student understanding of the content of the course as described for the Virginia
SOL for that grade level. Data are also reported as the scaled mean score for each school on each test. There can be no assumptions made regarding student understanding at other grade levels or within other subject areas.

Summary

As 2014 approaches, public schools are faced with the reality that all students must demonstrate mastery of basic skills and concepts in math and reading as required by NCLB regardless race, gender, or socioeconomic status (United States Department of Education, 2004). Research shows that SES is the most significant predictor of student success (Coleman et al., 1966; Sirin, 2005). As student SES is beyond the control of educators, school officials must focus on factors within their control in order to promote student achievement. Organizational citizenship behaviors and collective teacher efficacy are two examples of constructs that are within the sphere of influence of school officials. An examination of the relationship between OCB and CTE when controlling for SES can provide valuable insight into two factors that impact student achievement with practical implications for school leaders as they move to meet the mandate of universal proficiency set forth by governing agencies.
CHAPTER 2: LITERATURE REVIEW

Review of the Literature

This chapter includes a discussion of the literature for the variables that are featured in this study. The chapter also includes theoretical justification for the research questions presented in the previous chapter.

The Need for the Study

With the 2001 authorization of No Child Left Behind [NCLB], the federal government shifted its level of involvement in the operations of local schools. Under NCLB, public schools are required to test students in math and reading in grades 3 to 8 and at least once in high school. Pass rates for students must improve at an acceptable rate over a period of time, culminating in a 100 percent pass rate by 2014. Schools that fail to demonstrate adequate yearly progress (AYP) are subject to sanctions that may include placement in an improvement program, loss of federal funding, and/or replacement of administrators (Virginia Department of Education, 2003).

While goals for school improvement and student achievement should be ambitious, it is critical that they also be realistic. There are some that would argue that the goal that all students demonstrate proficiency in math and reading by 2014, while laudable, is unachievable (Linn, 2003). First, consider the problematic process of defining proficiency. Establishing student achievement expectations requires four processes: defining content domains, developing methods for measuring student understanding of the content domains, establishing performance standards, and formulating long-range goals and short-term achievement objectives (Linn, 2003). Under the existing NCLB guidelines, individual state agencies are responsible for developing
the content domains and the assessments used to measure them. The states also are
responsible for defining the acceptable achievement levels for students on the state-
adopted assessments (United States Department of Education, 2004). While the states are
required to submit plans for defining and measuring student proficiency to the federal
government for review, the process lends itself to the possible creation of 50 different
sets of content descriptions, assessment measures, and performance standards for student
proficiency in math and reading.

Another consideration is the current rate of improvement on existing nationally
administered measures of student achievement. The National Assessment of Educational
Progress (NAEP) is a series of achievement tests administered to select fourth-grade,
eighth-grade, and 12th-grade students that addresses a wide-range of content areas,
including mathematics and reading (United States Department of Education, 2008).
During the 1990s, the rate of student improvement on the NAEP math assessment
averaged around 1% for the Grade 4 and Grade 8 and at half of 1% for Grade 12. By
2000, the proficiency rate for students on the math assessment in fourth-grade was 26%,
eighth-grade 27%, and 12th-grade 17% (Linn, 2003). In order to reach the goal of 100%
proficiency by 2014, the rate of improvement would need to increase from 400% on the
fourth-grade assessment to 1,180% on the 12th-grade assessment. Some would argue that
to expect such a drastic rate of improvement is unrealistic (Linn, 2003).

Realistic or not, the goal that students to achieve universal proficiency in math
and reading by 2014 is the established federal requirement. This goal is particularly
stressful for school leaders as it is coupled with the specter of corrective measures for
those who fail to meet the established benchmarks. Principals and administrators must
work with their staffs, students, parents, and other stakeholders to develop strategic plans that provide a framework for meeting NCLB requirements. With such high stakes, it is critical for school leaders to be keenly aware of factors that impact student achievement.

**Student Socioeconomic Status**

The Coleman report (Coleman et al., 1966) laid forth the assertion that differences in student achievement were due to a student's SES and family background. The report also concluded that there was little that could be done on the part of schools and school officials to overcome the overpowering effects of environment and poverty (Coleman et al., 1966). These findings are certainly discouraging in light of government mandates that all children must succeed, but do they hold true today.

One of the difficulties of interpreting SES and student achievement studies lies in how researchers interpret student SES. White (1982) completed a meta-analysis of 101 studies conducted from 1918 to 1975 addressing the relationship between SES and student achievement. White (1982) found that in studies where the student was used as the unit of analysis and SES was defined based on the parent's income, education level, or occupation, there was a positive but weak relationship between SES and student achievement \( (r = .22) \). White (1982) found the strength of the relationship between SES and student achievement to be stronger when the school was used as the unit of analysis.

In 2005, Sirin replicated White's (1982) study using findings from 1990 to 2000 relating student achievement to SES. Sirin (2005) found that among the 74 samples selected, the mean effect size between SES and student achievement was still significant \( (M = .299, SD = .169, k = 207) \). Sirin's (2005) findings were consistent with White's (1982) in that when the school was used as the unit of analysis, the strength of the
relationship increased. The importance of these findings is that while there is still a
relationship between SES and student achievement, on the student level the strength of
the relationship is not as strong. With this in mind, educators can focus on other factors
that impact student achievement with the understanding that employing best practices on
the individual level can have a positive influence.

Effective Schools Research

Edmonds (1979, 1982) is credited with shaping our understanding of the
foundational work of effective schools research. Within his summaries, Edmonds (1979,
1982) identified five characteristics of successful schools, regardless of the students’
socioeconomic status: strong administrative leadership and attention to quality
instruction, an emphasis on instructional focus that includes high expectations for student
achievement, a safe and orderly learning environment, and frequent monitoring of student
progress as a means to promote program success. Upon completion of the review,
Edmonds’ (1979) reached the powerful conclusion that schools could successfully serve
all students regardless of their socioeconomic status or backgrounds.

Since the publication of Edmonds’ (1979, 1982) findings, the literature has
expanded to provide different perspectives of the factors that impact student learning.
Marzano (2003) completed a meta-analysis of previous studies and identified three levels
of factors that affect student achievement: school level, teacher level, and student level.
Examples of these factors are included in Table 1.

While effective school research leads us to a deeper understanding of the factors
that impact student learning, it does not provide a specific prescription for designing the
perfect school. In order to meet the mandated goal of 100 percent pass rates, schools and
administrators must consider all factors that can impact student learning, including those that go beyond the effective schools research. A growing body of research is forming that centers on how the beliefs and behaviors of teachers impact the factors associated with effective schools as well as with student achievement. This study will focus on two of these factors, organizational citizenship behavior and collective teacher efficacy.

Table 1

Factors Affecting Student Achievement

<table>
<thead>
<tr>
<th>Factor</th>
<th>Example</th>
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</thead>
<tbody>
<tr>
<td>School</td>
<td>• Guaranteed and viable curriculum</td>
</tr>
<tr>
<td></td>
<td>• Challenging goals and effective feedback</td>
</tr>
<tr>
<td></td>
<td>• Parent and community involvement</td>
</tr>
<tr>
<td></td>
<td>• Safe and orderly environment</td>
</tr>
<tr>
<td></td>
<td>• Collegiality and professionalism</td>
</tr>
<tr>
<td>Teacher</td>
<td>• Instructional strategies</td>
</tr>
<tr>
<td></td>
<td>• Classroom management</td>
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<tr>
<td></td>
<td>• Classroom curriculum design</td>
</tr>
<tr>
<td>Student</td>
<td>• Home atmosphere</td>
</tr>
<tr>
<td></td>
<td>• Learned intelligence and background information</td>
</tr>
<tr>
<td></td>
<td>• Motivation</td>
</tr>
</tbody>
</table>

(Marzano, 2003, p.10)

Organizational Citizenship Behaviors

In any work environment it is possible to find individuals who contribute beyond the specified job requirements. These are the people who exhibit certain helpful
behaviors such as cleaning up clutter in the break room, going out of their way to help coworkers, or conserving company resources. They also tend to accept reasonable inconvenience without complaint, readily provide useful suggestions, and act in a manner consistent with good team players. Such desirable discretionary contributions are referred to as positive "citizenship" (Bateman & Organ, 1983, p. 588) behaviors.

Organizational Citizenship Behavior (OCB) has been described as "beneficial behavior of workers that was not prescribed but occurred freely to help others achieve the task at hand" (DiPaola et al., 2005, p. 320). Early research regarding OCB viewed the construct through different lenses. Organ (1988) identified five distinct categories of OCB: altruism, conscientiousness, sportsmanship, courtesy, and civic virtue. Other researchers have sorted OCB into factors of obedience, loyalty, social participation, advocacy participation, and functional participation (Van Dyne, Graham, & Dienesch, 1994). While OCB can be described many different ways, it generally refers to those behaviors that are desired work behaviors that typically exceed the specific job description and are beneficial to individuals and the organization.

In the school setting, OCB manifests within the roles that administrators, teachers, and staff are asked to perform on a daily basis. Schools are such unique public service entities that service to the organization or school typically serves individuals (DiPaola & Hoy, 2005). Examples of OCB for school teachers may include volunteering to serve on committees, assisting absent teachers by setting up their classes for instruction, and collaborating with their colleagues (Bogler & Somech, 2004). It may also include accepting minor duties such as administering standardized tests without complaint. Such behaviors when exhibited by instructional staff contribute to the positive climate of the
school and help to facilitate an efficient educational setting. School leaders must understand and appreciate the value of OCB and learn how to foster an environment that encourages staff to willingly and actively engage in the display of extra-role behaviors.

*Theoretical Underpinnings of the OCB Construct*

Research regarding OCB in the school setting is relatively new (DiPaola & Tschannen-Moran, 2001). Because of this, a discussion of OCB and proposals for possible research in schools requires a review of the historical development of the concept and a discussion of research conducted within other settings. The discussion of what would come to be called citizenship behaviors is rooted in studies conducted from around the mid to late 1930s through the 1970s that addressed a wide-range of workplace dynamics, particularly those studies concerning employee satisfaction and performance (Organ, 1977). Conventional wisdom of the time led managers to believe that in order for workers to be productive, they needed to be happy. This belief was not founded on empirical data, but was instead based on the anecdotal observations of employers. The general agreement among organizational psychologists was that job satisfaction did not have a causal affect on job performance (e.g. Lawler & Porter, 1967; Greene, 1973).

While there were some interesting positive correlations that existed within the data, the overall consensus was that worker satisfaction did not influence job performance and that any suggestion otherwise was simply “naïve folk wisdom” (Bateman & Organ, 1983, p. 587).

Why would conventional wisdom seem so at odds with empirical research? Some hypothesized that the discrepancy rested within the measures of job performance (Organ, 1977; Bateman & Organ, 1983; Smith et al., 1983). Studies in job performance were
typically and justifiably tied to worker productivity. Questions related to an employee’s ability to meet production quotas, meet customer needs, or complete specified tasks were linked directly to a company’s bottom line. Considering such quantifiable elements was essential when measuring organizational success, but there were other variables that also needed to be considered when employers rated an employee’s performance.

Organizational efficiency had been found to be dependent upon individual behaviors that exceeded an employee’s job description (Katz & Kahn, 1966; 1978). Katz and Kahn (1966) suggested that in order for an organization to survive, individuals had to display three types of behaviors: 1) They had to join and stay within the system, 2) they had to be dependable as they perform their role within the system, and 3) they had to demonstrate “innovative and spontaneous behavior (and perform) beyond role requirements for accomplishment of organizational functions” (p. 337). In other words, the members of successful organizations not only met expectations, they exceeded expectations. Factors such as timeliness, cleanliness, helpfulness, and conscientiousness have all been found to not only impact a person’s capacity to fulfill their assigned tasks, but also their ability to excel in the work setting and improve the work environment. Bateman and Organ (1983) characterized these behaviors as “citizenship” (p. 588). Managers find these behaviors desirable because they contribute to a more efficient work environment, freeing the manager to focus on higher-level tasks instead of mundane operations (Bateman & Organ, 1983).

Empirical data suggested that job satisfaction did not have a causal affect on job performance, but did job satisfaction influence citizenship behaviors? Bateman and Organ (1983) hypothesized that a strong connection existed between these two constructs
and they conducted a study to explore the relationship. Employees were asked to complete a measure of job satisfaction while their immediate supervisors were asked to rate the employees on various citizenship behaviors. The results indicated a very strong correlation between an employee’s level of job satisfaction and their tendency to exhibit citizenship behaviors.

Organ (1988a) revisited the satisfaction-performance hypothesis and put forth the argument that citizenship behaviors needed to be considered as a measure of employee performance. His first rationale for his position was based in social exchange theory. He reasoned that when employees work in an environment that induces satisfaction, they “frequently feel bound by the norm of reciprocity” (p. 548) resulting in helpful and supportive behaviors. His second rationale was based on accumulated evidence that “mood state or positive affect” (p. 548) also tended to produce citizenship behaviors. A review of the available literature led Organ to conclude that when citizenship behaviors were included as measures of performance, the empirical data supported the satisfaction-performance hypothesis.

*Development of the OCB Construct*

Organ (1977) planted the seed for the OCB construct when he advocated the popular opinion that individual contributions in the workplace may have positive impacts that are not readily manifested in traditional measures of productivity. Organ reasoned that these behaviors had the more subtle effect of promoting helpful behaviors among coworkers, encouraging collegial support, and improving worker compliance with workplace requirements. The purpose of the essay may have been to offer support to organizational managers who claimed that there was a linkage between job satisfaction
and job performance, but it served as a stimulus for research into what would evolve into the OCB construct (Organ, Podsakoff, & MacKenzie, 2006).

Early research into citizenship behaviors suggested a multidimensional construct. Smith et al. (1983) hypothesized that citizenship emerged as at least two distinct factors. The first factor was described as “altruism” or helping behaviors intended to assist specific individuals. The second dimension was described as “generalized compliance” which included behaviors that were “‘right and proper’ but for the sake of the system rather than specific persons” (p. 662). Statistical analysis suggested that specific dimensions would emerge within the construct. Williams (1988) also determined that OCB presented as a two-factor construct, but his analysis led him to define OCB from a different perspective: Organizational citizenship behaviors that benefited individuals (OCBI) and organizational citizenship behaviors that benefited the organization (OCBO). In fact, the individually observed behaviors were very similar. The difference rested in the manner in which the researchers described their findings.

In his seminal work *Organizational Citizenship Behavior: The Good Soldier Syndrome*, Organ (1988) defined OCB as “individual behavior that is discretionary, not directly or explicitly recognized by the formal rewards system, and that in the aggregate promotes the effective functioning of the organization” (p. 4). There were several important points of this definition that must be considered. First was that OCB was discretionary and that it was not included in the prescribed job function. A worker engaged in a particular behavior simply because they chose to. Second, OCB was not recognized by the formal reward system. A worker that displayed OCB would not receive more pay or any other form of tangible recognition. Finally, the behavior would
eventually contribute to organizational effectiveness. While the individual act may not have had a significant measurable effect, many similar actions would eventually combine to contribute to a more effective work environment.

Following a review of his own and other studies, Organ (1988) proposed that OCB was more complex than the simple two factor construct that was revealed in the study of Smith et al. (1983). Organ (1988) proposed that at least five categories of OCB could be identified. The dimensions Organ described were:

- **Altruism** (p. 8) or helping behaviors. This included all behaviors in which an individual assisted someone in completing organizationally related tasks. An example of altruism would be someone helping a struggling co-worker complete their assigned paperwork or put away stock in the store room even though the helper received no tangible benefit from helping. Subcategories of *cheerleading* and *peacekeeping* were included within this dimension.

- **Conscientiousness** (p. 9), also called compliance, described behaviors related to individuals going well beyond the minimum expectations. This category described people who rarely missed work, kept a neat and clean work area, and rigorously complied with organizational standards.

- **Sportsmanship** (p. 11) related to how workers addressed inconvenience and disruption. The unexpected occurs in every work setting, but the good sport handled these events with good nature and without complaint.

- **Courtesy** (p. 12) was manifested in the consideration of others. Workers who communicated with their colleagues, provided advance notice of changes in their
work schedule, or informed others of decisions that may impact their jobs
displayed courtesy.

- *Civic Virtue* (p. 12) described actions related to contributing to organizational
governance. Attending meetings, making constructive suggestions concerning
company rules and procedures, and agreeing to serve on or lead committees were
typical civic virtue behaviors.

While the construct of OCB was gaining acceptance, the factors identified to
describe OCB differed between studies. For example, Smith et al. (1983) identified
specific behaviors such as punctuality, cleanliness, and adhering to established workplace
norms as generalized compliance, implying that workers were diligently adhering to
company norms. Organ (1988) referred to these behaviors as conscientiousness because
from his perspective, they blossomed from internal motivations that went beyond a
simple desire to follow the rules. This may seem to be a minor point of semantics as to
how researchers referred to similar behaviors, but it leads to the discussion of other
descriptions and interpretations of OCB.

*Redefining OCB*

While Organ (1988) is credited with conceptualizing OCB, other researchers have
found other OCB to present differently. Some have found that there are different ways of
describing the factors of OCB (e.g. Van Dyne et al., 1994) or they have found OCB to
present with a different number of factors that Organ's (1988) original five (e.g
Dyne et al. (1994) developed an OCB measure largely based on the instrument designed
by Smith et al. (1983) and administered the survey to 950 employees from a wide range of organizations and occupations. Based on their findings, they proposed that OCB could be measured within five distinctive factors: obedience, loyalty, social participation, advocacy, and functional participation. Obedience entailed respect for orderly processes and obeying the rules of the organization. Loyalty required actions that protected the company structure including volunteering to go beyond minimum requirements. Social participation required workers to stay well informed and to remain active in organizational processes. Advocacy participation included the promotion of innovative ideas that maintained high standards and improve function. The final factor, functional participation, included actions directed toward oneself such as personal skill development or taking on additional assignments (Van Dyne et al., 1994).

Many of the individual behaviors included in Van Dyne et al.’s (1994) instrument were similar to those described by Organ (1988). Both researchers found that OCB presented in five dimensions, but there were distinct differences in the terminology the researchers used to describe the categories. Organ (1988) identified behaviors related to conforming to group norms as conscientiousness which seems to imply a level of thoughtfulness or consideration on the part of the worker. Van Dyne et al. (1994), on the other hand, identified such behaviors as obedience which implies a more subservient mindset.

While each of the five-factor descriptions was certainly supported by the individual findings, it should be pointed out that in other studies different numbers of dimensions had emerged. For example, in some studies, altruism and courtesy blended together into a single helping dimension (e.g. MacKenzie et al., 1991, 1993; Podsakoff &
MacKenzie, 1994; Podsakoff et al., 1997; Podsakoff et al., 2000) resulting in a reduced number of factors. In fact, there was strong support for a simpler, two-factor structure for OCB (Skarlicki & Latham, 1995) more consistent with the earlier proposals by Smith et al. (1983) and Williams (1988). The two-factor structure was certainly attractive for its simplicity and merited further consideration, but other studies indicated a much more complicated construct. Clearly a broader view of OCB research was necessary in order to gain a deeper understanding of the construct.

Such results raised the question as to why specific behaviors appeared to align along different factors in different studies. Podsakoff et al. (2000) published an extensive review of the available research of OCB in an attempt to clarify the conceptual confusion as to the nature of the construct. The examination led to the identification of close to 30 categories of citizenship behaviors, but after considering conceptual overlap the authors were able to reduce them into seven common themes: “(1) Helping Behavior, (2) Sportsmanship, (3) Organizational Loyalty, (4) Organizational Compliance, (5) Individual Initiative, (6) Civic Virtue, and (7) Self Development” (p. 516). The advantage of Podsakoff et al.’s (2000) meta-analysis is that it captured a broad view of OCB research up to that time. While it was apparent that the cumulative data could be sorted into a limited number of factors, it was also clear that OCB in one setting may not be considered OCB in another.

Organ et al. (2006) suggested that the reason for varying results was that OCB appeared to be contextual. For example, Farh, Zhong, and Organ (2004) asked 166 employees and 75 managers of state-owned companies in the Peoples Republic of China (PRC) to identify incidents of OCB based on a definition of the construct provided. The
respondents identified 756 separate citizenship behaviors which aligned along 10 specific factors. New dimensions such as “interpersonal harmony” (p. 247) and “social welfare participation” (p. 247) were revealed as being important factors in PRC. Considering these results along with the other studies presented, the implications were clear: OCB was dependent on the nature of the required work as well as the values and expectations within an organization.

**OCB and Leadership**

An important consideration for organizational leaders is how certain leadership styles may influence the behaviors of members of the group. If leaders want subordinates to display positive OCB, they must understand what conditions promote the desired conduct. Leaders who relied on a transactional leadership style were less likely to inspire OCB from their subordinates than leaders who took a more affective approach (Ehrhart & Nauman, 2004; Boerner, Eisenbeiss, & Griesser, 2007). If the relationship between leaders and employees was regarded as an economic exchange instead of a team effort to achieve a goal, workers were less likely to seek to achieve beyond the base expectations (Boerner et al., 2007).

Leader-member exchange (LMX) theory focuses less on the personal traits of the supervisor and instead centers on the relationship between leaders and subordinates (Graen & Uhl-Bien, 1995). Truckenbrodt (2000) sampled 63 pairs of supervisors and subordinates to determine the possible relationship between the quality of LMX and employee OCB. The results revealed a significant positive relationship between positive LMX and OCB, particularly for altruism. While this particular study was limited to well-trained informational technology professionals, a meta-analysis of 50 studies found a
moderately strong positive relationship between positive LMX and citizenship behaviors (Ilies, Nahrgang, & Morgeson, 2007).

Servant-leadership is an affective style in which leaders put the needs of the workers and the organization above their personal needs and view the leader-subordinate relationship as an opportunity to help individuals grow (Greenleaf, 2002). Ehrhart (2004) examined the relationship between unit-level OCB, servant-leadership, and procedural justice climate among 249 grocery store employees. Ehrhart (2004) found that when measured as a group, units tended to exhibit high levels of OCB when they felt that they were treated fairly. The findings also suggested a positive relationship between servant-leadership and OCB, but the strength of the relationship varied depending on the procedural justice climate of the organization.

Transformational leaders have been described as those who “broaden and elevate the interest of their employees” (Bass, 1990) by making them aware and promoting acceptance of the group mission and inspiring them to put the needs of the organization above their personal interests. As with servant-leadership, research has identified a positive relationship between transformational leadership and OCB. In one study, Purvanova, Bono, and Dzieweczynski (2006) found that workers from an aerospace company as well as from the customer service department of a private utility company were more likely to display good OCB if their managers practiced transformational leadership. Boerner et al. (2007) found a similar positive relationship between the transformational leadership and OCB in a study of 91 German companies. These studies along with the previously discussed studies addressing LMX and servant-leadership suggested that there was a relationship between leadership style and the likelihood of
workers displaying OCB: When workers were supported in their efforts and encouraged
to grow as valued members of a team they were more likely to exhibit extra-role
behaviors than if they were treated as a fixed commodity (Podsakoff, MacKenzie, &
Bommer, 1996; Ehrhart & Naumann, 2004; Ehrhart, 2004; Purvanova et al., 2006;
Boerner et al., 2007).

There are few studies relating supervisor-subordinate interactions to OCB in the
school setting, but the results of those studies are worth noting. Tschannen-Moran (2003)
found that trust between teachers and administrators had a strong positive correlation
with OCB for school personnel. In the same study, it was determined that a
transformational leadership style of the principal proved unrelated to OCB when trust
was included in the analysis, which is in contrast from findings from studies of the
relationship in other work environments (Purvanova et al., 2006; Boerner et al., 2007).
Curiously, Bogler and Somech (2004) found OCB in teachers to correlate positively with
teachers’ perception of their level of empowerment and in a follow-up study they found a
positive correlation between OCB and teacher participation in decision making (Bogler &
Somech, 2005). Since empowerment and shared decision making are both promoted by
transformational leaders (Kouzes & Posner, 2002), the findings of these studies are
supportive of the hypothesis of a positive relationship between transformational
leadership and OCB.

Organizational Citizenship Behaviors in Schools

Since OCB appeared to vary depending on the nature of the work-place and
values of the group, it was necessary to study it in the school setting in order to determine
how it presented. DiPaola and Tschannen-Moran (2001) developed a 15-item measure for
the study of OCB in schools that they called the Organizational Citizenship Behaviors in Schools Scale (OCBSS). The items were derived from the measure developed by Smith et al. (1983) and were modified so as to be applicable to the school setting. Some of the items included in the new measure were:

- Teachers are rarely absent.
- Teachers arrive to work and meetings on time.
- Teachers take the initiative to introduce themselves to substitutes and assist them.

The survey was administered to a convenience sample of high school and middle school teachers and proved to have acceptable levels of reliability and validity.

Not surprisingly, OCB manifested differently in schools as compared to other settings. While helping behaviors directed toward students and colleagues are considered part of a teacher’s “professional identity” (DiPaola & Tschannen-Moran, 2001, p. 322), they are also clear examples of Organ’s altruistic behaviors (1988; Organ et al., 2006). The service nature of schools required teachers to act in the best interest of their students resulting in a blending of examples of OCB in terms of whether they benefit the organization as a whole or benefit individuals within the organization (DiPaola & Tschannen-Moran, 2001). DiPaola and Hoy (2005) conducted a similar study of elementary, middle, and high school teachers using a refined OCB measure and determined that OCB in schools presenting as a “single, bipolar construct” (p. 37).

It should be noted that while DiPaola and Hoy (2005) found OCB in schools to be a single-factor construct in the United States, some international studies have presented different findings. Oplatka (2006) conducted a qualitative study of Israeli schools which indicated dimensions of OCB consistent with helping behaviors, civic virtue, and
individual initiative, but that did not include loyalty, compliance, or sportsmanship.

Another study of Israeli schools by Vigoda-Gadot, Beeri, Birman-Shemesh, and Somech (2007) supported the three dimension construct of OCB that included group level OCB directed at individuals, group level OCB directed at the organization, and a third factor related to in-role performance. A review of the results, however, reveals that the in-role performance factor consisted of behaviors that are representative of required behaviors instead of discretionary behaviors. For example, in-role behaviors included meeting formal job requirements, fulfilling supervisor’s expectations, and fulfilling responsibilities specified in job descriptions. These behaviors are not consistent with the definition of OCB. If the in-role performance dimension were discounted from the findings, the results would suggest a two-factor construct.

While the discrepancies between the Israeli studies (Oplatka, 2006; Vigoda-Gadot et al., 2007) and the findings in the North American studies (DiPaola & Tschannen-Moran, 2001; DiPaola & Hoy, 2005) were consistent with the premise that OCB appeared contextual, the findings were not truly comparable. Similar measures would have to have been administered to the samples in order to draw conclusions based on the findings. An interesting follow up would have been to administer the OCBS scale (DiPaola & Hoy, 2005) to a sample of Israeli teachers and compare the findings with the data previously collected in the American studies.

As recently as 2001, DiPaola and Tschannen-Moran noted the limited amount of research available regarding OCB in schools, but the number of studies addressing the construct has increased in recent years. Researchers have explored the relationship between OCB and teachers’ organizational and professional commitment (Bogler &
Somech, 2004). Others have found positive correlations between OCB and student achievement in high schools (DiPaola & Hoy, 2005). Oplatka (2006) explored the contextual determinants of OCB and Dussault (2006) found a correlation between OCB and teacher efficacy. While the body of knowledge of OCB in schools is certainly not voluminous, it is steadily growing.

**Teacher Qualities and OCB**

One particular area of research involves the examination of the relationship of individual teacher qualities with OCB. One element of a study by Somech and Ron (2007) focused on the link between affectivity and supervisor perception of OCB in Israeli schools. The study revealed that there was a significant correlation between self-rated teacher affectivity for negative affect and poor OCB as rated by their supervisor. Teachers who had a negative mood state were not likely to engage in extra-role behaviors. Curiously, in the same study there was no correlation between positive affect and OCB. Another study by Dussault (2006) of a sample of French-Canadian High School teachers revealed that individual teacher self-efficacy had a positive correlation with self-rated OCB in the areas of altruism, courtesy, conscientiousness, and civic virtue. In other words, teachers who believed they were effective also believed that they exhibited positive OCB.

As the study of OCB in schools is relatively new, it is difficult to gauge the importance and impact of these desired behaviors. Until the body of evidence is more substantial, researchers must rely on the studies conducted in similar settings to serve as informational guides. Schools are unique service institutions and certain altruistic behaviors are often regarded as the norm as opposed to the exception (DiPaola &
Tschannen-Moran, 2001). Still, the presence of these behaviors likely has an impact on the effectiveness and efficiency of a school which justifies further study.

**OCB and Student Achievement**

As the primary mission of any school should center on affecting student learning, the importance of any construct in this setting can be measured by its relationship to student growth. DiPaola and Hoy (2005) found a significant positive relationship between student achievement on standardized tests and the level of OCB presented by faculty members of a sample of 97 public high schools in Ohio, even when controlling for socioeconomic factors. OCB among staff was measured using the OCBS Scale (DiPaola & Tschannen-Moran, 2001) and student achievement was based on student performance on the Ohio 12\textsuperscript{th}-grade proficiency tests in mathematics and reading. The correlation levels after controlling for SES factors were (partial $r = .28, p<.01$) for reading and (partial $r = .30, p<.01$) for mathematics.

It should be noted that similar studies based on state designed achievement tests have yielded mixed results. In a study of OCB, school climate, and students achievement, Jurewicz (2004) sampled 82 middle schools in Virginia and found a significant positive relationship between teacher OCB and student achievement on the grade eight Virginia Standards of Learning Exams in English ($r = .35, p<.01$) and mathematics ($r = .35, p<.01$). However, when controlling for SES, the relationship between OCB and student achievement was only significant for English ($\beta = .22, p<.05$) (Jurewicz, 2004).

There are some studies that challenge the assertions that OCB has a positive relationship with student achievement. For example, in a study of student achievement for elementary and middle school students on the New Jersey grade level standardized
assessments for math and English when controlling for school size, Bazzel (2007) found no relationship between teacher OCB and student achievement. In a broader study relating academic optimism to OCB and student achievement in Virginia High schools, Wagner (2008) found a significant positive relationship between OCB and academic optimism. When controlling for SES, regression analysis revealed that academic optimism had a more significant positive relationship with student Achievement on the Virginia Standard of Learning Biology and United States History exams than OCB (Wagner, 2008). The factor analysis also revealed that OCB had a slightly negative relationship with student achievement on the Grade 11 English reading and writing measures (Wagner, 2008). Wagner (2008) concluded that the relationship between academic optimism and OCB was so strong that the effects of OCB on student achievement were likely “masked by dominant effects of academic optimism” (p. 100). These conflicting findings of the impact of teacher OCB on student achievement suggest that further study is warranted.

Summary of OCB

OCB is a construct that is contextual and manifests differently from setting to setting depending on the nature of the work and the values and expectations of the organization (Organ et al., 2006). It has been typically measured from the perspective of an outside observer such as a supervisor, a manager, or even a peer (e.g. Podsakoff et al., 1997; Feather & Rauter, 2004; DiPaola & Hoy, 2005). In the school setting, these measures are usually taken by having administrators rate teacher behaviors or having teachers rate the behaviors of their colleagues using measures such as the OCBSS (DiPaola & Tschannen-Moran, 2001) and the OCB scales (DiPaola & Hoy, 2005).
Teachers are regularly called upon to step beyond the classroom to mentor their colleagues, tutor a struggling student, assist a substitute in delivering a lesson, serve on committees, sponsor a club, or simply monitor the restrooms during class changes. While such requests may extend beyond the enumerated duties as outlined in the terms of employment, the performance of these tasks are essential to the operation of an efficient and effective school. Many teachers complete such tasks without complaint and some even volunteer before being asked, but a few consider such requests as an imposition and resist engaging in any activity beyond the defined instructional role.

How can educational leaders promote desired citizenship behaviors within a school? Studies suggest that leadership style influences the likelihood of workers exhibiting extra-role behaviors. Transactional leaders are less likely to inspire OCB from their subordinates than leaders who adopt a more affective style (Ehrhart & Naumann, 2004; Boerner et al., 2007) such as servant-leaders (Ehrhart, 2004) and transformational leaders (Purvanova et al., 2006; Boerner et al., 2007). It is true that one study in the school setting did not find a significant correlation between transformational leadership and OCB from teachers (Tschannen-Moran, 2003), but within the same study there was a positive correlation between OCB and trust. One could argue promoting a climate of trust is a quality of a transformational leader. It should also be noted that other studies in school settings did reveal that certain characteristics of transformational leaders are linked to the manifestation of OCB (Bogler & Somech, 2004, 2005). When considered as a whole, the literature strongly suggests that leaders who employ strategies that foster an environment of support within the workplace are more likely to inspire their constituents
to display extra-role behaviors. Educational leaders should be mindful of these findings and promote an atmosphere of service and support within their schools.

Collective Teacher Efficacy

In 1976, researchers at the RAND Corporation studying the effectiveness of reading instruction added two items to an existing survey designed to measure how teachers felt they could influence student achievement (Armor et al., 1976; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). The added items read as follows:

- Item number one: *When it comes right down to it, a teacher really can't do much because a student's motivation and performance depends on his or her home life.*
- Item number two: *If I try really hard, I can get through to the most difficult or unmotivated students.*

Item one addressed teacher respondents’ views about teachers’ general control of student success while item two addressed the teacher respondents’ beliefs about their personal ability to perform the task at hand. The sum of the results of the questions provided a rating measure for the teachers’ efficacy. Teachers who believed that they could have a positive impact on student achievement regardless of other environmental factors were regarded as having high efficacy (Goddard et al., 2000). The inclusion of these items laid the foundation for teacher self-efficacy research.

In order to form a clearer understanding of self-efficacy, it is necessary to formulate an operational definition. Bandura (1997) described self-efficacy as a person’s belief in their ability to do what is required in order to affect a desired outcome.

The theoretical underpinnings of teacher self-efficacy are rooted in the social theories of Rotter (1966) and Bandura (1977). Within his development of social learning
theory, Rotter (1966) posited that individuals’ behaviors are influenced by the expectation that events occur either due to their actions or because of circumstances beyond the individuals’ control. This simple premise, that actions could affect outcomes, is referred to as locus of control. According to Rotter (1966), people tend to believe that their successes or failures are due to either internal or external forces. Teachers with a strong sense of control believe that they are largely responsible for the successes and failures of students in their classroom. On the other hand, teachers with a weak sense of control feel that student learning is out of their control (Tschannen-Moran & Woolfolk Hoy, 2001).

Locus of control begins to take on a new form when the concept is extended to include the premise that individuals’ actions not only can affect outcomes, but can actually produce specific desired outcomes. It is with the addition of this extension that we begin to consider the concept of self-efficacy (Bandura, 1977). According to Bandura, self-efficacy is the result of a cognitive process in which people form beliefs about their capability of completing prescribed tasks. Teachers with a strong sense of self-efficacy not only believe that their actions have an influence on student learning, they believe that they can actually create a desired result. This is the key difference between locus of control and self-efficacy (Bandura, 1997).

Teacher self-efficacy is an important and growing aspect of educational research with studies covering the relationships with instructional practices (Gibson & Dembo, 1984), professional commitment (Ware & Kitsantas, 2007), and leadership styles (Ross & Gray, 2006). Perhaps most importantly, a high level of individual teacher self-efficacy has been linked positively linked to student achievement (Armor, Conry-Oseguera, Cox,
King, McDonnell, Pascal, et al., 1976; Ashton & Webb, 1986; Bandura, 1993). While teacher perceptions and beliefs in their own abilities are another consideration for educators is how teachers perceive the ability of the staff as a unit to produce desired outcomes. Schools are highly social structures and teachers are part of a greater collective group working toward a common goal. The beliefs of teachers in their individual abilities to achieve desired goals is an important area of research, and so are the relationships between their perceptions of their collective abilities and other constructs.

Defining Collective Teacher Efficacy

The construct of collective teacher efficacy is deeply rooted in teacher self-efficacy. Bandura (1997) noted that "(t)eachers operate collectively within an interactive school system rather that as isolates" (Bandura, 1997, p. 243). This observation is significant in that it recognizes that schools have unique social structures that function within a high level of interdependence. Individual teachers may exhibit high or low self-efficacy, but the efficiency of the school as a unit is likely to depend on collective efficacy beliefs of the group rather than on the efficacy beliefs of the individuals. This is more than just the aggregate sum of the individual efficacy beliefs of the teachers in their personal abilities to influence learning outcomes. It is the measure of the beliefs of the staff as a whole to affect desired change. Instead of centering on the capacity of the individual to affect desired outcomes, CTE centers on the capacity of the school as a whole to influence learning outcomes.

Sources of Collective Efficacy

In order to promote high teacher efficacy, it is first necessary to understand how it is promoted within the school setting. Bandura (1997) identified four sources for
individual efficacy: (a) mastery experience; (b) vicarious experience; (c) social persuasion; and (d) affective state. While it is true that the constructs of self-efficacy and collective efficacy are distinct, social cognitive theory informs us that the choices of organizations and individuals are subject to efficacy beliefs. Goddard, Hoy, and Woolfolk Hoy (2004) argued that since the constructs of self-efficacy and collective efficacy beliefs are both derived from social cognitive theory, the sources of self-efficacy identified by Bandura (1997) should also operate at the collective level.

Successful completion of a task due to one’s own hard work and efforts can certainly inspire confidence and encourage strong feelings of personal efficacy. Goddard et al. (2004) posited that “a mastery experience is the most powerful source of efficacy information” (p. 5). A mastery experience occurs when an individual or organization successfully performs a task to established standards. Mastery experience is typically tied to previous student achievement. School principals can help shape the definition of a mastery experience by working with teachers to establish challenging but obtainable goals for student success (Ross et al., 2004). Success tends to raise efficacy beliefs while failure tends to lower efficacy beliefs. It is important to note, however, that in order to have a positive impact on efficacy, the individual or organization must perceive that the successful experience occurred due to the skill of those completing the tasks. If success can be attributed to luck or other factors, the experience can have a negative impact on perceived collective efficacy (Tschannen-Moran et al., 1998).

Vicarious experience is obtained by observing the actions of another. An example of vicarious experience for teachers could be watching a master teacher deliver a lesson. Goddard, et al. (2004) noted that “(w)hen a model with whom the observer identifies
performs well, the efficacy beliefs of the observer are most likely advanced” (p.5).

Within the context of collective efficacy, belief in the capability of the staff to produce desired learning outcomes could be significantly increased through observing the success of colleagues. High quality staff development that is designed to provide teachers with systematic training in practices that have been proven effective which is delivered by respected, highly competent professionals would be an example of positive vicarious experience. It must be noted that while some research may suggest that organizations may learn vicariously through the experiences of others, the body of research is not as developed as it is for individual learning (Goddard et al., 2004).

Social persuasion can come as the result of criticism or encouragement from a supervisor or a colleague. It can also come as the result of group discussions in informal settings. Regardless of the setting, the impact of the persuasion is directly related to the credibility of the persuader (Bandura, 1997). For teachers, the impact of social persuasion on collective efficacy can have a significant impact, particularly for teachers who are new to the profession (Goddard et al., 2004). Teachers use social exchange to communicate expectations and to describe progress toward obtaining established goals.

An individual’s emotional or affective state can influence their perceptions of their personal ability or competence (Bandura, 1977). Goddard et al. (2004) suggested that just as individuals’ perceptions of their own capabilities are influenced by the affective state, organizations are also subject to stress. They suggest that strong organizations are more resistant to stressors than weak organizations, so they are more likely to maintain high levels of collective efficacy when subjected to external pressures. In schools, since teachers shape the organizational structures not only as individuals but
also as a group, this means that the affective state of the faculty can influence collective efficacy. Goddard et al. (2004) also noted that the body of research related to the affective state of organizations is relatively thin, so researchers should be cautious when applying findings for individuals to group dynamics.

Elements of CTE

In order to develop a deeper understanding of CTE, it is helpful to consider any factors of CTE that may present. In an extension of a study conducted by Tschannen-Moran et al. (1998), Goddard et al. (2000) suggested that there are two elements that are critical for the development of CTE: analysis of teaching task and analysis of teaching competence. Analysis of teaching task requires teachers to consider all elements that impact instruction at their school including but not limited to student motivation, available materials, community resources, and the physical plant. Teachers must “analyze what constitutes successful teaching in their school, what barriers or limitations must be overcome, and what resources are available to achieve success” (Goddard et al., 2000, p. 485). Analysis of teaching competence requires teachers to consider the competency of the faculty. Teachers must evaluate the training and skill level of the faculty, professional competence, and general expertise. It is through completion of these two separate but simultaneous tasks that faculties can develop a clear understanding of their current charges and abilities in order to develop realistic and challenging goals which in turn will lead to increased CTE.

Measures of CTE

Bandura (1997) suggested that collective efficacy could be measured by either determining the sum of the self-efficacy beliefs within a group regarding a given task,
determining the descriptive sum of individuals’ beliefs about the groups’ abilities, or through a given group reaching consensus as to their capabilities. Bandura (2000) went on to reason that due to the level of interdependence among staff members within schools, the process of aggregating individuals’ perceptions of group processes was the most appropriate means of determining a group’s collective efficacy. Based on this reasoning and using established measures of self-efficacy as a guide, Bandura developed an unpublished measure of collective teacher efficacy (Goddard et al., 2000).

A second measure for CTE developed by Goddard et al. (2000) was similar to Bandura’s measure in that it was designed to determine the aggregate of teachers’ beliefs of faculty’s ability to achieve desired outcomes. Goddard et al. revised a valid and reliable instrument developed by Gibson and Dembo (1984) that was designed to measure teacher self-efficacy. Select items were rephrased to address the group orientation as opposed to the individual orientation and sorted between two factors: task analysis (TA) and group competence (GC). Examples of TA items include a) These students come to school ready to learn, and b) The lack of instructional materials and supplies makes teaching very difficult. Examples of GC items a) Teachers in this school are able to get through to difficult students, and b) Teachers in this school really believe every child can learn. The final 21-item product produced was The Collective Teacher Efficacy Scale (CTES) (Goddard et al., 2000). The CTES is scored on a Likert-type scale with numerical responses ranging from 1 (strongly disagree) to 6 (strongly agree). The measure was found to have high reliability (α = .96) and factor analysis of the items on the scale revealed that a one-factor solution could explain over 50% of the variance items leading to the conclusion that CTE was a single factor construct (Goddard et al., 2000).
The CTES has since been refined to into shorter and simpler versions. Goddard (2002) recognized that the original 21-item scale was cumbersome and contained a greater number of items designed to measure group competence than task analysis. Goddard selected the items with the highest structure coefficients and produced a more parsimonious measure that was highly correlated with the original scale ($r = .983$) with high internal reliability ($\alpha = .98$) (Goddard, 2002).

Tschannen-Moran and Barr (2004) expressed concern that the Collective Teacher Efficacy scale “artificially drives down the collective efficacy score of schools in more challenging environments by its explicit measure of task difficulty” (p.199). Task analysis items centered on variables that are beyond the teachers’ control such as students’ living circumstance, the quality of facilities, and the level of substance abuse among students. Including these items in the survey is problematic because some of them are phrased in such a manner that levels of CTE may be depressed because respondents simply recognize a problem. For example, one TA item reads “Drug and alcohol abuse in the community make learning difficult for students here” (Goddard et al., p. 492). By recognizing that students are challenged due to factors in the community, the respondents’ CTE score will be lower.

Tschannen-Moran and Barr (2004) developed a new measure for CTE that was designed to reduce the influence of task analysis: The Collective Teacher Efficacy Belief Scale (CTEBS). The scale is derived from the Teacher Sense of Efficacy Scale (TSES) which was developed by Tschannen-Moran and Woolfolk Hoy (2001) to measure teacher self-efficacy. Several items included on the TSES were rephrased so as to reflect a group orientation. The final measure included 12 items. Sample items include the following:
• How much can your school do to get students to believe they can do well in schoolwork?

• How well can teachers in your school respond to defiant students?, and

• How much can your school do to foster student creativity?

Responses are scored on a scale ranging from 1 (nothing at all) to 9 (a great deal). The CTEBS has a reliability of .97 (Tschannen-Moran & Barr, 2004).

In designing the Collective Teacher Efficacy Belief Scale, Tschannen-Moran and Barr (2004) found that there are two dimensions of CTE: perceptions of instruction and perceptions of discipline. Perceptions of instruction is a factor that encompasses the faculty’s collective beliefs of how well teachers can affect student learning. It is an indicator of CTE in terms of the level of control teachers have on student achievement. Perceptions of discipline describes the faculty’s collective beliefs of how well teachers can control student behavior. This factor describes CTE in terms of how much control the staff has over creating an orderly instructional setting and ensuring that students comply with behavioral expectations. The presentation of different dimensions may be due to the nature of the items included on the survey instrument. For the purpose of this study, the measure developed by Tschannen-Moran and Barr (2004) will be utilized.

CTE and Student Achievement

CTE is regarded as an important construct in emerging research in education because of its positive association with student achievement. In 1993, Bandura determined that CTE was a stronger predictor of student achievement than SES. These findings were supported by several subsequent studies. For example, Goddard et al. (2000) found that collective teacher efficacy was a significant predictor of student
achievement in mathematics and reading. In a study of 47 elementary schools, the researchers found that one unit increase in collective efficacy as scored on the CTE scale corresponded with an 8.62 point average gain in mathematics achievement and an 8.49 point average gain in reading achievement as measured by the 7th edition of the Metropolitan Achievement Test.

In another study in elementary schools, Goddard (2001) measured the relationship between CTE and student achievement in elementary schools. The sample included respondents from 91 schools in a large urban midwestern school district. CTE was measured using the 21-item collective efficacy scale and student achievement among fourth-grade students was determined from student performance on the Metropolitan Achievement Test, seventh edition (MAT7). Mastery experience was found to have been a strong predictor of CTE based on past student performance on the MAT7. CTE was also found to be “significantly and positively related to differences between schools in student achievement, even when school means were adjusted for students’ prior achievement and demographic characteristics” (Goddard, 2001, p. 474).

CTE has also been found to have a strong correlation with student achievement in middle schools. Tschannen-Moran and Barr (2004) found that there was a significant positive relationship between CTE and student achievement on the Virginia Grade 8 Standards of Learning Exams in math, writing, and English. Socioeconomic status was also a factor with a significant negative relationship between SES status and student performance on all three tests. When controlling for SES, CTE demonstrated a significant relationship with student performance on the writing test, but not so with the math and English exams.
Goddard, LoGerfo, and Hoy (2004) found a positive relationship between CTE and student achievement of twelfth-grade students on state-required achievement tests. CTE among high school teachers was measured by using the short form of the Collective Teacher Efficacy scale (Goddard, 2002) and student achievement was determined by student performance on the state-mandated tests in mathematics, science, social studies, reading, and writing. The researchers found that a 1-SD increase in CTE corresponded with a .23-SD increase in student achievement in math and science and a .24-SD increase in student scores in reading, writing, and social studies (Goddard et al., 2004).

Promoting CTE

As CTE has been found to have a strong positive relationship with student achievement, it is important for school leaders to understand factors that promote high levels of CTE and to foster an environment that promote CTE. School leaders can work toward this end by being mindful of the four sources of collective efficacy: mastery experience, vicarious experience, social persuasion, and affective state. “School processes that contribute to a supportive cohesive environment are likely to contribute to each of the four sources of efficacy information” (Ross et al., 2004).

Processes that impact decision making are likely to impact the sources of CTE. Goddard (2002) found that a .41 standard deviation increase in teacher influence over decision making corresponded to a 1 standard deviation in CTE. A faculty with highly empowered teachers is more likely to present a high level of CTE than a faculty that is effectively powerless. A decision making process that promotes shared decision making contributes to the four sources of CTE.
Empowering teachers in the decision making process is a practice employed by transformational leaders (Kouzes & Posner, 2002). Ross and Gray (2006) conducted a study of 3,074 teachers in 218 elementary schools. Within the broader study, a significant positive relationship was found between the principal’s transformational leadership style and collective teacher efficacy. In a separate study of 487 French Canadian teachers in 40 public high schools, a significant positive relationship was found between the transformational and transactional leadership styles of principals and CTE (Dussault, Payette, & Leroux, 2008).

**Summary**

In a climate where public schools are under increased pressure to ensure that students are achieving at higher levels than ever before, it is critical for school leaders to be aware of all factors that are positively linked to student success in order to establish an environment in which all students can thrive. While there is a growing body of research addressing OCB and CTE independently, the amount of research relating them to each other is limited. A review of the literature has only revealed one study centered on the relationship between OCB and some level of teacher efficacy. In a study of 487 teachers at French Canadian high schools, Dussault (2006) found a significant positive correlation between teacher self-efficacy and certain OCB in the areas of altruism, courtesy, conscientiousness, and civic virtue. Unfortunately, the study did not provide any data on student achievement within the participating schools. While teacher self-efficacy and CTE are linked, they are different constructs. Dussault’s (2006) findings do provide an interesting basis for studying the relationship between OCB and CTE.
In a study of 36 public Virginia high schools centering on the relationship of academic optimism to OCB and student achievement, Wagner (2008) found a significant positive relationship between OCB and CTE ($r = .89, p < .01$). Academic optimism is a construct that describes a faculty's collective belief that student achievement is important and that conditions within the school are conducive to supporting students meet their academic goals. (Hoy, Tarter, Woolfolk-Hoy, 2006). Collective teacher efficacy, faculty trust in students and parents, and a school's academic emphasis, are the dimensions of academic optimism (Hoy et al., 2006). While the focus of the study may have been on the broader relationship between OCB and academic optimism, Wagner's (2008) findings support the conceptual model for this study suggesting a positive relationship between OCB and CTE in elementary schools.

OCB has been found to have a positive correlation with student achievement (DiPaola et al., 2005; Jurewicz, 2004; DiPaola & Hoy, 2005) as has CTE (Goddard et al., 2000; Ross et al., 2004; Tschannen-Moran & Barr, 2004). Based on these findings, it is logical to hypothesize that there is a positive correlation between levels of OCB and CTE at the school level because both factors present similar correlations with student achievement. While SES is beyond the control of school officials, there are certainly practices that school leaders can adopt that can promote positive OCB (Podsakoff et al., 1996; Ehrhart & Naumann, 2004; Ehrhart, 2004; Purvanova et al., 2006; Boerner et al., 2007) and high CTE (Dussault et al., 2008). In the era of mandated universal proficiency, it is critical for school leaders to take the extra steps necessary to ensure that the climate of the school is supportive of factors positively aligned with high achievement and is conducive to academic excellence.
CHAPTER 3: METHODOLOGY

This chapter identifies the research questions. It also provides a description of the data sample and collection procedures, research measures, and data analysis procedures.

Research Questions

The proposed study will address the following questions:

1. What is the relationship between organizational citizenship behaviors (OCB) and collective teacher efficacy (CTE) in elementary schools?
   a. What is the relationship between OCB and CTE centered on perceptions of instruction?
   b. What is the relationship between OCB and CTE centered on perceptions of discipline?

2. What is the relationship between OCB and student achievement when controlling for student socioeconomic status (SES)?

3. What is the relationship between CTE and student achievement when controlling for SES?
   a. What is the relationship between CTE centered on perceptions of instruction and student achievement when controlling for SES?
   b. What is the relationship between CTE centered on perceptions of discipline and student achievement when controlling for SES?

4. What are the relative contributions of OCB and CTE in explaining variance in student achievement when controlling for SES?
Method

This study was a quantitative correlational study. The purpose of this study was to describe the relationship between teacher OCB, CTE, and student achievement from a sample of Virginia public elementary schools. OCB has been shown to have a positive correlation with student achievement (DiPaola et al., 2005; Jurewicz, 2004; DiPaola & Hoy, 2005), as has CTE (Goddard et al., 2000; Ross et al., 2004; Tschannen-Moran & Barr, 2004). This study measured the relationship between these two constructs as well as the relative strengths between them and student achievement.

Participants

All participants in this study were full-time teachers from 35 public elementary schools in a large urban district in southeastern Virginia.

Instrumentation

This section will include a description of the instruments used to measure organizational citizenship behavior, collective teacher efficacy, and student achievement. The unit of analysis in this study was the school.

Organizational citizenship behavior. In this study, the OCB measure used was the 12-item Organizational Citizenship Behavior Scale (OCB-Scale) (DiPaola, Tartar, & Hoy, 2005), an abbreviated form of the 15-item Organizational Citizenship Behavior in Schools Scale (OCBSS) (DiPaola & Tschannen-Moran, 2001). Sample items on this scale include:

- Teachers volunteer to serve on committees.
- Teachers make innovative suggestions to improve the overall quality of our school.
• Teachers voluntarily help new teachers.

Participants responded to each of the items using a five-point response scale ranging from “never” to “very frequently”. This varies slightly from the original six-point scale that ranges from “strongly disagree” to “strongly agree” (DiPaola et al., 2005). This adjustment is necessary because the items were included as part of a much larger survey that is a combination of multiple measures.

In previous studies, the scale has demonstrated high reliability with an alpha coefficient of .93 for elementary and middle schools and .86 for high schools (DiPaola et al., 2005). As the response scale was adjusted for this study, the reliability was recalculated using the responses from the present sample. The measure maintained high reliability with an alpha coefficient of .88. Validity results for use of the OCB scale in elementary schools were determined through correlation analysis with other variables as described in Table 2 (DiPaola et al., 2005).

Table 2

Correlations between Predictor Variables and OCB for Elementary Schools (N=109)

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>Correlation with OCB in Elementary Schools</th>
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<tbody>
<tr>
<td>Collegial Principal Behavior</td>
<td>.61**</td>
</tr>
<tr>
<td>Teacher Professionalism</td>
<td>.92**</td>
</tr>
<tr>
<td>Academic Press</td>
<td>.72**</td>
</tr>
<tr>
<td>School Mindfulness</td>
<td>.66**</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>.87**</td>
</tr>
</tbody>
</table>

**p<.01
Collective teacher efficacy. The collective teacher efficacy measure used was the Collective Teacher Belief Scale developed by Tschannen-Moran and Barr (2004). The scale is an adaptation of the Teacher Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Woolfolk Hoy (2001). The measure is a 12-item instrument divided into two subscales: instructional strategies and student discipline. Teachers are asked to score items to reflect their views of collective efficacy on their school using a nine-point response scale ranging from “none at all” to “a great deal”. Examples from each subscale include the following:

**Instructional Strategies:**

- How much can teachers in your school do to help students think critically?
- How much can teachers do in your school to help students master complex content?

**Student Discipline:**

- How much can your school do to help students feel safe while they are at school?
- How well can adults in your school get students to follow the rules?

Tschannen-Moran and Barr (2004) found the reliability of the scale to be .97. The reliability of the instructional strategies subscale is .96 and the reliability of the student discipline subscale is .94.

**Student achievement.** In 1995, the Board of Education of the Commonwealth of Virginia adopted new Standards of Learning (SOL) for English, mathematics, history, social sciences, science, and computer technology. The adopted standards established the required curricula in each of these content areas and were designed as a vehicle to inform teachers and parents what students should learn. They also provided a means for holding
schools accountable for ensuring that the basic standards were delivered. To ensure that schools were meeting minimum requirements, the Virginia Department of Education [VDOE] recruited educators including teachers, administrators, and curriculum specialists to work in concert with Harcourt Assessment to develop the Virginia SOL Exams (Virginia Department of Education, 2005).

In order to ensure that the SOL exams are valid assessments, Harcourt Assessments assembled Content Review Committees (CRC) each summer to assess SOL materials. The CRC are tasked with ensuring that the SOL exams are aligned with the standards, are appropriately rigorous, and, most importantly, are fair. Committee members are primarily content area teachers, but administrators and content specialists also serve. CRC members receive training in test development, including methods for item selection and use of psychometric measures used in statistical analysis (Virginia Department of Education, 2005). Since the publication of the last Virginia Department of Education report (2005), the role of developing and completing the reliability analysis of the SOL exams has been contracted to a new company, Pearson Education, Inc.

The CRC process for developing the exams has not changed, but reports detailing the reliability of the measures have not been provided to the Virginia Department of Education since the spring of 2004 test administration. Since that testing period, the SOL exams at certain grade levels and the identified content of the tests administered have been revised. SOL exams administered in the spring of 2009 that are included in this study were for grade 3 reading, grade 3 mathematics, grade 5 reading, and grade 5 mathematics. In 2004, third-grade students were tested in English (reading + writing) instead of simply reading. Also, fifth-grade students were tested in English
(reading/literature and research). As statistical analysis of the spring of 2009 SOL exam administration have not been received by the Virginia Department of Education and the reading components of the 2004 third-grade and fifth-grade English SOL exams well aligned with the 2009 reading exams, the reliability of the spring of 2004 administration is likely a fair indicator of the reliability of the 2009 exams. The statistical measure used to determine reliability for the Grade 3 English (reading + writing) and mathematics as well as for the Grade 5 English (reading/literature and research) and mathematics is the Kuder-Richardson Formula #20. KR-20 results for the spring 2004 administration are included in Table 3.

Table 3

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Form</th>
<th>KR20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3 English (reading/writing)</td>
<td>Core 1</td>
<td>.87</td>
</tr>
<tr>
<td></td>
<td>Core 2</td>
<td>.88</td>
</tr>
<tr>
<td>Grade 3 Math</td>
<td>Core 1</td>
<td>.89</td>
</tr>
<tr>
<td></td>
<td>Core 2</td>
<td>.89</td>
</tr>
<tr>
<td>Grade 5 English (reading/literature and research)</td>
<td>Core 1</td>
<td>.89</td>
</tr>
<tr>
<td></td>
<td>Core 2</td>
<td>.89</td>
</tr>
<tr>
<td>Grade 5 Math</td>
<td>Core 1</td>
<td>.89</td>
</tr>
<tr>
<td></td>
<td>Core 2</td>
<td>.90</td>
</tr>
</tbody>
</table>

Core 1 and Core 2 refer to the question forms used for the paper and pencil test administration. The high reliability coefficients are sufficient evidence that the
assessments accurately measure student understanding of the specific content areas (Virginia Department of Education, 2005).

SOL exams in elementary schools are administered in math and reading at the third, fourth, and fifth-grade levels. Students are scored on a scale that ranges from 0 to 600 with variable increments depending on the test. Students are required to earn a score of at least 400 in order to be rated as proficient in the subject (Virginia Department of Education, 2005). For this study, student achievement was measured by using the mean scaled scores for the grade 3 and grade 5 math and reading SOL exams for each school.

Student socioeconomic status. For this study, student SES was a school-level attribute determined by the percentage of students enrolled in the free and reduced lunch program at each school. FRL percentages were collected from the Virginia Department of Education.

Data Collection

Data for this study was collected through an arrangement between a research team from the College of William and Mary and an urban public school district located in southeast Virginia. Under the arrangement, researchers collected data through survey instruments administered to staff, parents, students, and other various stakeholders. OCB and CTE data for this study was collected through the administration of a comprehensive climate survey administered to the teachers in the elementary schools. The climate survey consisted of multiple measures and the data required for this study was extracted from the results. The teachers’ surveys were administered during regularly scheduled faculty meetings by trained staff. Participants were informed that participation was voluntary and
that all responses were anonymous. Student achievement data were provided by the school division.

Data Analysis

The school served as the unit of analysis for this study. Data were entered into a statistical analysis software package to generate descriptive statistics for each school including mean measures for OCB, CTE, CTE for instructional strategies, CTE for discipline strategies, and student achievement in math and English. SES status for individual schools was identified as the percentage of students receiving FRL. Table 4 describes the data sources and data analysis process for each of the research questions.

Table 4

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Data Sources</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is the relationship between organizational citizenship behaviors and collective teacher efficacy in elementary schools?</td>
<td>Teacher Climate Survey 2008-09, items D29-D40 (OCB) and A13-A20, centered on perceptions of A14, A17, A18, A19, and A20 instruction?</td>
<td>Correlation</td>
</tr>
</tbody>
</table>

a. What is the relationship between OCB and CTE centered on perceptions of instruction? | Teacher Climate Survey 2008-09, items D29-D40 (OCB) and A13, A14, A17, A18, A19, and A20 | Correlation (CTE instruction) |
b. What is the relationship between OCB and CTE centered on perceptions of discipline?

2. What is the relationship between OCB and student achievement when controlling for SES?

3. What is the relationship between CTE and student achievement when controlling for SES?

a. What is the relationship between CTE centered on perceptions of instruction and student achievement when controlling for SES?
b. What is the relationship between CTE centered on items D29-D40 (OCB) and A15, perceptions of discipline A16, A21, A22, A23, and A24 and student achievement (CTE discipline) and student when controlling for SES? performance on Virginia SOL exams for grade 3 and grade 5 math and reading.

4. What are the relative contributions of OCB and CTE in explaining variance in student achievement when controlling for SES? Teacher Climate Survey 2008-09 Regression items D29-D40 (OCB) and A13-A24 (CTE) and student performance on Virginia SOL exams for grade 3 and grade 5 math and reading.

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Ethical Safeguards

This project was found to comply with appropriate ethical standards and was exempted from the need for formal review by the College of William and Mary Protection of Human Subjects Committee. Participation in the survey was voluntary and individual teachers' responses were not identifiable. Publication of results is done collectively so that individual schools are not identifiable.
CHAPTER 4: Analysis of Data

Introduction

This study investigated the relationship between teacher organizational citizenship behaviors (OCB), collective teacher efficacy (CTE), and student achievement in urban elementary schools. Initial analysis centered on the correlation between OCB and CTE. The study also addressed the relationship between these constructs and student achievement when controlling for student socioeconomic status (SES). Additional analysis described the relative strengths of the relationships between each of these constructs and student achievement.

Data for this study were collected through an agreement between a research team from the College of William and Mary and an urban public school district located in southeast Virginia. Under the arrangement, researchers collected a wide-range of data through survey instruments administered to staff, parents, students, and other various stakeholders. OCB and CTE data were collected through the administration of a teacher climate survey that was presented to all of the teachers at all instructional levels within the school district. The survey consisted of multiple measures and the data required for this study were extracted from the results. The teacher surveys were administered during regularly scheduled faculty meetings by trained staff. Participants were informed that participation was voluntary and that all responses were anonymous. The surveys used for this study were those completed by 1,327 teachers from 35 elementary schools. The response rate from each school ranged from 20 to 64 participants. For this study, the school was the unit of analysis.
The OCB measure imbedded in the survey was the 12-item Organizational Citizenship Behavior Scale (OCB-Scale) (DiPaola et al., 2005), an abbreviated form of the 15-item Organizational Citizenship Behavior in Schools Scale (OCBSS) (DiPaola & Tschannen-Moran, 2001). Participants responded to each of the items using a five-point response scale ranging from “never” to “very frequently”. The collective teacher efficacy measure included in the survey was the Collective Teacher Belief Scale developed by Tschannen-Moran and Barr (2004). The measure is a 12-item instrument divided into two subscales: instructional strategies and student discipline. Teachers were asked to score items to reflect their views of collective efficacy in their school using a nine-point response scale ranging from “none at all” to “a great deal”. Scores for negatively-worded items were reversed.

Student achievement data were provided by the school division. Student achievement was measured by using the mean scaled scores from the spring of 2009 administration of the grade 3 math, grade 3 reading, grade 5 math, and grade 5 reading Virginia Standards of Learning (SOL) exams for each school. Student socioeconomic status was determined by the percentage of students enrolled in the free and reduced lunch program at each school. FRL percentages were collected from the Virginia Department of Education.

Findings

Analysis of the research findings was completed through the application of the Statistical Package for Social Sciences (SPSS) software. Descriptive statistics were calculated for the following factors: Organizational citizenship behavior, collective teacher efficacy, collective teacher efficacy centered on perceptions of instruction,
collective teacher efficacy centered on perceptions of discipline, student achievement in
grade 3 math, grade 3 reading, grade 5 math, and grade 5 reading as evidenced by the
scaled mean scores for each school on the spring of 2009 Virginia SOL exams, and for
student SES based on the percentage of students receiving free or reduced lunch. The
mean school-level score for OCB, CTE, and the dimensions of CTE were calculated from
the average scores for all-items within the factor.

Table 5

Descriptive Data (N=35)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
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<tr>
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<td>0.19</td>
<td>3.50</td>
<td>4.26</td>
</tr>
<tr>
<td>Collective Teacher Efficacy</td>
<td>7.60</td>
<td>0.33</td>
<td>6.92</td>
<td>8.19</td>
</tr>
<tr>
<td>Perceptions of Instruction</td>
<td>7.59</td>
<td>0.33</td>
<td>6.96</td>
<td>8.09</td>
</tr>
<tr>
<td>Perceptions of Discipline</td>
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<td>0.35</td>
<td>6.88</td>
<td>8.29</td>
</tr>
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<td>21.90</td>
<td>428.0</td>
<td>532.0</td>
</tr>
<tr>
<td>Grade 3 Reading SOL</td>
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<td>22.91</td>
<td>407.0</td>
<td>509.0</td>
</tr>
<tr>
<td>Grade 5 Math SOL</td>
<td>496.97</td>
<td>24.86</td>
<td>437.0</td>
<td>541.0</td>
</tr>
<tr>
<td>Grade 5 Reading SOL</td>
<td>475.17</td>
<td>17.54</td>
<td>447.0</td>
<td>520.0</td>
</tr>
<tr>
<td>Free and Reduced Lunch (in Percent)</td>
<td>64.75</td>
<td>18.41</td>
<td>27.48</td>
<td>97.17</td>
</tr>
</tbody>
</table>

*Note: Survey responses for organizational citizenship behavior were measured on a
scale from 1 to 5 while responses for collective teacher efficacy and dimensions of
collective teacher efficacy range from 1 to 9. Results for the Standards of Learning (SOL)
assessments are reported on a scale of 200 to 600.

The mean scores for student achievement for the 2008-2009 school year were
obtained from the school district. Individual student scores ranged from 200 to 600 and a
score of 400 was required for students to demonstrate proficiency within a content area. Scores of 500 or higher demonstrate advanced proficiency. The mean score for each content area was calculated from the average scaled mean score from each school. Descriptive statistics for each of the variables is included in Table 5.

**Relationship between OCB and CTE**

The first research question asked: What is the relationship between organizational citizenship behaviors and collective teacher efficacy in elementary schools? The question also addressed the relationship between organizational citizenship behaviors and each of the subscales of collective teacher efficacy: a) collective teacher efficacy centered on perceptions of instruction and b) collective teacher efficacy centered on perceptions of discipline. A correlational analysis was completed in order to describe the independent relationships between factors without consideration of the effects of the other factors. The purpose of this analysis was to provide a baseline for comparison when controlling for other factors, specifically when measuring the relationship between organizational citizenship behavior, collective teacher efficacy, and student achievement when controlling for student socioeconomic status. Table 6 includes the results of the baseline correlation analysis.

When the effect of student socioeconomic status were not considered, OCB, CTE, and both dimensions of CTE had a significant positive relationship with all measures of student achievement. The effect of student socioeconomic status was considered in answering questions two, three, and four. The data indicated that there was a significant relationship between organizational citizenship behavior and collective teacher efficacy \((r = .64, p < .01)\) as well as with the two dimensions of collective teacher efficacy: CTE
centered on perceptions of instruction (r = .60, p < .01) and CTE centered on perceptions of discipline (r = .63, p < .01). Table 7 contains the correlations between these factors.

Table 6

*Correlational Analysis of All Variables*

<table>
<thead>
<tr>
<th></th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
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<td>.63**</td>
<td>.61**</td>
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<td>.58**</td>
<td>.55**</td>
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<td>.97**</td>
<td>.45**</td>
<td>.46**</td>
<td>.46**</td>
<td>.48**</td>
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<td>3. CTE Instruction</td>
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<td>.46**</td>
<td>.45**</td>
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<td>4. CTE Discipline</td>
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<td>.44**</td>
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<td>.67**</td>
<td>-.65**</td>
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<td>6. Grade 3 Reading</td>
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<td>.61**</td>
<td>-.56**</td>
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<td></td>
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<td></td>
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<td>7. Grade 5 Math</td>
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</tr>
<tr>
<td>8. Grade 5 Reading</td>
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<td></td>
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<td>9. SES</td>
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</table>

**p < .01, *p < .05

Table 7

*Correlational Analysis of OCB and CTE*

<table>
<thead>
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<th>3.</th>
<th>4.</th>
</tr>
</thead>
<tbody>
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<td>1. Organizational Citizenship Behavior</td>
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<td>.60**</td>
<td>.63**</td>
</tr>
<tr>
<td>2. Collective Teacher Efficacy</td>
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<td>.97**</td>
<td></td>
</tr>
<tr>
<td>3. CTE Perceptions of Instruction</td>
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<td></td>
<td>.89**</td>
</tr>
<tr>
<td>4. CTE Perceptions of Discipline</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .01.
Relationship between OCB and Student Achievement

The second research question asked: What is the relationship between OCB and student achievement when controlling for SES? When the effects of student socioeconomic status are ignored, organizational citizenship behavior had a significant positive correlation with each of the four achievement measures: grade 3 math ($r = .61$, $p < .01$), grade 3 reading ($r = .47$, $p < .01$), grade 5 math ($r = .58$, $p < .01$), and grade 5 reading ($r = .55$, $p < .01$). When controlling for student socioeconomic status, organizational citizenship behavior was found to have a significant relationship with student achievement in grade 3 math ($r = .50$, $p < .01$), grade 5 math ($r = .33$, $p < .01$), and grade 5 reading ($r = .41$, $p < .05$). The relationship with grade 3 reading was not significant. Table 8 includes the strengths of the correlations and the significance levels for each achievement measure.

Table 8

Correlation of OCB with Student Achievement

<table>
<thead>
<tr>
<th>Achievement Measure</th>
<th>$r$</th>
<th>Partial $r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 3 SOL exam</td>
<td>.61**</td>
<td>.50**</td>
</tr>
<tr>
<td>Reading 3 SOL exam</td>
<td>.47**</td>
<td>.33</td>
</tr>
<tr>
<td>Math 5 SOL exam</td>
<td>.58**</td>
<td>.46**</td>
</tr>
<tr>
<td>Reading 5 SOL exam</td>
<td>.55**</td>
<td>.41*</td>
</tr>
</tbody>
</table>

***Note: Partial $r$ is calculated by controlling for the effects of student socioeconomic status.

*p<.05. **p<.01.
Relationship between CTE and Student Achievement

The third research question asked: What is the relationship between CTE and student achievement when controlling for SES? The question also addressed the relationship between CTE centered on perceptions of instruction and student achievement and CTE centered on perceptions of discipline and student achievement. When the effects of student socioeconomic status were ignored, collective teacher efficacy, CTE centered on perceptions of instruction, and CTE centered on perceptions of discipline had significant positive relationships with all measures of student achievement (see Table 6).

When controlling for the effects of student socioeconomic status, collective teacher efficacy was found to have significant positive relationships with student achievement in grade 3 reading ($r = .36, p < .05$), grade 5 reading ($r = .38, p < .05$) and grade 5 math ($r = .35, p < .05$). Collective teacher efficacy centered on perceptions of instruction was found to have a significant positive relationship with student achievement in grade 3 reading ($r = .35, p < .05$) and grade 5 reading ($r = .38, p < .05$), but not grade 5 math. Collective teacher efficacy centered on perceptions of discipline also had a significant positive relationship with student achievement in grade 3 reading ($r = .34, p < .05$) and grade 5 reading ($r = .36, p < .05$), but not grade 5 math. Table 9 includes the strengths of the correlations and the significance levels for each achievement measure.
**Table 9**

*Correlation of CTE with Student Achievement***

<table>
<thead>
<tr>
<th></th>
<th>Math 3 SOL</th>
<th>Reading 3 SOL</th>
<th>Math 5 SOL</th>
<th>Reading 5 SOL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>Partial r</td>
<td>r</td>
<td>Partial r</td>
</tr>
<tr>
<td>CTE</td>
<td>.45** .33</td>
<td>.46** .36*</td>
<td>.46** .35*</td>
<td>.46** .38*</td>
</tr>
<tr>
<td>CTE-Ins.</td>
<td>.43** .31</td>
<td>.46** .35*</td>
<td>.45** .34</td>
<td>.48** .38*</td>
</tr>
<tr>
<td>CTE-Dis.</td>
<td>.44** .34</td>
<td>.44** .36*</td>
<td>.43** .33</td>
<td>.45** .37**</td>
</tr>
</tbody>
</table>

***Note:*** Partial r is calculated by controlling for the effects of student socioeconomic status.

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

**Relative Contributions in Explaining Variance**

The fourth research question asked: What are the relative contributions of OCB and CTE in explaining variance in student achievement when controlling for SES? This question was addressed through regression analysis. For the first model, OCB and SES were identified as the predictor variables and compared to each achievement measure. For the second model, CTE and SES were used as the predictor variables. For the final model, each achievement measure was established as the dependent variable with OCB, CTE, and SES identified as the predictor variables.

*Regression Analysis: OCB and SES.* Regression analysis was used to address the relationship between OCB, SES, and student achievement. OCB was a significant predictor of student achievement for the grade 3 math SOL exam (β = .41, p < .01), grade 5 math SOL exam (β = .33, p < .01), and grade 5 reading SOL exam (β = .31, p < .05). As expected, SES was found to have a significant negative relationship with student
achievement on all measures. Table 10 displays the findings of the regression analysis for teacher organizational citizenship behaviors, student socioeconomic status, and student achievement.

**Regression Analysis: CTE and SES.** Simple regression analysis was also used to address the relationship between CTE, SES, and student achievement. CTE was a significant predictor of student achievement for the grade 3 reading SOL exam ($\beta = .31$, $p < .05$), grade 5 math SOL exam ($\beta = .24$, $p < .05$), and grade 5 reading SOL exam ($\beta = .28$, $p < .05$). SES was found to have a significant negative relationship with student achievement on all measures. Table 11 displays the findings of the regression analysis for collective teacher efficacy, student socioeconomic status, and student achievement for each achievement measure.

**Regression Analysis OCB, CTE, and SES.** For the final multiple regression model, OCB, CTE, and SES, were each established as the predictor variables and compared to each measure of student achievement. Regression analysis revealed that student socioeconomic status had a significant negative relationship with all achievement measures: grade 3 math ($\beta = -.48$, $p < .01$), grade 3 reading ($\beta = -.42$, $p < .01$), grade 5 math ($\beta = -.61$, $p < .01$), grade 5 reading ($\beta = -.57$, $p < .01$). The model was able to explain 52% of the variance for Grade 3 math, 36% of the variance for Grade 3 reading, 63% of the variance for Grade 5 math, and 57% of the variance for grade 5 reading. When all factors are considered, teacher organizational citizenship behavior only demonstrated a significant independent relationship with student achievement on the grade 3 math SOL exam ($\beta = .378$, $p < .05$). Collective teacher efficacy did not present significant relationships with any of the achievement variables. Table 12 displays the
findings of the regression analysis for teacher organizational citizenship behaviors, collective teacher efficacy, student socioeconomic status, and student achievement.

Conclusion

Significant relationships were found between the variables in this study. Pearson correlation statistics revealed a significant positive relationship between teacher organizational citizenship behaviors and collective teacher efficacy as well as with both dimensions of collective teacher efficacy. Significant positive relationships were found between teacher organizational citizenship behaviors and student achievement scores in grade 3 mathematics, grade 5 mathematics, and grade 5 reading when controlling for student socioeconomic status. Collective teacher efficacy demonstrated a significant positive relationship with student achievement scores in grade 3 reading, grade 5 reading, and grade 5 mathematics when controlling for student socioeconomic status. Both subscales of collective teacher efficacy also demonstrated significant positive relationships with achievement scores in grade 3 reading and grade 5 reading.

Regression analysis revealed that student socioeconomic status had a strong negative relationship with student achievement on all measures within each of the three models. Within the model that considered OCB, SES, and student achievement, OCB was found to be a significant independent predictor of student achievement on the grade 3 mathematics, grade 5 mathematics, and grade 5 reading SOL exams. Within the model that considered CTE, SES, and student achievement, CTE was found to be a significant independent predictor of student achievement on the grade 3 reading, grade 5 mathematics, and grade 5 reading SOL exams. When OCB, CTE, SES, and student achievement are considered within one model, SES had a significant negative
relationship with all achievement measures. OCB was only found to be a significant independent predictor of student achievement on the grade 3 mathematics SOL exam. CTE was not a significant predictor of student achievement on any achievement measure. Further discussion and recommendations for future studies will be based on these findings.

Table 10

*Regression Analysis: OCB and SES as Predictors of Student Achievement*

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Predictor Variables</th>
<th>Beta</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
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<td>.54</td>
<td>14.94</td>
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<tr>
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<td>OCB</td>
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<td></td>
<td>SES</td>
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<td>Reading 3 SOL</td>
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<td>18.51</td>
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<tr>
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</tr>
<tr>
<td></td>
<td>SES</td>
<td>-.62**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading 5 SOL</td>
<td></td>
<td>.59</td>
<td>.57</td>
<td>11.52</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OCB</td>
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<td></td>
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<tr>
<td></td>
<td>SES</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

* p < .05. **p < .01.
Table 11

*Regression Analysis: CTE and SES as Predictors of Student Achievement*

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Predictor Variables</th>
<th>Beta</th>
<th>( R^2 )</th>
<th>Adjusted ( R^2 )</th>
<th>Standard Error</th>
</tr>
</thead>
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<td></td>
<td>SES</td>
<td>-.56**</td>
<td></td>
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</tr>
<tr>
<td>Reading 3 SOL</td>
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<td>.36</td>
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</tr>
<tr>
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</table>

* p < .05. **p < .01.
Table 12

*Regression Analysis: OCB, CTE, and SES as Predictors of Student Achievement*

<table>
<thead>
<tr>
<th>Dependent Variable</th>
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<th>R²</th>
<th>Adjusted R²</th>
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* p < .05. ** p < .01.
CHAPTER 5: DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

Summary

Introduction

No Child Left Behind (NCLB) legislation holds schools accountable for ensuring that students meet certain levels of achievement regardless of their personal circumstance. Under NCLB requirements, all public schools are required to meet specified benchmarks in student achievement (United States Department of Education, 2004). The findings of the Coleman report (Coleman et al., 1966) presented the argument that differences in student achievement were largely due to students' socioeconomic status and family background and subsequent studies have supported these findings (e.g. White, 1982; Sirin, 2005). This presents the following dilemma for educators: How are schools to succeed at meeting the mandates of NCLB when the most powerful factors influencing student achievement are beyond the schools' control?

While socioeconomic status is certainly a powerful factor influencing students' academic success, effective schools research has revealed that there are other variables that have a significant relationship with achievement (Edmonds, 1979, 1982). Within the scope of this research, multiple school, teacher, and student level factors have been identified that have a positive correlation with student achievement, even when considering the effects of students' socioeconomic conditions. The promising findings of effective schools research have helped school leaders recognize that there are factors within their control that can affect student learning. Beyond effective schools research, factors have been identified that address teacher behaviors and beliefs that have a direct correlation with student achievement, even when considering the effects of
socioeconomic stature. The focus of this study centered on two of these factors: organizational citizenship behaviors (OCB) and collective teacher efficacy (CTE).

Organ (1988) described organizational citizenship behaviors (OCB) as worker behaviors that are not required or formally rewarded, but promote the effective operation of an organization. Organ (1988) identified five dimensions of OCB: altruism, civic virtue, conscientiousness, courtesy, and sportsmanship. Subsequent studies revealed that the dimensions of OCB presented differently in number and description depending on the nature of the organization (e.g. Van Dyne et al., 1994; MacKenzie et al., 1991; Podsakoff & MacKenzie, 1994; Podsakoff et al., 1997; Podsakoff et al., 2000). Schools are unique public service entities and extra-role behaviors are necessary and commonplace and behaviors that serve the organization typically serve the individual. As such, OCB in schools presents as a “single, bipolar construct” (DiPaola & Hoy, 2005, p.37).

The construct of collective teacher efficacy is deeply rooted in teacher self-efficacy. CTE differs from self-efficacy in that CTE is a school level factor that describes the belief among teachers that their efforts as a group influence students’ achievement regardless of their home-life, community standing, or socioeconomic status. (Tschannen-Moran & Barr, 2004). Instead of centering on the capacity of the individual to affect desired outcomes, CTE centers on the capacity of the school as a whole to influence learning outcomes.

Studies have shown a positive correlation between teacher OCB and student achievement (DiPaola & Hoy, 2005; Jurewicz, 2004) as well as with CTE and student achievement (Bandura, 1993; Goddard et al., 2000; Goddard, 2001; Tschannen-Moran & Barr, 2004). Unfortunately, there is little available research addressing the relationship
between OCB and CTE. A review of the literature revealed few studies that were designed specifically to address the relationship between OCB and any level of teacher efficacy. In one study, Dussault (2006) found a positive relationship between OCB and teacher self-efficacy, but it did not address CTE. In another, Wagner (2008) considered the relationship between OCB and CTE in a broader study addressing the relationship between OCB, academic optimism and student achievement and found a positive correlation between OCB and CTE.

The purpose of this study was to build on the limited literature that describes the relationship between teacher organizational citizenship behaviors and collective teacher efficacy. It also considered the individual and combined relationships of these constructs to student achievement when considering the effects of student socioeconomic status. The school served as the unit of analysis. OCB was measured using was the 12-item Organizational Citizenship Behavior Scale (OCB-Scale) (DiPaola et al., 2005). The collective teacher efficacy measure used was the Collective Teacher Belief Scale developed by Tschannen-Moran and Barr (2004). Student achievement was measured by using the mean scaled scores for the grade 3 math, grade 3 reading, grade 5 math, and grade 5 reading Standards of Learning (SOL) exams for each school. SOL results were provided by the school district. Student socioeconomic status was defined as the percentage of students receiving free or reduced lunch in each school. Free and reduced lunch data were obtained from the Virginia Department of Education.

Limitations

This study was limited to a convenience sample collected from teachers at urban elementary schools within a specific school district in the Commonwealth of Virginia. As
such, the findings cannot be generalized to secondary schools or to schools located in
alternate settings. It should also be noted that the study focused exclusively on the
correlational relationships between CTE, OCB, and student achievement when
controlling for SES and therefore no assumptions can be made of a causal nature of one
construct on the other based on the findings.

Achievement data for this study were limited to student performance on the
Virginia Standards of Learning Exams for grade 3 math, grade 3 reading, grade 5 math,
and grade 5 reading. These criterion reference assessments are minimum competency
tests used to measure student understanding of the content of the course as described for
the Virginia SOL for that grade level. Data were also reported as the scaled mean score
for each school on each test. There can be no assumptions made regarding student
understanding at other grade levels or within other subject areas.

Discussion of the Results

This study yielded significant results for several of the relationships considered.
The findings provide insight into the relationship between organizational citizenship
behaviors and collective teacher efficacy. The findings of this study provided mixed
results when considering the findings of previous studies that described relationships
between organizational citizenship behaviors, collective teacher efficacy, student
socioeconomic status, and student achievement.

Correlational Analysis

*CTE and SES.* The most surprising finding from this study was the failure to
reveal a significant relationship between any of the dimensions of collective teacher
efficacy with student socioeconomic status (see Table 6 and Table 11). While it is true
that this relationship is not addressed by the research questions, it is worth discussing as it raises questions regarding the Collective Teacher Belief scale (Tschannen-Moran and Barr, 2004), which is the measure for CTE used in this study.

Tschannen-Moran and Barr (2004) developed the Collective Teacher Belief scale used in this study. The measure was developed for use in a study describing the relationship between student achievement in math and reading and CTE among middle school students. Tschannen-Moran and Barr (2004) argued that the new scale was necessary because the Collective Teacher Efficacy scale (Goddard et al., 2000) depressed schools' CTE scores because it penalized teachers for recognizing that some conditions within a school or related to students' home lives presented challenges to instruction. Tschannen-Moran and Barr (2004) claimed that simply recognizing obstacles to instructional success did not equate to lower feelings of collective efficacy. As with the present study, Tschannen-Moran and Barr (2004) did not find a significant relationship between CTE and SES.

Curiously, in a study relating CTE and student achievement among students in urban elementary schools, Goddard (2001) found a strong negative relationship ($r = - .73, p < .01$) between CTE and SES when the Collective Teacher Efficacy scale (Goddard et al., 2000) was used as the CTE measure. Similarly, a study of a theoretical model to explain achievement in high schools revealed a significant negative relationship between CTE and SES ($r = -.29, p < .05$) when a short form of the Collective Teacher Efficacy scale was used as the CTE measure (Hoy, Sweetland, & Smith, 2002). These findings lead to questions regarding the CTE measure used for this study. In studies where the Teacher Belief Scale is used, CTE appears unrelated to SES (Tschannen-Moran & Barr,
This is in direct contrast to findings from earlier studies that used variations of the Collective Teacher Efficacy scale as the CTE measure (Goddard, 2001; Hoy et al., 2002). The difference in findings lead to the conclusion that these two scales are not strictly measuring the same construct.

**OCB and CTE.** This study explored the relationship between teacher organizational citizenship behaviors and collective teacher efficacy in urban elementary schools. Correlational analysis revealed a significant positive correlation between OCB and CTE ($r = .64, p < .01$). It also revealed a significant positive correlation between OCB and each of the subscales of CTE: CTE centered on perceptions of instruction ($r = .60, p < .01$) and CTE centered on perceptions of discipline ($r = .63, p < .01$). The strengths and significance of the correlations between OCB and CTE and the dimensions of CTE confirm the positive correlation predicted in the conceptual model.

A search of the available literature revealed few studies that directly addressed the relationship between organizational citizenship behaviors and any level of teacher efficacy; however, a study was identified that examined the relationship between organizational citizenship behaviors and teacher self-efficacy. In a study of 487 teachers at French Canadian high schools, Dussault (2006) found a significant positive correlation between teacher self-efficacy and certain OCB in the areas of altruism, courtesy, conscientiousness, and civic virtue. While CTE is an independent construct from teacher self-efficacy, CTE is deeply rooted in teacher self-efficacy (Bandura, 1997). If individual teacher OCB have a positive correlation with individual teacher self-efficacy, it would be reasonable to hypothesize that group OCB has a positive correlation with CTE. The findings of this study were consistent with that hypothesis.
The findings of this study were also consistent with findings within Wagner’s (2008) study of the relationship between OCB, academic optimism, and student achievement. In a study of 36 Virginia High Schools, Wagner (2008) found a strong positive correlation between OCB and CTE, a dimension of academic optimism ($r = .82$, $p < .01$).

**OCB and Student Achievement.** When the effects of student socioeconomic status are ignored, organizational citizenship behavior had a significant positive correlation with each of the four achievement measures: third-grade math ($r = .61$, $p < .01$), third-grade reading ($r = .47$, $p < .01$), fifth-grade math ($r = .58$, $p < .01$), and fifth-grade reading ($r = .55$, $p < .01$). When controlling for student socioeconomic status, organizational citizenship behavior was found to have a significant relationship with student achievement in third-grade math (partial $r = .50$, $p < .01$), fifth-grade math (partial $r = .33$, $p < .01$), and fifth-grade reading (partial $r = .41$, $p < .05$).

The results of the correlational analysis from this study are mixed when compared the findings of previous studies. In a study of 97 public high schools in Ohio, DiPaola and Hoy (2005) found a significant positive relationship between faculty OCB and student achievement on standardized tests in reading (partial $r = .28$, $p < .01$) and mathematics (partial $r = .30$, $p < .01$) even when controlling for student socioeconomic status. This study differs from the present study in that OCB did not serve as a predictor of reading achievement at the third grade level.

In a 2004 study, Jurewicz found a significant positive relationship between teacher OCB and student achievement on the grade eight Virginia Standards of Learning Exams in English ($r = .35$, $p < .01$) and mathematics ($r = .35$, $p < .01$). When controlling
for SES, there was still a significant relationship between OCB and student achievement for English \( (\beta = .22, p < .05) \), but not for mathematics. These findings differ from the present study which found a significant relationship between student achievement in mathematics at the third and fifth grade levels and OCB when controlling for SES.

Some of the reasons for the discrepancies between the current study and previous studies cited are related to the size and makeup of the sample of schools. First, consider the size of the samples. DiPaola and Hoy (2005) drew from a sample of 97 Ohio high schools. Similarly, Jurewicz (2004) sampled 82 Virginia middle schools. The present study was limited to 35 elementary schools from a single urban Virginia school district. With samples nearly three times as large, the relationships revealed in the high and middle school studies would not have to be as strong to be regarded as significant as compared to this study (Gall, M., Gall, J, & Borg, 2003).

Next consider the demographics of the samples. The sample collected for this study was restricted to a single urban school district. The samples from the previous studies were more demographically diverse (Jurewicz, 2004; DiPaola & Hoy, 2005). It may be that the relationship between OCB and student achievement in an urban district is very different from the relationship between the constructs in suburban and rural districts. Attempts are made to account for these differences by controlling for SES in the statistical analysis, but it must be remembered that there may be community and environmental factors that are unique to the urban setting beyond income levels that could come into play.

Finally the instructional level for each of the studies must be considered. This study was limited to elementary schools. The samples from the previous studies were
drawn from middle schools (Jurewicz, 2004) and high schools (DiPaola & Hoy, 2005). Elementary school teachers tend to have earned bachelor's degrees in education as opposed to their secondary counterparts who tend to have earned degrees in a specific content area (United States Department of Education, 2006). As such, elementary teacher preservice training generally includes a heavier concentration in pedagogy. Elementary teachers are also typically assigned to a single class of students while secondary teachers teach several classes of students each day. These factors may promote a more personal identification with the children served among elementary teachers than secondary teachers. The variation in training and preparation and number of students served between elementary and secondary teachers may be a contributing factor to the differences in findings between studies conducted at distinct instructional levels.

*CTE and Student Achievement.* CTE, CTE centered on perceptions of instruction, and CTE centered on perceptions of discipline had significant positive relationships with all measures of student achievement when the effects of SES were not considered (See table 5). When controlling for the effects of student SES, CTE was found to have significant positive relationships with student achievement on the third-grade reading (partial r = .36, p < .05), fifth-grade reading (partial r = .38, p < .05) and fifth-grade math (partial r = .35, p < .05) SOL exams. CTE centered on perceptions of instruction was found to have a significant positive relationship with student achievement on the third-grade reading (partial r = .35, p < .05) and fifth-grade reading (partial r = .38, p < .05) SOL exams. CTE centered on perceptions of discipline had a significant positive relationship with student achievement on the third-grade reading (partial r = .34, p < .05)
and fifth-grade reading (partial $r = .36, p < .05$) SOL exams. Table 8 includes the strengths of the correlations and the significance levels for the factors.

The findings of the correlational analysis are mixed when compared to findings of previous studies. In this study, the positive correlations between CTE and student achievement were significant for both third-grade reading and fifth-grade reading, but only for third-grade math. Neither CTE centered on perceptions of discipline nor CTE centered on perceptions of instruction demonstrated significant relationships with either math measure. These findings differ from those of Goddard et al. (2000) in which the relationship between CTE and student achievement was determined to be significant for math and reading in urban elementary schools. These findings also differ from Goddard’s 2001 study of urban elementary schools in which CTE was found to have a significant positive relationship with student achievement in math and reading even when considering prior student achievement and demographic characteristic.

The findings of this study were mixed when compared to those of Tschannen-Moran and Barr (2004). As with the present study, Tschannen-Moran and Barr (2004) found that the relationship between CTE and student achievement on the Virginia Grade 8 Standards of Learning Exams in math and reading were significant when the effects of SES were not considered. In addition, Tschannen-Moran and Barr also found a significant relationship between CTE and student achievement in writing. When controlling for SES, however, CTE only had a significant relationship with student achievement in writing (Tschannen-Moran & Barr, 2004). While these studies differ in the content areas that maintain a significant correlation when controlling for the effects of
SES, they are similar in that there were still significant relationships between CTE and some measures of student achievement when controlling for SES.

As with the relationship between OCB and student achievement, the differences between the samples must be considered when addressing differences in findings between the present study and earlier studies. The study by Tschannen-Moran and Barr (2004) drew from a demographically diverse sample of 66 middle schools. The sample was larger, was drawn from a different instructional level, and represented a broader cross-section of the population than the sample for the present study.

Like the present study, the Goddard et al. (2000) and Goddard (2001) studies, were both completed using a sample of elementary schools drawn from a single urban school district. As such, differences in findings are likely due to other reasons than those associated with the samples. The most likely reason for discrepancies between these studies and the current study lies with the instruments used to measure CTE. Goddard et al. (2001) and Goddard (2000) both used the 21-item Collective Teacher Efficacy scale. Tschannen-Moran and Barr (2004) claimed that the Collective Teacher Efficacy scale artificially drove down CTE scores in schools with challenging environments due to the manner in which it included task difficulty. In response to this concern, Tschannen-Moran and Barr (2004) developed the Collective Teachers Belief scale which was used in this study.

Regression Analysis

The purpose of regression analysis was to determine if any of the variables in this study demonstrated a significant independent effect on student achievement when considering the effects of the other variables.
**OCB, SES, and Student Achievement.** For the first model, OCB and SES were identified as predictor variables for each achievement measure. Regression analysis identified OCB as a significant predictor of student achievement on the Grade 3 Math, Grade 5 Math, and Grade 5 Reading SOL exams. These findings are largely consistent with previous studies relating these constructs (DiPaola & Hoy, 2005; Jurewicz, 2004) in that OCB is still a significant predictor of student achievement on some measures even when considering the effects of SES.

**CTE, SES, and Student Achievement.** For the second model, CTE and SES were identified as predictor variables for each measure of student achievement. Regression analysis also revealed significant findings. When considering the effects of SES, CTE was found to be a significant predictor of student achievement on the grade 3 reading, grade 5 math, and grade 5 reading SOL exams. Again, these findings are generally in agreement with the current literature (Bandura, 1993; Tschannen-Moran & Barr, 2004) in that CTE is still a significant predictor of student achievement on some measures even when considering the effects of SES.

**OCB, CTE, SES, and Student Achievement.** For the final model, OCB, CTE, and SES were established as the predictor variables for each achievement measure. Significant independent relationships were not as prevalent when the effects of OCB, CTE, and SES were considered simultaneously. The model was able to explain 52% of the variance for grade 3 math, 36% of the variance for grade 3 reading, 63% of the variance for grade 5 math, and 57% of the variance for grade 5 reading. Regression analysis confirmed that student socioeconomic status had a significant negative relationship with all achievement measures: grade 3 math ($\beta = -.48, p < .01$), grade 3
reading ($\beta = -.42, p < .01$), grade 5 math ($\beta = -.61, p < .01$), grade 5 reading ($\beta = -.58, p < .01$). These findings are consistent with previous studies which have indicated a correlation between the two constructs (Coleman et al., 1966; Jurewicz, 2004; DiPaola & Hoy, 2005; Tschannen-Moran & Barr, 2004). The findings only revealed one other significant relationship: Teacher organizational citizenship behaviors demonstrated a significant independent positive relationship with student achievement on the Grade 3 Math SOL exam ($\beta = .378, p < .05$). Collective teacher efficacy did not reveal an independent significant relationship with any of the achievement measures.

Why would the analysis fail to reveal significant relationships between OCB and CTE with student achievement when all factors are considered in the same model? Only one other study was identified that considered multiple factors including OCB, SES, student achievement, and some measure of CTE. In a study of the relationship between academic optimism, teacher organizational citizenship behaviors, Wagner (2008) considered the collective relationships of multiple factors with student achievement. Regression analysis did not reveal any significant relationships between OCB and student achievement when the effects of academic optimism, a multi-factor construct that includes collective teacher efficacy (Hoy et al., 2006), were included in the analysis (Wagner, 2008). Wagner (2008) reasoned that the correlations between student achievement and academic optimism ($r = .83, p < .01$) were so strong that it was likely that the relationship between academic optimism and student achievement masked the effects of OCB.

Unfortunately, in the current study the final regression model did not identify a factor that was a consistent independent predictor of student achievement beyond student
socioeconomic status, so the failure to identify significant relationships must be due to other causes. Before conclusions could be drawn, it is necessary to consider the limitations of the study. The greatest limitation of this study is due to the size and composition of the sample. The sample for this study comprised of 35 schools from a single urban school district. Small samples require relationships to be stronger in order for them to be regarded as significant (Gall et al., 2003). The failure of significant relationships to present in the final regression model for CTE and only one significant relationship to present for OCB may be due to the small sample size.

It is possible to conclude that this study supports the findings of the Coleman Report (Coleman et al., 1966) and accept that there is little that schools can do to overcome the negative effects of SES. One conclusion that could be reached is that, at least within urban districts, the effects of SES are too strong to overcome. To reach this conclusion based solely on the outcome of the final regression, however, would be injudicious as the decision would fail to take into account all of the findings within the study.

When considering the findings of all three regression analyses in conjunction with the results of correlational analyses, it would be more reasonable to conclude that SES certainly has a strong negative relationship with student achievement, particularly when compared with the effects of OCB and CTE simultaneously (see Table 12). When only SES and OCB are entered in the regression model, OCB is still a significant predictor of student achievement in math and fifth-grade reading (see Table 10). Similarly, when SES and CTE are entered into the regression model, CTE is still a significant predictor of student achievement in reading and fifth-grade math (see Table 11). If we consider the
strength of the correlation between OCB and CTE (r = .64), it is reasonable to conclude that the independent affects of each construct blend when they are considered simultaneously and are therefore less likely to reveal independent significant relationships with student achievement. Figure 2 illustrates the blending effect when OCB, CTE, and SES as related to student achievement are considered in a single model.

Figure 2

*Student Achievement, OCB, CTE, and SES*

\[\text{Student Achievement} \rightarrow \text{OCB} \rightarrow \text{CTE} \rightarrow \text{SES}\]

\[\text{Positive Correlation}\]

*Variance Explained for Third-Grade Reading.* One of the more curious findings from the regression analyses was the relatively low percentage of variance each model could explain for student achievement in third-grade reading. The first regression model could only explain 35% of the variance and the second and final models could only explain 36% of the variance. On average, the models could explain 21% more of the variance for student achievement in fifth-grade reading. A confounding variable seems to have come into play that affected student achievement on the third-grade reading SOL
exam, but was less influential to student performance on the mathematics SOL exams and on the fifth-grade reading SOL exam.

One possible explanation for the relatively low percentage of variance explained is the design of the third-grade reading Virginia SOL exam. The third-grade reading SOL exam is a cumulative assessment that measures student competency of content and skills learned from kindergarten through third-grade (Virginia Department of Education, 2005). Students assessed at grade 3 are being tested on material learned over a long period of time delivered by multiple teachers.

The fifth-grade reading SOL exam, on the other hand, measures student competency as it relates to content addressed in grade 5 (Virginia Department of Education, 2005). While the skills learned at earlier grade levels are important to student development, the fifth-grade exams are specifically designed to measure student understanding of fifth-grade material. Students tested at grade 5 are tested on a single year of material that was, most likely, delivered by a single teacher.

The Virginia math SOL exams are structured like the reading SOL exams: the third-grade exam is cumulative while the fifth-grade exam measures student knowledge of fifth-grade content (Virginia Department of Education, 2005). As such, if the suggestion that the structure of the test may be the confounding factor is true, the percentage of variance explained should be similar for math as it is for reading. For student achievement on the third-grade math SOL exam, the first regression model explained 54% of the variance, the second model explained 45% of the variance, and the final model explained 52% of the variance. While these values are greater than those for third-grade reading (35%, 36%, and 36% respectively), they are less than the values for
fifth-grade math and reading. On average, the regression models could explain 12% more of the variance for student achievement in fifth-grade math than for student achievement in third-grade math. As with reading, the regression models could explain more of the variance for student achievement in mathematics at the fifth-grade level than at the third-grade level. While not definitive, the relationships suggest that the difference in the structure of the tests by grade level may be a confounding factor.

Implications

In recent years, public schools have faced increased public scrutiny and have been subjected to intense political pressure to ensure that they meet the increasing demands laid forth in their instructional missions. No Child Left Behind (NCLB) legislation charges public schools with ensuring that all students demonstrate mastery of basic concepts in math and reading regardless of race, gender, or socioeconomic status or face possible sanctions that range from a loss of funding to participation in mandatory improvement programs (United States Department of Education, 2004). In order to meet these demands, school leaders must have a clear understanding of all factors that impact student learning and establish an environment that fosters the development of those variables that have a positive correlation with achievement.

Research shows that student socioeconomic status is the most significant predictor of student success (Coleman et al., 1966; Sirin, 2005). Unfortunately, conditions which influence students' financial situation or their support structure at home are largely beyond the control of school officials. School officials must instead concentrate their efforts on those factors which are within their control. Within the scope of effective schools research, Edmonds (1979, 1982) determined that schools that had strong
administrative leadership that paid attention to quality instruction, emphasized instructional focus and maintained high expectations for student achievement, maintained a safe and orderly learning environment, and frequently monitored student progress as a means to promote program success were likely to be successful regardless of student socioeconomic status. School leaders who ensure that each of these factors has been addressed will have moved their schools closer to meeting the instructional needs of their students.

As schools continue to improve, it becomes imperative that leaders focus on the more understated variables that influence student achievement beyond those identified within effective schools research. If the mandate for universal proficiency is to be reached, principals must create an environment that promotes the development of these subtle influences on student success. Many of these variables are related to individual and collective faculty behaviors and beliefs. Two examples of such factors that have demonstrated a positive relationship with student achievement are teacher organizational citizenship behaviors (DiPaola & Hoy, 2005; Jurewicz, 2004) and collective teacher efficacy (Goddard et al., 2000; Goddard, 2001; Tschannen-Moran & Barr, 2004).

Organizational Citizenship Behaviors

The findings of this study suggest that teacher OCB is an independent predictor of student achievement in third-grade math, fifth-grade math, and fifth-grade reading as measured by the Virginia Standards of Learning exams. This relationship held true in correlational analysis and regression analysis, even when considering the effects of student socioeconomic status.
Organ (1988) defined organizational citizenship behavior as “individual behavior that is discretionary, not directly or explicitly recognized by the formal rewards system, and that in the aggregate promotes the effective functioning of the organization” (p. 4). Teachers are regularly asked to mentor their colleagues, tutor struggling students, assist in administering standardized assessments, serve on committees, sponsor clubs, or perform a wide variety of other tasks that may extend beyond the enumerated duties as outlined in the terms of employment. The performance of these tasks, however, is essential to the operation of an efficient and effective school. While many teachers complete such tasks without complaint and some even volunteer before being asked, a few consider such requests as an imposition and resist engaging in any activity beyond the defined instructional role.

Principals should be mindful that their personal behaviors and the processes they select for operating their schools can directly influence the level of OCB presented by teachers. Research suggests that leaders that employ transactional leadership are less likely to inspire OCB from their subordinates than leaders who adopt a more affective style (Ehrhart & Naumann, 2004; Boerner et al., 2007) such as servant-leadership (Ehrhart, 2004) and transformational leadership (Purvanova et al., 2006; Boerner et al., 2007). The literature also suggests that leaders who employ strategies that foster an environment of support within the workplace are more likely to inspire their constituents to display extra-role behaviors. Educational leaders should be mindful of these findings and promote an atmosphere of service and support within their schools.
Collective Teacher Efficacy

This study suggests that collective teacher efficacy is an independent predictor of student achievement in third-grade reading, fifth-grade math, and fifth-grade reading as measured by the Virginia Standards of Learning exams. These relationships held true through correlational and regression analysis, even when considering the effects of student socioeconomic status.

Bandura (1997) noted that “(t)eachers operate collectively within an interactive school system rather than as isolates” (Bandura, 1997, p. 243). This observation is significant in that it recognizes that schools have unique social structures that function within a high level of interdependence. Bandura (1997) identified four sources for individual efficacy: (a) mastery experience; (b) vicarious experience; (c) social persuasion; and (d) affective state. While it is true that the constructs of self-efficacy and collective efficacy are distinct, social cognitive theory informs us that the choices of organizations and individuals are subject to efficacy beliefs. Goddard et al. (2004) argued that since the constructs of self-efficacy and collective efficacy beliefs are both derived from social cognitive theory, the sources of self-efficacy should also operate at the collective level.

As collective teacher efficacy has been found to have a positive relationship with student achievement (Goddard et al., 2000; Goddard, 2001; Tschannen-Moran & Barr, 2004), it is important for school leaders to foster an environment that promote CTE. School leaders can work toward this end by being mindful of the four sources of collective efficacy. Principals can promote CTE by helping teachers experience success in promoting student learning, providing high-quality, relevant, and continuous staff
development, providing opportunities for professional dialogue and collaboration, and promoting a collegial work environment.

Processes that impact decision making are likely to impact the sources of collective teacher efficacy (Goddard, 2002). A faculty with highly empowered teachers is more likely to present a high level of CTE than a faculty that is effectively powerless. It should be noted that empowering teachers in the decision making process is a practice employed by transformational leaders (Kouzes & Posner, 2002). As with OCB, principals that employ a more affective leadership style are more likely to encourage higher levels of CTE. This is not surprising considering the strong correlation between OCB and CTE. 

Organizational Citizenship Behaviors and Collective Teacher Efficacy

The findings of this study confirm a significant positive correlation between teacher organizational citizenship behaviors and collective teacher efficacy. As these factors are also positively linked with aspects of student achievement, it would be prudent for school leaders to foster environments that promote positive OCB and strong CTE. As there is a positive correlation between the two constructs, it would be reasonable to assume that actions and behaviors related to promoting one of these factors would have a constructive influence on the development of the remaining factor. Based on these findings, school leaders should be encouraged to employ a more affective leadership style in order to establish a school climate that will encourage teachers to demonstrate desired organizational citizenship behaviors and develop a stronger sense of collective efficacy to the end of helping students meet established achievement goals.
Recommendations for Further Research

Further study is recommended in the areas of organizational citizenship behavior and collective teacher efficacy in order to better understand how they relate to one another and how they may serve as predictors of student achievement. This study was limited by the fact that the sample included only 35 elementary schools from a single urban school district in Virginia. Because of this, the findings of this study cannot be generalized to all elementary schools in Virginia nor outside of Virginia, nor can they be generalized to the secondary level. It would be beneficial to replicate this study using a much larger sample of elementary schools drawn from a wide-range of demographic regions from across the nation using standardized measures designed to measure student achievement. It would also be useful to replicate the study using samples collected from middle schools and high schools.

Additional research regarding the reliability and validity of the CTE measure used for this study is also recommended. The findings of a study relating student achievement to CTE in urban elementary schools revealed a significant relationship between CTE and SES when the Collective Teacher Efficacy scale was used as the CTE measure (Goddard, 2001). For this study, the Collective Teacher Belief scale (Tschannen-Moran & Barr, 2004) was used to measure CTE and the relationship between CTE and SES was not significant. Repeating the study using both scales simultaneously would reveal if the differences in the findings were due to the samples or if the differences were due to the measures.

Further research is also recommended for considering the collective relationship between organizational citizenship behaviors, collective teacher efficacy, and student
socioeconomic status with student achievement. This study revealed significant relationships between OCB and measures of student achievement and CTE and measures of student achievement when considered independently. Organizational citizenship behaviors only presented a significant relationship with student achievement in third-grade math and collective teacher efficacy did not present any significant relationships with student achievement when considered in a regression model that included both factors along with student socioeconomic status. Repeating the regression analysis using data collected from a more robust sample may be more revealing.

Finally, further analysis should be conducted to attempt to understand what additional factors may have influenced student performance in third grade reading. All three of the regression models failed to explain an acceptable percentage of the variance when OCB, CTE, and SES were used as predictor variables for student achievement for third grade reading, while the same models explained an acceptable percentage of variance for the math measures as well as for fifth-grade reading. Clearly a confounding factor needs to be identified and studied.

Final Thoughts

The findings of this study indicate that teacher organizational citizenship behaviors are significantly and positively related to collective teacher efficacy within the school setting. Additionally, this study revealed significant relationships between teacher organizational citizenship behaviors and collective teacher efficacy with student achievement when considering the effects of student socioeconomic status, even though these relationships were generally suppressed when the regression model included all of the variables simultaneously. In the drive toward ensuring that all students meet academic
benchmarks in math and reading, principals must be mindful of all factors that influence student achievement, including those that are outside effective schools research.

Principals need to foster a school climate that is conducive to the development of the behaviors and beliefs that are consistent with positive OCB and CTE in order to help ensure that all students can meet academic success.
Appendix A
**Teacher Climate Survey 2008-09**

<table>
<thead>
<tr>
<th>School</th>
<th>Years Teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ ☐ ☐</td>
<td>☐ 1st year</td>
</tr>
<tr>
<td>☐ ☐ ☐</td>
<td>☐ 1-2 years</td>
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<tr>
<td>☐ ☐ ☐</td>
<td>☐ 3-5 years</td>
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<tr>
<td>☐ ☐ ☐</td>
<td>☐ 6-10 years</td>
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<tr>
<td>☐ ☐ ☐</td>
<td>☐ 11-15 years</td>
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<tr>
<td>☐ ☐ ☐</td>
<td>☐ 16-20 years</td>
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<tr>
<td>☐ ☐ ☐</td>
<td>☐ 21+ years</td>
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</tbody>
</table>

**Marking Instructions**

- Use a No. 2 pencil only.
- Do not use ink, ballpoint, or felt tip pens.
- Make solid marks that fill the response completely.
- Erase cleanly any marks you wish to change.

**How much can you do?**

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
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</thead>
<tbody>
<tr>
<td>A1. Control disruptive behavior in the classroom</td>
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<td>A2. Motivate students who show low interest in school work</td>
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<td>A3. Calm a student who is disruptive or noisy</td>
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<td>A4. Help your students value learning</td>
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<td>A5. Craft good questions for your students</td>
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<td>A6. Have students follow classroom rules</td>
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<td>A7. Have students believe they can do well in school work</td>
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<td>A8. Establish a classroom management system with each group of students</td>
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<td>A9. Use a variety of assessment strategies</td>
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<td>A10. Provide an alternative explanation or example when students are confused</td>
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<td>A11. Assist families in helping their children do well in school</td>
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<td>A12. Implement alternative teaching strategies in your classroom</td>
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**How much can teachers in your school do?**

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<tbody>
<tr>
<td>A13. Produce meaningful student learning</td>
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<td>A14. Get students to believe they can do well in school work</td>
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<td>A15. Make expectations clear about appropriate student behavior</td>
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<td>A16. Establish rules and procedures that facilitate learning</td>
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<td>A17. Help students master complex content</td>
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<td>A18. Promote deep understanding of academic concepts</td>
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<td>A19. Help students think critically</td>
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<td>A20. Foster student creativity</td>
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<td>A21. Help students feel safe while they are at school</td>
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<td>A22. Control disruptive behavior</td>
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<td>A23. Get students to follow school rules</td>
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<td>A24. Respond to defiant students</td>
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</table>
Teacher Climate Survey 2008-09
(page 2)

Please indicate your opinion on each item below by selecting a number for each item ranging from (1) Strongly Disagree to (6) Strongly Agree:

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1. Students care about each other</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B2. Teachers typically look out for each other</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B3. Teachers have faith in the integrity of the school's administration</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B4. Even in difficult situations, teachers can depend on each other</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B5. The school's administration typically acts in the best interests of the teachers</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B6. Teachers can rely on the school's administration</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B7. Teachers trust each other</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B8. Teachers can count on parental support</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B9. Teachers think that most of the parents do a good job</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B10. Teachers trust the school's administration</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B11. Teachers are open with each other</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B12. Students can be counted on to do their work</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B13. Parents are reliable in their commitments</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B14. The school's administration does not tell teachers what is really going on</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B15. The school's administration does not show concern for teachers</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B16. Teachers have faith in the integrity of their colleagues</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B17. Teachers trust the parents</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B18. Teachers are suspicious of each other</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B19. When teachers tell you something you can believe it</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B20. Teachers do their jobs well</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B21. Teachers believe that students are competent learners</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B22. Teachers are suspicious of most of the school's administration actions</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B23. Teachers believe what parents tell them</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B24. The principal is competent in doing his or her job</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>B25. Teachers trust their students</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

In what extent is each of the following a problem at your school:

<table>
<thead>
<tr>
<th>Item</th>
<th>Not at all</th>
<th>Very Little</th>
<th>Some</th>
<th>Quite a Bit</th>
<th>Great Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1. Physical conflicts among students (fighting)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>C2. Gang activity</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>C3. Disorder in classrooms</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>C4. Disorder in hallways</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>C5. Threats of violence toward teachers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>C6. Students threatening other students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>C7. Students intimidating other students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>C8. Bullying</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>C9. Students in this school fear other students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>C10. Students in this school make fun of other students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
### Teacher Climate Survey 2008-09

*page 3*

<table>
<thead>
<tr>
<th>Please indicate your opinion on each item below by selecting a number for each item.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In your School:</strong></td>
</tr>
<tr>
<td>D1. Our school makes an effort to inform the community about our goals and achievements</td>
</tr>
<tr>
<td>D2. Our school is able to marshal community support when needed</td>
</tr>
<tr>
<td>D3. The interactions between faculty members are cooperative</td>
</tr>
<tr>
<td>D4. Teachers respect the professional competence of their colleagues</td>
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<tr>
<td>D5. The school sets high standards for academic performance</td>
</tr>
<tr>
<td>D6. Students respect others who get good grades</td>
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<tr>
<td>D7. The principal is friendly and approachable</td>
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<tr>
<td>D8. The principal puts suggestions made by the faculty into operation</td>
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<tr>
<td>D9. Parents and other community members are included in planning committees</td>
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<tr>
<td>D10. Community members are responsive to requests for participation</td>
</tr>
<tr>
<td>D11. Teachers help and support each other</td>
</tr>
<tr>
<td>D12. Teachers in this school exercise professional judgment</td>
</tr>
<tr>
<td>D13. Teachers are committed to helping students</td>
</tr>
<tr>
<td>D14. Academic achievement is recognized and acknowledged by the school</td>
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<tr>
<td>D15. Students try hard to improve on previous work</td>
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<tr>
<td>D16. The principal explores all sides of topics and admits that other opinions exist</td>
</tr>
<tr>
<td>D17. The principal treats all faculty members as his or her equal</td>
</tr>
<tr>
<td>D18. Teachers accomplish their jobs with enthusiasm</td>
</tr>
<tr>
<td>D19. Teachers &quot;go the extra mile&quot; with their students</td>
</tr>
<tr>
<td>D20. Teachers provide strong social support for colleagues</td>
</tr>
<tr>
<td>D21. The learning environment is orderly and serious</td>
</tr>
<tr>
<td>D22. Students seek extra work so they can get good grades</td>
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<tr>
<td>D23. The principal is willing to make changes</td>
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<td>D24. The principal lets the faculty know what is expected of them</td>
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<tr>
<td>D25. The principal maintains definite standards of performance</td>
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<tr>
<td>D26. Community members attend meetings to stay informed about our school</td>
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<tr>
<td>D27. Organized community groups (e.g., PTA, PTO) meet regularly to discuss school issues</td>
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<tr>
<td>D28. School people are responsive to the needs and concerns expressed by community members</td>
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<tr>
<td>D29. Teachers help students on their own time</td>
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<td>D30. Teachers take initiative to introduce themselves to substitutes and assist them</td>
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<tr>
<td>D31. Teachers waste a lot of class time</td>
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<tr>
<td>D32. Teachers volunteer to sponsor extra-curricular activities</td>
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<tr>
<td>D33. Teacher committees in this school work productively</td>
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<tr>
<td>D34. Teachers make innovative suggestions to improve the overall quality of our system</td>
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<tr>
<td>D35. Teachers voluntarily help new teachers</td>
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<tr>
<td>D36. Teachers volunteer to serve on committees</td>
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<tr>
<td>D37. Teachers arrive at work and meetings on time</td>
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<tr>
<td>D38. Teachers begin class promptly and use class time effectively</td>
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<tr>
<td>D39. Teachers give colleagues advanced notice of changes in schedule or routine</td>
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<tr>
<td>D40. Teachers give an excessive amount of busy work</td>
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</table>
Please indicate your opinion on each item below by selecting a number for each item.

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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<tbody>
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How many teachers in your school:

<table>
<thead>
<tr>
<th>Item</th>
<th>None</th>
<th>Some</th>
<th>Most</th>
<th>Nearly All</th>
<th>All</th>
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<tbody>
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Indicate the implementation level for the following Response to Intervention (RTI) components in your school:

<table>
<thead>
<tr>
<th>Item</th>
<th>None</th>
<th>Planning</th>
<th>Early</th>
<th>Some</th>
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The school's administration actively monitors the quality of teaching in this school:

1. The school's administration actively monitors the quality of teaching in this school
2. The school's administration is proactive and addresses support issues in the classroom
3. The school's administration knows what's going on in the classroom
4. Principals promote and nurture leadership among the staff
5. Principals promote shared decision-making
6. The school's administration takes a personal interest in the professional development of teachers
7. The school's administration focuses on student safety and student success

The principal is involved in making decisions:

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References


Vita

Jeffrey Charles Jackson

Birthdate  July 1, 1965

Birthplace  Portsmouth, VA

Education  2004-2009  The College of William and Mary
            Williamsburg, Virginia
            Doctor of Education

            1994-1996  Old Dominion University
            Norfolk, Virginia
            Master of Science Education Administration

            1983-1988  Old Dominion University
            Norfolk, Virginia
            Bachelor of Science in Secondary Education

Professional Experience  2008-Present  Middle School Principal
                          West Point Public Schools
                          West Point, Virginia

                          1999-2008  High School Assistant Principal/Instructional Specialist
                          York County School Division
                          Yorktown, Virginia

                          1996-1999  Physics and Chemistry Teacher/Technology Coordinator
                          York County School Division
                          Yorktown, Virginia

                          1989-1996  Physics and Chemistry Teacher
                          Poquoson City Public Schools
                          Poquoson, Virginia