Organizational citizenship behaviors of middle school teachers: A study of their relationship to school climate and student achievement

Marsha Moye Jurewicz

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ORGANIZATIONAL CITIZENSHIP BEHAVIORS OF MIDDLE SCHOOL TEACHERS: A STUDY OF THEIR RELATIONSHIP TO SCHOOL CLIMATE AND STUDENT ACHIEVEMENT

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
Marsha Moye Jurewicz
April 2004
ORGANIZATIONAL CITIZENSHIP BEHAVIORS OF MIDDLE SCHOOL
TEACHERS: A STUDY OF THEIR RELATIONSHIP TO SCHOOL CLIMATE AND
STUDENT ACHIEVEMENT

By Marsha Moye Jurewicz

Approved April 2004

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DEDICATION

This work is dedicated to my family. They are most deserving of my gratitude for their willingness to support me throughout this journey. Many years ago I began this program with the support of my parents and friends. Along the way I was blessed with a husband and three beautiful children. My father, James Moye, has been my best advocate and advisor. My mother, Noreen Olson, has been the nurturing support that I desperately needed along the road. My stepfather, Jimmy Olson, has encouraged me every step of the way. My husband, Andrew Jurewicz, has been my best friend and has helped me to persevere. My three children, Andrew, Abigail, and Schuyler, have tolerated more than required of them and have been so patient and gracious when I needed it most.

Words cannot express my appreciation for the patience of each of my loved ones and their taking care of the many aspects of my life while I completed this educational endeavor.
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ORGANIZATIONAL CITIZENSHIP BEHAVIORS OF MIDDLE SCHOOL TEACHERS: A STUDY OF THEIR RELATIONSHIP WITH SCHOOL CLIMATE AND STUDENT ACHIEVEMENT

ABSTRACT

In response to accountability issues mandated by federal and state legislation, educators are looking at various aspects within schools to identify relationships between school variables and student performance. This study addressed this issue by investigating the relationship between organizational citizenship behaviors of middle school teachers and student achievement, and organizational citizenship behaviors of middle school teachers and school climate within 82 middle schools throughout the state of Virginia. This study also explored the relative effects of student socio-economic status (SES) and organizational citizenship behaviors on student achievement. The Organizational Citizenship Behavior in School Scale (OCBS) was used to measure teacher organizational citizenship behavior. The School Climate Index (SCI) was used to measure school climate. The eighth grade Virginia Standards of Learning math and English Tests were the measurement tools for student achievement.

A significant relationship was found between organizational citizenship behavior (OCB) and student achievement in both English and math. There was also a significant relationship between OCB and school climate. Additional correlational analysis found significance between organizational citizenship behaviors and each of the four dimensions of school climate: collegial leadership, teacher professionalism, academic
press, and community engagement. Further stepwise regression analysis indicated that SES had a significant independent effect on student achievement in both math and English. Organizational citizenship behaviors had a significant independent effect on student achievement in English when controlling for SES.

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ORGANIZATIONAL CITIZENSHIP BEHAVIORS OF VIRGINIA MIDDLE SCHOOL TEACHERS: A STUDY OF THEIR RELATIONSHIP TO SCHOOL CLIMATE AND STUDENT ACHIEVEMENT
CHAPTER 1

Introduction

On January 8, 2002, President Bush signed into law the No Child Left Behind Act (NCLB) signaling increased expectations and demands for the nation’s public schools. Under this legislation, state education agencies are charged with the responsibilities of instituting accountability measures based on rigorous state standards. A fundamental response to the issue of accountability is the implementation of statewide accreditation models using formal student achievement measures. When schools or school districts fail to meet accreditation standards, NCLB maintains that the state education agency must respond with a corrective action plan that includes provisions for assigning technical assistance to the failing schools.

The NCLB Act strengthens Title I by requiring state agencies to implement statewide accountability systems based on state standards and annual testing for all students in grades 3 through 8. Likewise, NCLB mandates that assessment results be disaggregated into groups of poverty, race, disability, ethnicity, and limited English proficiency to ensure that no child is left behind. Schools and districts that fail to meet the benchmarks of statewide proficiency goals must participate in corrective action plans and possible restructuring efforts (No Child Left Behind [NCLB], 2002).

The Virginia Department of Education has responded with a corrective action plan that requires consultation teams to provide technical assistance to schools not reaching the established benchmarks. The Virginia corrective action model provides for a technical assistance team to evaluate and assist schools in four core areas: professional
development planning, use of time and scheduling, data analysis, and curriculum alignment. Anne Wescott (personal communication, March 17, 2002), Virginia’s Assistant Superintendent for Policy and Public Affairs, stated that the technical assistance process was crafted out of the research-based findings from effective schools literature. Findings from conventional effective schools research maintain that there are specific variables within schools that are positively linked to student achievement. A consolidation of those variables includes safe and orderly environment, instructional leadership, school mission, time on task, and parental involvement (Brookover, 1978; Bruttman & Carlson, 1983; Erbe, 2000; Hughes, 1995).

Many different approaches to educational research have offered various malleable conditions of schooling as contributors to student achievement. In the 1960’s, The Coleman Report formed the cornerstone of this tradition with a large scale, cross-sectional study concluding that student background and socio-economic status (SES) are the single most dominant predictors of student achievement (Scheerens, 2000). In response to these findings, school effectiveness research flourished during the 1980’s and 1990’s, becoming more sophisticated in the types of data used and the statistical modeling techniques applied (Goldstein & Woodhouse, 2000). This new approach to educational research focused on high-performing low SES schools and considered not only student “inputs” as indicators of success, but deliberated the implications of school variables as significant contributors to student achievement.

This traditional research has provided evidence supporting the notion that high performing schools display identifiable characteristics not found in their lower performing counterparts. Within this context of findings, educational researchers

While educational researchers may agree with the notion of consistent identifiable characteristics of effective schools, there is recent discussion regarding the complexity of improving schools and the dynamics of the organizational players. Simply implementing a five-step solution as a model for improvement is not enough to engage the organization in long-term systemic change (Goldstein & Woodhouse, 2000). School improvement is more than incorporating specific amenable characteristics to any school setting. The social context of schools and the behaviors of its participants must be considered as well.

Scheerens (2000) adds, “in the applied use of the school-effectiveness knowledge base, the broader organizational view of effectiveness can serve as the conceptual background for the development of educational indicators” (p.27). Research considerations now posit that social constructs are valuable contenders in the school effectiveness equation. When a school attains a particular level of excellence, it is not just the implementation of the traditionally identified indicators that generates success; it is the synergistic qualities of its members that enable the organization to improve (Hersch, 1985).

Reichardt (2001) created a framework that outlines the areas of opportunity for school improvement: (a) comprehensive pre-service education of future teachers and high standards, (b) recruitment and selection of only the best teachers, (c) in-service and continuing education for teachers, continuous feedback and monitoring, and (d) retention of the best teachers through creating and maintaining compensation and positive working
conditions. This framework sends a clear message that the behavior of school personnel is the fundamental catalyst for effectiveness and school improvement. Effective schools not only claim to be committed to educating children, but the faculty works together to make that vision a reality. Fullan (2000) also implicates the organization's members as critical factors to organizational capacity. The “human capital” is critical to school capacity and “no amount of professional development of individuals will have an impact if certain organization features are not in place” (p. 2). Fullan charges school leaders with the responsibility of building school capacity by working on relationships within the school and between school and community while maintaining a focus on program coherence and student learning. “Developing people, building commitment to change, and creating the conditions for growth in teachers” (Fullan, 2000, p. 2) are the driving forces behind effective schools.

For four decades, organizational climate has been recognized as an important factor for organizational effectiveness. Theorists Getzels and Guba (1957) and Katz and Kahn (1966) articulated the influence of organizational environments on their outputs. They maintain that organizations are open-systems, influenced by external variables and internal influences. Inputs, in forms of individual attributes, coupled with institutional properties and external factors transform these inputs into outputs. This theory popularizes the notion that organizations craft their own destinies. School climates are dependant upon the behaviors and perceptions of its members, and according to the research, organizational effectiveness is related to a positive climate. Furthermore, Katz and Kahn (1966) recognize the linkage between organizational effectiveness and the
employee's acts of cooperation and willingness to go beyond the formal role requirements of the job.

In 1988, Dennis Organ characterized this concept of employee behavior as organizational citizenship behavior (Smith, Organ, & Near, 1983). He and several colleagues began to study the concept of employee performance beyond the contractual duties in the private sector and found a link between organizational citizenship behaviors and job performance (Smith, Organ, & Near, 1983). A meta analysis has identified significant relationships between organizational citizenship behaviors and job performance (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). The definition used for the purpose of this study defines organizational citizenship behaviors as "the performance that supports the social and psychological environment in which task performance takes place" (Organ, 1997, p. 95).

Organizational citizenship behavior is a relatively new concept in educational research. Only a handful of studies have tapped into this contextual construct as a valuable facilitator of school effectiveness (DiPaola & Hoy, 2004; DiPaola & Tschannen-Moran, 2001; Los Angeles Unified School District, 2001). This new strand of educational research theorizes that teachers who are committed to helping students by practicing altruistic behaviors can influence the organizational effectiveness. The investigation of organizational citizenship behaviors in schools is primarily the work of DiPaola and colleagues. In exploring the notion of organizational citizenship behaviors of teachers, they have recently discovered a positive relationship between these behaviors and school climate and student performance in secondary education (DiPaola & Hoy, 2004; DiPaola & Tschannen-Moran, 2001).
The framework for this study originates from the current research of organizational citizenship behaviors in public schools. This study explores the relationship between organizational citizenship behaviors of middle school teachers and student achievement. It also investigates the relationship between organizational citizenship behaviors of middle school teachers and school climate.

Conceptual Framework

Schools are social systems. They operate as systems of social interactions characterized by unique cultures of clearly defined populations and complex networks of interrelationships that respond to internal and external forces (Getzels & Guba, 1957). The contextual differences in each organization provide for the capacity to change. Although schools are under the influence of national and state directives, the contradicting perspective of schools as semi-autonomous organizations is also true; this notion gives power to the schools, in that, they have control over their own effectiveness (Scheerens, 2000).

In this current era of accountability, school effectiveness is measured in terms of student performance on standardized tests. This increased emphasis on student achievement has educational researchers exploring identifiable characteristics that might be related to student performance. It is well documented that student socio-economic status is a powerful predictor of student success, but educational research is based on the notion that school variables are also contributors to student performance (Prosser, 1999; Slovacek, Kunnan, & Kim, 2002; Venezky & Winfield, 1979). For nearly four decades, conventional effective schools studies have consistently focused on specific variables.
related to student performance. The contextual characteristics of schools and behaviors of the organizational members are not typically included in this research.

The relationships and roles of organizational members are critical to the effectiveness of organizations (Getzels & Guba, 1957, Katz & Kahn, 1969). Researchers have documented that employees engaged in organizational citizenship behaviors perform tasks that are beyond the contractual expectations (Allison, Voss, & Dryer, 2001; Organ, 1988; Borman & Motowidlo, 1993). This behavior helps to cultivate an environment that supports task activities (Borman & Motowidlo, 1993).

Organizational citizenship behavior has been investigated for decades throughout the private sector, yet it is a relatively new concept in the K-12 research. Application of this construct to the school setting is limited to two large-scale studies that investigate the relationship of teacher citizenship behaviors to school climate and student achievement. (DiPaola & Hoy, 2004; DiPaola & Tschannen-Moran, 2001). The findings are compelling. Teacher organizational citizenship behavior has a significant relationship to both school climate and student performance. Theoretically, teachers who practice organizational citizenship behaviors spontaneously go the extra mile to work with students, collaborate with colleagues, and are willingly open to new teaching strategies and curricular methods (DiPaola & Hoy, 2004).

The process of cultivating organizational citizenship behaviors of teachers is not a simple one. Hersch (1985) argued that it is not each quality teacher in isolation that yields results; it is the synergy of the working force. Changing the behaviors of teachers requires changing the cultural norms of a school. In terms of school improvement, there is nothing that educational practitioners can do to change the SES of students, but
organizational behavior norms can be manipulated. With this, it is recommended that school improvement initiatives send a clear message that the social constructs of schools are fundamental to the school effectiveness equation.

School Improvement Conceptual Framework

Note. The model illustrates Student Achievement as the dependent variable. Each of the three independent variables, SES, Organizational Citizenship Behaviors, and School Climate are recognized as contributing factors to student achievement. Furthermore, the relationship shared between Organizational Citizenship Behaviors and School Climate should be explored within the school improvement framework.

Solid casing illustrates an unchangeable construct (SES).

Dashed casing illustrates a malleable construct (OCB, and Climate)
Statement of the Problem

The purpose of this study is to examine the relationships between organizational citizenship behaviors (OCB) of Virginia middle school teachers and school climate. It also explores the relationship between organizational citizenship behavior and student achievement. Organizational citizenship behaviors of teachers will be entered into regression analysis to account for student socio-economic status. Studies have shown that socio-economic status is a strong predictor of student achievement (Hoy, Sabo, et al., 1998; Hoy, Hannum, & Tschannen-Moran, 1998). The relationship between socio-economic status and student achievement cannot be overlooked if the framework for this study is to be of significant value to educators and educational researchers.

Traditional school variables such as safe and orderly environment, data analysis, time on task, leadership style, and curriculum alignment, have been consistently examined throughout the effective schools literature. However, limited research exists identifying the social constructs of schools. Research that investigates the value of organizational citizenship behaviors of teachers is minimal, but the findings are compelling (DiPaola & Hoy, 2004; DiPaola & Tschannen-Moran, 2001, Cantrell, et al. 2001).

The study explores the relationship of organizational citizenship behaviors of teachers to student achievement as measured by the eighth-grade Virginia Standards of Learning (SOL) Assessment. Tests in the areas of English and Math were the measurement tools for this research. This study also investigates the relationship between organizational citizenship behaviors of Virginia middle school teachers and school climate.
Research Questions

1. What is the relationship between organizational citizenship behaviors of teachers, as measured by the Organizational Citizenship Behavior in School Scale (OCBS), and student achievement on the eighth-grade Virginia Standards of Learning Mathematics and English: Reading, Research and Literature Tests?

2. What is the relationship between organizational citizenship behaviors, as measured by the Organizational Citizenship Behavior in School Scale (OCBS), and middle school climate, as measured by the School Climate Index (SCI), in Virginia middle schools?

3. What are the relative effects of student socio-economic status and organizational citizenship behaviors of teachers in middle schools on student achievement on the eighth-grade Virginia Standards of Learning Mathematics and English: Reading, Research, and Literature Tests?

Limitations of the Study

Generalizations of this research are limited due to the use of a convenience sample. However, the researcher made every effort to include a diverse sample of schools representing rural, urban, and suburban middle schools. This research was exclusively conducted in public middle schools in the state of Virginia. Only middle schools willing to participate were included in the study. All of the schools were self-selected and, therefore, findings cannot be generalized to every middle school in Virginia.

This research investigated the relationship between organizational citizenship behaviors of teachers and school climate and sought to find a relationship between OCB and student achievement after controlling for socio-economic status. It did not identify nor investigate the influences of other potentially meaningful variables such as school
size, class size, teacher student ratio, race and gender, and teacher quality characteristics (e.g. certification, tenure).

Student achievement measurement was limited to the Virginia Standards of Learning (SOL) tests. The tests are administered to eighth grade students on a yearly basis. The criterion referenced SOL tests have a certain level of accuracy and validity and are designed to test only the Standards of Learning as prescribed by the state of Virginia. This study is part of a larger middle school study currently being conducted by researchers at The College of William and Mary. Therefore, the timeline for data collection has been extended over a two-year interval. Furthermore, participants were surveyed during the 2003-2004 academic year, and SOL test data were applied from the previous school year. This limitation should not impact the findings considerably because it has been established that organizational climate tends to be relatively stable over time (Hoy, Hannum, & Tschannen-Moran, 1997).

Finally, the organizational citizenship behavior and school climate findings are measured through self-reporting surveys. The findings rely on the responses of individual teachers, understanding that their answers might be affected by the events of the particular day on which they completed the survey.

Definition of Terms

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

- Middle School: Those schools with grade configurations of 5-8, 6-8, and 7-8.
- Organizational Citizenship Behaviors: The “performance that supports the social and psychological environment in which task performance takes place” (Organ, 1997, p. 95). For purposes of this study, organizational citizenship behaviors will be measured
by the Organizational Citizenship Behavior in School Scale (OCBS), which measures organizational citizenship behaviors in terms of teacher behaviors that collectively benefit the organization and benefit the individuals of the organization (DiPaola & Tschannen-Moran, 2001). A sample item for this measurement is:

*Teachers help students on their own time.*

- **School Climate:** The set of internal and influential characteristics that distinguish one school from another. "The relatively stable property of the school environment that is experienced by participants, affects their behavior, and is based on their collective perceptions of behavior in schools" (Hoy & Hannum, 1997, p. 291). School climate is measured by the School Climate Index (SCI). The SCI consists of the following four dimensions of school climate:

  - **Collegial Leadership:** The behavior of the principal that is considered supportive, considerate, and helpful. Additionally, the principal sets expectations and preserves standards of performance (DiPaola, & Tschannen-Moran, 2001; Hoy, Hannum, & Tschannen-Moran, 1998). A sample item for this measurement is: *The principal treats all faculty members as his or her equal.*

  - **Teacher Professionalism:** Teacher professionalism is teacher behavior that reflects respect to colleagues and commitment to students. Teachers are committed to the teaching task and have cooperative relations with one another. (DiPaola, & Tschannen-Moran, 2001; Hoy, Hannum, & Tschannen-Moran, 1998). A sample item for this measurement is: *Teachers provide strong social support for colleagues.*
• Academic Press-The school has high expectations for achievement. The learning environment is orderly and serious. Teachers believe in the students’ potentials and ability to achieve. Students work hard to attain goals and respect those who perform. (DiPaola, & Tschannen-Moran, 2001; Hoy, Hannum, & Tschannen-Moran, 1998). A sample item for this measurement is: *The school sets high standards for academic performance.*

• Community Engagement-The extent to which the school is actively engaged with its community and is able to count on community involvement, interest, and support (Tschannen-Moran & DiPaola, 2002). A sample item for this measurement is: *Community members are responsive to requests for participation.*

• Student Socio-Economic Status (SES): Represented by the percentage of students who participate in the federal free and reduced lunch program. Data are provided by the Virginia Department of Education.

• Student Achievement: The 2002-2003 and 2003-2004 student assessment scores on the Virginia Standards of Learning tests. This study used data from the eighth-grade Mathematics and English: Reading, Research, and Literature Tests.

• Standards of Learning (SOL) Tests: Criterion referenced assessments that have been developed in Virginia to measure the content knowledge and mathematical processing of public school students. This study used data from the eighth-grade Mathematics and English: Reading, Research, and Literature Tests. Data are provided by the Assessment and Reporting Division of the Virginia Department of Education.
CHAPTER 2

Literature Review

This literature review presents the theoretical and conceptual frameworks for School Climate and Organizational Citizenship Behavior and provides implications for school improvement efforts designed to improve student achievement.

Effective Schools Research

There are many definitions of school effectiveness. Different nuances are provided by various perspectives of what “effectiveness” actually is. A popular and precise description of the term states that school effectiveness is the performance of the school organization expressed by the output of the school, which in turn is measured in terms of average achievement of the students (Scheerens, 2000). The objective of identifying the elements of effective schools has been a tradition of educational research for decades. In an attempt to target specific amenable variables contributing to school effectiveness and student performance, many theorists and researchers have recognized that schools are complex and dynamic organizations that answer to both external and internal influences.

Theoretical Foundations

The theory of organizations as social structures maintains that organizations operate within the context of internal and external relationships. Herbert Simon (1957) stated that organizational structures must recognize the predictable, observable, and frequent interactions within the hierarchy of the organization. Getzels and Guba (1957) applied “social systems” theory to schools and formulated a model identifying the structural elements that contribute to the functioning of organizations. Their conceptual
framework recognizes organizations are interactions of the nomothetic, or institutional, elements and the idiographic, or individual, elements. The theory postulates that regular and routine patterns of organizations are institutionalized in terms of defined expectations, normative duties, role variability, and role definition (Hoy & Miskel 1982). This nomothetic element recognizes an institution comprised of dominant roles with expectations aimed at meeting the goals established by the system. The second element, the individual, introduces the personalities and psychological aspects of behaviors within a social system. This idiographic element identifies individuals comprised of unique personalities with complex needs in terms of security, acceptance, and expression (Hoy & Miskel, 1982). Together, the two elements provide a basis for explaining organizational effectiveness based on the dynamics between roles, defined by the organization’s expectations, and personalities, defined by individual’s needs.

Theorists Katz and Kahn (1966) crafted a similar theory stating that organizations are indeed influenced and dependant upon dynamics within the organization and external forces. They explored open-systems theory and established that there is a transformation process that occurs within the organization based on interactions of elements internal and external to the organization (Hoy & Miskel, 2001). Open-systems theory supports the notion that outputs are the transformations of internal and external interactions, and inputs are part of the working entity.

The relationships and patterns of interactions between subsystems within the organization and reciprocal influences between the organization and its environment have provided educational researchers with a foundation to explore possibilities of social constructs as contributors to school effectiveness. Transactions between internal
organizational elements, coupled with reciprocal influences between the organization and its environment, provide researchers with opportunities to investigate school effectiveness in terms of school capacity to impact student achievement.

Socio-Economic Status and Student Achievement

Historically, educational research has consistently supported the notion that no matter how academic performance is measured, "differences in socio-economic background of the family lead to significant differences in student achievement" (Hoy & Miskel, 2001, p.299). The 1966 Coleman Report provided influential findings suggesting that not only are student background variables the most significant predictors of academic success, but also that school and classroom variables have limited impact on student performance.

Although many studies support findings that suggest school wide variables play contributing roles to student performance, student socio-economic status continues to be significantly linked to student achievement (Brookover, 1978; Hoy & Hannum, 1997; Slovacek, Kunnan, & Kim, 2002). Researchers Slovacek, Kunnan, & Kim (2002) argued that socio-economic status will continue to influence student performance, but teacher credential, school size, high mobility rates, and percentages of English language learners also contribute to student performance on standardized tests. Their study of California's most at-risk students compares California charter schools to non-charter public schools, each serving a population of 75 percent or more free or reduced lunch-eligible students. The study revealed that for each percentage point of the student body that was considered low-SES, there was a 1.2-point decline in Stanford Achievement Test scores in charter schools and a 2.6 point decline in non-charter schools. These findings suggest that SES is
a strong predictor of student achievement, but within the context of low SES schools, student achievement can be influenced by other school wide variables. Many educational studies that yield similar results (Barth, et al. 1999; Bulach, Malone, & Castleman, 1995; Gregoire & Algina, 2000; Hoy, et al., 1997; Hughes, 1995; and Wang, Haertel, & Walberg, 1997). These studies detail the strong correlation between SES and student achievement but also embark upon other school wide variables that show a significant relationship to academic performance.

**Effective Schools Research Variables**

In response to the Coleman Report, educational studies began to focus on the conditions within school organizations that influence student performance. Conventional educational research was crafted on the notion that schools can make a difference in student performance. The prevalent design for these studies compared high-performing high-poverty schools characteristics with those of their lower-performing counterparts. Educational researchers (Brookover, 1978; Buttram & Carlson, 1983; Chance, 1991; Erbe, 2000; and Hughes, 1995) unveiled consistent school-wide factors exclusively found within the high performing schools. Although student socio-economic (SES) background has always proven to be an indisputable predictor of student performance, social-systems theory supports the numerous findings that suggest, when controlling for SES, specific school conditions serve as contributors to student achievement and school effectiveness. Bruttman and Carlson (1983) summarize the conditions as:

(a) safe and orderly school environment, (b) clear school mission, (c) instructional leadership of the principal, (d) high expectations for student achievement, (e)
student opportunity to learn and time on task, (f) frequent monitoring of student progress, and (g) supportive home-school relations. (p. 3)

These conditions suggest that although schools cannot control inequities of society, they can influence student achievement through the performances and practices of the school’s organizational members. During the 1970’s educational researchers focused on these narrow independent conditions, but few studies focused on the comprehensive and social qualities of school organizations (Prosser, 1999). A shift in focus from more narrow independent variables emerged, and organizational variables linked to such terminology as ethos, culture, and climate began to highlight educational research literature (Prosser, 1999).

School Climate

Theoretically, effective schools research takes the position that schools are indeed valuable contributors to student achievement and that identifiable characteristics can be manipulated and generated in any school (Hughes, 1995). Chance (1991) articulated three major assumptions to be made of the effective schools research: (1) some schools are effective at teaching poor and minority students as measured on standardized tests, (2) successful schools consistently exhibit key characteristics that correlate with student achievement, and (3) these characteristics can provide a basis for school improvement practices in other schools. In terms of conceptualizing school climate as a construct related to organizational effectiveness, we need to ask, “what are the conditions for fostering positive school climate?” and “is it a variable that is easily manipulated to satisfy requirements of school improvement?”
It is critical to identify the malleable features of school functioning that generate desirable effects on student achievement (Scheerens, 2000). The contextual differences at the school level should be explored as impetus or resilience to climate reform initiatives. It is critical that educational planners operationalize the research-based conditions and focus on specific intended effects appropriate for each school. It is also necessary to carefully delineate the characteristic variables for school improvement within the context of each individual school. Fullan’s (2001) warning, “Don’t generalize prematurely from successful cases” (p. 54) is a reminder that schools are social systems, people run them, and how they do it matters (Hersh, 1985).

Scheerens (2000) proposed that there are “antecedent conditions” which serve as “avenues for improving effectiveness” (p. 28). Antecedent conditions are the social contexts of schools and serve as variables in the overall effectiveness equation. Reichardt (2001, ¶ 2) points out that even teacher quality is “technically complex” and must be placed in the context of each school. “Each educational system is composed of a unique set of elements arranged in a unique constellation of relationships” (Betts, 1992, p.39). Betts (1992) asserted that improvement of quality of schools requires a design change that not only optimizes the interrelationships of the organization but also between the school and its outside elements. These interactions demonstrate that if schools are going to effectively change, then the organizational members and their relationships must be recognized as the conduit for improvement.

Measuring School Climate

In the 1960’s, Halpin and Croft originally conceptualized organizational climate as a profile of openness or closed-ness. Climate was the “personality” of the organization.
A school's personality was scored on a continuum from being open, or supportive and genuine, to being closed, or aloof and inconsiderate (Hoy & Hannum, 1997; Hoy & Miskel, 2001; Mikkelsen & Joyner, 1982; Prosser, 1999). The original Organizational Climate Description Questionnaire (OCDQ) identified six basic clusters of profiles that spanned a continuum from open to closed climates. An “open” climate is described by functional flexibility, where Esprit, Thrust, and Consideration are high; Disengagement, Hindrance, Production Emphasis, and Aloofness are low; and Intimacy is average. A “closed” climate is differentiated by functional stringency, where Hindrance, Disengagement, Production Emphasis, and Aloofness are high, and Intimacy is average (Ochitwa, 1973). Critics of the OCDQ cited overlap between the measured elements and sparked a comprehensive attempt to refine its questions and measured constructs. Three new and more concise adaptations were developed for elementary, middle, and secondary school levels. The new OCDQ-RE, OCDQ-RM, and OCDQ-RS provide results that map principal-teacher, teacher-teacher, and teacher-student relationships on a continuum from open to closed (Hoy & Miskel, 2001).

Although there is consensus on the impact of school climate on student achievement (Barthe et al. 1999; Erbe, 2000; Mikkelsen & Joyner, 1982; Wang et al. 1997), there is little agreement as to the meaning of school climate. Brookover (1978) referred to school climate as student self-efficacy and student perceptions of others' behaviors. Mikkelson (1982) defined climate using Halpin's open and closed concept. The terms organizational “personality” or “feel” of the organization is also a popular conceptualization throughout the climate literature (Hoy & Miskel, 2001; Prosser, 1999; Mikkelson, 1982).
Closely associated with the concept of organizational climate is the concept of "organizational health". Matthew Miles (as cited in Ochitwa, 1973) suggested 10 criteria for assessing the health of an organization that fall under the three dimensions of Task Needs, Maintenance Needs, and Growth and Development Needs. The subgroups of the "healthy" organization are closely linked to dimensions in climate; they include conditions such as morale, goal focus, and autonomy (Hoy, Tarter, & Kottkamp, 2001). Further investigation of both organizational climate and organizational health constructs has led to a more factored conceptualization (Hoy & Sweetland, 2000; Tschannen-Moran & Hoy, 1997). The more recent School Climate Index (SCI) reports four dimensions of school climate: Community Engagement, Collegial Leadership, Teacher Professionalism, and Academic Press.

These dimensions also describe a "healthy" climate (Hoy & Hannum, 1997; Tschannen-Moran & Hoy, 1997). The dimensions are characterized as follows:

1. Collegial Leadership refers to the open, supportive, and friendly behavior of the principal. The principal establishes high expectations but does not burden teachers with bureaucratic tasks and busy work.

2. Academic Press is the press for academic excellence. It is the collective nature of teachers setting goals, students responding accordingly, and principal resourcefulness and influence to accomplish these goals. Principals are willing to exert their influences with superiors in support of teachers and instructional practices. Environments are orderly and serious.

3. Community Engagement is the harmonious relationship between parents and community members with school personnel, practices and policies. Community
members are actively engaged with the school and are responsive when called upon for assistance.

4. Teacher Professionalism characterizes respectful and supportive teacher behavior towards colleagues and students. Teachers are friendly, enthusiastic about their work, and committed to helping students. Teachers are committed to their school and their students.

The School Climate Index explores many of the factors found throughout the effective schools literature, but abbreviates the constructs to four more concentrated and applicable dimensions.

For purposes of this study, school climate is defined as “the relatively stable property of the school environment that is experienced by participants, affects their behavior, and is based on their collective perceptions of behavior in schools” (Hoy & Hannum, 1997, p. 291). This definition encapsulates the four dimensions of collegial leadership, academic press, community engagement, and teacher professionalism discussed throughout the school climate research and assessed by the School Climate Index.

Collegial Leadership

One of the more acknowledged climate variables associated with student achievement is leadership behavior (Buttram, Mikkelsen & Joyner, 1982; Venezky & Winfield, 1979). Many studies recognize the importance of the school principal, but emphasize different leadership characteristics with respect to student achievement. Academic focus, shared decision making, promotion of school vision, provision of
resources for teachers, and participative leadership style are often associated as principal characteristics throughout the literature (Cantrell, et al., 2001).

Effective schools research commonly attributes specific leadership characteristics to student performance. Venezky and Winfield (1979) found two significant variables linked to student achievement to be (a) an achievement oriented principal, and (b) building-wide instructional efficiency including “adaptability and consistency” of instruction defined as regularly monitoring students and employing appropriate instructional strategies (p.4).

Chance et al. (1991) concluded that the differences between the most successful schools and their least effective counterpart are evident in the attitudes and actions of the administrators and teachers. Based on findings of the effective schools movement, administrators and teachers in one school district in Oklahoma embarked on an extensive school improvement project addressing each of the following five correlates of effective schools: (a) strong instructional leadership, (b) high expectations for all students, (c) positive and orderly environment, (c) instructional focus, and (d) regular monitoring of student performance. School Researchers from the University of Oklahoma revealed that successful school reform is evident in schools where principals carried an “overwhelming” workload carefully placing focus on instruction (Chance, 1991, p.2). The results identified the role of the principal as the primary catalyst for changing the environment.

Leadership behaviors are an important contribution to school climate. Hoy, Sabo, et al. (1997) found that schools with open principals had significantly higher levels of student achievement in math \((r=.52, p<.01)\), reading \((r=.54, p<.01)\), and writing \((r=.47,\)
The study also found that open teacher behaviors influenced student achievement in math ($r = .42, p < .01$), reading ($r = .40, p < .01$) and writing ($r = .42, p < .01$). Socio-economic status was the most significant predictor of student achievement. SES coupled with school climate variables accounted for nearly 83 percent of the variance in math, nearly 81 percent of the variance in reading, and 75 percent of the variance in writing.

Hallinger and Heck (1996) suggest that leadership that "makes a difference is aimed toward influencing internal school processes that are directly linked to student learning" (p.39). Their meta analyses of 40 studies of principal effects suggested that although supported throughout the educational research literature, principal effects on student achievement are not as linear as previously proposed. However, implications for improving school climate primarily extend to school leaders. Principals set the tone, and faculty responds accordingly. Empowerment, collective efficacy, trust, academic press, collegial behaviors, and cooperative learning environments are driven by leaders and enforced through the conduits of teacher behavior.

Hoy and Hannum (1997) found similar results in their study of 86 middle schools in New Jersey. The study explored dimensions of organizational health in terms of collegial leadership, resource support, academic emphasis, institutional integrity, principal influence and teacher affiliation. Although organizational health was found to be related to student achievement in the areas of math ($r = .61, p < .01$), reading ($r = .58, p < .01$), and writing ($r = .58, p < .01$), collegial leadership, or principal behaviors, was unexpectedly found to have no independent impact on student achievement. Hoy and Hannum justify the principal's role as being one of importance but less contributory to student performance as initially considered. Principals are one step removed from student
learning, and therefore, principals' influences, although valuable, are interposed by other facets of the organization.

The National Center for Education Statistics (2000) examined school variables most closely linked with student achievement after controlling for SES and found that the normative cohesion (principal support and collective shared beliefs) is positively related to teachers' perceptions of self influence at the elementary, middle, and secondary school levels (McLaughlin, Ross, & Gili, 2000). Accordingly, next to school size and class size, teacher's influence (perception of influence over school policy and practices) is related to student achievement in middle schools and secondary schools. There was no statistical significance at the elementary school level.

Academic Press

Many educational studies seek to identify contributions of school climate to student performance in terms of the intensity of academic focus or press for academic excellence (Brookover, et al., 1978; Mikkelsen & Joyner, 1982; Butram & Carlson, 1983; Hughes, 1995; Hoy & Hannum, 1997, Tschannen-Moran & Hoy, 1997, Wang, Haertel, & Walberg, 1997; Erbe, 2000). Brookover (1978) completed a study of school climate and student achievement that explored fourth grade students' reading and mathematics scores in 68 schools in Michigan. After accounting for socio-economic status and racial composition of the schools, the researchers found that teacher expectations for student performance and teacher judgments of student capabilities were most significantly related to both mathematics and reading achievement. In this study, academic futility, or student sense of nonsupport by school personnel, is most significantly correlated to student achievement (r =-.77, p< .01). The researchers argue
that the lack of support by teachers and principal, regardless of student efforts and abilities, leads to greater academic futility and decreased student performance.

The previously mentioned Hoy and Hannum (1997) study of 86 middle schools in New Jersey concluded that academic emphasis ($\beta = .31$, $p < .01$) and student socio-economic status ($\beta = .57$, $p < .01$) were the only two variables that made separate contributions to student achievement in mathematics when achievement was regressed on the climate variables. Researchers agree, “teachers can improve the performance of students who normally exhibit average achievement by setting and communicating high expectations” (Stronge, 2002, p.46).

Community Engagement

Parental support and community engagement have frequently been acknowledged throughout the school climate research. Wang, Haertel, and Walberg (1997) found that a climate conducive to parental support is influential in student achievement and state that “active engagement of family members involved in parent-developed workshops, providing tutoring, assisting teachers in classrooms or after school activities” (p.4) is associated with improved student performance and attendance, and decreased student dropout rates and delinquency rates. Findings indicated that second to classroom management, parental support was most significantly related to student learning.

Additionally, The 1998 Education Trust study found that 81 percent of high-performing low-SES schools indicated dedication to practices of comprehensive systems of monitoring student data and early support systems that focus primarily on parental involvement campaigns related to curricular activities and remediation interventions (Barth et al., 1999). Further research from this study adds that schools with a strong focus
on challenging the traditional role of parents as "fundraisers," show higher student performance than those who do not (Barth et al., 1999, p. 8). Survey findings revealed that top performing high-poverty schools focus on changing instructional practice, monitoring student progress regularly, and focusing on efforts to involve parents in helping students meet standards.

Parent, teacher, and student involvement is acknowledged throughout the literature as being a powerful indicator of school climate. The parental involvement dimension was significantly correlated with student achievement when factored against the subscales of leadership, order, instruction, expectation, and collaboration (Bulach, Malone, & Castleman, 1995). The considerable findings of collective involvement of community, teachers, and parents contribute to our awareness of the influences people have on organizational climate and student performance. Through accountability, community members and parents can influence schools and can have a positive impact on school climate and ultimately student achievement.

**Teacher Professionalism**

Teacher professionalism is characterized as teacher commitment to students and engagement in the teaching task (DiPaola & Tschannen-Moran, 2001). Teachers who exemplify this professionalism perpetuate an open climate of warmth, friendliness and support for one another. (Hoy, Hannum, & Tschannen-Moran, 1998; Hoy, Sabo, et al., 1997). In this age of accountability, assessment, and federal legislation, teachers must now respond to high stakes testing by cultivating a learning environment conducive to high standards.
Findings consistently suggest that teacher characteristics and behaviors are linked to student achievement (Darling-Hammond, 2000, Reichardt, 2001; Sanders, 1998; Stronge, 2002). Stronge (2002) described teacher effectiveness to include the characteristics of the “teacher as an individual, teacher preparation, classroom management, and the way a teacher plans, teaches, and monitors student progress” (p. viii). Sanders (1998) argued that academic performance is most affected by teacher quality. Sanders based his assessments on the value-added approach, stating that each student, independent of SES, is capable of achieving academic progress no matter what the baseline performance might be. Essentially, schools and teachers should be adding “value” to every student’s performance. Teacher quality, defined by Reichardt (2001), is a “teacher’s ability to help students reach high standards” (p. 2). According to Sanders (1998) and Darling-Hammond (2000), the single most influential factor in student performance is teacher quality.

Teacher behaviors are measured not only in terms of student achievement, but also in terms of positive school climate and interrelationships among colleagues. School climate is a reflection of all facets of the organization, specifically the behaviors of its members. Effectiveness reveals itself in the form of student achievement as well as in the attitudes and behaviors of the collective organizational group. Hoy and colleagues (1997) explored the relationship between school climate variables and student achievement in terms of open and closed principal and teacher behaviors. Their findings suggest that although socio-economic status appears to be the most important predictor of student achievement in this study, schools with open teachers also had significant levels of student achievement in the areas of math ($r = .42, p < .01$) reading ($r = .40, p < .01$), and
writing \((r = 0.42, p < 0.01)\). Schools with open principal behaviors also had significant levels of student achievement in math \((r = 0.52, p < 0.01)\), reading \((r = 0.54, p < 0.01)\), and writing \((r = 0.47, p < 0.01)\).

Another study by Hughes (1995) revealed that staff morale, principal effectiveness, and teacher-principal relations are significantly related to student achievement. The study of 66 West Virginia elementary schools used analysis of survey data, observations, and interviews to characterize school effectiveness domains. After controlling for SES, high performing schools were characterized by low teacher turnover rates, faculty collaboration, high staff morale and accountability, teacher commitment, strong teacher belief that children can achieve, student pride and respect, remediation services, instructional leadership, and supportive principal. Furthermore, a second phase of the study compared lower achieving schools with their higher achieving counterparts. Findings revealed a significant difference between the scores of paired schools on all scales of staff morale, staff commitment, and job satisfaction.

**School Climate and Affective Behaviors**

Climate is a reflection of all facets of the school. It reveals itself in the form of student achievement as well as the attitudes and behaviors of the collective behaviors of the organizational group. Interactions and relationships are not only reflected in student performance, but they are the fuel for overall school climate and job satisfaction.

Hersh (1985) identified three powerful facts that emerge from the effective schools literature: (1) people run schools, and how they do it primarily determines a school's effectiveness; (2) quality, not quantity, of resources matters; and (3) curriculum, the what and how it is taught is critical. Considering Hersh’s deductions of the findings,
the second and third notions are easily transferable to the conditions of effectiveness supported by the research. Hersh’s first notion, however, adds another dimension to the application of this research-based knowledge by supporting the notion of contextual variables as critical elements in school effectiveness. Hoy and Hannum’s (1997) definition of school climate recognized that the climate is actually a reflection of the perceptions of its members. Accordingly, Hersh proposes that the synergistic behaviors of the people within the organization are the very qualities that create the climate.

School climate is the product of the teachers’, leaders’ and students’ behaviors and perceptions. Research suggests that teacher efficacious behavior influences school climate and impacts student achievement (Goddard, 2001; Tschannen-Moran & Hoy, 1998). Goddard (2001) postulated that teachers’ collective efficacy influences group performance while impacting student achievement. Bandura defines collective efficacy as “the concern with performance capability of a social system as a whole” (as cited in Goddard, 2001, p. 467). Collective efficacy is associated with the tasks, levels of effort, persistence, thoughts, stress levels, and achievement of groups. It is based on Bandura’s social cognitive theory that perceived capabilities generate results. “People’s shared beliefs in their collective power to produce desired results is a key ingredient of collective agency. A group’s attainments are the product not only of shared knowledge and skills of the different members, but also of the interactive, coordinative, and synergistic dynamics of their transactions” (Bandura, 2001, p. 6). Goddard (2001) adds that if the majority of teachers in a school believe they can successfully raise student achievement, the behavioral and normative environment will then perpetuate this belief and teachers will, consequently, persevere to raise student achievement. In a study conducted in 91
elementary schools, findings demonstrated that the collective efficacy of teachers is significantly and positively related to differences between schools in student achievement, even when schools means were adjusted for students’ prior achievement and socio-economic status (Goddard, 2001).

Additional research also provides evidence that an environment of trust is related to a positive school climate in schools. Tschanne-Moran (2000) attributed the construct of trust to benefiting school climate, specifically collegial leadership and teacher professionalism. Data collected from a sample of 86 middle schools, including responses from 2,741 teachers, indicated that 40 percent of the variance in teacher trust in colleagues is explained by the four dimensions of climate. Teacher professionalism ($\beta = 0.635$, $p<0.01$) is found to be the only independent contribution to trust in colleagues. Nearly 60 percent of the variance of faculty trust in the principal is explained by the four dimensions of climate, with collegial leadership ($\beta =0.677$, $p<0.05$) making the most significant contribution (Tschanne-Moran & Hoy, 1998). Trust in organizations is found to foster quality and open communication between its members. Trust for the principal and a colleague is linked to organizational citizenship, the readiness of employees to go beyond their essential and required duties. “Fostering an atmosphere of trust pays significant dividends for schools. Improved effectiveness, communication, organizational citizenship and student achievement are worthy ends” (Tschanne Moran, 2001, 314).

Student academic motivation is also impacted by school climate variables (Gregoire & Algina, 2000; Maya 2001). Maya (2001) found that factors within the school environment influenced students’ motivation to achieve in a study of over 14,790 students in 57 public and private high schools. The study characterized school
environment as (a) school climate and (b) teacher’s support and expectations. Climate was defined as the relationships “among and between students and teachers and students’ sense of belonging and safety” (p.5). In this study, the largest effect on student achievement motivation was parental support followed by teacher support and expectations –variables closely related to the dimensions of community engagement and teacher professionalism. Gregoire and Algina (2000) also found a relationship between student motivation and climate variables. After controlling for individual and school background characteristic differences, academic motivation was also negatively linked to the “authoritarian” climate described in a study analyzing data collected from 977 schools as part of the National Educational Longitudinal Study of 1988. Gregoire and Algina described an authoritarian climate to reflect a lack of warmth and responsiveness, conducive to the students’ lack of “academic engagement”.

With each of the affective consequences of organizational factors, there is an acknowledgment of reciprocation between the variables. Collective efficacy increases student achievement, and, in turn, student achievement affects the perceptions of capabilities of members of the organization. A faculty’s trust in a principal and colleagues affects climate, but also generates behaviors that engender trustworthiness (Tschannen-Moran, 2001). One of the most comprehensive studies in educational research, conducted by the National Center for Educational Statistics (NCES) (1994), qualified that “normative cohesion” of teachers generates a better school climate. Normative Cohesion constitutes the unity, commonality, and cooperation of the teachers in a school. The message from these analyses proposes that steps to increase school
climate will always go hand-in-hand with improving the normative behaviors and attitudes of the collective organizational members.

Howard, Howell, and Brainard (1987) identified eight variables of the learning climate for determining the success a school will have in attaining goals of effectiveness and satisfaction: continuous academic growth, trust, respect, high morale, cohesiveness, opportunities for input, school renewal, and consideration. School climate must address the issue of human needs if it is to be effective. Interactions and relationships are not only the reflection of student performance, but they are the fuel for overall school climate and job satisfaction. No school can have a healthy or positive climate if the students and teachers are not being provided with the aforementioned fundamentals. School climate and achievement are mutually dependent upon one another and improving the conditions for a positive school climate requires changing the behaviors of the organizational members. See Table 1 for summary of climate findings.

Improving School Climate

Although historically there have been various methodological practices and different climate measurements, it is widely acknowledged that there is a linkage between school climate and student achievement (Brookover, 1978; Mikkelsen & Joyner, 1982, Erbe, 2000; Hoy & Hannum, 1997; West, 1985). “School climate scores can be just as helpful as the socio-economic status of students in predicting student achievement” (Bulach, Malone & Castleman, 1995, p. 23). Encouraging research reveals that there is a positive relationship between school climate and achievement, but also there is no significant relationship between school climate and socio-economic status (Bulach, Malone, & Castleman, 1995). The power to change school climate lies with the members
of the organization, and student background factors should not influence the expected
responsibility of doing so.

Facilitating change in school climate calls for understanding of the unique
complexity and contexts of school organizations. One major qualifier in the recent school
climate literature is the management of innovations or improvement in light of the
context of change and identification of a school’s current climate. The complexity of the
school climate concept affords us with opportunities to analyze the many nuances of
organizational characteristics and members’ behaviors.

As an open-system, a school operates under a series of environmental forces, legal
mandates and policies. The nature of the open-systems organization lends itself to
conflict of interests and ideas and yet maintains that the organizational members must
represent a consensus, working towards a common goal. Consequently, substantial
amounts of systems energies are consumed in maintaining relationships ensuring that
conflict does not impair organizational effectiveness (Betts, 1992). Improvement in
quality of schools requires a design that optimizes the relationship among the elements
but also between the school and its environment (Betts, 1992). The nature of school
climate research aims to provide insight into the underpinnings of organizational
effectiveness. School climate is characterized by the actions, relationships and
perceptions of school members and constituents. Research findings describe a
relationship between the people within the organization and organizational effectiveness.
Within the context of employee behaviors, there is growing interest in citizenship type
behaviors that lead to improved outcomes.
Table 1

Summary of School Climate Studies

<table>
<thead>
<tr>
<th>Researcher(s)</th>
<th>Climate Measures</th>
<th>Collegial Leadership</th>
<th>Teacher Professionalism</th>
<th>Community Engagement</th>
<th>Academic Press</th>
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<tr>
<td>Venezky &amp; Winfield, 1979</td>
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<td>NCES, 1994</td>
<td>National Database of 20 states, scores translated into z scores</td>
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<td>Hughes, 1995</td>
<td>Diagnostic Assessment of School and Principal Effectiveness, interviews, and observations</td>
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<th>Teacher Professionalism</th>
<th>Community Engagement</th>
<th>Academic Press</th>
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<td>Gregoire &amp; Algina, 2000</td>
<td>Findings from research base, National Educational Longitudinal Study</td>
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<td>Tschannen-Moran, 2000</td>
<td>Collaboration Survey</td>
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Note. • denotes dimension of school climate studied. Each author characterizes the dimensions using various descriptions and definitions.
Organizational Citizenship Behaviors

A review of management research reveals optimizing outputs has been a highlight of administrative theory for over a century. As early as the 1900's we see evidence of optimal output theory with Taylor, Gantt, and Gilbreth. The concept of Scientific Management explores redefining jobs and duties in order to increase production. In the 1930's and 1940's Max Weber describes an ideal of bureaucracy as the new administrative theory. His descriptions of organizational impersonality and the establishment of formal rules and regulations are not reflective of the organizational management trends of the 21st century, but they express a means for a more efficient organization. Organizational management history reveals that understanding the means for maximizing production has and always will be a primary focus for research.

Chester Barnard prescribed efficiency to be the product of effective communication between administrator and employee. His "zone of indifference" theory expressed a range within every individual in which one is willing to comply. He believed that optimizing and increasing the "zone of indifference" within each employee was the key to effectiveness (Courpasson, 2003). Barnard concluded that an organization has three essential elements: (a) communication, (b) members willing to contribute, and (c) a common purpose (Courpasson, 2003). Members' willingness to contribute is not necessarily prescribed in an employment contract, but is a valuable resource for organizational effectiveness nonetheless. The focus shifted from the technical elements of organizational management to the personal functions of its employees.
Dennis Organ (Organ, 1988) responded to this inquisition with a theory prescribing job satisfaction as related to job performance. He proposed that a satisfied worker is a more productive worker. His conceptualization of these “organizational citizenship behaviors” (OCB) is widely researched today in the business community. In redefining his original description, Organ (1997) explains OCB to be the “performance that supports the social and psychological environment in which task performance takes place” (p. 95).

Many researchers have identified different variables and dimensions of OCB. Podsakoff et al. (2000) examined the literature and grouped the seven common themes in the following categories: (a) helping behaviors (altruism), b) organizational loyalty, (promoting the organization to outsiders), (c) individual initiative (conscientiousness), (d) civic virtue (constructive involvement with the organization’s affairs and politics), (e) sportsmanship (tolerating inconveniences), (f) organizational compliance (respect for rules and structure), and (g) self development (voluntarily improving knowledge and skills). These seven variables are presented in a variety of taxonomies throughout the OCB literature in the form of five condensed factors: altruism, civic virtue, conscientiousness, courtesy, and sportsmanship (Allison, Voss, & Dryer, 2001; Govindarajulu, Daily, & Bishop, 2003; Podsakoff et al., 2000; Yen & Niehoff, 2002).

Interest in the topic has sparked further analyses of the dimensions and re-conceptualization of the taxonomical constructs. The transference of OCB with respect to business management to more diversified fields such as human resources management, industrial and labor functions, strategic management, international business, and now
educational foundations, has led to several developments in the literature (Podsakoff et al., 2000; Zhong & Farh, 2003).

Existing conceptualizations of OCB derive mostly from three perspectives. The first model reflects Katz and Kahn's (1966) notion of "extra-role" behaviors as discretionary and spontaneous. OCB is considered performance beyond role requirements for accomplishments of organizational betterment. These actions are illustrated through cooperative activities with colleagues, gestures of protection of the organization, creative improvement ideas, and self-training (Zhong & Farh, 2003). Katz and Kahn articulated their open-systems theory by defining the roles of organizational members in terms of expectations of roles. Organ (1997) proposed that we avoid linking "extra-role" requirements to OCB because a leader might very well have expectations of extra-role duties beyond the minimal requirements, and in this case the extra-roles are no longer "extra"—they become requirements (Organ, 1997).

The second conceptualization pioneered by Smith et al. (1983) described a compact two-factor conceptualization of the constructs: altruism and compliance. Altruistic behaviors are described as being discretionary actions that aid a specific person or small group on task-related functions. Compliance behaviors tend to be more impersonal, but contributory to the organization's goals nonetheless. One example of compliance as defined by Smith is respect of policies and procedures as seen in punctuality and attendance of certain employees (DiPaola & Tschannen-Moran, 2001, Podsakoff et al., 2000; Zhong & Farh, 2003).

A third perspective on the nature of OCB interprets Greek philosophy on the concept of citizenship as described in 1991 by Van Dyne and colleagues (as cited in
Zhong & Farh, 2003). This perspective identifies the variables of "loyalty" and "boosterism".

Subsequent research proposes there is much overlap between the facets of OCB. Researchers vary in their approaches to categorizing the dimensions of OCB. Studies reveal that there is still argument over the dimensions and taxonomies of OCB. The two-category taxonomy offered by Williams and Anderson (1991) categorizes organizational citizenship behaviors as either directed toward the organization (OCBO) or directed toward others (OCBI). A one-dimensional model suggested that organizational citizenship behaviors should be grouped together within one category because each behavior shares a commonality of discretion and reciprocity (Zhong & Farh, 2003). Researchers argue that because organizational citizenship behaviors that are directed towards individual interests could be different from those behaviors directed to investment in the organization, motives and consequences should be evaluated (DiPaola & Tschannen-Moran, 2001, Zhong & Farh, 2003).

In the case of public education, DiPaola and Tschannen-Moran (2001) discovered through factor analysis that OCB indicators fall within one dimension. Schools are service organizations and that behavior which tends to support others within the organization, whether it is task-oriented or people-oriented, also supports organizational goals. Teachers who cooperate with others, share instructional ideas with colleagues, and help other teachers with task-oriented details, are clearly beneficial to the organization's goals of serving children as well (DiPaola & Tschannen-Moran, 2001).

Numerous research findings support the values of organizational citizenship behaviors in the workplace (Bateman & Organ, 1983; DiPaola & Hoy, 2004; DiPaola &
Tschannen-Moran, 2001; Yen & Niehoff, 2002). A majority of the OCB studies acknowledge the importance of determining how to achieve those variables that are empirically linked to increasing organizational effectiveness. Research findings have identified several antecedent conditions of OCB that fall into four categories: employee characteristics, task characteristics, organizational characteristics, and leadership behaviors (Podsakoff et al., 2000). Research reveals that different forms of citizenship behavior have different consequences. Therefore, theory concerning antecedents provides insight into the many consequences of OCB. Antecedents to employee engagement in OCB have included such determinants as reward affiliation, intellectual stimulation, affiliation motive, and power motive (Barbuto, Brown, Wilhite, & Wheeler, 2001; Haworth & Levy, 2001; Moorman, 2003; Niehoff, 2000; Podsakoff et al., 2000; Rioux & Penner, 2001).

Performance Indicators of Organizational Citizenship Behaviors

Numerous empirical studies have indicated positive relationships between and OCB and employee performance rates (Allison, Voss, & Dryer, 2001; Organ, 1997; Podsakoff et al., 2000; Yen & Niehoff, 2002). Yet by the year 2000, out of over 160 reported studies, only five attempted to test whether the behaviors influenced organizational effectiveness (Podsakoff et al., 2000). An overwhelming number of OCB studies sought to identify the causal concepts or antecedents of OCB. A framework of understanding why some employees are willing to perform beyond their expected duties while others are not is valuable in terms of organizational improvement initiatives. Organ (1997) recognized job satisfaction as being directly linked to task performance. Borman and Motowidlo (1993) identified two types of performance observed in organizational
citizenship behaviors: task performance and contextual performance. It is suggested that employees must move beyond the performance of tasks that simply support the technical core of the organization. Rather, workers should perform tasks that accompany support of the broader organizational, social, and psychological environment in which the technical core must function (Borman and Motowidlo, 1993). These contextual behaviors include interpersonal support and job dedication.

In most organizations it is not difficult to recognize those employees who practice organizational citizenship behaviors. What becomes a challenge is providing a formal evaluation system inclusive of these functions. Job performance is evaluated through a variety of measures. In schools, teacher performance is typically measured in terms of instructional techniques, compliance with school policies and functions, and student outcomes. The pioneering conceptualization of organizational citizenship behaviors stresses that, when aggregated over time and across people, employee organizational citizenship behaviors influence organizational effectiveness (Bolino & Turnley, 2003; Organ, 1997). Organ (1997) mentioned that only the collectivity of performances over time must be considered; the occasional helping behaviors of employees do not substantiate enhanced organizational effectiveness.

In a meta-analyses conducted by Podsakoff and colleagues (2000), findings support the notion that OCB dimensions are consistently related to performance evaluations and reward recommendations. Since the time of the pioneering study of OCB related to job satisfaction (Bateman & Organ, 1983), new studies attempt to link organizational citizenship behaviors to performance and effectiveness. Mackenzie, Podsakoff, and their colleagues (as cited in Podsakoff et al., 2000) have studied the
influences of OCB on job performance for nearly two decades. Their findings overwhelmingly suggested that OCB is accountable for high performance evaluations.

When the independent domains of OCB are analyzed through multiple regression analysis, there is a clear picture of which dimensions of OCB are in the forefront for contributing to performance. Allison, Voss, & Dryer (2001) determined that organizational citizenship behaviors are positively correlated to efficiency in banks in Taiwan. The large-scale study of over 250 participants concluded that, although altruism, civic virtue, conscientiousness, courtesy, and sportsmanship are found to be significant, altruism is most statistically significant in terms of efficiency (Yen & Niehoff, 2002). The altruistic behaviors of employees actually proved to be more efficient, as the need to spend additional funds to optimize output diminished.

While OCB variables have been investigated in the private sector for a number of years, they are now also finding their way in educational research studies. Although limited, new educational research initiatives have started to recognize the values of student and teacher OCB engagement. Organizational citizen behaviors are linked to higher education institutions through two studies targeting values in terms of teacher organizational citizenship behaviors and student organizational citizenship behaviors (Allison, Voss, & Dryer, 2001; Armenio, 2003).

Allison, Voss, and Dryer (2001) identified a positive correlation with organizational citizenship behaviors of teachers and student productivity ($r=.24, p <.001$) and organizational citizenship behaviors of students and GPA ($r=.21, p <.004$). Similarly, significant findings were described regarding relationships between the five familiar dimensions of OCB and student productivity and GPA.
Another study of university teachers' engagement with OCB illustrates a positive correlation between OCB and student professional motivation and student performance on all dimensions used in analyses (Armenio, 2003). Dimensions used in this study included: (a) participatory behavior (encouragement of student participation), (b) practical orientation (relates content to real life), (c) pedagogical conscientiousness (high standards for achievement, well-prepared), and (d) courtesy (respectful to students). Participatory behavior was found to be related to student performance ($r=.25, p<.001$). OCB practical orientation was related to student motivation ($r=.36, p<.001$) and student performance ($r=.22, p<.001$). Pedagogical conscientiousness was related to student motivation ($r=.31, p<.001$) and student performance ($r=.36, p<.001$). Teacher courtesy was related to student motivation ($r=.17, p<.001$) and student performance ($r=.25, p<.001$).

**OCB and Student Achievement**

A growing number of educational researchers have begun to investigate the nature of social constructs in schools. School climate concepts illuminate the need to further investigate the phenomenon of contextual influences. School climate is directly linked to student achievement and teacher and student behaviors. Therefore, identifying the conditions conducive to positive school climate is critical to the advancement of school improvement research. Three studies have recognized the value of organizational citizenship behaviors in the k-12 setting. Two studies have sought to investigate a relationship between OCB and student achievement. DiPaola and Hoy (2004) conducted a study of 97 high schools in Ohio. They measured OCB using the Organizational Citizenship Behavior in School Scale to correlate faculty OCB with student achievement.
in math and English as measured by the Ohio Department of Education, twelfth grade state assessments. The researchers found that when controlling for SES, faculty engagement in organizational citizenship behavior is positively linked to both reading (partial $r = .28, p<.01$) and math scores (partial $r = .30, p<.01$). Additionally, the researchers explained that in a simultaneous regression equation, SES ($\beta = .33, p<.01$) and organizational citizenship behaviors ($\beta = .28, p<.01$) were most significantly related to achievement in math. Scores for reading achievement were almost as strong for both SES ($\beta = .23, p<.01$) and organizational citizenship behaviors ($\beta = .27, p<.01$). This study found that faculty organizational citizenship has approximately the same impact on high school mathematics and reading scores as the effects of student socio-economic status.

The Los Angeles Unified School District also conducted its own analyses on the relationship between teacher OCB and student achievement (Cantrell, et al., 2001). The 2000 study is based on an evaluation of eleven local school districts to include 21 elementary schools, seven middle schools, and seven high schools. Although this study does not indicate SES accountability, care was taken to randomly select schools from various demographics. The authors randomly sampled 35 principals, ten percent of their certified teaching staff, one percent of parents, and one percent of students. The researchers explored five domains of effective schools through this endeavor: (a) leadership, to include instructional leadership and trust; (b) quality of teaching; (c) school climate and culture, measured by safe and orderly campus, teacher organizational citizenship behaviors, collegiality, and academic focus; (d) data-driven decision making, attending to several measures of school performance; and (e) site level commitment to school improvement.
Findings suggest that school effectiveness, in terms of student achievement, is correlated to each dimension in this study. Closer examination of the third dimension highlights the relationship between teacher organizational citizenship behaviors and student performance specifically. Teacher citizenship behavior is based on the extent to which teachers are helping, participatory, and exhibiting constructive behaviors that go beyond formal job descriptions. Based on the Stanford Achievement Test (SAT) in Reading, the results are significant. The "preponderance" of schools where teachers exhibit citizenship behaviors achieved performance target gains at a rate of 64 percent. Schools with less than half of its teachers exhibiting organizational citizenship behaviors attained performance target gains at a rate of only 26 percent. Findings also support that school climate and culture are "healthy" when teachers treat each other with respect, set high expectations for learning, and when students are recognized for their accomplishments (Cantrell, et al., 2001).

OCB and School Climate

Given the literature on both school climate and organizational citizenship behaviors, it is only reasonable to conceptualize the two constructs as sharing a connection in terms of school effectiveness. DiPaola and Tschannen-Moran (2001) sought to identify the correlation between the two constructs. Organizational citizenship behaviors were weighed against the four dimensions of school climate as indicated on the School Climate Index Survey. Findings in two separate studies were supportive of a relationship between the two constructs. The researchers collected data for the first study from a sample of 664 teachers in 42 public schools in Ohio and Virginia, including elementary, middle, and high schools. The second sample consisted of 1,120 teachers in...
97 public high schools throughout Ohio. The studies collectively assisted in the development of the Organizational Citizenship Behavior in School Scale and identified a one-dimensional concept of OCB within the context of schools. Findings from both studies demonstrated significant findings.

Results from the first sample showed that in schools where principals exhibit a more collegial leadership style, organizational citizenship behavior of teachers was more evident ($r = .67, p< .01$). Teacher professionalism was also highly correlated with organizational citizenship behaviors ($r = .92, p< .01$). Academic press ($r = .81, p< .01$) and community engagement ($r = .74, p< .01$) were positively correlated with organizational citizenship behaviors as well.

Findings from the second study were similar for three dimensions of school climate. Organizational citizenship behavior of teachers was again most positively correlated to teacher professionalism ($r = .83, p< .01$). A positive relationship was also found between OCB and academic press ($r = .63, p< .01$). A small but significant relationship was depicted between collegial leadership and OCB ($r = .23, p< .01$). Findings for this sample differ from the first sample population for the dimension of community engagement. For the second sample of high schools, community engagement was not significantly related to organizational citizenship behaviors ($r = .12$). The researchers explain this by suggesting that the nature of the distinguishable relationships between parental involvement and school operations is different at the elementary, middle, and secondary levels. Parents and community members might be more engaged in school relations during the younger school age years of their children. The authors
suggest further exploration of each dimension should be researched in the k-12 setting, with particular interest in the dimension of community engagement.

The more recent applications of organizational citizenship behaviors in the k-12 setting are minimal, but findings are critical for investigating the effective functioning of schools. Teachers in effective schools "go well beyond the minimum expectations of formal job descriptions everyday. School organizations count on teachers doing so and could not achieve their goals if teachers limited their contributions only to those specified in their job descriptions" (DiPaola & Tschannen-Moran, 2001, p.433). See Table 2 for summary of OCB findings.

**OCB, Achievement, and Climate**

Educational research has provided a basis for the exploration of school wide variables that contribute to student achievement. School Effectiveness studies afford the educational community with opportunities to examine the artifacts of specific school variables regarding student achievement. The literature consistently points to organizational members as key contributors to student achievement (Darling-Hammond, 2000; Erbe, 2000; Fullan, 2001; Hersh, 1985; Wang, Haertel, & Walberg, 1997).

The concept of organizational citizenship behaviors was crafted out of the observations that some employees work harder than others, and organizations benefit from those respective performances (Niehoff, 2003; Organ, 1998; Yen & Niehoff, 2002). Organizational management findings provide evidence that organizational citizenship behavior is related to performance and overall organizational effectiveness, yet limited research exists delineating the variable of effectiveness in relation to this construct within public schools. Two major studies in educational research, have focused primarily on the
concept of organizational citizenship behaviors and provided compelling findings that these behaviors are significantly related to student achievement and school climate (DiPaola & Hoy, 2004; DiPaola & Tschannen-Moran, 2001).

Effective schools research acknowledges that school climate is a reflection of the actions, attitudes, and perceptions of its members and is positively related to student achievement. School climate research consistently links this construct to school effectiveness but not necessarily in terms of teacher “helping” behaviors that extend beyond contractual obligations. Educators are in the business of teaching children. The unanimous goal is to implement practices that lead towards this endeavor. The findings throughout the literature suggest that through exploration of social systems theory, open-systems theory, school climate research, and organizational citizenship research there is a clear message that the roles of organizational members are influential to organizational effectiveness.

This study aims to further explore the underpinnings of school effectiveness and adds to the limited body of knowledge concerning the relationships of organizational citizenship behaviors of teachers and other school variables. Understanding the value of these social contexts of schools is critical for gaining appreciation for the capacity building required for not only reform but for creating norms of continuous improvement.
Table 2

Summary of Organizational Citizenship Behavior Studies

<table>
<thead>
<tr>
<th></th>
<th>OCB Measures</th>
<th>Sample</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bateman &amp; Organ, 1983</td>
<td>Author generated 30-item, 7-point scale</td>
<td>82 non academic employees in administrative departments at a university</td>
<td>OCB of employees is positively related to job satisfaction.</td>
</tr>
<tr>
<td>Allison, Voss, &amp; Dryer, 2001</td>
<td>Author generated 17-item questionnaire</td>
<td>211 undergraduate students enrolled in business</td>
<td>OCB of students is positively correlated with student productivity and GPA on all five dimensions analyzed.</td>
</tr>
<tr>
<td>Cantrell, et al., 2001</td>
<td>Author generated survey questions included in phone interview</td>
<td>11 school districts to include 35 principals, 10% teachers, 1% parent, &amp; 1% student population</td>
<td>OCB of teachers is positively correlated to Reading gains on the Stanford Achievement Test</td>
</tr>
<tr>
<td>Yen &amp; Niehoff, 2002</td>
<td>22-item scale adapted from instrument developed by Farh et al, 1997</td>
<td>251 employees of 26 retail bank in Taiwan</td>
<td>OCB not related to customer service quality but dimension of altruism is positively correlated to efficiency.</td>
</tr>
<tr>
<td>Armenio, 2003</td>
<td>Author generated 7-point likert scale.</td>
<td>242 college graduates (from variety of colleges and occupations)</td>
<td>OCB of university teachers is positively correlated to student professional motivation on four dimensions analyzed.</td>
</tr>
<tr>
<td>DiPaola &amp; Hoy, 2004</td>
<td>OCBS –15 likert items, 4-pt. Scale. Teacher survey.</td>
<td>97 high schools in Ohio</td>
<td>Faculty OCB positively related to math and reading scores of high school students</td>
</tr>
</tbody>
</table>
CHAPTER 3

Methodology

The purpose of this quantitative study was to determine if a relationship exists between organizational citizenship behaviors of Virginia middle school teachers, as measured by the Organizational Citizenship Behavior in School Scale (OCBS), and student achievement in mathematics and English, as measured by the eighth grade Standards of Learning assessment. It also sought to determine if a relationship exists between organizational citizenship behaviors of Virginia middle school teachers, as measured by the Organizational Citizenship Behavior in School Scale (OCBS), and the four dimensions of school climate, as measured by the School Climate Index (SCI). Results of this research help contribute to the organizational citizenship literature that links such behaviors to school effectiveness.

Due to federal directives of The No Child Left Behind legislation and state corrective action planning initiatives, schools are faced with accountability issues that are unprecedented. Researchers are constantly seeking to find effective variables that cultivate gains in student performance. Organizational citizenship behavior research provides the impetus that school leaders need to highlight the necessary responsibilities and roles of teachers. This study focuses on teacher characteristics that will enable middle school leaders to better understand the influences of teachers’ behaviors.

Research Questions

1. What is the relationship between organizational citizenship behaviors of teachers, as measured by the Organizational Citizenship Behavior in School Scale (OCBS), and
student achievement on the eighth-grade Virginia Standards of Learning Mathematics and English: Reading, Research and Literature Tests?

2. What is the relationship between organizational citizenship behaviors, as measured by the Organizational Citizenship Behavior in School Scale (OCBS), and middle school climate, as measured by the School Climate Index (SCI), in Virginia middle schools?

3. What are the relative effects of student socio-economic status and organizational citizenship behaviors of teachers in middle schools on student achievement on the eighth-grade Virginia Standards of Learning Mathematics and English: Reading, Research, and Literature Tests?

Research Design

This study is a quantitative correlational study. The research investigated a possible relationship between organizational citizenship behaviors (OCB) of Virginia middle school teachers and student achievement on the Virginia Standards of Learning eighth grade assessments in English and mathematics. It also explores the relationship between organizational citizenship behaviors of middle school teachers and school climate. The Pearson r statistic was employed to determine the correlational relationships between the constructs. Multiple regression analysis was used to assess the relative effects of organizational citizenship behaviors and socio-economic status on student achievement.

Participants and Setting

This study is part of a larger study of middle schools conducted by researchers at The College of William and Mary. The study investigated the relationships between the constructs in 82 middle schools throughout the state of Virginia. For this study, the
researcher collected data from 16 middle schools and merged those data with an existing database of 66 schools. Each of the 82 schools was self-selected based on their willingness to participate in the study. Schools were also diverse in size, socio-economic status, and racial composition. The sample included 28 percent urban schools, 36 percent suburban schools, and 36 percent rural schools. A total of 1,096 teachers were surveyed. In some instances, all middle schools within a school district were part of the study. The unit of analysis is the school, so data were aggregated at the school level because climate and organizational citizenship behaviors are characteristics of the school. With permission of the principal, researchers disseminated the surveys during a regularly scheduled faculty meeting at each selected school.

Instrumentation

Organizational Citizenship Behaviors

The Organizational Citizenship Behavior in School Scale (OCBS) and the School Climate Index (SCI) were used to survey the teachers in each school. The OCBS and SCI were incorporated into one survey form. One third of each faculty at an individual school completed the OCBS and SCI survey and the remaining two-thirds of the teachers completed one of two additional forms used for further research. Halpin (1959) demonstrated that the average scores on descriptive questionnaire items that are computed on the basis of five to seven respondents yield relatively stable results. In this study, care was taken to survey faculties that were comprised of at least 20 members.

The OCBS measure is a 15-item Likert-type scale, which contains questions with five choices ranging from Never to Always. The OCBS measures the degree to which the teachers engage in organizational citizenship behavior. The instrument was tested in a
pilot study in Virginia and Ohio with two samples of 664 teachers in 42 elementary, middle and secondary schools and 1,210 teachers in 97 high schools (DiPaola & Tschannen-Moran, 2001). The reliability of the OCBS is consistently high, at .87 or higher (DiPaola & Tschannen-Moran, 2001). The construct validity is also supported in two factor analyses (DiPaola & Tschannen-Moran, 2001). A sample item from this instrument is: *Teachers voluntarily help new teachers.* Appendix A presents this measure.

**School Climate**

School climate is measured by the School Climate Index (SCI). The survey measures the four dimensions of school climate: collegial leadership, teacher professionalism, academic press, and community engagement. The SCI contains 5-point scaled questions with anchors ranging from Never to Always. The instrument was tested in a pilot study of 97 high schools. Reliability for each factor is as follows: Collegial Leadership, .86; Teacher Professionalism, .92; Academic Press, .85; Community Engagement, .87. Sample items for each dimension include: Collegial Leadership, *The principal puts suggestions made by the faculty into operation;* Teacher Professionalism, *Teachers provide strong social support for colleagues;* Academic Press, *Students respect others who get good grades;* and Community Engagement, *Parents and other community members are included on planning committees.* Appendix B presents this Index.

**Student Achievement**

Student Achievement is measured by the state developed Virginia Standards of Learning test. Data are drawn from two of the eighth grade tests: mathematics and English: Reading, Research and Literature. This assessment is chosen as the means for analysis because The Standards of Learning (SOL) tests are administered to every eighth
grade middle school child in the state of Virginia on a yearly basis. SOL test scores are aggregated at the school level using mean scaled scores. The test questions are multiple choice items. The SOL test is considered valid as confirmed by the Content Review Committee process. Reliability for the SOL grade eight tests is determined using the Kuder-Richardson Formula 20 (KR-20). The values are as follows: Mathematics reliability = .92 and English reliability = .88. These reliability scores are for the Core 1 test, which is the primary test given to a vast majority of the students in Virginia (Hambleton, et al., 2000).

Data Collection

Organizational Citizenship Behavior and School Climate

This research is part of a larger study of middle schools being conducted by researchers at The College of William and Mary. Three separate survey forms were used to collect three different data sets related to social processes in schools. One-third of each faculty completed one form inclusive of the OCBS an SCI instruments. The remaining two-thirds filled out the two alternate surveys.

From September 2003 to January 2004, school districts were contacted initially by telephone for approval to conduct the study. Details of the research, consent forms, and sample surveys were sent to each district office (see appendixes A, B, C and D). Appropriate district office administrators and school principals were informed of the purposes of the research. Once approval was granted, principals were individually contacted to seek approval for surveying the teachers during a regularly scheduled faculty meeting. Confidentiality of schools and respondents was ensured. Arrangements were then made to have the researcher administer the surveys to the teaching staff during a
regularly scheduled faculty meeting. Completion of each survey took approximately 10 minutes. Participants in each of the 16 schools were surveyed from October 2003 to April 2004. Additionally, 2001-2002 data were collected from the existing database of 66 schools.

*Student Achievement*

The data for eighth grade student achievement as measured by the Virginia Standards of Learning mathematics and English: Reading, Research, and Literature tests were collected from the Assessment and Reporting office of the Virginia Department of Education. Mean scores from 2003 SOL data were used for the 16 schools that participated during the 2003-2004 academic year. Corresponding mean scores from 2001 SOL data were used for the 66 schools that were included as the existing database.

*Student Socio-Economic Status*

The data for the socio-economic status of the participating schools were collected from the Virginia Department of Education. The socio-economic status of the schools was based on the percentage of students who receive free or reduced lunch. Each of the 82 participating schools used free and reduced lunch data appropriate to the time of their participation in the study.

*Data Analysis*

Organizational citizenship behaviors of teachers, school climate, and student achievement data were aggregated at the school level. Descriptive and inferential analyses were used to provide correlational and multiple regression analysis. The Statistical Package for the Social Sciences (SPSS) was used for analyses. Mean scores, standard deviations, and range were calculated for organizational citizenship behaviors,
overall SCI score, and for each of the four climate dimensions: collegial leadership, teacher professionalism, academic press, and community engagement. Correlations using Pearson r statistics were computed to determine relationships between organizational citizenship behaviors and student achievement and organizational citizenship behaviors and climate dimensions. Multiple regression analysis was used to identify independent relationships and relative effects of the constructs of organizational citizenship behaviors, student socio-economic status, and student achievement scores. Table 3 presents the data analysis techniques.

Table 3

Data Analysis

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is the relationship between organizational citizenship behaviors of teachers, as measured by the Organizational Citizenship Behavior in School Scale (OCBS), and student achievement on the eighth-grade Virginia Standards of Learning Mathematics and English: Reading, Research and Literature Tests?</td>
<td>Correlations</td>
</tr>
<tr>
<td>2. What is the relationship between organizational citizenship behaviors, as measured by the Organizational Citizenship Behavior in School Scale (OCBS), and middle school climate, as measured by the School Climate Index (SCI), in Virginia middle schools?</td>
<td>Correlations</td>
</tr>
<tr>
<td>Research Question</td>
<td>Data Analysis</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>3. What are the relative effects of student socio-economic status and organizational citizenship behaviors of teachers in middle schools on student achievement on the eighth-grade Virginia Standards of Learning Mathematics and English: Reading, Research, and Literature Tests?</td>
<td>Multiple Regression</td>
</tr>
</tbody>
</table>

**Generalizability**

Although this was not a random sample, it was a diverse sampling of 82 middle schools throughout the state of Virginia. This study does not include private schools and, therefore, results may not be generalized to schools other than public middle schools within the state of Virginia that meet similar demographic characteristics.

**Ethical Safeguards**

The Human Subjects Institutional Review Board at The College of William and Mary approved this project in September 2003. Authorization was given to conduct research in middle schools throughout state of Virginia. Principals signed consent forms ensuring them of anonymity regarding the results. Participants were given the option to opt out from completing the survey or to leave blank any item(s) that they were uncomfortable answering. Principals were provided with the opportunity to receive the results of the OCBS and SCI findings. Specific teachers’ responses were not identifiable. Results from schools are being published collectively; therefore, specific schools are not identifiable.
CHAPTER 4

Analysis of Data

This study investigated the relationship between organizational citizenship behaviors of middle school teachers and student achievement. It also examined the relationship between organizational citizenship behaviors of middle school teachers and school climate. Further analyses assessed the relative effects of organizational citizenship behaviors and student socio-economic status on student achievement.

The Organizational Citizenship Behavior in Schools Scale (OCBS) was used to measure citizenship behaviors of teachers. The School Climate Index (SCI) was used to measure the four dimensions of school climate. The OCBS and SCI were administered as one form to teachers during a regularly scheduled faculty meeting. There were three forms in total with one-third of the teachers completing the OCBS and SCI form and the remaining two-thirds of the faculty completing the alternate forms to be used in future research. The survey was completed by 1,096 participants from 82 Virginia middle schools from throughout the state. The researcher administered the surveys to teachers in 16 middle schools from September 2003 through April 2004. Data were combined with an existing database of 66 schools in which schools were surveyed during the 2001-2002 academic year. The sample included 28 percent urban schools, 36 percent suburban schools, and 36 percent rural schools. Data for student achievement were collected from the eighth grade mathematics and English Virginia Standards of Learning (SOL) Tests. Corresponding data from the 2003 SOL assessment were used for analyses with schools surveyed during 2003-2004. Likewise, data from the 2001 SOL test administration were used for schools surveyed during the 2001-2002 academic year. The socio-economic
status of participating schools was based on the percentages of students receiving free and reduced lunches. These data were obtained from The Virginia Department of Education and were collected for the corresponding school year at the time of survey dissemination.

Findings

The three research questions were answered using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, identified in Table 4, were computed for organizational citizenship behaviors, collective school climate, each of the four dimensions of school climate, and student achievement in mathematics and English. Data were aggregated at the school level. The results were determined by averaging the scores for each item within each factor. The mean scores for organizational citizenship behaviors and each of the four dimensions of school climate were a result of an average of all of the responses for the items. The mean score for the school climate index was determined by averaging each of the four dimensions: collegial leadership, academic press, community engagement, and teacher professionalism. Teachers responded to each item on the Organizational Citizenship Behavior in School Scale (OCBS) and the School Climate Index (SCI) by completing one likert-type survey based on a five-point scale ranging from Never (number one) to Always (number five).

The mean scores for the mathematics and English eighth grade SOL tests are results of the mean English and mathematics scores for each of the 82 participating schools. The SOL scores were calculated by converting raw scores into standard scores that range from 200 to 600. A score of 400 is considered a passing score, and a score of 500 is considered an advanced passing score on the SOL tests.
Table 4

*Descriptive Data*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Citizenship Behaviors</td>
<td>3.66</td>
<td>.19</td>
<td>3.27</td>
<td>4.16</td>
</tr>
<tr>
<td>School Climate Index</td>
<td>3.74</td>
<td>.28</td>
<td>3.01</td>
<td>4.37</td>
</tr>
<tr>
<td>Collegial Leadership</td>
<td>3.90</td>
<td>.39</td>
<td>2.89</td>
<td>4.58</td>
</tr>
<tr>
<td>Teacher Professionalism</td>
<td>3.92</td>
<td>.25</td>
<td>3.14</td>
<td>4.44</td>
</tr>
<tr>
<td>Academic Press</td>
<td>3.56</td>
<td>.30</td>
<td>2.76</td>
<td>4.41</td>
</tr>
<tr>
<td>Community Engagement</td>
<td>3.56</td>
<td>.41</td>
<td>2.41</td>
<td>4.40</td>
</tr>
<tr>
<td>English SOL Test</td>
<td>431.37</td>
<td>29.66</td>
<td>364.3</td>
<td>503.1</td>
</tr>
<tr>
<td>Math SOL Test</td>
<td>422.69</td>
<td>26.03</td>
<td>366.9</td>
<td>494.3</td>
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</table>

*Note.* The range is one through five for Organizational Citizenship Behaviors and the School Climate Index (including each of the four dimensions of Collegial Leadership, Teacher Professionalism, Academic Press, and Community Engagement). The range is between 200 and 600 for the English and Math SOL Tests.
First Research Question

What is the relationship between organizational citizenship behaviors of middle school teachers, as measured by the Organizational Citizenship Behavior in School Scale (OCBS) and student achievement on the eighth-grade Virginia Standards of Learning Mathematics and English: Reading, Research and Literature Tests?

The data show that there is significant positive correlation between teacher organizational citizenship behaviors and student achievement on the eighth-grade Virginia Standards of Learning English: Reading, Research and Literature Test ($r = .35$, $p < .01$) with organizational citizenship behaviors explaining 12 percent of the variance in student achievement in English. Similar significance is also found in the correlation between organizational citizenship behaviors of teachers and student achievement on the eighth-grade Virginia Standards of Learning Mathematics Test ($r = .35$, $p < .01$) with organizational citizenship behaviors explaining 12 percent of the variance in student achievement in Mathematics. These findings indicate that the greater the amount of teacher organizational citizenship behavior, the higher the level of student achievement in both English and math. Table 5 provides data that report findings for the first research question.

Second Research Question

What is the relationship between organizational citizenship behaviors, as measured by the Organizational Citizenship Behavior in School Scale (OCBS) and middle school climate, as measured by the School Climate Index (SCI) in Virginia middle schools?
The data indicate that there is a significant relationship between organizational citizenship behaviors of teachers and school climate ($r = .78$, $p < .01$). Further analyses reveal significance between organizational citizenship behaviors and each of the four dimensions of school climate: collegial leadership, teacher professionalism, academic press, and community engagement. Of the four climate factors, organizational citizenship behavior is most highly correlated with teacher professionalism ($r = .85$, $p < .01$) and academic press ($r = .75$, $p < .01$). Both community engagement ($r = .63$, $p < .01$), and collegial leadership ($r = .41$, $p < .01$) share significant relationships with organizational citizenship behaviors as well. Table 5 provides data that answer the second research question. These findings suggest that within schools where teacher helping behaviors are practiced more frequently, there will more likely be supportive teachers (teacher professionalism), warm and friendly principals (collegial leadership), strong instructional focus (academic press), and connectedness to the community and parents (community engagement).

**Third Research Question**

*What are the relative effects of student socio-economic status and organizational citizenship behaviors of teachers in middle schools on student achievement on the eighth-grade Virginia Standards of Learning Mathematics and English: Reading, Research, and Literature Tests?*

Data show that socio-economic status (SES) had a significant and negative independent effect on student achievement in the English ($\beta = -.59$, $p < .01$) and mathematics ($\beta = -.75$, $p < .01$) Virginia SOL eighth grade tests. These statistics reveal that schools in this study with a higher proportion of student receiving free or reduced-
priced lunches had a lower level of student achievement in English and math. Data also indicate that when factoring for SES, organizational citizenship behavior has a significant and independent effect on student achievement in English ($r = .22$, $p < .05$). Multiple regression analysis reveals there is no significant independent effect of organizational citizenship behaviors on math achievement when factoring for SES ($r = .15$) In schools where teachers typically go out of their way to help students on their own time, these behaviors have an independent and significant effect on student achievement in English. The lack of independent significance to math achievement opens the door for future research. In the DiPaola and Hoy (2004) study, findings indicated a significant independent relationship to both English and math for an Ohio high school sample.

The sample of middle schools in this research identified different results that will be discussed further in Chapter 5. The data show that organizational citizenship behaviors and SES can explain 44 percent of the variance for student achievement in English and 63 percent of the variance in student achievement in math. Table 6 reveals findings for regression analysis for organizational citizenship behaviors and achievement on the eighth grade English SOL test. Table 7 shows results for regression analysis for organizational citizenship behaviors and achievement on the eighth grade Mathematics SOL test.
Table 5

*Correlational Analyses of Organizational Citizenship Behaviors*

<table>
<thead>
<tr>
<th>1. Organizational Citizenship Behaviors</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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<tr>
<td></td>
<td>.78**</td>
<td>.41**</td>
<td>.85**</td>
<td>.75**</td>
<td>.63**</td>
<td>.35**</td>
<td>.35**</td>
<td>-.20</td>
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<tr>
<td>2. School Climate Index</td>
<td>.73**</td>
<td>.80**</td>
<td>.90**</td>
<td>.85**</td>
<td>.48**</td>
<td>.55**</td>
<td>-.38**</td>
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<tr>
<td>3. Collegial Leadership</td>
<td>.51**</td>
<td>.46**</td>
<td>.35**</td>
<td>.06</td>
<td>.13</td>
<td>-.02</td>
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<tr>
<td>4. Teacher Professionalism</td>
<td>.69**</td>
<td>.56**</td>
<td>.32**</td>
<td>.34**</td>
<td>-.20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Academic Press</td>
<td>.82**</td>
<td>.58**</td>
<td>.62**</td>
<td>-.39**</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6. Community Engagement</td>
<td>.62**</td>
<td>.67**</td>
<td>-.58**</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>7. English SOL Test</td>
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<td></td>
</tr>
<tr>
<td>8. Math SOL Test</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>9. SES</td>
<td>**p &lt; .01</td>
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</table>

Table 6

*Regression Analyses for English SOL Test Variable*

<table>
<thead>
<tr>
<th>Dependent Variable and Predictor</th>
<th>Beta</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>Standard Error</th>
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<td>SES</td>
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<td></td>
<td></td>
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<tr>
<td>Organizational Citizenship Behavior</td>
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</table>

**p<.01
*p<.05
**p<.01
### Table 7

**Regression Analyses for Mathematics SOL Test Variable**

<table>
<thead>
<tr>
<th>Dependent Variable and Predictor</th>
<th>Beta</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math SOL Test</td>
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<td>.64</td>
<td>.63</td>
<td>14.98</td>
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<tr>
<td>SES</td>
<td>-.75**</td>
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<tr>
<td>Organizational Citizenship Behavior</td>
<td>.15</td>
<td></td>
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</tbody>
</table>

**p<.01**

### Additional Results

Additional correlations were calculated for student achievement for each of the variables. The research questions did not directly speak to these correlations but findings should be addressed. One substantial result was the lack of a relationship found between the variables of student socio-economic status (SES) and organizational citizenship behaviors ($r = -.20$). This finding is substantial in terms of contextual conditions for fostering teacher citizenship norms. The result suggests that the proportion of students participating in the free and reduced priced lunch programs is not significantly related to the cultural norms of the school in terms of teacher citizenship and how much extra effort and time the teachers are willing to commit to helping students achieve. Additionally, the climate dimension of teacher professionalism and socio-economic status shared the same correlation in the lack of a significant relationship ($r = -.20$). This finding further supports the earlier strong correlation between teacher professionalism and organizational citizenship behaviors. These results suggest that teachers who support each other are also likely to give of their time and energy despite the socio-economic status of their students.
Dissimilar results for the constructs of SES and the School Climate Index reveal a significant negative correlation between the two ($r = -0.38, p<.01$). This finding suggests an inverse relationship is shared between the two constructs. The greater the proportion of students participating in free and reduced priced lunch programs, the less likely it is for a school to have a positive and healthy school climate. Student socio-economic status was also negatively and significantly related to the climate dimension of academic press ($r = -0.39, p<.01$). This relationship indicates that in schools where there is more of an instructional focus and emphasis on high performance standards, there are also fewer students participating in the free and reduced lunch program.

The most statistically significant relationship within the school climate index and SES is found within the negative correlation of socio-economic status and community engagement ($r = -0.58, p<.01$). This finding indicates that for schools with higher rates of students enrolled in the free and reduced priced lunch program, there is less participation and support from the community and parents.

The data also indicate that the School Climate Index is significantly correlated with student achievement in English ($r = 0.48, p<.01$), explaining 23 percent of the variance for student achievement. Similar findings reveal a significant correlation between the School Climate Index and mathematics ($r = 0.55, p<.01$). This explains 30 percent of the variance for math achievement.

Of the four dimensions of school climate, community engagement is most strongly correlated with student achievement in both English ($r = 0.62, p<.01$) and math
(r = .67, p< .01). This suggests that schools that partner with the community and parents are found to have higher achievement scores in both English and math than those schools with less of a connection to their external environment.

Academic press is significantly correlated with English (r = .58, p< .01) and math (r = .62, p< .01). The dimension of teacher professionalism is also significantly related to English (r = .32, p< .01) and math (r = .34, p< .01). These findings indicate that in schools where there is a strong sense of focus on achievement and instruction, there is also higher math and English student achievement. Likewise, in schools where teachers act like professionals, there is higher student achievement in both English and math.

Another interesting finding was the lack of a significant correlation between the climate dimension of collegial leadership and achievement in both math (r = .13) and English (r = .06). This is of interest because collegial leadership is the only climate variable found not to be significantly related to student achievement. This result might suggest that principals, although valuable, are not directly related to student performance. Similar literature suggests that principals are valuable in terms of fostering behaviors in teachers that could result in student achievement, but they themselves might not share a linear relationship with student achievement (Hallinger & Heck, 1996; Hoy & Hannum, 1997).

The data also indicate a strong negative relationship between SES and each of the achievement variables, English (r = -.65, p< .01) and math (r = -.79, p< .01). These results show that socio-economic status and student achievement share an inverse relationship. Schools with high percentages of students participating in the free and reduced lunch program tend to reveal lower SOL test scores in English and mathematics.
Conclusion

Significant relationships were found between the variables in this study. Pearson r statistics revealed that the organizational citizenship behavior of teachers was significantly and positively correlated to student achievement in both English and math. Further multiple regression analysis revealed that organizational citizenship behavior had a significant independent effect on student achievement in English when controlling for student socio-economic status. Multiple regression analysis revealed there was no significant relationship between citizenship behaviors of middle school teachers and math achievement.

Data also indicate a relationship exists between organizational citizenship behavior of teachers and the School Climate Index (SCI). Each of the four dimensions of the SCI yielded a significant positive correlation to organizational citizenship behaviors of teachers. Teacher professionalism and academic press were most significantly correlated with OCB. Collegial leadership showed the least significance to organizational citizenship behaviors of the four dimensions.

Educational research consistently indicates that SES is a strong predictor of student performance. In this study, SES had strong independent effects on student achievement in both English and math. Interestingly, SES and organizational citizenship behaviors of teachers were found to have no significant relationship. These findings will provide the basis for further discussion of this study and recommendations for possible future research.
CHAPTER 5

Summary of the Findings

This study of the relationships between teacher organizational citizenship behaviors and student achievement and organizational citizenship behaviors of teachers and school climate provides important information for educators with considerable implications for school improvement planners. A summary of the research findings are presented and discussion of results regarding implications and recommendations for further research are provided.

Introduction

For decades, effective schools research has recognized that conditions within schools can contribute to student performance. Educational researchers have examined a variety of variables to include socio-economic status, school size, teacher qualities, instructional strategies, and leadership style (Barth, et al., 1999; Brookover, 1978; Erbe, Hughes, 1995; McLaughlin & Gili, 2000; Stronge, 2002). Accountability issues and new federal legislation from The No Child Left Behind Act has prompted educators to closely examine the factors associated with school effectiveness.

Research in the private sector has focused on employee behaviors as one of the major contributors to organizational effectiveness (Katz & Kahn, 1966; Bateman & Organ, 1983). In 1938, Chester Barnard described organizations as “cooperative” systems where employees must illuminate a willingness to cooperate (Niehoff, 2000). Theorists Getzels and Guba (1957) formulated a model based on the theory that schools are “social systems.” Their conceptual framework described organizations as interactions of two elements: the nomothetic (institutional), and the idiographic (individual). The interactions
between the customary routines, defined roles, and regular patterns of the organization (the nomothetic element) with the personalities and behaviors of the organizations' individuals (the idiographic element) are the underpinnings of organizational effectiveness.

Organ (1988) also recognized the importance of employee characteristics in his conceptual framework of organizational citizenship behaviors. He described organizational citizenship behavior as the “performance that supports the social and psychological environment in which task performance takes place” (p. 95).

The application of organizational citizenship behaviors to the k-12 setting is new in the educational research (Cantrell, et al., 2001; DiPaola & Hoy, 2004; DiPaola & Tschannen-Moran, 2001). Citizenship behaviors in public schools are now being measured in terms of teacher helping behaviors, going above and beyond, for the benefit of both the student and school. This study adds to the limited body of knowledge that prescribes organizational citizenship behaviors to the school effectiveness equation. Research findings, to date, describe a direct and positive relationship between teacher helping behaviors and student achievement and school climate.

This study investigated the organizational citizenship behaviors of Virginia middle school teachers and student achievement in English and mathematics using a recently developed Organizational Citizenship Behavior in School Scale (OCBS). The study also explored the relationship between organizational citizenship behaviors and school climate as measured by the School Climate Index (SCI). Furthermore, the research was designed to determine if organizational citizenship behaviors had independent effects on student achievement in English and mathematics when controlling for student socio-
economic status. Student achievement was measured by the eighth grade Virginia Standards of Learning English: Reading, Research and Literature Test and the eighth grade Virginia Standards of Learning Math Test.

Discussion of the Results

The study yielded several significant results. The findings from this study support the limited body of K-12 organizational citizenship research and indicate that middle school teachers who "go the extra mile" are correlated with school climate and student achievement.

The first part of this research examined the relationship between organizational citizenship behaviors of middle school teachers and student achievement as measured by the eighth grade Virginia's Standards of Learning English: Reading, Research and Literature Test and the eighth grade Virginia Standards of Learning Mathematics Test. Results depicted a significant correlation between organizational citizenship behavior of teachers and student achievement in both English and math. These findings indicate there is a positive relationship between "helping" teacher behaviors and eighth grade student achievement for both and math and English. The findings support the previous organizational citizenship research in public schools yielding similar results when exploring effects on student achievement (Cantrell, et al., 2001; DiPaola & Hoy, 2004).

This study also explored the relationship between organizational citizenship behaviors of teachers and school climate as measured by the School Climate Index (SCI). Significance was found for collective school climate and for each of the four dimensions of climate: teacher professionalism, academic press, community engagement, and collegial leadership.
Organizational citizenship behaviors of teachers correlated most significantly to teacher professionalism. This is explained through the similarities shared between the two variables. Teacher professionalism and organizational citizenship behaviors both measure positive teacher behaviors in terms of commitment and support. Organizational citizenship behavior differs from teacher professionalism by the distinguishing nature of practicing altruistic and "extra" role behaviors illustrated through the willingness to volunteer time, energy and effort for helping others. Teacher professionalism describes the supportive, cooperative, and friendly nature of participants without mention of willingness to commit extra time. It is not surprising that these two factors are highly correlated. This suggests that teachers who are supportive and friendly also tend to reach out to help others on their own time.

Organizational citizenship behavior of teachers was also highly correlated to academic press. Schools with higher teacher citizenship behaviors also had a stronger sense of instructional focus, support for student accomplishments, and press for high standards. The significance of these findings is similar to those found in DiPaola's and Tschannen-Moran's (2001) study of two samples of 42 Ohio and Virginia elementary, middle, and high schools and 97 high schools in Ohio. Their findings yielded results that indicated a strong relationship between organizational citizenship behaviors of students and the factors of teacher professionalism and academic press.

In this study, community engagement was also correlated with teacher organizational citizenship behaviors. Community engagement, or active participation and support of parents and community members, is related to the citizenship behaviors of teachers. Again, this finding has parallels to results from earlier research conducted
DiPaola and Tschannen-Moran (2001). Their findings indicated a relationship exists between community engagement and organizational citizenship behaviors of teachers in the mixed sample of elementary, middle, and high school students; but no significant relationship was observed in the exclusive high school sample.

The final dimension of the School Climate Index, collegial leadership, also generated positive results but with less strength than found with the other school climate factors. Teacher citizenship behaviors are found at a higher rate in schools where principals express high standards, and are supportive, friendly, and respectful to the faculty. Similar to the DiPaola and Tschannen-Moran (2001) study, collegial leadership, although substantial, had the smallest correlation to organizational citizenship behavior of the four dimensions.

Finally, this study examined the relative effects of socio-economic status (SES) and organizational citizenship behaviors of teachers on student achievement as measured by the eighth grade Virginia's Standards of Learning English: Reading, Research and Literature Tests and the eighth grade Virginia Standards of Learning Mathematics Test. In both areas of English and math, SES was found to have a significant independent effect on student achievement. Schools with higher proportions of students receiving free or reduced lunches had lower achievement in English and math. These results are similar to numerous other studies that found SES to be a strong predictor of student outcomes (Brookover, 1978; Chance, 1991; Erbe, 2000; Hoy & Sweetland, 2001; Hoy, Tarter, & Kottkamp, 2001).

Further analysis of the independent effects of organizational citizenship behaviors of teachers on student achievement yielded significance as well. Using multiple
regression analysis, organizational citizenship behavior was found to have a significant and independent effect on student achievement in English when controlling for socio-economic status. These findings suggest that citizenship behaviors of teachers are independently related to student achievement in English. There was no significant relationship found for organizational citizenship behaviors of middle school teachers on student achievement in math after controlling for SES. This discrepancy might be explained because of the differences in teaching methodology for each discipline. Math classes are typically more structured than English classes with strong focus on skills-based learning and less concentration on creative inputs of teachers and students. Another interesting observation that comes from this finding is the difference between these results and those findings of DiPaola's and Hoy's (2004) study of 97 Ohio high schools. That investigation found independent effects of organizational citizenship behaviors for both English and math at the high school level. This could possibly be explained by the different measurements of student achievement issued by The Virginia Department of Education and the Ohio Department of Education. The achievement instruments are different as well as the data provided by these assessments. The Ohio high school sample used percentages of students passing the 12th grade proficiency test. Achievement data from this middle schools study used correlated mean raw scores for the Standards of Learning assessments. One last observation concerning the different findings for the two studies is that student populations at the middle school level might be quite different from those found at the 12th grade level. Compulsory attendance laws maintain that every child be enrolled in school at the middle school level. By the time children are in high school, enrollment requirements are more discretionary. Because organizational citizenship
behavior is a relatively new construct in the k-12 literature, it is difficult to apply an explanation of the discrepancies in findings between studies. The construct of organizational citizenship behaviors has been consistently linked to student achievement and should serve as a variable to be explored a great deal further.

It should be noted that correlational analysis also depicted no significant relationship between the organizational citizenship behaviors of teachers and student socio-economic status. This finding is valuable to educational researchers by providing insight into the contexts that organizational citizenship behaviors are cultivated. This result proposes that teachers employed at schools with higher free and reduced lunch percentages are just as likely to practice good citizenship behaviors as those teachers from dissimilar schools with fewer proportions of students on free and reduced lunch. The socio-economic composition of middle schools does not seem to affect the willingness of teachers to provide extra time and energy for the sake of others.

Implications

School Improvement efforts are based on the belief that schools are malleable and provided with the right tools, are capable of becoming effective. School effectiveness research and school improvement planning should work in partnership to explicate high performance conditions. One study of 32 schools in Britain generated reports that schools successful in their school improvement endeavors not only adopt curriculum or pedagogical practices as a basis for improvement, but also emphasize the development of the social context (Connolly & James, 1998).

More than ever, school improvement initiatives are focusing on research-based strategies that have been linked to student performance. The No Child Left Behind
legislation mandates that state education agencies implement corrective action models and technical assistance programs to facilitate change and improved practice in schools. Schools are being held more accountable than ever before, and state agencies are now required by federal legislation to participate in improvement practices. The Virginia Department of Education has instituted a technical assistance model based on the essential variables found throughout the conventional effective schools literature. The model targets school improvement initiatives of schools that have failed to meet required benchmarks. The four criteria emphasized in the model are: professional development practices, scheduling practices, data analysis, and curriculum alignment to the Virginia Standards of Learning.

Although reflective of the effective schools research findings, the Virginia model for technical assistance fails to address the contributions and delimitations of the social constructs within schools. Provided with technical report findings and recommendations, schools are expected to have the sufficient tools necessary for successfully implementing an improvement plan. The findings from this study propose that improvement planning based on conventional effective schools research is not enough. The behaviors and relationships of organizational players must be considered as part of the equation.

Contextual barriers in different organizations create inequalities and disadvantages that are amenable to remedy (Agócs, 1997). Improvement planning encompasses the management of changing “processes” in order to increase effectiveness (Connolly & James, 1998). Successfully changing process requires gaining new perspective on the way things should be done (Fullan, 2001). Sergiovanni and Starratt (1993) posit that teachers’ acceptance to change is a developmental process that emerges
as they learn about the proposed change initiatives, prepare to use it, use it, and finally include it as part of the everyday repertoire. It is critical to consider school improvement planning as not only structurally significant but culturally significant to the organization.

What we gain from the findings in this study is a more sophisticated perspective of social contexts of schools with implications for educational planning and school improvement. The social structures of schools should be interpreted as "levers" (Scheerens, p. 73) for change and improvement. For decades, the private sector has recognized organizational citizenship behaviors as an important aspect to employee performance, organizational effectiveness, and efficiency (Bateman & Organ, 1983; Moorman; 2003; Niehoff, 2000; Podsakoff, et al., 2000). Until recently, organizational citizenship behaviors had not been considered an important "lever" for school effectiveness.

**Organizational Citizenship Behaviors and Student Achievement**

Because of the nature of educational research, it is difficult to interpret causality when examining the variables related to student achievement. There is a sense of reciprocity among the shared constructs. In this study, student achievement is related to teachers' giving of extra time, but it is hypothesized that teachers are also driven to give extra time in response to the increase in performance of their students. The fact that there is a relationship between organizational citizenship behaviors of teachers and student achievement is enough reason for researchers and educators to focus on teacher behaviors.

This study identified a significant relationship between organizational citizenship behaviors of teachers and eighth grade student achievement; specifically, an independent
effect was found for student achievement in English after controlling for socio-economic status. Educational planners should work to develop systems for increasing teacher citizenship behavior and school leaders should cultivate systems that develop and maintain citizenship behaviors. These findings suggest that organizational citizenship behaviors might be of value in terms of identifying characteristics in new teachers that would be contributory to organizational effectiveness. During the interview process, it might be of value to recognize a teacher’s record of volunteer work. Furthermore, teachers within schools who routinely exhibit citizenship-type behaviors to include volunteering, serving on committees, and devoting extra time to tasks could mentor new teachers in an attempt to create cultural norms of organizational citizenship behaviors.

The school leader also has a valuable role as a cultivator of citizenship behaviors. Principals should lead by example and should support and nurture the “extra” efforts and volunteerism of teachers. Principals should exercise altruistic behaviors and volunteerism and should encourage these practices of the teachers. DiPaola and Hoy (2004) suggested that having as few formal rules as possible might contribute to flexibility and motivation to participate in behaviors that are not prescribed by rules. “Formality breeds rule-oriented behavior and rigidity” (DiPaola & Hoy, 2004, p.18).

Organizational Citizenship Behaviors and School Climate

Significant correlations depicted that organizational citizenship behavior is related to school climate and each of the four dimensions of school climate: collegial leadership, teacher professionalism, academic press, and community engagement. The implications for educational planners and leaders are to encourage the behaviors associated with each of the dimensions.
Collegial Leadership

The significance of the correlation between organizational citizenship behaviors of teachers and collegial leadership suggests that in schools where principals are concerned about the welfare of teachers by showing support, consideration, and helpfulness, the teachers are more likely to go the extra mile to help students achieve success. Furthermore, principals who expect high standards of performance, and articulate this to the faculty, are more likely to see teachers perform like citizens, committed to the cause. Although some researchers (Hallinger & Heck, 1996, Hoy & Hannum, 1997) maintain that leaders are indirectly related to student outcomes, findings from this study indicate that principal collegial behaviors and teacher “helping” behaviors are related.

Many characteristics of school leaders are explored throughout the literature. Academic focus, shared decision-making, open communication, and provision of resources are a few of the correlates identified by researchers to be contributing factors to student achievement and effectiveness (Buttram, Mikkelsen & Joyner, 1982; Cantrell, 2001; Venezky & Winfield, 1979). Although a positive relationship was found in this study between the variables of organizational citizenship behaviors of teachers and collegial leadership, there was no significant relationship found between collegial leadership and student achievement. In fact, as seen in Table 5, of each of the four dimensions of school climate, collegial leadership yielded the smallest correlation to student achievement in both English (r = .06) and math (r = .13). These findings suggest that the principal is a valuable contributor to correlates of teacher behaviors and internal processes of the school; however, the principals’ relationship with student achievement is
indirect. These results are supported by the meta analysis conducted by Hallinger and Heck (1997). Implications for these findings suggest that in identifying qualities of effective leaders, it might be of value to target characteristics that are aligned with the ability to cultivate a positive climate and cultural norms of teachers as good citizens, who will in turn, directly contribute to student achievement. What we gain from organizational citizenship behavior research is a new perspective of the effects of principal behaviors on teacher helping behaviors and volunteerism. What we can interpret from these findings is that principals should be recognized as critical factors to school effectiveness through the processes of hiring, retaining, and fostering teachers who are quality citizens.

Teacher professionalism

Teacher professionalism is described as the commitment of teachers to the teaching task. Teachers who exhibit these characteristics are found in open, supportive climates where teachers are warm and friendly towards each other and the students (Hoy, Sabo, et al., 1997; DiPaola & Tschannen-Moran, 2001). The term “teacher quality” has also been linked to student achievement throughout the literature (Darling-Hammond, 2000; Sanders, 1998; Stronge, 2002). Teacher quality encompasses a variety of teaching behavior characteristics: classroom management, teacher credentials, preparation and planning, instructional techniques, and warmth and friendliness. Although dimensions of teacher characteristics vary throughout the literature, the message is clear: teacher behaviors affect student performance.

Table 5 shows a strong correlation exists between teacher professionalism and each of the other factors of school climate: collegial leadership, academic press and community engagement. Implications for school planners and leaders would be to
provide strategies that speak to each of these dimensions. Teachers may become more engaged in the teaching process if met with warmth, support, and high standards expressed by the principal. Teachers may be more disposed to characteristics associated with teacher professionalism in schools where academic press, or emphasis on standards and achievement, is accentuated. Teachers may also respond with altruistic actions to an active and positive community/parent connection. Of course the relationships between each of these variables is potentially reciprocal. Although it is impossible to determine causality in the relationships of these dimensions, each has a significant role in the citizenship behaviors of teachers and should be considered as schools seek to increase student achievement.

*Academic Press*

The data show that organizational citizenship behavior of teachers is highly correlated to the academic press of the school. This finding proposes that in schools where there is a serious learning environment with high standards for academic performances, teachers tend to go the extra mile. Several researchers have explored the motives for practicing organizational citizenship behaviors. It is suggested that concern for the organization cultivates motivation as an antecedent to organizational citizenship behaviors. (Podsakoff, 2000; Rioux, & Penner, 2001). In schools, concern for the organization is synonymous with concern for the students. It may be that concern for student performance surfaces in the form of setting high standards and helping students to succeed. In terms of organizational citizenship behaviors, this fits perfectly with the notion that teachers who are concerned for students, also willingly give of their time and energy to do what it takes for the sake of the student. It is also relevant to mention that
there is a strong correlation between academic press and community engagement, as seen in Table 5. Implications for school planners are that a more involved and hands-on community/school partnership corresponds with a more focused and serious learning environment. The reciprocal could also be true. This relationship could propose that a more stable learning environment with high standards for academic achievement is one that reaches out to the community and parents for support and assistance.

Community Engagement

The relationship between community engagement and organizational citizenship behaviors is a strong one. Until recently, the measurement of community involvedness was defined in terms of “environmental press”, illustrating a negative connotation of the pressures of community and parents to influence school policy (Hoy, Hannum, & Tschannen-Moran, 1998; Hoy, Sabo, et al., 1997). The term “community engagement” is a more recent application of the positive school/community partnership. The new conceptualization of the construct identifies the level of commitment of community members and parents who actively participate in programs and willingly respond to the needs of the faculty and students. The reciprocal nature of this relationship offers the possibility that it could be the effect of community and parent involvement that encourages teachers to become more altruistic, or it could be that committed teachers who are good citizens are also those who expect more of the community and parent connection.

OCB and socio-economic status

Although not significant in terms of statistical analysis, the lack of a relationship between organizational citizenship behaviors of teachers and student socio-economic
status (SES) is substantial. Schools can manifest conditions for organizational citizenship behaviors despite the socio-economic status of its students. The lack of a correlation between organizational citizenship behaviors of teachers and SES suggests that schools with higher populations of low-SES students are completely capable of engendering a teaching faculty with strong citizenship qualities. Teachers in these schools are just as likely to reach out to help students and other teachers on their own time, volunteer to work on committees and extra curricular activities, and to work productively to achieve high standards.

Organ (1997) mentioned that only the collectivity of performances over time must be considered; the occasional helping behaviors of employees do not substantiate enhanced organizational effectiveness. Organizational citizenship behavior is an organizational variable. This suggests that within schools where teachers exhibit strong citizenship type behaviors, there is a cultural norm conducive to supporting these behaviors. The focus is on creating a cultural norm where teachers practice good citizenship. This study describes that this may be done through the nurturing of specific aspects of school climate. The results from the School Climate Index, as part of this study, indicate there are higher levels of teacher organizational citizenship behaviors in schools where teachers respect and support colleagues, engage in positive and helpful relations with the community, press for student performance, and are met with support and collegiality from their principal.
Recommendations for Further Research

Additional research in the area of organizational citizenship behaviors in schools is encouraged in order to further the understanding of effects of teacher behaviors on school effectiveness. This study was limited to 82 middle schools in Virginia, and therefore, the results can not be generalized to all middle schools in Virginia, nor to middle schools in other states. Replication of this study, to include a more diverse sampling of schools within and outside of Virginia, would prove beneficial. Specifically, replication at the elementary level would be of value, where this construct has not been explored.

Further research is also recommended to identify the independent effects of organizational citizenship behaviors on student achievement. Findings from this study indicate an independent affect of organizational citizenship behaviors on eighth grade student achievement in English, and findings from previous research indicate an independent contribution of organizational citizenship behaviors to both English and math (DiPaola & Hoy, 2004). The fact that socio-economic status (SES) is not related to organizational citizenship behaviors also lends itself to further research. Further examination of the relationship between organizational citizenship behaviors and SES could confirm findings to date.

Also, analysis of the possible antecedent conditions for organizational citizenship behaviors in schools has not been explored in the K-12 research. It would be of substantial value to identify organizational citizenship behaviors as the dependent variable with specific school and individual factors as the independent variables. Independent factors could be school size, teacher credentials, teacher gender, professional
training, and staff development. Qualitative exploration of schools with high and low norms of organizational citizenship behaviors would also help to identify the qualities of school differences in which this characteristics are cultivated.

The dimension of organizational citizenship behaviors in public schools is a new concept to educational researchers. Further analysis of the effects of organizational citizenship behaviors and the contexts in which they are found is of value to both researchers and practitioners.

Final Thoughts

Organizational citizenship behavior has been researched thoroughly throughout the private sector literature. Its recent emergence in educational research has allowed educators to recognize the value of teachers in terms of commitment and extra effort. We have all known teachers that “go the extra mile” and sacrifice time and effort for the sake of students. As I surveyed the hundreds of teachers in preparation for this research endeavor, I was met with different responses from many of the participants. Some teachers were ambivalent, some were hostile, some were mildly welcoming, and others were enthusiastic to participate. These brief encounters with middle school teachers enabled me to sense and witness the effects of teacher citizenship behavior. These initial impressions helped shape my informal opinions about the effects of such behaviors on the students. The statistical evidence supported my hypothesis. The teacher-learner relationship is a personal one, and teacher behaviors play a significant role in the lives of students. The social constructs of schools must be thoroughly examined in order to gain a more comprehensive understanding of the underpinnings of student achievement.
Appendix A

Organizational Citizenship Behavior in School Scale (OCBS)
Organizational Citizenship Behavior in School Scale (OCSB)

Five point scale (Never, Rarely, Sometimes, Often, Always)

1. Teacher committees in this school work productively. (C 29)
2. Teachers make innovative suggestions to improve the overall quality of our school. (C 30)
3. Teachers help students on their own time. (C 33)
4. Teachers voluntarily help new teachers. (C 34)
5. Teachers volunteer to serve on committees. (C 37)
6. Teachers arrive to work and meetings on time. (C 38)
7. Teachers leave immediately after school is over. (C 39)
8. Teachers schedule personal appointments at times other than during the school day. (C 40)
9. Teachers are rarely absent. (C 41)
10. Teachers waste a lot of class time. (C 42)
11. Teachers volunteer to sponsor extra curricular activities. (C 43)
12. Teachers take the initiative to introduce themselves to substitutes and assist them. (C 44)
13. Teachers begin class promptly and use class time effectively. (C 48)
14. Teachers give colleagues advanced notice of changes in schedule or routine. (C 49)
15. Teachers give an excessive amount of busy work. (C 50)

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Appendix B

School Climate Index (SCI)
School Climate Index (SCI)

Five point scale (Never, Rarely, Sometimes, Often, Always)

Collegial Leadership
1. The principal explores all sides of topics and admits that other opinions exist. (C 16)
2. The principal treats all faculty members as his or her equal. (C 17)
3. The principal is friendly and approachable. (C 7)
4. The principal puts suggestions made by the faculty into operation. (C 8)
5. The principal is willing to make changes. (C 23)
6. The principal lets faculty know what is expected of them. (C 24)
7. The principal maintains definite standards of performance. (C 25)

Teacher Professionalism
1. The interactions between faculty members are cooperative. (C 3)
2. Teachers help and support each other. (C 11)
3. Teachers respect the professional competence of their colleagues. (C 4)
4. Teachers in this school exercise professional judgment. (C 12)
5. Teachers accomplish their jobs with enthusiasm. (C 18)
6. Teachers “go the extra mile” with their students. (C 19)
7. Teachers provide strong social support for colleagues. (C 20)

Academic Press
1. Students respect others who get good grades. (C 6)
2. Students try hard to improve on previous work. (C 15)
3. The school sets high standards for academic performance. (C 5)
4. Students seek extra work so they can get good grades. (C 22)
5. Academic achievement is recognized and acknowledged by the school. (C 14)
6. The learning environment is orderly and serious. (C 21)

Community Engagement
1. Community members attend meetings to stay informed about our school. (C 26)
2. Parents and other community members are included on planning committees. (C 9)
3. Organized community groups (e.g. PTA, PTO) met regularly to discuss school issues. (C 27)
4. Community members are responsive to requests for participation. (C 10)
5. School people are responsive to the needs and concerns expressed by community members. (C 28)
6. Our school is able to marshal community support when needed. (C 2)
7. Our school makes an effort to inform the community about our goals and achievements. (C 1)

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Appendix C

Research Prospectus
Organizational Citizenship Behaviors of Teachers: Their relationship with school climate and student achievement

Dissertation Research Overview
The College of William & Mary
Marsha Jurewicz

Statement of the Problem
For decades effective schools research has tapped into a variety of climate and culture dimensions as valuable contributors to school effectiveness. However, limited research exists identifying the social constructs of the organizational members that are the underpinnings of the organizational culture. Research recognizing organizational citizenship behaviors as a valuable contribution to school climate and school effectiveness is minimal, but the findings are compelling. This study explores the relationship between organizational citizenship behaviors of Virginia middle school teachers and their perceptions of school climate in terms of four dimensions of school climate: collegial leadership, teacher professionalism, academic press, and community engagement. The study also investigates the relationship of organizational citizenship behaviors of teachers to student achievement as measured by the eighth-grade Virginia Standards of Learning (SOL) Assessment. Tests in the areas of English and Math were the measurement tools for this research.

Research Questions
1. What is the relationship between organizational citizenship behaviors, as measured by the Organizational Citizenship Behavior in School Scale (OCBS) and middle school climate, as measured by the school climate index (SCI) in Virginia middle schools?
   a. Organizational Citizenship Behaviors are described as “helping” or altruistic behaviors of teachers. A sample item from the Likert-style questionnaire is “Teachers help students on their own time.”
   b. School Climate is measured by four variables: collegial leadership, teacher professionalism, community engagement, and academic press. A sample item from the Likert-style questionnaire is “Parents press for school improvement.”

2. What is the relationship between organizational citizenship behaviors, as measured by the Organizational Citizenship Behavior in School Scale (OCBS) and student achievement on the eighth-grade Virginia Standards of Learning Mathematics and English: Reading, Research and Literature Tests?

3. What are the relative effects of the socio-economic status and organizational citizenship behaviors of teachers in middle schools on student achievement on the eighth-grade Virginia Standards of Learning Mathematics and English: Reading, Research, and Literature Tests?
Brief Rationale

As state educational agencies are forced to respond to federal accountability legislation and state directives, major undertakings are being initiated addressing the issue of standards-based education and increased student performance. Because schools are social systems, they operate as systems of social interactions where contextual variables create the conditions for effectiveness. The purpose of this research is to explore the relationships between organizational citizenship behaviors, school climate, and academic achievement. This quantitative study suggests important implications for educational planners in the measurement of, and the interrelationships, among these constructs. This study part of a large scale study being conducted by researchers at The College of William and Mary and is a follow-up and replication to a research project conducted in 97 high schools in Ohio.

Participants

Data will be collected from a diverse sample of over 80 middle schools in Virginia from urban, suburban, and rural districts from across the state. Once approval has been received from central office and building principals, the teachers will be asked to devote 8-10 minutes of a morning faculty meeting to completing the surveys. Only certified teachers who teach in the building at least half time will complete the surveys. The principal will also be asked to complete an administrator’s survey. The responses to questions will be anonymous; no identifying marks will acknowledge a teacher’s identity. At the conclusion of the study, building principals will receive a copy detailing school findings.

Methodology

The purpose for this quantitative study is to determine if a relationship exists between organizational citizenship behaviors of teachers, school climate, and student achievement. Organizational citizenship behaviors of teachers are “helping” or altruistic behaviors shared between colleagues.

Research Design: This study is a quantitative correlational study. The research seeks to investigate relationships between the variables of organizational citizenship behaviors, school climate, and student achievement. The study is part of a larger study of middle schools conducted by researchers at The College of William and Mary. The instrument used is a social processes survey inclusive of items found on the School Climate Index (SCI) and the Organizational Citizenship Behaviors Scale (OCBS). The survey takes approximately 8 to 10 minutes to complete. The sample includes all full time teachers within each middle school. The researcher will administer the survey during a regularly scheduled faculty meeting. No resources will be requested of the school.

Statistical procedures: This is a quantitative study that uses correlational statistics to explore relationships between the variables. The researcher will use Pearson r statistics, multiple regression analyses, and Beta analyses to analyze relationships and relative effects of organizational citizenship behaviors of teachers and school climate and student math and English achievement.
Time Schedule
Data Collection will take place from January through March. Data analyses will take place during March and April. Principals will be given specific school findings in April.

Statement of Confidentiality
A statement of confidentiality will be read aloud to the faculty as part of the directions for administering the social processes questionnaire. The statement reads as follows: “The research is being conducted through the School of Education at the College of William and Mary. All teachers' responses are anonymous. Data gathered about the school will be completely confidential. Data will be compiled at the school level and will be used for a statistical analysis of the relationships between the variables. We are not interested in ranking or rating individual schools. Your participation is voluntary. You may decline to complete the survey or you may skip any item that you feel uncomfortable answering.”

Results
Participants will be told the study is an attempt to identify factors related to well-functioning schools. During the months of April and May, each participating school will be provided with a graph detailing the data collected from their school. The data will enable the school to identify the relationships between teachers that are contributory to positive school climate. The data should assist the schools in efforts of self-assessment and improvement initiatives.

Consent Form
Consent for participation in the study will be initially solicited as part of telephone correspondence made by the researcher to the building principal. A consent form will be sent upon acceptance to participate. Text reads: "The general nature of this study entitled 'Organizational Citizenship Behaviors of Teachers: Their relationship with school climate and student achievement' conducted by Marsha Jurewicz has been explained to me. I understand that I will be asked to dedicate 8-10 minutes of one faculty meeting to subscribing my teachers to voluntarily filling out questionnaires. I further understand that all responses will be confidential and that the school name will not be associated with any results of this study. I know that the teachers may refuse to answer any question asked and that we may discontinue participation at any time. I am aware that I may report dissatisfaction with any aspect of this experiment to the Chair of the Protection of Human Subjects Committee, Dr. Stan Hoegerman 757-221-2240. My signature below signifies my voluntary participation in the project, and that I have received a copy of this consent form."

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 (PHONE: 757-221-3901) ON OCTOBER 1, 2003 AND EXPIRES ON SEPTEMBER 30, 2004.
Appendix D

Informed Consent Form
Informed Consent Form

The College of William & Mary

The general nature of this study entitled "Middle School Social Processes: Relationships between Organizational Citizenship Behaviors, Climate, and Achievement" conducted by Marsha Moye Jurewicz has been explained to me. I understand that a group of teachers will be asked to complete a Social Processes Survey. I further understand that all responses will be confidential and that the school name will not be associated with any results of this study. I know that the teachers may refuse to answer any question asked and that they may discontinue participation at any time. I am aware that I may report dissatisfactions with any aspect of this experiment to the Chair of the Protection of Human Subjects Committee Chair, Dr. Stan Hoegerman, 757-221-2240. I am aware that all participants must be at least 18 years of age to participate. My signature below signifies my voluntary participation in this project, and that I have received a copy of this consent form.

_________________________  __________________________
Date                        Signature

_________________________
Print Name

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 (PHONE: 757-221-3901) ON OCTOBER 1, 2003 AND EXPIRES ON SEPTEMBER 30, 2004.
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