An examination of the relationship between school climate and student growth in select Michigan charter schools

Benjamin P. Jankens

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An Examination of the Relationship Between School Climate and Student Growth in Select Michigan Charter Schools

by

Benjamin P. Jankens

Dissertation

Submitted to the Department of Leadership and Counseling
Eastern Michigan University
In partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

Dissertation Committee:
Ronald Williamson, EdD, Chair
James Berry, EdD
Ella Burton, EdD
Nelson Maylone, EdD

September 14, 2011
Ypsilanti, Michigan
Abstract

The purpose of this study was to determine what relationship exists between school climate and student growth in Michigan charter schools. Data were collected through the use of a school climate survey and standardized assessment results. The Organizational Climate Descriptive Questionnaire for Elementary Schools (OCDQ-RE) developed by Hoy, Tarter, and Kottkamp (1991) was used to assess teacher perceptions of school climate. Student growth data were calculated using the fall and spring reading and math results from the Performance Series test by Scantron, and the MAP test by NWEA.

The population of this study consisted of 355 teachers from 11 participating schools serving students in grades 3 through 8, selected from a purposeful sample of 35 charter schools in Michigan. Data were analyzed through the Pearson Product-Moment correlation analysis and linear regression analysis.

The results indicated a significant relationship between both principal openness and student growth, and teacher openness and student growth with p-value < 0.01. Additionally, these results indicated a significant relationship between whether a school was open or closed and student growth. In short, the results of this study conclude that there is a significant relationship between school climate and student growth with p-value < 0.01.
Acknowledgements

I would like to thank Dr. Ron Williamson for his guidance, direction, and advice throughout this research project and my program. He has served as a professional mentor for me, and his support has been an important part of my success. Additionally, I would like to thank Drs. Ella Burton, Jim Berry, and Nelson Maylone for their reflective feedback and continued encouragement through this project.

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And especial heartfelt thanks to my wife, Beth Jankens, who has supported me throughout this arduous journey and has been my companion every step of the way. Her generosity, gentleness, and patience have taught me more than I will ever realize, and whom I love completely. She has inspired me to achieve my fullest potential and for that I am eternally grateful.
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CHAPTER I: INTRODUCTION TO THE STUDY

Introduction

Today, more than ever, public schools are feeling tremendous external pressures to increase student outcomes. And with state standardized tests becoming a central focus on a school’s effort to survive the current era of accountability, school leaders are looking to the latest research to inform their decisions and maximize their time and effort in ensuring increased student outcomes (Ravitch, 2010). Current dynamics are being fueled by an increase in federal requirements and national standards, while states are grappling with local control (Shavelson & Towne, 2002). To add to this complexity, the current public education system in America is struggling to find its way in a new global marketplace with more than 45 million school children served by 15,000 independent school districts in 50 states.

Despite the drama being acted out on the state and national stage, public education is an important part of American society and is a subject of interest to researchers (Burton & Bartlett, 2009). Additionally, there is a real need for school leaders to understand the basics of teaching and learning and what factors within a school environment affect student outcomes. Research has demonstrated that there are many variables that contribute to influencing a student’s academic success, which include instructional strategies, classroom resources, school culture, or current school climate, as well as the student’s socioeconomic status, previous educational attainment and his or her past educational experiences (Brookover et al., 1978). Although each of these may have a direct or indirect impact on student outcomes, there is a significant amount of empirical research that suggests school climate is a considerable factor in student outcomes and a school’s overall performance (Rollins and Roberts, 1998; Hoy et al., 1991).
The topic of school climate has been studied and written about for over 100 years (Cohen et al., 2009). With an increasing interest in how school climate affects student outcomes and more specifically how school leaders can help shape their school’s climate, the effective schools research over the past three decades has continued to shed light on this subject. In *Improving School Climate and School Culture*, Gonder and Hymes (1994) provide additional support to school climate’s impact on staff productivity and student achievement. Harvard Professor Roland Barth (2002) provided additional analysis, stating that, “A school’s culture has far more influence on life and learning in the schoolhouse than the state department of education, superintendent, the school board, or even the principal can have” (Barth, 2002).

While school culture encompasses the collective norms and traditions of the school environment, school climate is “the heart and soul of a school” (Freiberg 1999, p. 11). Yet for many, school climate is an abstract and intangible concept that is often misunderstood or completely overlooked (Freiberg, 1999). The following chapter provides the basis for the concepts and theories surrounding school climate, as well as the conceptual framework used to further illustrate the relationship between school climate and student outcomes in select Michigan charter schools.

**Statement of Problem**

Due to the countless social dynamics students and schools face on a daily basis, understanding the environment surrounding student learning and the factors that have a direct or indirect impact on student outcomes are as broad and elusive as ever (Cohen et al., 2009). School climate itself is a complex, multi-dimensional phenomenon, which influences many aspects of the school and the greater community in which it resides (Marshall, 2004).
Additionally, previous research on school climate has determined that there are many factors that contribute to this complex concept (Marshal, 2004). Despite a wealth of empirical data on student achievement and factors related to student outcomes, teachers are still uncertain of their impact on students (Fullan, 2007).

There is a significant body of empirical research demonstrating that various characteristics of school climate influence student outcomes, as measured by student achievement tests (Freiberg, 1999; Brookover et al., 1978; Hoy & Clover, 1986; Hoy et al., 1991). The use of standardized tests and student achievement as a measure of school success is still debated (Boyles, 2000), yet research on school climate’s effects on student outcomes has primarily focused on data surrounding such tests (Brookover, et al., 1978; Hoy & Clover, 1986; Hoy, 1997; Kelly, 2005; Cunningham, 2008). Rarely, however, has student growth been a topic of conversation in relationship to school climate. Limiting the results to achievement hasn’t allowed for a central focus on whether or not the current school climate was a significant factor in the study’s results, as separated by prior instruction (Cunningham, 2008).

Since the early 1990s the public educational system in America has seen the most significant change in its history, with the emergence of schools of choice and charter schools, serving to reshape the educational landscape (Weil, 2000). Charter schools are new public school environments with lessons to be learned that have yet to be fully researched (Sarason, 1998). Although many students who enroll in a charter public school transferred from a traditional district public school, charter public schools offer new and unique school climates (Nathan, 1996), mainly due to their individualized mission and approach to education. The
question that remains, however, is whether this new environment is a factor in student success?

Purpose of Study

Since the inception of public education in America, educators and researchers have been attempting to understand the dynamics within the school environment and how they impact student outcomes (Zullig et al., 2010). From parental involvement and social-economic factors to teacher pedagogy and instruction practices, school leaders are faced with a myriad of factors that impact student outcomes (Anderson, 1982). Cohen (2006) argues that “the goals of education need to be re-framed to prioritize not only academic learning, but also social, emotional and ethical competencies” (p. 201). Furthermore, he argues that learning social-emotional skills, knowledge and dispositions help to create good citizens, can improve the quality of one’s life, and are the foundation of a democracy (Cohen, 2006).

But what are the factors that contribute to student success? Does a school’s environment impact teaching and learning? How does school climate affect student outcomes? Today we understand that school climate captures the essence of an organization’s personality (Hoy et al., 1991). Taking our knowledge of organizations as places in which adults and children work, play, interact, and learn can be applied to the school environment. From Hoy and colleagues (1991) we can define school climate in these terms:

“School climate is the relatively enduring quality of the school environment that is experienced by participants, affects their behaviors, and is based on their collective perceptions of behaviors in schools.” (Hoy, Tarter & Kottkamp, 1991; Hoy & Miskel, 1987; Tagiuri, 1968)

It is here, the understanding that the quality of a school’s environment has a direct and measurable effect on student behavior, that we conclude school climate is central to
long-term student success (Brookover et al., 1978; Anderson, 1982; Hoy & Clover, 1986; Hoy et al., 1991; Freiberg, 1999; Cohen 2006; Zullig et al., 2010). Furthermore, its relevance in the field of education cannot be underscored but should be studied and better understood (Freiberg, 1999, Cohen et al., 2009). Additionally, unlike achievement, growth – as a measure of student success – can better illustrate the direct impact school and classroom climate has on the learning environment within a controlled period of time. Electronic delivery, computer adaptation, value-added analysis, and other contemporary assessment mechanisms have paved the way for this approach to be a viable option through which to study this topic.

The purpose of this quantitative study was to investigate the relationship between school climate and student growth within a selected cohort of Michigan public charter schools. To examine this relationship, participating charter schools in Michigan with a common authorizer were surveyed using a school climate inventory (Hoy, Tarter & Kottkamp, 1991). This survey examined aspects of school climate, including teacher perceptions of teacher and leader behaviors, as well as other variables surrounding the learning environment.

The grounds for comparison focused on the variables associated with school climate in a select group of charter schools in Michigan. School climate data served as the independent variable and were gathered using the Organizational Climate Descriptive Questionnaire for Elementary Schools (OCDQ-RE) survey by Hoy et al. (1991). The dependent variable, student growth, was measured using both fall and spring scaled scores of the same academic year, from Scantron’s Performance Series and Northwest Evaluation Association’s Measures of Student Progress’s (MAP) reading and math tests administered in
grades 3 through 8. From these raw scaled scores each student’s gain score was then
compared to his or her expected gain, based on national results, to create a percent of normal
growth.

The population of the study was composed of teachers and teacher assistants in
approximately 35 elementary charter public schools in Michigan. Although 35 schools were
invited, only 11 schools elected to participate in the study. The same public state university
authorized all schools in the study. All teachers, teacher assistants or paraprofessionals,
support staff and other teaching personnel within these schools were invited to participate in
the study.

Research Questions

To complete this quantitative research study, the following questions were
investigated:

1. What is the relationship between the independent variable (school climate) as
   measured by the OCDQ-RE and the dependent variable results (the percent
   of normal growth – in reading and math), as measured by the Performance
   Series and MAP tests?

2. What are the common characteristics of schools with similar climate results,
   as measured by the OCDQ-RE?

3. What are the common characteristics of schools with similar student growth,
   as measured by the Performance Series and MAP tests?

Hypotheses

Based on the research questions, the following null hypotheses were used in this
study using a 0.05 level of significance:
1. There will be no relationship between perceived school climate and student growth;
2. Schools with similar school climate results will not have common growth results; and
3. Schools with similar student growth results will not have common climate characteristics.

Research Design and Methodology

In order to conduct this study exploring the issues surrounding school climate and student outcomes, a non-experimental quantitative study was used to investigate these relationships within select Michigan charter schools. The research methods used to gather information regarding this relationship continued on the tradition of Brookover and colleagues (1978) with their work exploring the relationship between elementary school social climate and school achievement in Michigan public school districts. Adapted, however, to fit the more contemporary needs of today’s educational system (Hoy et al., 1986, 1991), the research instruments used in this study more closely followed those developed by Hoy and colleagues (1991), as described previously in this chapter.

Participating charter public schools in Michigan, with a common authorizer, were surveyed using a school climate inventory: the Organizational Climate Descriptive Questionnaire for Elementary Schools (OCDQ-RE, addendum A). This survey, originally developed by Halpin and Croft (1963), refined by Hoy and Clover (1986), and then further refined by Hoy and colleagues (1991), provided an established and reliable instrument to examine the school climate. With an emphasis on teacher and principal behaviors, the OCDQ-RE served its purpose in determining the openness of a school environment as seen from a teacher’s perspective (Freiberg, 1999; Hoy et al., 1986, 1991).
This cross-sectional survey examined multiple aspects of school climate including perceptions of school climate, teacher and leader behaviors, and other variable surrounding the learning environment. This research did not attempt to establish a cause-effect relationship between the variables, seeking instead to ascertain the presence or absence of a relationship between them. The survey instrument used a Likert-type scale, originally developed by Rensis Likert and a widely accepted format (Vogt, 1999).

Each survey was composed of 42 questions and scored using a 4-point Likert-type scale (1 = Rarely Occurs, 2 = Sometimes Occurs, 3 = Often Occurs, 4 = Very Frequently Occurs). The survey response sought to provide six dimensions of responses separated into two categories (Table 1). Schools surveyed completed a consent form prior to providing information regarding the perceived school climate within the environment being studied. Data were gathered with an established survey tool from public sources and published as tables within this study.

Student growth data were obtained from the public state university authorizer who chartered the schools who participated in the study. Student test scores from the 2010-2011 school year were gathered from the fall and spring reading and fall and spring math results from either the Performance Series test by Scantron or the Measures of Academic Progress (MAP) by Northwest Evaluation Association (NWEA), administered in grades 3 through 8, depending on the assessment identified in their charter contract. Results were coded using a non-student identifiable code in compliance with the Family Educational Rights Privacy Act (FERPA), matched by students who took both fall and spring tests, and a percent of normal growth was calculated using national results. All raw data collected through the climate
survey instrument and student test data were entered into a computer and analyzed using Statistical Package for Social Services (SPSS-18) software by IBM, Inc.

Descriptive statistics were used to analyze the quantitative data to determine the significance between the variables and test the stated null hypothesis. Data were further analyzed using the parametric Pearson Product-Moment correlation and linear regression analyses on the various factors to determine the correlation between the pairs of independent and dependent variables. These analyses were used to determine what relationship exists between school climate (independent variable) and student growth (dependent variable), and among schools in both the areas of school climate and student growth.

Conceptual Framework

Throughout the 1960s researchers focused on tying school climate to various student demographics, such as socioeconomic and race differences, in an attempt to explain achievement, albeit with mixed results (Colman et al., 1966; Hauser, 1970; McDill, Meyers, & Rigsby, 1976). The Colman Report of 1966 reported that factors within a school environment had little impact on student outcomes, noting that it was external factors such as family dynamics that played the most significant role. Not everyone agreed with this analysis, and in response there was an increase in research focused on the school environment (Edmonds, 1979).

It wasn’t until the late 1970s that a concerted effort was given to associating school climate directly with student outcomes (Zullig et al., 2010). Brookover and colleagues (1978) describe their approach in examining elementary school climate in a manner that could be positively linked to mean student outcomes, even when adjusting for adherent variables such as race, socioeconomic status, and other demographics. Student self-
perception and the way they felt about themselves was the greatest indicator of achievement within the social environment of the school (Zullig et al., 2010). Continuing on this tradition such notable researchers as Rutter, Maughan, Mortimore, Ouston, and Smith (1979), Lightfoot (1983), Hoy, Tarter, and Kottkamp (1991), Teddlie and Springfield (1993), and Rogers and Freiberg (1994) sought to find the connection between school climate and student outcomes.

The body of evidence from this work produced additional clarification on school climate and its constructs, each study using a unique approach and framework. By the early to mid-1990s, researchers began to focus on individual classrooms and teachers (Griffith, 1995). Griffith (1995) contended that if school climate was a factor of student outcomes at a school level, then individual classrooms with their own unique climates also have an impact on the teaching process and student learning.

The conceptual framework used in this study to examine the relationship between school climate and student growth in selected Michigan charter schools was based on the concepts and theories of organizational and school climate, and the impact climate has on the outcomes of individuals within that organization. School climate is a complex concept that produces unique phenomena, and it is the relationship between the perceived climate and the impact or influence it may have on those who occupy this setting that is of immense interest (Hoy, Tarter, & Kottkamp, 1991; Kelly, 1980; Stringer, 2002).

Adopting the Anderson (1982) causal model constructed from Tagiuri’s (1968) taxonomy, which provides a comprehensive assessment of the social environment, the conceptual model used to illustrate the relationship between school climate and student outcomes rested on this research tradition. The first climate model (Figure 1) conceptualizes
Figure 1. Interrelationships Between Tagiuri’s 4 Climate Dimensions

Figure 2. School Climate’s Impact on Achievement
possible interactions throughout the school environment as they relate to one another and formulate the collective school climate (Anderson, 1982). Each dimension – ecology, milieu, social systems and culture - not only contribute to the overall climate, but also share links with the various dimensions and vary within the strengths of their relationships.

Figure 2 illustrates a progression of the collective climate and the possible relationships between school climate and student outcomes. Although the Anderson model shows four main relationships among student outcomes and their interactions with school climate, a single research study could not possibly test all the possible relationships (Anderson, 1982).

As the pioneers of organizational climate research in schools, Halpin and Croft’s (1963) Organizational Climate Descriptive Questionnaire (OCDQ) model has been a staple in the field of education research for more than forty years (Hoy & Clover, 1986; Hoy et al., 1991; Hoy & Tarter, 1992). Unlike that of Anderson’s (1982) adoption of the Tagiuri (1968) taxonomy, the OCDQ was created as an instrument focused on understanding school climate, not necessarily seeking to understand climate’s impact on student achievement (Halpin & Croft, 1963); though it has been proved to be useful for this purpose (Thomas, 1972; Hoy & Clover, 1986; Tomlinson, 2004).

After many years of use, Hoy and Clover (1986) took on the task of revisiting Halpin and Croft’s original measure of school climate, the OCDQ (Hoy & Clover, 1986). Based on the more contemporary issues facing America’s schools, Hoy and Clover (1986) offered the field of educational research a reliable tool that focuses on teacher and principal behavior as seen from the teacher’s perspective (Hoy et al., 1991).
Table 1

Sample Items for Each Subscale of the OCDQ-RE

<table>
<thead>
<tr>
<th>SUPPORTIVE PRINCIPAL BEHAVIOR</th>
<th>DIRECTIVE PRINCIPAL BEHAVIOR</th>
<th>RESTRICTIVE PRINCIPAL BEHAVIOR</th>
<th>COLLEGIAL TEACHER BEHAVIOR</th>
<th>INTIMATE TEACHER BEHAVIOR</th>
<th>DISENGAGED TEACHER BEHAVIOR</th>
</tr>
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<td>The principal uses constructive criticism.</td>
<td>The principal monitors everything teachers do.</td>
<td>Teachers are burdened with busywork.</td>
<td>Teachers help and support each other.</td>
<td>Teachers socialize with each other.</td>
<td>Faculty meetings are useless.</td>
</tr>
<tr>
<td>The principal compliments teachers.</td>
<td>The principal rules with an iron fist.</td>
<td>Routine duties interfere with the job of teaching.</td>
<td>Teachers respect the professional competence of their colleagues.</td>
<td>Teachers' closest friends are other faculty members at this school.</td>
<td>There is a minority group of teachers who always oppose the majority.</td>
</tr>
<tr>
<td>The principal listens to and accepts teachers suggestions.</td>
<td>The principal checks lesson plans.</td>
<td>Teachers have too many committee requirements.</td>
<td>Teachers accomplish their work with vim, vigor, and pleasure.</td>
<td>Teachers have parties for each other.</td>
<td>Teachers ramble when they talk at faculty meetings.</td>
</tr>
</tbody>
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There are six dimensions of the OCDQ-RE (Table 1) that are divided into two categories: principal’s behavior and the teacher’s behavior (Hoy & Clover, 1986). The updated OCDQ-RE model measures changes in organizational climate and provides a school climate profile. This profile places schools on a continuum from an open organization to a closed organization (Freiberg, 1999).
Figure 3. Interrelationships Among Hoy’s 6 Climate Dimensions

Figure 4. School Climate’s Impact on Growth
Using Anderson’s (1982) model as a point of reference, Hoy’s (1986) six dimensions of the OCDQ-RE can be exchanged with Tagiuri’s four dimensions of the organizational environment, focusing on teacher and principal perceptions (Figure 3). The principal’s behavior made up of three dimensions (supportive, directive, restrictive) interacts with the teachers’ collective behavior, made up of three dimensions (collegial, intimate, disengaged), which in turn interacts with and establishes the school climate (Figure 3).

Additionally, the three distinct behaviors for both the principal and the teachers overlap to form two openness dimensions: principal openness and teacher openness. Figure 3 conceptualizes all possible interactions between the teachers and principal in the school environment as they relate to one another and formulate the principal and teacher openness, and the collective school climate.

Figure 4 builds upon the interrelationships among Hoy’s six climate dimensions and illustrates the interactions between the collective school climate and student outcomes. Similar to that in Anderson’s model (1982), the outcomes have an interaction with the collective school climate. Outcome\textsubscript{1} is shown as affecting both school climate and outcome\textsubscript{2}; however, outcome\textsubscript{1} is not directly affected by outcome\textsubscript{2} as time is a factor in this relationship. For the purpose of measuring student growth within an elementary school, two points of reference are being used to create a growth score. Outcome\textsubscript{1} is represented as being the results of a pre-test, while outcome\textsubscript{2} is represented as being the results of a post-test. Therefore, outcome\textsubscript{1} may have an interaction effect on outcome\textsubscript{2}, but outcome\textsubscript{2} cannot have a reciprocal relationship with outcome\textsubscript{1} (Figure 4). This is divergent from Anderson (1982), who measured student achievement at a single point in time using a status score (Anderson, 1982).
Therefore, the conceptual framework used to illustrate the theory of school climate and its relationship to student outcomes within this study combined the concept of school climate developed through the OCDQ-RE by Hoy et al. (1991) with Tagiuri’s (1968) original climate taxonomy. Using the OCDR to measure climate and student growth as a measure of student outcomes, this new approach is a more sophisticated concept than Anderson’s (1982) work seeking to understand how school climate affects student achievement. With some slight modifications to bridge the gap between concepts and account for student growth, a new framework was identified (Figure 3 & 4).

Definition of Terms

Authorizer

A charter school authorizer is a public state university, community college, Regional Educational Service Provider (or Intermediate School District), or a local educational association (or “traditional” public school district) who by approval from the governing board of that organization has approved a charter contract with an independent public school academy (charter school) board of directors.

Charter Schools

A charter public school (or public school academy) is a public, tax-supported school established by a charter contract (charter) between a granting body (authorizer) and an independent, not-for-profit group of individuals (board of directors), which operates the school within the confines of the charter.

Closed Climate

Closed climate occurs when the principal is distrustful, non-supportive of faculty, unyielding, and authoritarian. Additionally, the faculty is apathetic, self-involved, uncaring
about students and each other, and is unwilling to accept responsibility. Principal and teacher behaviors are guarded and closed (Hoy & Sabo, 1998).

Healthy School Climate

A healthy school is one in which the institutional, administrative, and teacher levels are in harmony, and the school meets functional needs as it successfully copes with disruptive external forces and directs its energies toward its mission (Hoy and Sabo, 1998).

Elementary School

A school for the first four to eight years of a child’s formal education, often including kindergarten. For the purposes of this study, the term elementary is used to define a school that enrolls and assesses students in grades 3 through 8.

Leadership

Leadership is the process of influencing others to understand and agree about what needs to be done and how it can be done effectively, and the process of facilitating individual and collective efforts to accomplish the shared objective.

MEAP

Michigan Education Assessment Program (MEAP) is the state mandated standardized assessment give to students in grades 3 through 9 in the fall of the academic year. This criterion-reference test, which serves to assess the subjects of English, mathematics, science and social studies, was first administered during the 1969-70 school year for the purpose of determining what students know and what students are able to do, as compared to standards set by the State Board of Education.
Measures of Academic Progress

The Measures of Academic Progress (MAP) by the Northwest Evaluation Association (NWEA) is one of the two national normed, criterion-referenced tests administered in grades 3 through 8 in both fall and spring used in this study to determine student growth. Both the reading and math tests will be used.

One Year’s Growth

One Year’s Growth (OYG) is defined as the growth between the fall test and spring test given in the same academic year.

Open Climate

Open climate occurs when the principal is supportive of teachers and provides the necessary autonomy for them to accomplish specified learning objectives. The principal avoids burdening teachers with busy work. The faculty is respectful, non-critical of each other, and is committed to assisting students (Hoy & Sabo, 1998).

Performance Series

The Performance Series by Scantron, Inc. is the second of the two national normed, criterion-referenced assessments administered in grades 3 through 8 in both fall and spring used in this study to determine student growth. Both the reading and math tests will be used.

Public School Academy*

A public school academy (PSA) is the formal name given to a charter school through state legislation. *See also Charter School

Scaled Score

A scaled score is a conversion of a student’s raw score on a test to a common scale that allows for a numerical comparison between students and, in some cases, between tests.
School Climate

The set of internal characteristics that distinguishes one school from another and influences the behavior of its members. School climate is construed as organizational “personality” (Hoy, Tarter, & Kottkamp, 1991).

School Culture

Culture can be defined as the school’s unwritten rules and traditions, norms and expectations, as well the group’s collective behaviors and habits: the way people act, how they dress, what they talk about or consider taboo, whether they seek out colleagues or isolate themselves and how teachers feel about their work and their students. “Culture consists of the stable, underlying social meanings that shape beliefs and behavior over time” (Deal & Peterson, 1990)

Student Achievement

Student Achievement is the attainment of clearly defined academic standards as measured by a standardized assessment. Typically, student achievement is measured by a state administered criterion-referenced assessment, such as the MEAP.

Student Growth

Student growth (or student gain) is the amount of academic change between two points in time as measured by a standardized assessment. For the purposes of this study, student growth will be defined as the percent of normal growth determined by calculating the difference between the fall test and spring test given in the same academic year, compared to the student’s anticipated growth, as measured by a national normed, criterion-referenced assessment, either the Performance Series test by Scantron or the MAP test by NWEA.
Limitations and Delimitations

The nature of social science research limits the ability of a researcher to study all possible variables related to one topic. Yet, it is the responsibility of the researcher to understand these limitations and address them through proper restrictions. This study had several limitations, including the fact it could not examine every factor affecting school climate. It also limited the findings to the openness of the school, based on principal and teacher behaviors in a select group of Michigan charter schools. The study was also limited to teacher perceptions and did not include students’ perceptions or those from parents or the administration. This study was also limited to climate survey results at a single point in time, noting that school climate continually changes.

The findings in this study were limited by the following factors:

The study was limited to the voluntary responses of those respondents on the perceived school climate at the very time the survey instrument was distributed. The study did not account for variations in responses or differences in personal or professional conflicts between teachers and/or teachers and administration. This study was limited to the results of the Performance Series test by Scantron and the MAP test by NWEA given in the fall of 2010 and spring of the 2011. This study accepted all test results and did not account for variances in the administration and proctoring of the tests.

When conducting research, is it also necessary for a researcher to place self-imposed restrictions upon the study. These delimitations served to focus the study and provide additional parameters.

This study had the following delimitations:
The study was limited to a cohort of approximately 35 elementary charter schools authorized by the same public state university. Data were only collected from elementary charter schools chartered by a single public state university authorizer. This study limited the population to schools who meet the following criteria: authorized by the same public state university; served and assessed grades 3 through 8; were not in their first year of operation; who enrolled more than 100 students, but no more than 2,000; and whose students were all located on the same physical site throughout the school year. The study was also limited to the survey responses of the teachers, teacher assistants or paraprofessionals, support staff, and other related teaching personnel in the respective schools.

Additionally, it is noted that the researcher was employed with the state university that authorized the schools who participated in this study at the time of this study. The researcher did not have responsibilities that required contact with the individuals at any of the schools, including the principals and teachers. Throughout the course of gathering data, the researcher did not contact or have any interactions with the schools, their governing boards or employees as an agent of the university.

This researcher did not impose delimitations on the following criteria: The design of this study was not limited by the demographics of the schools or the students who occupied the schools, which may have included socio-economic status; free and reduced price lunch eligibility; special education population; diversity of the student and staff population; the location of the school, may it be rural, urban, suburban; age of the school, beyond the first year of operation; length of charter contract; age of teaching staff or administration; and years of service of the teachers or administrators.
Summary

Chapter I began with an introduction to the study and a statement of the problem, including an overview of the importance of school climate; how student outcomes were measured with student growth scores; and the environment within charter schools. The chapter continued with the purpose of this study, which was defined as an investigation into the relationship between school climate and student growth, as well as stated research questions and a null hypothesis which served to guide the study. The chapter then provided a description of the conceptual framework used to build the study. The chapter also provided definition of terms, an introduction to the study’s design and methodology, which included limitations and delimitations. Chapter II provides a review of literature regarding the problem of the study, with respect to school climate in charter schools, as measured by student growth. Additionally, Chapter III will provide an overview of the research design and methodology used in the study, while Chapter IV presents the findings and Chapter V concludes with a summary, discussion, and recommendations for future research.
CHAPTER II: REVIEW OF RELATED LITERATURE

Introduction

The purpose of this quantitative study was to investigate the relationship between school climate and student outcomes by understanding the variables surrounding healthy schools (Freiberg, 1999). Although significant research has been conducted in the area of school climate (Hoy et al., & Freiberg) there is relatively little empirical data tying school climate to student growth. Additionally, most of the research and findings have been supplied by studies within the traditional district school system environment (Zullig, Koopman, Patton, & Ubbes, 2010).

With the dawn of school choice there is a new, relatively untapped field of study waiting to be researched in the charter school environment (Buckley & Schneider, 2007; and Walberg, 2007). By focusing on how school climate affects student outcomes, the results of this study intended to add new empirical evidence to the field of educational leadership and shed light on the complexities surrounding today’s schooling. The purpose of this chapter is to present a historical context; explore the literature surrounding school climate, student growth and charter schools; discuss how school climate differs from school culture; and to continue defining the conceptual model used in this study.

Organizational Climate Theory

The roots of school climate as a field of study grew out of the organizational theory research of the early to mid-1900s (Perry, 1908; Anderson, 1982; Cohen, McCabe, Michelli, Pickeral, 2009). Organizational theory itself borrowed many concepts from earlier established work in industrial and organizational psychology and organizational behavior, which mainly focused on the individual worker (Schneider, 1990). It was Lewin, Lippit, and
White (1939) who first portrayed climate as an “empirical reality,” referencing the social climate within an organization to describe the relationship between leadership styles and environmental dynamics (Stringer, 2002; Kundu, 2007). In a 1953 article explaining the failure of a program to properly transfer into a field setting, Fleishman made reference to leadership climate, but stopped short in defining climate as a separate concept (Schneider, 1990).

Beginning in the 1950s and well into the subsequent decades, organizational researchers such as Pace & Stern (1958), March & Simon (1958), and Halpin & Croft (1963) defined organizational climate as “organizational life” or the “work environment.” Then in his case study diagnosing group dynamics of a bank, Argyris (1958) introduced “organizational climate” as a concept and provided a comprehensive definition of the term. Through the study he defined climate in terms of formal organizational policies and employee needs, values, and personalities. It was also his work, due to its all-encompassing scope, that led to an ambiguous relationship between climate and culture that persisted until the 1970s (Kundu, 2007).

Organizational climate continued to gain interest through the latter part of the 1950s and into the 1960s. The focus on climate at that point in time, however, was primarily on empirical research rather than that of scholarly writing. Thus, there is a larger body of material on research methodology and instrumentation, rather than on a defined conceptual framework (Schneider, 1990). At a conference on climate in 1966, Lewin and Stringer presented a paper that provided the first comprehensive overview of how climate is conceptualized and operationalized, which was widely accepted (Schneider, 1990; Stringer,
2002). They described six dimensions of organizational climate that included structure, responsibility, reward, risk, warmth, and support (Stringer, 2002; Kundu, 2007).

Tagiuri (1968) continued defining the terminology surrounding organizational climate as “the general notion to express the enduring quality of organizational life” in his essay, *The Concept of Organizational Climate* (Stringer, 2002). It was during this time that the conceptual framework of organizational climate began to take shape and the accepted view that climate can be conceptualized and measured was established (Kundu, 2007).

Building on the work of their predecessors, James and Jones (1974) provided three new standard categories in which to conceptualize and measure organizational climate: Multiple measurement-organizational attribute approach (MMOAA), Perceptual measurement-organizational attribute approach (PMOAA), and Perceptual measurement-individual attribute approach (PMIAA; James & Jones, 1974; Kundu, 2007). Most of the work on organizational climate after the 1970s falls under one of these three categories. However, with its focus on the nature of the individual, the term “psychological climate” is used for work in the area of PMIAA (James & Jones, 1974). Today, most of the work in the area of organizational theory represents the corporate culture, working to identify strategies and best practices to maximize productivity (Deal & Kennedy, 2000).

**School Climate Theory**

It is from these concepts and theories of organizational climate that much of the groundwork for school climate is constructed. Although educators have recognized the importance of school climate for many years (Perry, 1908), it was Tagiuri (1968) who bridged the gap between the business world and education by encompassing the total environmental quality within a school building (Cohen et al., 2009). His taxonomy of
climate-related terms provided a precise specification of the constructs dealing with the total environmental quality within a school as an organization (Anderson, 1982; Cohen et al., 2009).

Tagiuri (1968) defined climate as being a set of four distinct qualities representative of an individual, “a particular configuration of enduring characteristics of the ecology, milieu, social system and culture would constitute climate, as such as a particular configuration of personal characteristics constitutes a personality.” A breakdown of this taxonomy including the four main distinctions is as follows (Tagiuri, 1968).

- **Ecology** – the physical and material aspects of the organization
- **Milieu** – the social dimension concerned with the presence of persons and groups
- **Social System** – the social dimension concerned with the patterned relationships of person and groups
- **Culture** – the social dimension concerned with belief systems, values, cognitive structures, and meaning

Moos (1974) and Insel & Moos (1974) provided additional descriptions of climate, similar to that of Tagiuri, with a focus on the two distinct components of the physical and social dimensions of the environment. Although more refined in terms and descriptors, Tagiuri’s model has resonated more so with educators and researchers in subsequent decades and is still a base for contemporary school climate research (Anderson, 1982). Today such terms as atmosphere, feelings, tone, setting, or milieu are all common ways to express the general phenomena associated with climate (Freiberg, 1999, Homana, Barber & Torney-Purta, 2006; Tagiuri, 1968).

While there is no commonly agreed upon definition for school climate, many researchers and educators propose that the essence of school climate reflects the collective and subjective experiences within a school (Cohen, 2006). Originally, many researchers
focused on the observable qualities of a school and saw school climate as a tangible property, like that of a building or its physical condition (Cohen et al., 2009). Hoy and colleagues (1991) assert that although climate was initially used to express a quality of organizational life, its characteristics, which are influenced by individual behavior, are a collective perception of those in the environment. They concluded that an organization’s climate could be equated to that of an individual’s personality (Hoy et al., 1991).

Contemporaries describe school climate as the “ethos or spirit” of an organization (Greunert, 2008). Most notably, Cohen et al. (2009) suggest that “school climate refers to the quality and character of school life… based on patterns of people’s experiences of school life and reflects norms, goals, values, interpersonal relationships, teaching and learning practices, and organization structures” (p. 10). Freiberg (1999) continues to describe school climate as “much like the air we breathe – it tends to go unnoticed until something is seriously wrong.”

School Climate versus School Culture

A very common misunderstanding, nevertheless, is the indistinctness between school climate and that of school culture. Due to the similarities between climate and culture, and the common roots of both concepts, an ambiguity of sorts has developed (Hoy, Tarter & Kottkamp, 1991). Although both climate and culture are conceptual, organizational culture – unlike that of climate – is rooted in the field of sociology and anthropology. Anthropologists describe culture as the norms, beliefs, values, rituals, and ceremonies of a collective group of people. Regarding a school environment, this would encompass the shared attributes of the students, teachers, administration and other participants who choose to interact in the school (Schein, 2004). As the unwritten expectations that build up over time, school culture is an
abstraction of sort, which can best be studied through observation, interviews, and other qualitative research methods.

In order to continue illustrating the differences between climate and culture, Gruenert (2008) applies the human attributes of attitude versus personality. Defining school climate as a person’s attitude, this concept draws on the current mood of an individual, one that is variable, changes frequently based on internal and external forces, as a reflection of the moment. Culture, on the other hand, is more like a person’s personality, which doesn’t change as our personalities are set for life. Although they may alter slightly by a traumatic or significant life event, they are more inclined to stay constant. The make-up of our personality is based on internal desires, values, ideals, and beliefs, which are molded from our experiences and rarely are they directly influenced by others (Dimmot & Walker, 2005).

![Figure 5. Dimensions for Distinguishing between Climate and Culture](image-url)
Stolp and Smith (1995) provide a comparison between the factors that make up both school culture and school climate (Figure 5), helping to delineate the variables between the two. They describe a context in which school climate is composed of the immediate, surface activities of an organization and is encapsulated in or a part of the school’s culture, which is more historical and internalized in nature. Climate is a narrower concept than that of culture, which is a broader and more abstract concept (Stolp & Smith, 1995).

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<td>METHOD:</td>
<td>Survey Research Multivariate Statistics</td>
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<td>CONTENT:</td>
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*Figure 6. Comparison of the Perspectives of Climate and Culture*

Hoy, Tarter, and Kottkamp (1991) also provide an expanded explanation of the relationship between climate and culture (Figure 6). Although climate and culture each try to identify significant properties of the organization, there are unique and distinct attributes that
set each other apart. Hoy and colleagues elaborate by describing culture as the shared assumptions, ideologies, and values of the members of an organization, while climate is described as being the shared perceptions of behavior. Figure 6 provides an additional comparison of the perspectives between organizational climate and culture.

Understanding the similarities and differences between these two concepts provides us with a more precise instrument by which to study the school environment and understand the variables surrounding student outcomes. Although research has shown that both school climate and school culture may have an impact on the school environment, this research study sought to focus on school climate as a factor relating to student outcomes.

A Definition of School Climate

For more than a hundred years, educators and researchers have been attempting to understand the dynamics associated with schools and how they impact student outcomes (Zullig et al., 2010). The question remains, however, “What are student outcomes?” Typically, student outcomes are defined as the academic results and behavioral characteristics of students from the intentional activities of schooling (Zullig et al., 2010; Freiberg, 1999). During what period of time, however? Are they during the time a student is enrolled in a particular school, or for the life of that student?

Cohen (2006) argues that “the goals of education need to be re-framed to prioritize not only academic learning, but also social, emotional and ethical competencies” (p. 201). Furthermore, he claims that learning social-emotional skills, knowledge and dispositions help to create good citizens, can improve the quality of one’s life, and are the foundation of a democracy (Cohen, 2006).
So if student outcomes are the academic and behavioral effects – including social, emotional, and ethical properties – over the course of a student’s entire lifetime, understanding the variables, activities, and forces that impact or influence those outcomes is an overwhelming proposition. This, then, is why we need to return to the foundations of school and organizational theory for clarification and guidance.

Throughout the course of the last century, many definitions of organizational and school climate have been proposed; still, not one commonly accepted definition exists (Cohen, 2006). Based on the foundation of organizational climate and further research on school climate, the following are common characteristics of school climate among the field of study:

• Peoples’ shared perceptions of the school or department (Stolp & Smith, 1995; Hoy, Tarter & Kottkamp, 1991; and Freiberg, 1999)

• The collective impressions, feelings and expectations of individuals within an school (Stolp & Smith, 1995; and Freiberg, 1999)

• Perceptions of the school’s structure and setting (Stolp & Smith, 1995; and Freiberg, 1999)

• Social interactions and behaviors among individuals who work or spend time in the school (Stolp & Smith, 1995; Hoy, Tarter & Kottkamp, 1991; and Freiberg, 1999)

• It is something that is immediate and present, not historical. (Stolp & Smith, 1995; and Freiberg, 1999)

• It is something that surrounds us and is influenced by us, but is not integral or part of us. (Stolp & Smith, 1995)

• Climate is part of a school’s culture; culture is separate and not necessarily part of the climate. (Stolp & Smith, 1995; Hoy, Tarter & Kottkamp, 1991)

Although there is no one single definition of school climate, from these collective attributes and a review of literature on the subject, we can begin orchestrating a common definition for the purposes of this study. As the historical reference, Tagiuri (1968) provides a base for this activity in his definition. He states:
“Organizational climate is a relatively enduring quality of the internal environment of an organization that (a) is experienced by its members, (b) influences their behavior, and (c) can be described in terms of the values of a particular set of characteristics (or attributes) of the organization.” (p. 27)

From this we understand that climate is internal to the organization and made up of three distinct parts: (a) experiences by the individuals within the organization, (b) influences or has an impact on the behaviors of those individuals, and (c) can be measured and portrayed in specific terms of values, characteristics, and their attributes.

Lewin and Stringer’s (1968) definition provides additional clarity:

“Organizational climate is a concept describing the subjective nature or quality of the organizational environment. Its properties can be perceived or experienced by members of the organization and reported by them in an appropriate questionnaire.” (p. 187)

Expanding upon the understanding that organizational climate is a concept, one that can be studied, this definition proved insight into the construct that climate is “perceived” or “experienced.” Furthermore, this is a framework for the method in which to measure climate phenomena – a questionnaire.

Today, we can define organizational climate in more specific terms, capturing the essence of an organization’s character (Hoy et al., 1991). Taking our knowledge of organizations as places in which adults and children work, play, interact, and learn can be applied to the school environment. With help from Hoy and colleagues (1991) we can define school climate in these terms:

“School climate is the relatively enduring quality of the school environment that is experienced by participants, affects their behaviors, and is based on their collective perceptions of behaviors in schools.” (Hoy, Tarter, & Kottkamp, 1991; Hoy & Miskel, 1987; Tagiuri, 1968)

This validates that school climate is the enduring nature of the internal organization (or school) and at some level “affects” or influences the behaviors of the individuals within
that environment. Including the idea of “perceptions,” we also understand that school climate is a collective attribute of the individuals and their behavior. We can then rest assured that the concepts of organizational climate and that of school climate have been refined to provide a comprehensive yet focused definition.

It is here, the understanding that the quality of a school’s environment has a direct and measurable effect on student behavior, that we conclude school climate is central to long-term student success (Brookover et al., 1978; Anderson, 1982; Hoy & Clover, 1986; Hoy et al., 1991; Freiberg, 1999; Cohen 2006; Zullig et al., 2010). Furthermore, its relevance in the field of education should not be underestimated, but should be studied and better understood (Freiberg, 1999; Cohen et al., 2009). This final definition of school climate was used as the basis of this study to measure climate within the school setting.

Prior Research

Argyris (1958) first introduced “organizational climate” as a concept to the field of organizational theory and provided a comprehensive definition of the term. Through his work, climate was defined as the formal organizational policies and employee needs, values, and personalities (Anderson, 1982). Tagiuri continued to refine the methodology surrounding organizational climate in the 1960s and was responsible for making the connection from the organizational environment to the school environment (Stringer, 2002).

As pioneers in the field of organizational climate in schools, Halpin and Croft designed the first Organizational Climate Descriptive Questionnaire (OCDQ), providing the field with a reliable instrument with which to gather data surrounding the concept of school climate. Intended to expose the organizational climate of an elementary school, the OCDQ became a leading instrument in the search for empirical data describing the characteristics of
school climate (Halpin & Croft, 1963). Based on eight categories of school climate, four
dealing with group dynamics and four dealing with leader behavior, the OCDQ sought to
measure the “personality” of the school (Halpin & Croft, 1963). The eight subtest
components of the original OCDQ are as follows:

Characteristics of the Group

1. Disengagement
2. Hindrance
3. Espirit
4. Intimacy

Behavior of the Leader

5. Aloofness
6. Production Emphasis
7. Thrust
8. Consideration

Out of the many variables in which to assess school climate – aptitude tests,
achievement tests, information on absenteeism, tardiness, levels of student involvement, and
disciplinary referrals – it is academic achievement that researchers routinely turn to, to
measure the relationship climate has on student outcomes (Kelly, 1980). The watershed
study by Brookover and colleagues (1978) was the first work to systematically study the
relationship between school climate and student outcomes using student achievement as the
dependent variable.

Using various climate surveys, Brookover and colleagues provided the field of
education with a study in which climate was found to have a direct relationship with student
outcomes (Zullig et al., 2010). They concluded that favorable climate is necessary for high achievement (Brookover et al., 1978). The impact of this study and its results were extensive and had far-reaching implications for current school leaders and future research (Cohen et al., 2009). Additionally, Anderson (1982) provided a causal model constructed from Tagiuri’s (1968) taxonomy, which provides a comprehensive assessment of the social environment. This conceptual model is used to illustrate the relationship between school climate and student outcomes resting on past research tradition (Cohen, et al., 2009).

Hoy and Clover (1986) revisited Halpin & Croft’s (1963) OCDQ in an attempt to refine the survey and provide a contemporary instrument to measure school climate (Hoy & Clover, 1986). From this, they conducted two studies. First, they defined a pilot sample of 38 elementary schools, ten of which were actually used in the study. Once the new OCDQ-RE questionnaire was finalized they conducted a second, more elaborate study to test the new instrument (Hoy & Clover, 1986). This second test involved 70 schools in order to demonstrate the stability of the new survey and confirm its validity. Hoy, Tarter and Kottkamp (1991) then provided additional groundwork in Open Schools/Healthy Schools (1991) with the OCDQ-RE and a new survey for secondary schools, the Organizational Climate Descriptive Questionnaire for Secondary (OCDQ-RS) Schools. Through many years of testing and refining they have garnered support and have provided the field of educational research with a framework within which to work, aimed toward organizational improvement (Cohen, McCabe, Michelli, & Pickeral, 2009).

Today there are various models of extracting school climate data from schools. The foremost research models with an intentional focus on climate include the California School Climate and Safety Survey (CSCSS); the U.S. Department of Education’s (1988) National
Longitudinal Study Student Questionnaire (NELS); the National Association of Secondary School Principal’s Comprehensive Assessment of School Environments (CASE, 1987); the San Diego County (1984) Effective Schools Student Survey (ESSS); the School Development Program (SDP); and work by Jerry Valentine and colleagues on the organizational Climate Descriptive Questionnaire - Middle Level (OCDQ-ML) at the University of Missouri at Columbia’s The Middle Level Leadership Center (MLLC; Zullig et al., 2010).

Another perspective on school climate research through Wang, Haertel, and Walberg’s (1997) meta-analysis that found “When averaged together the different kinds of instruction and climate had nearly as much impact on learning as the student aptitude categories” (p. 205). When looking at the 28 categories they found to have an influence on learning, classroom management was the most significant influence. After meta-cognitive and cognitive processes, home environment, and parental support and student teacher social interactions – social behavior attributes, motivational affective attributes, peer group, quality of instruction, school culture and classroom climate – rounded out the list (Freiberg, 1999). This study, as Freiberg describes (1999), ultimately determined that among other factors, “school climate is a real factor in the lives of learners and that it is measurable, malleable and material to those that work and learn in schools” (p. 17).

School climate is not something that just occurs, it is the result of intentional, or unintentional actions. According to Stringer (2002), “It doesn’t just happen – it is caused.” The cause that creates or determines a school’s climate can be based on a variety of factors (or determinants), which may include (Stringer, 2002):
• External environment
• Strategy
• Leadership practices
• Organizational arrangements
• Historical forces

These five determinants each play a role in shaping a school’s culture. Although it’s not clear if these factors are causal to one another, leadership is a significant factor in shaping school climate (Stringer, 2002)

Student Outcomes

To better understand the relationship between school climate and student outcomes, the factors that determine the outcomes of the learning process must be explored. From a specific product, or test score to observable behavior, or even the invisible process of learning, student outcomes can be as formal and clearly defined as an student’s test score, or as informal and nebulous as the performance of a student acting out a scene from Shakespeare’s A Midsummer Night’s Dream.

Sergiovanni and Starrat (2002) define student outcomes as “an interpretive approach” and argue that “faculty and students’ meanings and experiences are as important as external evaluators’ constructions, and that the learning process is as important as the product.” Therefore, one cannot assume that a singular, standardized assessment can fully measure all outcomes of the teaching and learning process and assuredly does not account for all influences within the school environment.

Solely using standardized assessment scores to measure student outcomes could be described by the McNamara Fallacy. Robert McNamara, the U.S. Secretary of Defense from
1961 to 1967 under Presidents Kennedy and Johnson, among other notable positions, is supposed to have become obsessed with data during the Vietnam War. Although McNamara’s use of data was unprecedented at that time, social scientist Daniel Yankelovich described McNamara’s approach, dubbing it the McNamara Fallacy, in the following manner:

“The first step is to measure whatever can be easily measured. This is OK as far as it goes. The second step is to disregard that which can’t be easily measured or to give it an arbitrary quantitative value. This is artificial and misleading. The third step is to presume that what can’t be measured easily really isn’t important. This is blindness. The fourth step is to say that what can’t be easily measured really doesn’t exist. This is suicide.” (Charles Handy, 1994 – p. 219)

Applying this reasoning to the field of education, one could easily conclude that certain state and federal programs are encouraging this same, single-track approach. No Child Left Behind (2001), as one example, continues on this mindset and pushes states to enact policy that uses singular assessment strategies to determine school and teacher effectiveness. On January 4, 2010, the State passed a law requiring the Michigan Department of Education (MDE) to publish a list of “persistently low achieving” schools each year. On August 16, 2010, the MDE, in response to this law, published a Top-to-Bottom list ranking all public schools by proficiency and growth on the MEAP in grades 3 through 8, and MME in grade 11.

Despite these warnings there are few approaches to measuring student outcomes that are so clear, observable, and replicable. The standardized assessments common in educational research are administered, scored, and interpreted in a standard, predetermined manner (Popham, 2002), ensuring their validity and reliability.
Student Assessment

Since the National Commission on Excellence in Education published *A Nation At Risk: The Imperative For Educational Reform* in 1983 under the Reagan administration, public education has been placed in a national spotlight, researched and scrutinized. The report documented the decline of student achievement in American schools, in response to which policymakers and education reformers across the country began focusing on standards and assessment (Jennings, 1993). Furthermore, most states over the years have taken an aggressive approach, adopting academic standards and policies governing public education. Forty-four states have standardized curricula in at least four basic subjects: English, math, social studies, and science. Twenty-one states administer their own exams to test students in these subjects, including Michigan (Reed & Gifford, 2001).

The concept of unified standards and measuring achievement towards that standard, however, is not new. The Michigan Educational Assessment Program (MEAP) has been in place in the State of Michigan for more than 30 years. The MEAP began in 1969 and was developed into its current form in 2005 with the exception of a revised writing test, which was added in 2009. The MEAP test was created to evaluate what Michigan educators believe all students should know in the core academic areas of mathematics, reading, writing, science, and social studies, and seek to understand how Michigan’s students and schools are doing based on standards established by the Michigan State Board of Education. Today the MEAP test serves as a measure for school accountability under the No Child Left Behind Act and the Education YES! Accreditation system and is used to determine students’ knowledge of state specified Grade-Level Content Expectations (GLCEs; MDE, 2010).
As the only common academic measure of achievement in Michigan in grades 3 through 9, the MEAP is an important indicator of student success. Nonetheless, because it is the only common assessment given in Michigan, it is crucial to understand its limitations. It has been debated that there are multiple limitations of the MEAP. One recognized limitation is the bar at which student proficiency is set.

This proficiency bar is established by the state and there is no cross-linking to any other national standards. If attention is only given to the percent of students identified as proficient (achievement) on the MEAP, it could be concluded that a school with a high proficiency percentage is successfully preparing students academically for their futures. However, research has shown that the Michigan MEAP proficiency bar is set at a very low level, which creates an “illusion of proficiency” (Cronin, Dahlin, Xiang & McCahon, 2009).

It is due to this unreliability and lack of consistency that many charter school authorizers in Michigan require the schools they charter to administer a nationally standardized assessment, in addition to the MEAP, that produce nationally normed scale scores. Examples of these tests include the Scantron Performance Series and Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP) tests.

A scaled score is a conversion of a student’s raw score on a test to a common scale that allows for a numerical comparison between students and tests. Most experts agree that the scaled score is the most powerful numerical value to compare test scores over time, such as measuring one year’s growth of individual students or groups of students in a content area (Gong, 2004). However, a scaled score is not comparable between content areas such as math and reading.
The use of a computer adaptive testing system, such as the Performance Series and MAP tests, provides scaled scores that are accurate and reliable. One of the greatest benefits of computer adaptive tests is that students are not only assessed on material from their grade level, but rather the test adapts to their achievement level, whether above or below the grade in which they have been placed. Consequently, schools are provided richer information about the students than what they would receive from a more traditional test, like the MEAP.

The scales on these computer adaptive tests measure student achievement and growth in equal-intervals, like feet and inches, so scores can be added together to calculate the class or grade averages along with providing the mechanism to measure growth toward an outcome such as being able to read college-level materials. Computer adaptive tests that measure student growth are useful to help answer how much growth students achieved from fall to spring.

It’s because of these qualities that many educators and researchers are beginning to shy away from proficiency and look to student growth in studies gathering empirical results to draw conclusion between variables (Gong, 2004). Although growth can be used in similar ways as proficiency for teacher and program evaluation and for other internal decision-making processes, it’s the rich information it provides researchers that makes it so appealing (Hershberg, Simon & Lea-Kruger, 2004). Additionally, many states are now looking to implement national norm-referenced tests that provide student growth and value-added results for helping determine if the schools are making Adequate Yearly Progress (AYP) as required by the No Child Left Behind (NCLB) Act of 2001. Michigan is one such state, but it is not scheduled to implement such a test until 2014, at the earliest.
NCLB’s impact upon research linking assessment outcomes and school quality has also had a profound effect on schools (Betebenner, 2008). The conversations surrounding student outcomes and accountability models now differentiate between achievement and growth (Braun, 2005; Linn et al., 2002; Carlson, 2001). Beterbenner (2008) provides an overview of the distinction between achievement (status) and growth, as:

“Whether or not additional considerations—specifically prior achievement—should be taken into account to understand current achievement. Status models, as their name implies, qualify student performance solely in terms of the current status (i.e., achievement level) of the student. Hence, status models are unconditional achievement models, examining student performance at a point in time with no conditioning variables.” (p. 56)

It’s for these reasons that exploring student growth can provide additional contributions to this field of study, ultimately, broadening our understanding of the factors that contribute to student learning (Hershberg et al., 2004). In regard to measuring the relationship between school climate and student outcomes using student growth, having a keen sense of how a specific group of students is performing over a set period of time has significant implications on measuring the effects variables have on learning, such as climate (Betebenner, 2008).

A form of calculating student growth using sophisticated statistical analysis began in the mid-1980s in Tennessee (West, 1995). Statistician Dr. William Sanders at the University of Tennessee developed the value-added analysis.

Each student's test data are accumulated over time and are linked to that student's teacher(s), school(s), and school system(s) and can predict the amount of growth a student is likely to make in a given year. Because the model is associated with particular students and their teachers, the value-added assessment can look back over several years to determine the
long-term impact that a particular teacher or school had on student achievement (Sanders & Horn, 1998).

Originally, the value-added model gained little attention, and it wasn't until 1992 that a new interest in accountability surfaced with a Tennessee Supreme Court order that demanded a new funding system for schools. That year it became part of Tennessee’s Educational Improvement Act and is still in use in Tennessee and across the county. In addition to Dr. Sanders value-added model, similar models have been developed and implemented in various schools across the country (Sanders & Horn, 1998).

In a similar manner, the effective schools research over the past 20 to 30 years has spawned a great deal of research using student gain to measure various factors associated with the school environment (Lezotte, 1984; Berry, 1985). This approach, although similar to the value-added model, is less complex and uses test scores from one year to the next. The main limitation of this approach is that the test scores are from different school years, rather than within the same year. Prior to the schools of choice and the charter school movement, students were pretty stable and mobility was low. Today, however, students and families are much more transient and move from school to school. Whether it’s within the traditional district school boundaries, or to an entirely new school district or state, students may enroll in two, three, four, or more schools by the time they complete high school. Therefore, the use of a pre-test and post-test within the same school year is a preferred method by which to calculate student gain. Few schools, unfortunately, have such requirements for administering standardized assessments.
School Reform Initiatives

With the high stakes of state standardized tests becoming a central focus in a school’s efforts to address current deficiencies, both in regard to school and community relations as well as state accountability, school leaders are looking to best practices and strategies to maximize their time and effort in ensuring increased student outcomes. The first Bush administration’s approach to education policy, *America 2000: An Education Strategy*, was a broad plan stating “Sweeping, fundamental changes in our education system must be made” (Henig, 1994). Furthermore, Henig explains, “While Bill Clinton took issue with some of Bush’s specific education proposals, he did not challenge the notion that dramatic changes were required.” Therefore, we did not see extensive overhaul of the Elementary and Secondary Education Act (ESEA) of 1965 until 2001 with then President George W. Bush’s policies, namely the No Child Left Behind Act, a reauthorization of the ESEA.

The following National Security Strategy developed by President Obama’s administration further underscores the priority education has been given in today’s political environment.

“Yet even as we have maintained our military advantage, our competitiveness has been set back in recent years. We are recovering from underinvestment in the areas that are central to America’s strength. We have not adequately advanced priorities like education, energy, science and technology, and health care – all of which are essential to U.S. competitiveness, long-term prosperity, and strength.” (White House, 2010)

President Obama and his Secretary of Education, Arne Duncan, have made it a priority to attack the deficiencies of the nation’s current education crisis. Secretary Duncan has gone as far as to say that states are “lying to their children” when they tell them that they are college ready, when indeed they are not (Schneider, 2010)
With high stakes standardized tests becoming a central focus in today’s public education system, schools are seeing an ever-increasing pressure to perform. Since the mid-1980s and the release of the Nation At Risk report, America’s schools have seen an era of accountability. This increased accountability is like non-before, in regard to both national and state standards, and in more recent years, parent satisfaction and community acceptance. From standardized tests to parent satisfaction and schools of choice to community buy-in, school leaders are required to place a heightened focus on organizational matters that are taking attention away from the school’s core activity: teaching and learning (Ravitch, 2010). Due to these constant and increasing pressures, many schools and districts are finding themselves in critical condition, while receiving little in the form of life support from local, state, or federal departments (Ravitch, 2010).

Over the past couple of decades principals have stood by helplessly while the state and federal governments have made sweeping changes to the public education system. Top-down influences from the 2001 reauthorized Elementary and Secondary Education Act (ESEA) of 1965, the NCLB sent “shockwaves through the U.S. public school system,” pushing states to standardize school activities across the state (Mohammad, 2009).

In response to these pressures, many states have increased their control of school purse strings through title grants and other categorical funding and now mandate that public schools implement a statewide curriculum, follow a common calendar throughout regional Intermediate School District, and other items that had historically been site-based. Taking much of the control of the educational decision-making away from the individual school, schools have lost autonomy to make decisions on what to teach, yet “the educational system has remained largely the same” (Muhammad, 2009).
Schools of choice were one answer to parent and public backlash, who eagerly desired an alternative approach to education reform providing local, site-based control. In the early 1990s states across the country were looking to the legislature to create avenues for parents who wanted choice to have their children educated in public schools that were different from the ones determined by geographical boundaries (Nathan, 1996). This national movement created new legislation that allowed for “open” school districts, or “schools of choice,” where students and parents could select a school that was best suited to their needs.

Charter Schools

A charter public school (or public school academy) is a form of tuition-free public schools that first emerged across the United States in the early 1990s. These new and uniquely created schools are funded by tax dollars and follow legislation set forth by the state in which they operate. Some states require the schools to follow the same and in some cases additional requirements than those of traditional districts, while others offer more autonomy from state mandates. Each charter school is authorized by an oversight agency: a state university, not-for-profit organization, governmental municipality (governor’s office, state education department or city mayor), an intermediate school district, regional educational service association or local school district. Each authorizer issues a charter to the school, which in essence is the license to operate.

Subsequently, each charter school is an autonomous non-profit, public organization composed of an independent board of directors. Each charter school usually has between 5 and 9 board members, which are either publically elected or appointed by the authorizer.
Charter school boards may choose to hire staff directly to implement the educational program outlined in the charter contract, or contract with a third-party to provide the instructional and management services (Educational Service Provider, or ESP), which may vary state-by-state. Each state also has its own laws on who can charter a school, as well as provide the management and instructional services. Charter schools are open to the public and cannot discriminate based on race, color, national origin, religion, sex, handicap, or age.

Origins of Charter Schools

The roots of school choice, and ultimately that of charter schools, can be traced back to the late 1960s and early 1970s in the major metropolitan cities of New York, Philadelphia, Chicago, and Minneapolis. Parents and innovative public school educators were banding together to discuss new school designs and educational options for students. The new schools that grew out of this movement were independent from the larger districts, although they were still overseen by them. They were environments of innovation, experimenting with site-based decision-making, internships, apprenticeships, and increased parent involvement (Weil, 2000).

Due to ever increasing public opposition to school busing in the late 70s, districts created “magnet schools,” where the schools offered increased diversity and advanced curricula. Then schools labeled “alternative schools” for rebellious, often unsuccessful students began to form, as well as separate programs for students with special needs (Weil, 2000). And then trade schools were created for those who wanted more of a technical education, rather than liberal arts or college prep-focused one.

In the 1980s American was already experimenting with all types of educational models. Although funded through traditional funding streams, there were dozens of
educational styles, with various themes and concentrations. It was the 1983 publication *A Nation at Risk* that provided the catalyst needed to accelerate the charter school strategy through the clear message of a system wide failure. In Minnesota in 1988 a state legislator first took action and adopted new legislation that opened the door for students to have a choice in their education.

By the end of the year students in Minnesota could now choose which district they wanted to attend school in based on a plan developed by a University of Massachusetts Amherst professor, Ray Budde. Albert Shanker, the president of the American Federation of Teachers, then adopted this strategy the same year. Shanker embraced the notion of school development and new, improved formats of education, and encouraged unions to get behind the concept and create autonomous public schools within schools; he called these “charter schools” (Weil, 2000).

Minnesota was the first state to pass a charter school law, in 1991. California was second, in 1992, followed closely by Colorado, Massachusetts, and Michigan, in 1993. Although Michigan’s law was challenged initially, in 1994 the Michigan Supreme Court upheld the law as being constitutional. By the end of 1998 thirty-four states and the District of Columbia passed charter school legislation. Today there are more than one million students are enrolled in over 3,500 schools in 40 states plus the District of Columbia and Puerto Rico (NCES, 2006).

Charter Schools in Michigan

Michigan’s first charter school legislation was passed in 1993 as a result of the state’s broken education finance system. At that time much of school funding came from local property taxes, where there were dramatic inequities between wealthy and poor school
districts. The financial situation for some school districts was so bad that one school district in northern Michigan was forced to close more than two months early in 1993 (Mead, 2006).

In June of that year the Michigan Legislature took the drastic step and proposed eliminating local property taxes as the foundation of elementary and secondary schools in the state. The legislator then restructured the funding system, through what is now known as “Proposal A,” to offer an equitable solution to school funding. This new system was based on a formula containing income tax, sales tax, and other sources of revenue separate from property taxes. Capitalizing on this new plan, Republican Governor John Engler took advantage of this opportunity and asserted that the plan include school reform efforts. In December of 1993 the Michigan Legislature passed the state’s first charter school law (Mead, 2006).

Fifteen years later, there are more than 110,000 students and 5,000 teachers in the state’s 243 charter schools, representing roughly 7% of the state’s K-12 student population. Forty-five percent of charter schools currently offer high school grades, and this number is growing each year (MAPSA, 2010). On January 4, 2010, new legislation in Michigan lifted the current cap of 150 charter schools authorized by state universities, effectively increasing the number of charters that can be granted. The future of charter school in Michigan is bright, as there doesn’t seem to be a limit to the number of schools or the number of students they will serve anytime soon.

Charter Schools as a Strategy

Many charter school proponents refer to the charter movement as a “strategy,” rather than a specific model of education (Nathan, 1996). Charter schools themselves are not the end, but a means to achieve that end. Nathan (1996) continues to say, “The charter school
concept is about an opportunity, not a blueprint” (p. 1), describing the approach to reform the American education system through the formation of new, entrepreneurial styled schools, schools that have autonomy to try completely new methods and approaches. Some charter schools have shown they are able to address climate, culture, and social issues within a community that, whether because they are unable or unwilling, the traditional districts have been not been able to overcome (Weil, 2000).

Up until the early 1990s there was only one option for parents seeking to have their children schooled in public system: the district school. With the formation of charter schools came competition for students, and traditional districts felt attacked. The teachers’ unions stood in opposition to this new threat, seeking to stop future or reverse existing legislation, so much so that the American Federation of Teachers, the National Education Association, and state affiliates all stood in solidarity against the formation of charter school legislation, in spite of Shanker’s original stance (Nathan, 1996). After 15 years, charter schools are still in existence and receiving more publicity than ever. Despite mixed research on their effectiveness, the Obama administration has publically acknowledged his support for charter schools. As a multi-faceted approach, he believes stricter standards, charter schools, more time in schools, and merit pay are all ways to improve student achievement (Qauid, 2009).

Charter School Characteristics

It’s now widely accepted that the American school system has its shortcomings and needs to improve, but the approach to improvement is still up for debate (Weil, 2000). Despite the vast variations of charter legislation, chartering process, oversight, and operations, the one commonality of charter schools across the country is “uniqueness.” A charter school by its very nature is created to do things differently than the traditional district
Not that all charter schools are unrecognizable for their traditional counterparts down the road, but their entire purpose for being is to try new ideas and fill a void that the larger, one-size-fits-all districts cannot fill.

Charter school characteristics range as widely as the communities that they occupy. From an international focus to a fine arts integrated curriculum, or a college-prep program to a technical certification, each school seeks to find a niche at which they can be successful. Other programs include a focus for students in various populations, such as dropout recovery, adjudicated youth, adult special needs and middle colleges. As a school of choice, charter schools need to appeal to parents’ interests and fulfill the needs of students within the community. A popular theme of charter schools across the county is focusing on cultural identity of the community. In the Southwestern part of the United States, there are many schools that tailor to the Native American population who live there, including the Navajo Indians. While many urban charter schools in Los Angeles, CA, focus on the Latino and African American populations, as do other large urban areas within the U.S.

Dearborn, a suburb of Detroit in Southeast Michigan, has the highest proportion of Arab immigrants in the U.S. and subsequently contains many schools with a high percentage of Arab students. These schools all have a cultural theme matching the community, which includes Arab language classes, social studies, art, and other subjects infused with specific traditions and customs of this ethnicity. Although the schools may not select the students who choose to enroll in the program, many schools naturally draw children of parents who seek to have their child educated in a specific environment.

Charter School Outcomes
Despite all the publicity charter schools have received over the past two decades, the empirical data shows mixed results on their success (Henig, 1994; Sarason, 1998). There is, however, evidence showing how charter schools have created unique and independent school climates. For some parents, having a school that is small, safe, and focused on character values is more important than increased student achievement (Nathan, 1996). Although the focus of this study is based on the relationship between school climate and student growth, institutional factors including class size, the competency of the teachers, availability of learning resources, faculty workload, and overall program effectiveness may also affect student outcomes (Ramsden & Entwistle, 1981). Additionally, Ewell (1995) contends that student services provided by the school, including special education, as well as a student’s enrollment status and the location of the school, all play a role in influencing student outcomes.

Therefore, providing additional empirical findings in the area of school climate and student growth will contribute to a better understanding of our current education landscape and the factors that contribute to student learning in charter public and traditional public schools.

Summary

Chapter II reviewed the related literature and research on the roots of organizational and its history, the definition of school climate and how it varies from school culture and student assessment models. This chapter also provided a historical perspective on school reform efforts including schools of choice and charter schools. Chapter III will provide an overview of the research design and methodology used in the study, while Chapter IV
presents the findings and Chapter V concludes with a summary, discussion, and recommendations for future research.
CHAPTER III: RESEARCH DESIGN AND METHODOLOGY

Introduction

Schools are challenged with complicated social dynamics and understanding the environment surrounding student learning and the factors that have a direct or indirect impact on student outcomes are as broad and elusive as ever (Cohen et al., 2009). School climate itself is a complex, multi-dimensional phenomenon, which influences many aspects of the school and the greater community in which it resides (Marshall, 2004). Because schools are social environments having a solid understanding of school climate can guide school leaders to enact instructional practices and school activities that simultaneously improve the learning environment and increase student outcomes (Kelly, 1980; Marshall, 2004). Additionally, having empirical evidence surrounding the association school climate has with student outcomes can provide the field of education with valuable data in which to inform decisions thus improve the quality of education for a countless number students (Freiberg, 1999).

The purpose of this quantitative study was to investigate the relationship between school climate and student growth within a cohort of Michigan charter public schools. To examine this relationship, participating charter public schools in Michigan with a common authorizer were surveyed using the OCDQ-RE school climate inventory (Hoy, Tarter, & Kottkamp, 1991). This survey examined aspects of school climate, including teacher perceptions of teacher and leader behaviors and other variables surrounding the learning environment.

Research Tradition

Based on the characteristics of the social system in schools, Brookover, Schweitzer, Schneider, Beady, Flood, & Wisenbaker (1978) identified school climate as a variable useful
in exploring school achievement. The concept of school climate, outlined in detail in the preceding chapter, is defined as the “enduring quality of the school environment that is experienced by participants, affects their behaviors, and is based on their collective perceptions of behaviors in schools” (Hoy, Tarter & Kottkamp, 1991; Hoy & Miskel, 1987; Tagiuri, 1968). While foundational concepts were adopted from organizational climate, school climate research has steadily developed into a separate field of study (Freiberg, 1999).

The research tradition in which this study was based rests on the shoulders of Tagiuri’s (1968) taxonomy that was adopted by Anderson (1982) in her exploration of school social climate in elementary schools, and school achievement. The four main groups of climate factors described in Tagiuri’s (1968) work reflect the collective attributes of organizational climate:

- ecology (physical and material aspects);
- milieu (the composition of the population of a school);
- social system (relationships between persons); and
- culture (belief systems, values).

From this reference point the topic of school climate and its effects on students has been studied separately over the course of the past forty years. Using Tagiuri’s (1968) widely accepted descriptions of school climate, researchers worked to define the areas of focus and setting and each made unique contributions to this topic of study, leading to four parallel tracks (Freiberg, 1999). School climate research has been primarily in one of these four main research traditions:

- school effects research tradition;
- classroom effects research tradition;
The school effects research tradition focuses primarily on the school as the environment, looking to school climate factors such as orderliness and structure as the primary variables affecting achievement (Brookover et al., 1978). The classroom effects research tradition brings more focus on individual qualities of the classroom, but tends to stay at the managerial level within the school environment (Freiberg, 1999). The psychological research tradition focuses on perceptions and the means in which to measure the classroom climate, and the individuals within the classroom environment, with cognitive and affective outcomes (Freiberg, 1999).

Similar to that of the collective climate model used in organizational theory (Kundu, 2007), effectiveness research, or better known as effective schools research, works to combine many of the variables within the three traditions, bringing a focus on the three levels: school, classroom, and student (Brookover et al., 1978; Freiberg, 1999).

Researchers have long sought to identify the factors that play a key role in student achievement (Block, 1983). Typically, the approach has involved measures that look to correlate resources within a school environment with test scores. In 1966 the United States Department of Health, Education and Welfare commissioned the Equality of Educational Opportunity Study (EEOS), also known as the "Coleman Report." This study was intended to discuss the effectiveness of American education by assessing the availability of equal educational opportunities to children of different race, color, religion, and national origin, directly in response to the Civil Rights Act of 1964 (Squires, Huitt & Segars, 1983).
The results of this study concluded that public schools didn’t make a significant difference in student success, asserting that a student’s family background was the main factor. Coleman (1966) declared that students from poor families and homes, who lack the support and resources of middle class families, were not able to learn despite of the school’s efforts. Although many educators acknowledged that a family’s background does have an effect on a student’s education, many did not agree with Coleman’s findings (Squires, Huitt, & Segars, 1983).

Ronald Edmonds, the Director of the Center for Urban Studies at Harvard University, was one such individual (Lezotte, 1984). He and a group of colleagues conducted their own studies using schools where kids from low-income families were succeeding. This work was the beginning of the effective schools movement, which even today maintains to be a well-used tradition. After comparing successful schools with high populations of low income families to similar schools, who’s student achievement scores were lower, Edmonds found his results were contradictory to Coleman’s and published the following results (Edmonds, 1979):

- public schools can and do make a difference, even those composed of students from poverty backgrounds;
- children from poverty backgrounds can learn at high levels as a result of public schools;
- There are unique characteristics and processes common to schools where all children are learning, regardless of family background. Because these characteristics, found in schools where all students learn, are correlated with
student success -- they are called “correlates.” This body of correlated information began what is now referred to as effective schools research; and

- Replication research conducted in recent years reaffirms these findings and the fact that these correlates describe schools where children are learning and do not describe schools where children are learning at a much lower level.

This replication research has been conducted in all types of schools: suburban, rural, urban; high schools, middle schools, elementary schools; high socio-economic communities, middle class communities, and low socio-economic communities (Block, 1983). This study sought to build upon this prior research tradition and the effective schools research, with a keen focus on how leadership affects the classroom, which in turn impacts student learning.

Research Design

The careful design of a study is one of the most critical steps within the research planning process (Travers, 1969). Applying the scientific method to research in education provides many options for researchers, each with unique approaches and results (Creswell, 2003). From qualitative to quantitative and experimental to non-experimental, there are many research design options that will determine the foundation on which a study can be conducted (Lodico, Spaulding & Voegtle, 2006).

Quantitative inquiry uses surveys and experiments to gather statistical data in which to test theories or a hypothesis, often in a descriptive, experimental or non-experimental manner (Creswell, 2003). Descriptive research looks to describe behaviors and gathers people’s perceptions, opinions, attitudes, and beliefs about a current issue in education (Lodico et al., 2006). Experimental research, on the other hand, is the most common form of scientific research and the one most people think of first. Looking to establish a cause-and-
effect relationship, this approach employs a degree of control on the study intending to elicit a reaction in the dependent variable by altering the independent variable (Lodico et al., 2006). Non-experimental, causal-comparative, or ex-post facto research approach seeks to explain causal relationships between groups by examining their differences (Travers, 1969; Hoy, 2010). The main distinction between experimental and non-experimental research is the independent variable. In a non-experimental study, the activity in which to investigate has already occurred (a past experience) and therefore the independent variable cannot, ethically, be manipulated (Lodico et al., 2006; Creswell, 2003).

Grounded in the field of Ethnography, the qualitative approach is geared more toward social discovery and a participatory means of collecting empirical data through interviews and observational strategies (Tuckman, 1999). Making claims based on multiple meanings of individual experiences, meanings socially or historically constructed, for the purposes of developing a theory or pattern (Creswell, 2003).

In order to conduct a study exploring the issues surrounding school climate and student outcomes, a non-experimental quantitative study was used to investigate these relationships within select Michigan charter schools.

Research Questions

To complete this quantitative research study, the following questions were investigated:

1. What is the relationship between the independent variable (school climate) as measured by the OCDQ-RE and the dependent variable results (student gain scores in reading and math), as measured by the Performance Series or MAP tests?
2. What are the common characteristics of schools with similar climate results, as measured by the OCDQ-RE?

3. What are the common characteristics of schools with similar student growth, as measured by the Performance Series or MAP tests?

Hypotheses

Based on the research questions, three null hypotheses were developed and tested using a 0.05 level of significance:

1. There will be no relationship between perceived school climate and student growth;

2. Schools with similar school climate results will not have common growth results; and

3. Schools with similar student growth results will not have common climate characteristics.

Research Instruments

As pioneers in the field of organizational climate in schools, Halpin and Croft designed the first Organizational Climate Descriptive Questionnaire (OCDQ) back in 1963, providing the field a reliable instrument in which to gather data surrounding the concept of school climate. Intended to expose the organizational climate of an elementary school, the OCDQ has become a leading instrument in the search for empirical data describing the characteristics of school climate (Halpin & Croft, 1963).

Using the OCDQ and other climate survey instruments researchers worked to associate climate to student outcomes, and by the late 1970’s Brookover and colleagues provided the field of education with a study on the relationship between elementary school
climate and achievement (Zullig et al., 2010). Examining school climate, as the norms, expectations, and beliefs of the membership of the organization, the study used a three-tier climate questionnaire that was distributed to 19,544 fourth-grade students in 159 Michigan elementary schools. The study used the mean achievement scores of students in the fourth grade of each elementary school, based on the MEAP.

They found that school climate differs from school-to-school, as does that of the classroom. More importantly, however, they concluded, “favorable climate rather than specific composition is, we believe, the necessary condition for high achievement” (Brookover et al., 1978). The impact of this study and its results are extensive and had far reaching implications for school leaders and future research (Cohen et al., 2009).

On the heels of this work Hoy and Clover (1986) revisited the OCDQ, first developed by Halpin and Croft (1963), in an attempt to refine the survey and provide a contemporary version of the instrument (Hoy & Clover, 1986). Using a pilot sample Hoy and Clover (1986) identified 38 elementary schools in which to explore, for the purposes of test-driving the revised OCDQ. From this small study the new questionnaire (OCDQ-RE) was finalized and contained 42 items mapped to six dimensions of school climate – three for administrators and three for teachers (Hoy & Clover, 1986 – see Table 1, p. 16).

Hoy, Tarter and Kottkamp (1991) provided additional groundwork of empirical research through reliable and valid measures with their work on school climate and the OCDQ-RE in Open Schools/Healthy Schools (1991). Through many years of testing and refining they have garnered support and have provided the field of educational research with a solid framework within to work, aimed toward organizational improvement (Hoy et al.,
School Climate & Student Growth in Charter Schools

1991 & Cohen, et al., 2009). The OCDQ-RE was used to examine the relationship between school climate and student outcomes.

Each survey was a collection of 42 questions and scored using a 4-point Likert-type scale (1 = Rarely Occurs, 2 = Sometimes Occurs, 3 = Often Occurs, 4 = Very Frequently Occurs). The survey responses sought to provide six dimensions of responses separated into two categories: principal behavior and teacher behavior.

Student growth data were obtained from the public state university authorizer who chartered the schools who participated in the study. Student test scores from 2010-2011 were gathered from the fall and spring reading and fall and spring math results from either the Performance Series test by Scantron or the Measures of Academic Progress (MAP) by Northwest Evaluation Association (NWEA), administered in grades 3 through 8, depending on the assessment identified in their charter contract. Results were coded using a non-student identifiable code in compliance with the Family Educational Rights Privacy Act (FERPA) and a percent of normal growth was calculated using national results.

Population and Selecting Participants

Since 1991, when Minnesota passed the first charter school law in the nation, over one million students are enrolled in more than 3,500 schools in 40 states plus the District of Columbia and Puerto Rico. In Michigan there are 110,000 students and 7,000 teachers in the state’s 243 charter schools, representing roughly 7% of the state’s K-12 student population (MAPSA, 2010). Nonetheless, despite all the publicity charter schools have received over the past two decades there is a lack of empirical data in which to determine their success (Henig, 1994; Sarason, 1998). The setting in which this study took place was a select group of elementary charter schools in Michigan, serving grades 3 through 8.
The sample (or subgroup of the population) of this study was composed of teachers in approximately 35 charter public schools in Michigan. Only 11 schools chose to participate. For the purposes of selecting participants, the sample design was identified as a single-stage cluster sampling procedure and selected participants through a non-probability (or convenience) sample. Because charter schools in Michigan are authorized by one of many state universities, community colleges, local intermediate school districts, or local school districts, the non-probability sample is intended to limit the variables between charter schools with various authorizing agencies. This sought to ensure the schools in the study administered a common national normed, criterion-referenced assessment – the Performance Series and the MAP tests – that were used in the study to collect student assessment data.

The sample in this study was selected from schools chartered by the same public state university authorizer. Due to this factor, the geographical location of the study was limited to the Michigan. Teachers and teacher assistants (or paraprofessionals) from the schools were invited to participate in the study encompassing a total population of 355 teachers and paraprofessionals.

Limitations

A single quantitative research study cannot possibly account for all factors associated with a given topic due the manner in which social science research is conducted. This study, itself, had several limitations including the fact it could not examine every factor affecting school climate. It was also limited to the teacher perceptions of principal and teacher behavior in a select group of Michigan charter schools. The study did not include student, parent, or administrator perceptions on school climate. This study was also limited to a single school year, when the climate survey was distributed and student growth data were
collected. Although school climate fluctuates and changes regularly, this study was limited in the manner in which the climate surveys were distributed, at a single point in time.

The findings in this study were limited by the following factors:

The study was limited to the perceived school climate of the voluntary responses of the teachers who completed and returned a survey. This study was limited to the results from standardized assessments and the tests themselves: the Performance Series test by Scantron and the MAP test by NWEA. The results were limited to those from the same school year in the fall of 2010 and spring of 2011. Additionally, the study did not account for variations in responses or differences in personal or professional conflicts between teachers and/or teachers and administration. This study accepted all testing results and did not account for variances in the administration and proctoring of the tests.

Delimitations

In order to effectively focus on the factors relating to school climate and student growth, the researcher placed self-imposed restrictions on this study. This study had the following delimitations:

This study was limited to a population of approximately 35 elementary charter schools who were authorized by the same public state university. This was in order to seek continuity of the school’s oversight activities and to ensure the standardized assessment was administered twice per year. Data were only collected from charter schools that served students in grades 3 through 8. The study also limited the survey to teachers, teacher assistants or paraprofessionals, support staff, and other related teaching personnel in the respective schools. This study was also limited to the population to schools who were authorized by the same public state university; served students in grades 3 through 8;
administered a standardized assessment in the fall and spring; were not in their first year of operation; who enrolled more than 100, but no more than 2000 students; and whose students in each grade were located on the same physical site.

Additionally, it is disclosed that the state university that authorized the schools who participated in this study employed the researcher. The researcher did not have contact with the principals and/or teachers at the school at any time through the duration of this study, in his role at the university.

Finally, the researcher did not seek to impose delimitations on the following criteria: This study was not limited to other factors, including student, which may have included: socio-economic status; free or reduced price lunch eligibility; special education population; diversity of the student and staff population; the physical location of the school building; years the school was in operation; the length of the current charter contract; the age of teaching staff or administration; and how many years the teaching staff or administration had been employed.

Human Subjects Procedures

The researcher obtained authorization to conduct the study from the Human Subjects Institutional Review Board (IRB) at Eastern Michigan University (Appendix C). The principals of participating charter schools were sent an email requesting permission to distribute the OCDQ-RE surveys at the school. The initial communication included a school approval form (Appendix D) and information regarding the as well as a copy of the proposed survey (Appendix A).

Once permission from the principal was received, letters of consent (Appendix E) and the OCDQ-RE (Appendix A) were distributed by mail to the participating schools and then
hand delivered by a school employee to teachers and teacher assistance of the school during the month of February. The month of February was chosen due to several factors. Some of the primary considerations include:

- not selecting a time near the beginning or ending of the school year;
- not during the summer;
- not selecting a time of year where there is significant academic testing (early fall or late spring);
- not selecting a time of year when there would most-likely be a semester or marking period transition; and
- not selecting a time of year leading up to a significant holiday or spring break.

Based on these limiting factors two times of year were identified: late October/early November or the month of February. Due to the notion that there are customarily less transitions and/or disruptions in the middle of a school year, February was the month that was selected.

In order to increase the percentage of completed and returned surveys communications were established with the principal of the school, outlining the study and seeking his or her permission and assistance with the survey’s completion. Based on the cooperation of the school principal, a follow-up letter was mailed and an advance-notice letter was sent to the school one week before the survey was to be distributed. The survey packet that included a preaddressed return envelope with postage was then mailed to the individual identified at each school, distributed to the staff during a faculty meeting, completed, placed in a secure envelope, and returned to the researcher. All survey results were anonymous.
The returned survey results were entered into a computer, scored, and mean climate scores calculated for each school. The categories included Principal Openness, Teacher Openness, and School Openness.

Student growth data were obtained from the university authorizer to whom all schools were authorized. The data were received in the form of non-student identifiable, scaled scores from the fall and spring test administration of the Scantron and MAP tests. These data were then scored and mean percentages of normal student growth scores were calculated.

Data Analysis

All data collected, including school climate survey results and student growth data, were entered into a computer database and analyzed using Statistical Package for Social Services (SPSS) PSAW Statistics 18 software. Descriptive statistics were used to analyze the independent variables (school climate) and dependent variable (student gains), and to test the stated null hypotheses. The dataset was analyzed using the Pearson Product-Moment correlation and linear regression analyses using SPSS to determine the correlation between the independent and dependent variables. The correlation analysis was generated to identify the relationship between the independent and dependent variables, and any significance. Finally, a linear regression analysis was conducted to determine what relationship exists between both school climate and student growth and between schools with similar characteristics.

Validity and Reliability

When documenting a study and displaying research findings, it is necessary to consider validity and reliability (Carter & Porter, 2000). By taking precautions early in the study design, the researcher can increase the validity and reliability of a study, as well as
increasing the generality of the findings (Lodico et al., 2006). In order to attend to issues within the research study examining the relationship between school climate and student outcomes, the following considerations were explored.

There are various threats to a study’s validity and reliability that should be considered by the researcher (Creswell, 2003). Generally speaking, validity and reliability are the factors within the study and the manner in which the research is conducted, which provide evidence to support the notion that interpretations of the data are correct and that the method in which the interpretations are applied is appropriate (Johnson & Christensen, 2007). The data gathered for this study was acquired from two primary sources: a cross-sectional school climate survey (OCDQ-RE) distributed to the teachers at the schools who chose to participate in the study, and longitudinal data collected from the Performance Series and MAP tests at two separate times, within the same year.

Relating specifically to reliability or the consistency and dependability of the measures used within this study, there is a conscious effort to select methods and instruments based not only on the alignment to the study’s stated purpose, but also on established research traditions. Beginning with Tagiuri’s (1968) taxonomy of school climate research, in which Anderson’s (1982) model is based upon, this study used proven and accepted practices to construct concept models, a conceptual framework, the research design and methodology. Additionally, the survey instrument used in the study, the OCDQ-RE, was a survey tool used extensively in the field of educational research with a long-standing tradition of reliable data collection (Hoy, 1991).

Scantron, Inc., who provided one of the assessment instrument used to collect student growth data for this study, is a national leader in education assessment. For more than three
decades Scantron has produced educational assessment mechanisms, serving 80 of the largest 100 school districts in the United States. The Scantron Performance Series test has a data set of over one million students annually, making the test an accurate and stable instrument. The Northwest Evaluation Association (NWEA), who also provides an assessment instrument used to collect student growth data for this study, is a national leader in education assessment. With over 3,400 schools that have provided more than 24 million assessments since 1977, NWEA’s MAP test is an accurate and stable instrument.

Quantitative data gathered from the OCDQ-RE school climate survey and the Performance Series and MAP tests were analyzed with the use of the SPSS software. SPSS is the premier predictive analytic tool used by researchers at top colleges and universities for ensuring their analytical activities are reliable and the information it produces is dependable.

The validity of this study, whether it is measuring what it is intending to measure, had its foundation in the clear focus of the research design and of the instruments used in both gathering and analyzing the empirical data. The processes used within this study are documented in the forthcoming chapters and all findings were published in accordance with accepted research standard and traditions. The validity of published data can be confirmed through the examination of the final documents, their appendices and public records. A summary of climate scores from the OCDQ-RE and growth scores from the Performance Series and MAP tests are presented within this study. And finally, the statistical analyses used within this study can be replicated using the same or similar software package, based on the research design outlined above.
Importance of Findings

In some ways, the notion that school climate supports or obscures a student’s ability to learn and achieve academically is common sense (Cohen et al., 2009). Brookover and colleagues (1978), as well as many other since then, worked to confirm this phenomenon (Kelly, 1980; Anderson, 1982; Hoy & Clover, 1986; Hoy, Tarter & Kottkamp, 1991; Freiberg, 1999; Cohen 2006; Zullig et al., 2010). And although research tells us this to be true, there is still a great deal to learn about the factors that compose school climate and to what extent a school leader can influence those factors (Freiberg, 1999).

This study set out to examine two areas that have yet to be fully explored in the area of school climate: the effects of climate on student growth, rather than achievement, and school climate within the setting of charter schools. Much of our current understanding about the relationship between school climate and student outcomes is in one of two categories, either student achievement or student behavior. Student achievement is the basic level of academic attainment based on a defined set of criteria (Rood, 1988). As the model of assessment in American’s public education system for decades, these criterion-referenced tests have provided a wealth of information for schools and school leaders (Hershberg, Adams, & Lea-Kruger, 2004). Growth, on the other hand, provides a significant advantage in providing empirical data on student outcomes within a school year, eliminating the variables of a student having numerous teachers, summer loss, and other factors outside the bounds of a given year.

The findings in this study provide additional insight to educational leaders regarding the strength of the relationship between school climate and student growth, and the affect school leadership has on school climate. Additionally, the findings of this study may provide
information that could be applied to other public schools, and has the potential to be useful to other charter schools. It should be noted, however, that results might not correlate to schools outside of the sample used, due to the fact that the survey results from this study were based on perceptions from the individuals within this study and may not be generalized to other organizations. It must also be noted that the assessment tests which empirical data for this study were gathered, or others similar to them, are not required by the state in which this study occupied, nor necessarily required by any other state or authorizing body. That notwithstanding, the data collected in this study from the national normed, criterion-referenced test used in the schools chartered by the public state university are available to all public and private schools through the Performance Series, MAP, or other similar tests.

Ultimately, the importance of this study was to investigate the relationship between school climate and student growth in charter schools, throughout the school year in which this study was conducted. Additionally, the association school climate has to student growth may be of interest to school leaders and impact leadership practices.

Summary

Chapter III reaffirmed the purpose of this study, which was to understand the relationship between school climate and student growth. The study was identified as a correlational, non-experimental design and the methodology of this quantitative study was then outlined. Sections of population, limitations and delimitations, procedures, data analysis, reliability and validity, as well as the importance of the study are all detailed. A copy of the instrument and associated permission are included in the appendices. Chapter IV presents the findings and Chapter V concludes with a summary, discussion, and recommendations for future research.
CHAPTER IV: RESULTS

Introduction

Identifying and studying the variables surrounding the school environment and the factors that contribute to student learning is the topic of this research study. Although school climate is a complex, multi-dimensional phenomenon, which influences many aspects of the school and the greater community in which it resides (Marshall, 2004), its importance on the school environment and its relationship to student outcomes are of interest to this research project. Additionally, having empirical evidence surrounding the association school climate has with student outcomes, specifically the amount of growth a student makes through the course of a school year, can provide the field of education with valuable data to inform decisions and improve the quality of education for a countless number students (Freiberg, 1999).

This study sought to answer three research questions:

1. What is the relationship between the independent variable (school climate) as measured by the OCDQ-RE and the dependent variable results (student growth scores in reading and math), as measured by the Performance Series and MAP tests?

2. What are the common characteristics of schools with similar climate results, as measured by the OCDQ-RE?

3. What are the common characteristics of schools with similar student growth, as measured by the Performance Series and MAP tests?

To answer these questions, a non-experimental quantitative research study was conducted, seeking to explore the variables surrounding school climate and student growth.
The research methods used to gather empirical data to test this relationship continued on the tradition of Brookover and colleagues (1978), with their work exploring the relationship between elementary school social climate and school achievement in Michigan public schools. Adapted, however, to fit the more sophisticated needs of today’s contemporary educational system (Hoy et al., 1986, 1991) the research instruments used in this study more closely followed those developed by Hoy and colleagues (1991), as described previously in Chapter III.

Population

The population of this study was composed of teachers from 11 charter public schools in Michigan, who chose to participate in this study. The size of the schools ranged from 250 students to 957 students, in grades Kindergarten through grade 8. All teachers from the 11 schools were included in the study, regardless of their years of experience or years of the organization. A total of 355 teachers, teacher assistants, and paraprofessionals participated in the school climate survey. The population was limited to schools chartered by the same public state university authorizer.

Response Rate

A total of 35 charter public schools were initially identified to participate in the study, each chartered by the same public state university authorizer. Of the original 35 who were invited to take part in the study, 11 schools chose to participate (31%). A total of 7 schools returned the information sheet with the surveys, and of those 7 schools a total of 266 surveys were distributed. Of the 266 surveys, 224 were returned for a return rate of 84.2%. A total of 355 teachers, teacher assistants and paraprofessionals participated in the school climate survey from the 11 schools.
Instrumentation

Data collection began in February 2011, and ended in June 2011. School climate data were collected through the use of a school climate survey. Student growth data were collected from the university authorizer that chartered the schools participating in this study. The Organizational Climate Descriptive Questionnaire for Elementary Schools (OCDQ-RE – Appendix A) developed by Hoy, Tarter, and Kottkamp (1991) was used to assess teacher perceptions of principal and fellow teacher behavior, which influences school climate. The researcher gained permission to use this specific survey from Dr. Hoy in June 2010 (Appendix B). The OCDQ-RE contains a total of 42 questions, utilizing a four-point scale for respondents to answer statements regarding principal and teacher behavior: 1 = Rarely Occurs, 2 = Sometimes Occurs, 3 = Often Occurs, 4 = Very Frequently Occurs.

Scoring the OCDQ-RE

Teacher perceptions recorded on the survey were mapped to six dimensions of school climate: three for principals and three for teachers. Each dimension is attributed to a particular characteristic of both the principal and the group of collective teachers.

- Supportive Principal Behavior
- Directive Principal Behavior
- Restrictive Principal Behavior
- Collegial Teacher Behavior
- Intimate Teacher Behavior
- Disengaged Teacher Behavior

The researcher utilized the formulas provided by Hoy et al. (1991) to score the OCDQ-RE. This process allowed the researcher to compute standardized scores for each
dimension and ultimately an openness index for principal behavior, teacher behavior, and the overall school climate. To score the OCDQ-RE the following guidelines were used (Hoy, 1991):

1. Score each item for each participant with the appropriate number (1, 2, 3 or 4). Reverse scores for items 6, 31 and 37.
2. Calculate average school scores for each item. This is accomplished by adding the scores for each item for each participant, then dividing by the total number of respondents.
3. Sum the average school item scores as follows:

   Supportive Behavior (S) = 4 + 9 + 15 + 14 + 22 + 23 + 28 + 29 + 42
   Directive Behavior (D) = 5 + 10 + 17 + 24 + 30 + 34 + 35 + 39 + 41
   Restrictive Behavior (R) = 11 + 18 + 25 + 31 + 36
   Collegial Behavior (C) = 1 + 6 + 12 + 19 + 26 + 32 + 37 + 40
   Intimate Behavior (Int) = 2 + 7 + 13 + 20 + 27 + 33 + 38
   Disengaged Behavior (Dis) = 3 + 8 + 14 + 21

   These six scores represent the climate profile of the school. The school subset scores were calculated and then converted to standardized scores (SdS) with a mean of 500 and a standard deviation of 100, using the following formulas:

   SdS for S=100 X (S-23.34)/4.85 + 500
   SdS for D=100 X (D-19.34)/3.20 + 500
   SdS for R=100 X (R-12.98)/1.55 + 500
   SdS for C=100 X (C-23.11)/2.69 + 500
   SdS for Int=100 X (Int-17.23)/2.14 + 500
SdS for Dis=100 X (Dis-6.98)/1.26 + 500

The SdS scores were then used to calculate the two openness indexes: principal openness and teacher openness. The two openness measures were computed using the following formulas:

\[
\text{Principal Openness} = \frac{(\text{SdS for S})+(1000-\text{SdS for D})+(1000-\text{SdS for R})}{3}
\]

\[
\text{Teacher Openness} = \frac{(\text{SdS for C})+(\text{SdS for Int})+(1000-\text{SdS for Dis})}{3}
\]

Principal openness and teacher openness scores were also used to calculate the overall openness scores of each school.

The overall school openness scores were computed using the following calculations:

- Open climate – Both teacher and principal openness scores were above 500
- Closed climate – both teacher and principal openness scores were below 500
- Engaged climate – and the principal openness score was below 500 and the teacher openness score was above 500
- Disengaged climate – the principal openness score is above 500 and the teacher openness score is below 500

Openness scores were calculated for each school based on these calculations, as well as for the principal and teachers. The characteristics of an open climate are cooperation, respect, and openness; all attributes that exist within the school environment, among the faculty and between the faculty and principal (Hoy, 1991). Additionally, the principal within an open school listens and is receptive to feedback and provides frequent and genuine praise.
The attributes of an engaged climate are similar to that of teacher characteristics of an open school, with a professional and engaged staff, but lack the necessary leadership to provide effective support and encouragement. On the other hand, the disengaged climate describes a school in stark contrast to the engaged school climate. The principal listens, is open to feedback and criticism, but the teachers do not work together and are unwilling to take on responsibility despite the principal’s efforts to move the school forward. The closed school climate is on the opposite spectrum to that of an open climate. Neither the principal, nor teachers, work to build a supportive or collegial work environment. There is little commitment by the faculty and the principal is often highly controlling and stresses simple, mundane “busywork” (Hoy, 1991).

Presentation of Results

The following information is presented to provide the results of a descriptive statistical analysis, as well as various models of inferential statistical analyses using SPSS. Descriptive statistics were used to analyze the independent variable (school climate) and dependent variable (student growth), and the Pearson Product-Moment correlation analysis was used to determine the correlation between the independent and dependent variables and to test the stated null hypotheses. Finally, linear regression analyses were conducted to determine what relationship exists between both school climate and student growth, and between schools with similar characteristics and test for predictive qualities of the independent variables on the dependent variables.

Pre-Analysis Data Screening

Data screening for missing cases, outliers, and assumptions for normality were conducted before statistical analysis was performed. This process provided additional
accuracy and sought to ensure the data used were reliable. After performing explore procedures in SPSS, including descriptive statistics, histograms, and normality plots, it was determined that the math variable met all appropriate assumptions. A physical inspection of the reading variable, however, revealed values outside acceptable limits. These outliers ranged from a negative 4,148% to a positive 25,000% of normal growth.

Because an outlier can produce unintended outcomes, causing results to be insignificant, when without the outliers they would have been significant (Mertler & Vannatta, 2002), the researcher took the step of removing the outliers. Working to maintain data integrity, the limits of the percent of normal growth were constrained to values of >1,000% and <-1,000% of normal growth. All values beyond these limits were dropped from the dataset, which totaled 104 scores of the original 4015 (2.59%). All other variables were determined to be sound.

Presentation of Descriptive Statistics

The empirical data collected were analyzed using SPSS, PSAW Statistics 18 software and descriptive statistics were conducted. Statistics describing the responses of 355 teachers, categorized by the six standardized climate profiles, including the climate indices for principals and teachers, are found in Table 2. Included in the table are the minimum, maximum, mean, and standard deviation for the independent variables.
Table 2

*Teacher Responses*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supportive Behavior (S)</td>
<td>355</td>
<td>371</td>
<td>661</td>
<td>581.11</td>
<td>68.369</td>
</tr>
<tr>
<td>Directive Behavior (D)</td>
<td>355</td>
<td>317</td>
<td>607</td>
<td>537.18</td>
<td>61.180</td>
</tr>
<tr>
<td>Restrictive Behavior (R)</td>
<td>355</td>
<td>295</td>
<td>629</td>
<td>466.36</td>
<td>73.640</td>
</tr>
<tr>
<td>Collegial Behavior (C)</td>
<td>355</td>
<td>441</td>
<td>615</td>
<td>536.67</td>
<td>50.513</td>
</tr>
<tr>
<td>Intimate Behavior (Int)</td>
<td>355</td>
<td>459</td>
<td>626</td>
<td>546.22</td>
<td>55.246</td>
</tr>
<tr>
<td>Disengaged Behavior (Dis)</td>
<td>355</td>
<td>427</td>
<td>611</td>
<td>504.49</td>
<td>62.455</td>
</tr>
<tr>
<td>Principal Openness</td>
<td>355</td>
<td>426</td>
<td>665</td>
<td>525.85</td>
<td>48.946</td>
</tr>
<tr>
<td>Teacher Openness</td>
<td>355</td>
<td>460</td>
<td>588</td>
<td>526.14</td>
<td>43.503</td>
</tr>
</tbody>
</table>

Descriptive statistics were also used to describe the dependent variable, the percent of normal growth, from the 11 schools that participated in the study (Table 3). Included in the table are the minimum, maximum, mean, and standard deviation.

Table 3

*Student Gain (% of normal growth)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>3993</td>
<td>-5.08</td>
<td>9.49</td>
<td>1.03</td>
<td>1.038</td>
</tr>
<tr>
<td>Reading</td>
<td>4015</td>
<td>-41.48</td>
<td>250.00</td>
<td>1.66</td>
<td>6.748</td>
</tr>
<tr>
<td>Reading (altered)</td>
<td>3916</td>
<td>-10</td>
<td>10</td>
<td>1.27</td>
<td>2.074</td>
</tr>
</tbody>
</table>

Note: the reading variable was altered due to extreme outliers. Values outside the limits of >10.0 and <-10.0 were excluded.
Additionally, the perceived principal and teacher profiles for each school, along with the perceive school culture, are compared to the mean of the students percent of normal growth for both math and reading (Table 4). All schools in this study posted perceptions of either open or closed school climates.

Table 4

*School Climate and Student Growth Comparison*

<table>
<thead>
<tr>
<th>School</th>
<th>Perceived Principal Profile</th>
<th>Perceived Teacher Profile</th>
<th>Perceived School Climate</th>
<th>Mean % of Normal Growth (Math)</th>
<th>Mean % of Normal Growth (Reading)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High (572)</td>
<td>High (588)</td>
<td>Open</td>
<td>1.62</td>
<td>1.85</td>
</tr>
<tr>
<td>2</td>
<td>Low (426)</td>
<td>Below Average (476)</td>
<td>Closed</td>
<td>0.98</td>
<td>1.21</td>
</tr>
<tr>
<td>3</td>
<td>Above Average (534)</td>
<td>Above Average (542)</td>
<td>Open</td>
<td>1.05</td>
<td>1.69</td>
</tr>
<tr>
<td>4</td>
<td>Average (490)</td>
<td>Slightly Below (476)</td>
<td>Closed</td>
<td>0.84</td>
<td>0.99</td>
</tr>
<tr>
<td>5</td>
<td>Above Average (530)</td>
<td>High (570)</td>
<td>Open</td>
<td>1.22</td>
<td>1.19</td>
</tr>
<tr>
<td>6</td>
<td>Average (507)</td>
<td>Above Average (526)</td>
<td>Open</td>
<td>1.01</td>
<td>1.37</td>
</tr>
<tr>
<td>7</td>
<td>Slightly Below (479)</td>
<td>Below Average (460)</td>
<td>Closed</td>
<td>0.54</td>
<td>0.61</td>
</tr>
<tr>
<td>8</td>
<td>High (582)</td>
<td>High (578)</td>
<td>Open</td>
<td>1.46</td>
<td>2.01</td>
</tr>
<tr>
<td>9</td>
<td>Very High (665)</td>
<td>Slightly Above (521)</td>
<td>Open</td>
<td>0.85</td>
<td>0.82</td>
</tr>
<tr>
<td>10</td>
<td>Very High (630)</td>
<td>High (552)</td>
<td>Open</td>
<td>0.67</td>
<td>0.85</td>
</tr>
<tr>
<td>11</td>
<td>Average (507)</td>
<td>Average (501)</td>
<td>Open</td>
<td>0.94</td>
<td>1.44</td>
</tr>
</tbody>
</table>
Presentation of Inferential Statistics

Various inferential statistical analyses were conducted to test the stated null hypotheses, including the Pearson Product-Moment correlation coefficient analysis and regression analysis. A Pearson Product-Moment correlation analysis was generated to determine what relationship exists between school climate and student growth. In addition to the bivariate analysis, the use of multivariate statistics was an appropriate method of analyzing the collected empirical data and examining the relationships and potential interactions between all variables simultaneously (Mertler & Vannatta, 2002). A multiple regression analysis was generated to determine what difference exists between the independent variables (school climate indices) and dependent variables (student growth – math and reading), as well as determining the predictability of the independent variable on the dependent variable.

Hypothesis I

There will be no relationship between perceived school climate and student growth.

The results of the Pearson Product-Moment correlation analysis, displayed in Table 5, Table 6, Table 7, and Table 8, provide statistical evidence to reject the null hypothesis.

Because each of the variables were normally distributed and the assumption of linearity was not marked violated, a Pearson Product-Moment correlation coefficient was computed to examine the intercorrelations of the six individual dimensions of school climate and student growth in math. Table 6 shows that 9 of the 21 pairs of variables were significantly correlated. The strongest positive correlations between math growth and climate variables, which would be considered a relatively small to moderate effect size according to Cohen (1988), were between math scores and Supportive Behavior (S), $r = .18$, 

p < 0.01; between math growth and Collegial Behavior (C), r = .20, p < 0.01; and between math and Intimate Behavior (Int), r = .20, p < 0.01. Conversely, there was a relatively small to moderate negative correlation between math and Disengaged Behavior (Dis), r = -.20, p < 0.01, and a small negative correlation between math and Directive Behavior (D), r = -.08, p < 0.01. Math and Restrictive Behavior (R) did not have a significant correlation.

Table 5

*Intercorrelations, Means and Standard Deviations for Climate Levels and Math Growth (N = 4015)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Math Growth</td>
<td>--</td>
<td>.18**</td>
<td>-.08**</td>
<td>.00</td>
<td>.20**</td>
<td>.20**</td>
<td>-.20**</td>
<td>1.02</td>
<td>1.04</td>
</tr>
<tr>
<td>2. Behavior (S)</td>
<td>--</td>
<td>--</td>
<td>-.10**</td>
<td>-.24**</td>
<td>.64**</td>
<td>.63**</td>
<td>-.45**</td>
<td>581.11</td>
<td>68.37</td>
</tr>
<tr>
<td>3. Behavior (D)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>.50**</td>
<td>-.37**</td>
<td>-.15**</td>
<td>.46**</td>
<td>537.18</td>
<td>61.18</td>
</tr>
<tr>
<td>4. Behavior (R)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-.51**</td>
<td>-.20**</td>
<td>.21**</td>
<td>466.36</td>
<td>73.64</td>
</tr>
<tr>
<td>5. Behavior (C)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>.62**</td>
<td>-.48**</td>
<td>536.67</td>
<td>50.51</td>
</tr>
<tr>
<td>6. Behavior (Int)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-.15**</td>
<td>546.22</td>
<td>55.25</td>
</tr>
<tr>
<td>7. Behavior (Dis)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>504.49</td>
<td>62.46</td>
</tr>
</tbody>
</table>

**p < 0.01 (2-tailed)**

In addition to the correlation analysis between the dependent variable and the six dimensions of school climate, a correlation analysis between principal and teacher indices were also analyzed. The strongest positive correlations were between the two climate variables: principal openness and teacher openness, which have a relatively large effect size, r = .71, p < 0.01. There was a relatively weak positive correlation between math and
principal openness, $r = .12$, $p < 0.01$, with a slightly stronger, yet still weak positive correlation between math and teacher openness, $r = .26$, $p < 0.01$. Table 6 displays these results.

Table 6

*Correlation Between Principal and Teacher Openness and Math Growth (N=3993)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Math Growth</td>
<td>--</td>
<td>.12**</td>
<td>.26**</td>
<td>1.02</td>
<td>1.039</td>
</tr>
<tr>
<td>2. Principal Openness</td>
<td>--</td>
<td>--</td>
<td>.71**</td>
<td>525.85</td>
<td>48.946</td>
</tr>
<tr>
<td>3. Teacher Openness</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>526.13</td>
<td>45.503</td>
</tr>
</tbody>
</table>

**$p < 0.01$ (2-tailed)**

A Pearson product-moment correlation coefficient was also computed to examine the intercorrelations of the six individual dimensions of school climate and student growth in reading. Table 7 shows that 10 of the 21 pairs of variables were significantly correlated. The strongest positive correlations between reading growth and climate variables, which would be considered a small effect size according to Cohen (1988), were between reading scores and Supportive Behavior (S), $r = .09$, $p < 0.01$; between reading and Collegial Behavior (C), $r = .10$, $p < 0.01$; and between reading and Intimate Behavior (Int), $r = .12$, $p < 0.01$.

Conversely, there was a small negative correlation between reading and Disengaged Behavior (Dis), $r = -.12$, $p < 0.01$, and between math and Directive Behavior (D), $r = -.05$, $p < 0.01$. Reading and Restrictive Behavior (R) did not have a significant correlation.
Table 7

*Intercorrelations, Means, and Standard Deviations for Climate Levels and Reading Growth

*(N = 4015)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reading</td>
<td>--</td>
<td>.09*</td>
<td>-.05*</td>
<td>.00</td>
<td>.10*</td>
<td>.12*</td>
<td>-.12*</td>
<td>1.27</td>
<td>2.07</td>
</tr>
<tr>
<td>2. Behavior (S)</td>
<td>--</td>
<td>--</td>
<td>-.10*</td>
<td>-.24*</td>
<td>.64*</td>
<td>.63*</td>
<td>-.45*</td>
<td>581.1</td>
<td>68.37</td>
</tr>
<tr>
<td>3. Behavior (D)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>.50*</td>
<td>-.37*</td>
<td>-.15*</td>
<td>.46*</td>
<td>537.18</td>
<td>61.18</td>
</tr>
<tr>
<td>4. Behavior (R)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-.51*</td>
<td>-.20*</td>
<td>.21*</td>
<td>466.36</td>
<td>73.64</td>
</tr>
<tr>
<td>5. Behavior (C)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>.62*</td>
<td>-.48*</td>
<td>536.67</td>
<td>50.51</td>
</tr>
<tr>
<td>6. Behavior (Int)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-.15*</td>
<td>546.22</td>
<td>55.25</td>
</tr>
<tr>
<td>7. Behavior (Dis)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>504.49</td>
<td>62.46</td>
</tr>
</tbody>
</table>

**p < 0.01  (2-tailed)**

As with math, the strongest positive correlations among the reading analysis were between the two climate variables: principal openness and teacher openness, which have a relatively large effect size, $r = .71$, $p < 0.01$. There was a weak positive correlation between reading and principal openness, $r = .06$, $p < 0.01$, and a weak positive correlation between math and teacher openness, $r = .14$, $p < 0.01$. Table 8 displays these results.
Table 8

*Correlation Between Principal and Teacher Openness and Reading Growth (N=4015)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reading Growth</td>
<td>--</td>
<td>.06**</td>
<td>.14**</td>
<td>1.27</td>
<td>2.074</td>
</tr>
<tr>
<td>2. Principal Openness</td>
<td>--</td>
<td>--</td>
<td>.71**</td>
<td>525.85</td>
<td>48.946</td>
</tr>
<tr>
<td>3. Teacher Openness</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>526.13</td>
<td>45.503</td>
</tr>
</tbody>
</table>

**p < 0.01 (2-tailed)

To further test the hypothesis, a multiple regression analysis was conducted to examine the relationship among six profiles of school climate (Table 2), based on teacher perceptions. The means, standard deviations, and intercorrelations can be found in Table 9 for math and Table 10 for reading. The combination of variables to predict math growth from principal openness and teacher openness was statistically significant, F(4, 3989) = 983.28, p < 0.001. The beta coefficients are presented in Table 9. Note that high principal openness explains 50% of the variance of student growth in math, with low principal openness as the constant (R^2 = .50). Average principal openness and high teacher openness are also moderately strong predictors of math growth. Average teacher openness is a relatively low predictor of math growth with low teacher openness as the constant.
Table 9

*Regression Analysis: Principal and Teacher Climate Profiles and Math Growth*

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>Beta (β)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Openness High</td>
<td>.709</td>
<td>.000</td>
</tr>
<tr>
<td>Principal Openness Average</td>
<td>.541</td>
<td>.000</td>
</tr>
<tr>
<td>Teacher Openness High</td>
<td>.509</td>
<td>.000</td>
</tr>
<tr>
<td>Teacher Openness Average</td>
<td>.330</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note: Constant = Principal Profile 3 (low), Teacher Profile 3 (low)

The combination of variables to predict reading growth from principal openness and teacher openness were also statistically significant, $F(4, 3907) = 369.84$, $p < 0.001$. The beta coefficients are presented in Table 10. Note that high teacher openness and average teacher openness explains 28% of the variance of student growth in reading, with low teacher openness as the constant ($R^2 = .28$). High principal openness and average principal openness are also moderate predictors of reading growth.

Table 10

*Regression Analysis: Principal and Teacher Climate Profiles and Reading Growth*

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>Beta (β)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Profile 1 (high)</td>
<td>.684</td>
<td>.000</td>
</tr>
<tr>
<td>Principal Profile 2 (average)</td>
<td>.620</td>
<td>.000</td>
</tr>
<tr>
<td>Teacher Profile 1 (high)</td>
<td>.796</td>
<td>.000</td>
</tr>
<tr>
<td>Teacher Profile 2 (average)</td>
<td>.518</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note: Constant = Principal Profile 3 (low), Teacher Profile 3 (low)
The results of the multiple regression analyses for both math and reading, displayed in Table 9 and Table 10 with associated p-value of <0.01, provide additional statistical evidence to reject the null hypothesis for Hypothesis I.

Hypothesis II

Schools with similar school climate results will not have common growth results.

The results of the Pearson Product-Moment correlation analyses, displayed in Table 15 and Table 16, as well as results from linear regression analyses, displayed in Table 17 and Table 18, provide statistical evidence to reject the null hypothesis.

To test the null hypothesis for Hypothesis II the schools were scored and categorized based on the standardized openness indexes presented in Table 4. A total of 8 of the 11 schools had both principal and teacher openness indexes above 500 and were categorized as open schools. The other three schools had both principal and teacher openness indexes below 500 and were categorized as closed schools. None of the eleven schools were categorized as either engaged or disengaged schools.

From the descriptive statistics presented in Table 11 and Table 12 it was determined that the mean math scores for schools with open climates generally had higher and generally similar scores than those of closed schools, with means ranging from 0.67 to 1.94, and 0.54 to 0.98, respectively.

Table 11 presents math scores for schools that scored above 500 on the climate index for openness.
Table 11

*Open Schools Growth Comparison (math)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>School 1</td>
<td>475</td>
<td>-3.19</td>
<td>9.50</td>
<td>1.62</td>
<td>1.439</td>
</tr>
<tr>
<td>School 3</td>
<td>477</td>
<td>-2.07</td>
<td>4.19</td>
<td>1.05</td>
<td>0.761</td>
</tr>
<tr>
<td>School 5</td>
<td>475</td>
<td>-1.93</td>
<td>4.58</td>
<td>1.22</td>
<td>1.019</td>
</tr>
<tr>
<td>School 6</td>
<td>560</td>
<td>-5.08</td>
<td>6.99</td>
<td>1.01</td>
<td>0.944</td>
</tr>
<tr>
<td>School 8</td>
<td>179</td>
<td>-1.14</td>
<td>4.47</td>
<td>1.46</td>
<td>0.914</td>
</tr>
<tr>
<td>School 9</td>
<td>103</td>
<td>-1.45</td>
<td>4.06</td>
<td>0.85</td>
<td>1.039</td>
</tr>
<tr>
<td>School 10</td>
<td>270</td>
<td>-1.68</td>
<td>3.04</td>
<td>0.67</td>
<td>0.779</td>
</tr>
<tr>
<td>School 11</td>
<td>357</td>
<td>-1.51</td>
<td>4.03</td>
<td>1.94</td>
<td>0.805</td>
</tr>
</tbody>
</table>

Table 12 presents math scores for schools that scored below 500 on the climate index for openness.

Table 12

*Closed Schools Growth Comparison (math)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>School 2</td>
<td>185</td>
<td>-0.88</td>
<td>3.70</td>
<td>0.98</td>
<td>0.729</td>
</tr>
<tr>
<td>School 4</td>
<td>336</td>
<td>-2.62</td>
<td>3.67</td>
<td>0.84</td>
<td>0.958</td>
</tr>
<tr>
<td>School 7</td>
<td>576</td>
<td>-4.36</td>
<td>3.75</td>
<td>0.54</td>
<td>1.012</td>
</tr>
</tbody>
</table>
Descriptive statistics presented in Table 13 and Table 14 determined that the mean reading scores for schools with open climates generally had higher and also similar scores than those of closed schools, with means ranging from 0.82 to 2.01, and 0.61 to 1.21, respectively.

Table 13 presents reading scores for schools that scored above 500 on the climate index for openness.

Table 13

*Open Schools Growth Comparison (reading)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>School 1</td>
<td>454</td>
<td>-9.26</td>
<td>10.00</td>
<td>1.85</td>
<td>2.324</td>
</tr>
<tr>
<td>School 3</td>
<td>448</td>
<td>-7.80</td>
<td>9.21</td>
<td>1.65</td>
<td>2.287</td>
</tr>
<tr>
<td>School 5</td>
<td>477</td>
<td>-6.28</td>
<td>5.30</td>
<td>1.19</td>
<td>1.521</td>
</tr>
<tr>
<td>School 6</td>
<td>553</td>
<td>-8.39</td>
<td>9.06</td>
<td>1.34</td>
<td>1.717</td>
</tr>
<tr>
<td>School 8</td>
<td>175</td>
<td>-8.47</td>
<td>8.06</td>
<td>2.01</td>
<td>1.819</td>
</tr>
<tr>
<td>School 9</td>
<td>101</td>
<td>-9.13</td>
<td>8.50</td>
<td>0.82</td>
<td>3.352</td>
</tr>
<tr>
<td>School 10</td>
<td>263</td>
<td>-10.00</td>
<td>9.62</td>
<td>0.85</td>
<td>2.307</td>
</tr>
<tr>
<td>School 11</td>
<td>353</td>
<td>-8.34</td>
<td>8.27</td>
<td>1.38</td>
<td>1.568</td>
</tr>
</tbody>
</table>

Table 14 presents reading scores for schools that scored below 500 on the climate index for openness.
Table 14

Closed Schools Growth Comparison (reading)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>School 2</td>
<td>188</td>
<td>-6.59</td>
<td>8.81</td>
<td>1.21</td>
<td>1.678</td>
</tr>
<tr>
<td>School 4</td>
<td>338</td>
<td>-8.47</td>
<td>8.63</td>
<td>0.99</td>
<td>2.318</td>
</tr>
<tr>
<td>School 7</td>
<td>561</td>
<td>-9.20</td>
<td>7.97</td>
<td>0.61</td>
<td>2.045</td>
</tr>
</tbody>
</table>

In order to test Hypothesis II a Pearson Product-Moment correlation coefficient was computed to assess the relationship between the school climate and student growth for schools in the open climate and closed climate categories. Table 15 shows there was a positive correlation between the math and school openness variables, $r = 0.18$, $p < 0.01$. Overall, there was a small, positive correlation between school climate and student growth in math. An open school climate was correlated with positive student growth.

Table 15

Correlation Between School Climate and Math Growth (N=3993)

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Math Growth</td>
<td></td>
<td>.18**</td>
<td>1.02</td>
<td>1.039</td>
</tr>
<tr>
<td>2. School Climate</td>
<td></td>
<td>--</td>
<td>.72</td>
<td>.448</td>
</tr>
</tbody>
</table>

**p < 0.01  (2-tailed)

Likewise, a Pearson Product-Moment correlation coefficient was computed to assess the relationship between school climate and student growth in reading. Table 16 shows there was a positive correlation between the reading and school openness variables, $r = 0.12$, $p <$
0.01. Overall, there was a small, positive correlation between school climate and student growth in reading. An open school climate was correlated with positive student growth.

Table 16

*Correlation Between School Climate and Reading Growth (N=3911)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reading Growth</td>
<td>--</td>
<td>.12**</td>
<td>1.27</td>
<td>2.074</td>
</tr>
<tr>
<td>2. School Climate</td>
<td>--</td>
<td>--</td>
<td>.72</td>
<td>.448</td>
</tr>
</tbody>
</table>

**p < 0.01 (2-tailed)**

In addition to the Pearson Product-Moment correlation analysis, a multiple regression analysis was conducted to examine the predictability of the openness index on both math and reading growth. The means, standard deviations and intercorrelations can be found in Table 17 for math and Table 18 for reading. Using the openness index variable to predict math growth, the regression analysis provided results that were statistically significant, $F(1, 3992) = 3181.73$, $p < 0.001$.

The beta coefficient is presented in Table 17. Note that school openness significantly predicts student growth in math, with the closed school index as the constant. The adjusted R2 Value was .44. This indicates that 44% of the variance in math growth was explained by the model. Based on these results, schools with open climates are more likely to have high math growth results than schools with closed climates. According to Cohen (1988) this is a large effect.
Table 17

Regression Analysis: Open Schools and Math Growth

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>Beta (β)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Index: Open</td>
<td>1.139</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note: Constant = School Index: Closed

Using the same openness index variable to predict reading growth, the regression analysis provided results that were also statistically significant $F(1, 4014) = 261.58$, $p<0.001$. The beta coefficient is presented in Table 18. Note that school openness moderately predicts student growth in reading, with the closed school index as the constant. The adjusted R2 Value was .25. This indicates that 25% of the variance in reading growth was explained by the model. Based on these results, schools with open climates are more likely to have high reading growth results than schools with closed climates.

Table 18

Regression Analysis: Open Schools and Reading Growth

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>Beta (β)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Index: Open</td>
<td>1.430</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note: Constant = School Index: Closed

Hypothesis III

Schools with similar student growth results will not have common climate characteristics.

Despite the statistical evidence that a correlation exists among schools with high growth scores, the results of the Pearson Product-Moment correlation, displayed in Table 23, Table 24, and Table 25, do not provide statistical evidence to reject the null hypothesis. The null hypothesis was retained.
To test the null hypothesis for Hypothesis III the schools were categorized based on mean percent of normal growth for each school, presented in Table 2. A mean equal to or greater than 1.00 for both math and reading was used to classify schools as high growth schools. Schools with a mean equal to or greater than 1.00 for one of the two subjects but less than 1.00 for the other subject were classified as average growth schools. Schools with a mean less than 1.00 for both subjects were classified as low growth schools.

Based on these criteria, a total of five of the eleven schools were categorized as high growth schools (schools 1, 3, 5, 6, and 8); two of the eleven schools were categorized as average growth schools (schools 2 and 11); and the remaining four schools were categorized as low growth schools (schools 4, 7, 9, and 10). School categorization details are displayed in Table 19.
Table 19

*Growth Categorization*

<table>
<thead>
<tr>
<th>School</th>
<th>Mean % of Normal Growth (Math)</th>
<th>Mean % of Normal Growth (Reading)</th>
<th>Growth Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.62</td>
<td>1.85</td>
<td>High</td>
</tr>
<tr>
<td>2</td>
<td>0.98</td>
<td>1.21</td>
<td>Average</td>
</tr>
<tr>
<td>3</td>
<td>1.05</td>
<td>1.69</td>
<td>High</td>
</tr>
<tr>
<td>4</td>
<td>0.84</td>
<td>0.99</td>
<td>Low</td>
</tr>
<tr>
<td>5</td>
<td>1.22</td>
<td>1.19</td>
<td>High</td>
</tr>
<tr>
<td>6</td>
<td>1.01</td>
<td>1.37</td>
<td>High</td>
</tr>
<tr>
<td>7</td>
<td>0.54</td>
<td>0.61</td>
<td>Low</td>
</tr>
<tr>
<td>8</td>
<td>1.46</td>
<td>2.01</td>
<td>High</td>
</tr>
<tr>
<td>9</td>
<td>0.85</td>
<td>0.82</td>
<td>Low</td>
</tr>
<tr>
<td>10</td>
<td>0.67</td>
<td>0.85</td>
<td>Low</td>
</tr>
<tr>
<td>11</td>
<td>0.94</td>
<td>1.44</td>
<td>Average</td>
</tr>
</tbody>
</table>

From the descriptive statistics presented in Table 20, Table 21, and Table 22 it was determined that the mean climate scores for schools with high growth generally had higher and generally similar scores in the Supportive Behavior (S) and Collegial Behavior (C) than those of schools with average or low growth, with means of 602.75 and 553.42, respectively. On the other hand, schools with average and low growth tended to have higher and generally similar scores in the Restrictive Behavior (R), with means of 527.32 and 495.91,
respectively. Schools with low growth had a higher Disengaged Behavior (Dis) than both high and average growth schools, with a mean of 533.51.

Furthermore, the openness index revealed that schools with high growth had high levels of openness in both the principal and teacher indices, with means of 559.08 and 546.12 respectively, while both average and low growth schools had levels of principal openness that matched that of the high growth schools, with means of 512.15 and 552.07, respectively. Both average and low growth schools had decreased teacher openness, with means of 488.01 and 492.39, respectively. Both average and low growth schools had levels of principal openness that matched that of the high growth schools, with means of 512.15 and 552.07, respectively.

Table 20 presents climate scores for schools that were classified as high growth.

Table 20

*School Climate Comparison (high growth)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supportive Behavior (S)</td>
<td>170</td>
<td>245.57</td>
<td>761.03</td>
<td>602.75</td>
<td>123.234</td>
</tr>
<tr>
<td>Directive Behavior (D)</td>
<td>170</td>
<td>83.13</td>
<td>958.13</td>
<td>497.83</td>
<td>149.339</td>
</tr>
<tr>
<td>Restrictive Behavior (R)</td>
<td>170</td>
<td>-143.87</td>
<td>952.90</td>
<td>427.66</td>
<td>230.361</td>
</tr>
<tr>
<td>Collegial Behavior (C)</td>
<td>170</td>
<td>235.69</td>
<td>830.48</td>
<td>553.42</td>
<td>123.729</td>
</tr>
<tr>
<td>Intimate Behavior (Int)</td>
<td>170</td>
<td>-258.41</td>
<td>10003.27</td>
<td>553.84</td>
<td>196.030</td>
</tr>
<tr>
<td>Disengaged Behavior (Dis)</td>
<td>170</td>
<td>25.40</td>
<td>898.41</td>
<td>468.90</td>
<td>166.653</td>
</tr>
<tr>
<td>Principal Openness</td>
<td>170</td>
<td>305.91</td>
<td>782.33</td>
<td>559.08</td>
<td>98.905</td>
</tr>
<tr>
<td>Teacher Openness</td>
<td>170</td>
<td>216.20</td>
<td>841.18</td>
<td>546.12</td>
<td>114.934</td>
</tr>
</tbody>
</table>
Table 21 presents climate scores for schools classified as average growth.

Table 21

*School Climate Comparison (average growth)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supportive Behavior (S)</td>
<td>57</td>
<td>204.33</td>
<td>761.03</td>
<td>542.18</td>
<td>157.159</td>
</tr>
<tr>
<td>Directive Behavior (D)</td>
<td>57</td>
<td>145.63</td>
<td>770.63</td>
<td>478.41</td>
<td>134.863</td>
</tr>
<tr>
<td>Restrictive Behavior (R)</td>
<td>57</td>
<td>49.68</td>
<td>952.90</td>
<td>527.32</td>
<td>232.890</td>
</tr>
<tr>
<td>Collegial Behavior (C)</td>
<td>57</td>
<td>235.69</td>
<td>756.13</td>
<td>463.95</td>
<td>104.778</td>
</tr>
<tr>
<td>Intimate Behavior (Int)</td>
<td>57</td>
<td>21.96</td>
<td>769.63</td>
<td>451.54</td>
<td>135.789</td>
</tr>
<tr>
<td>Disengaged Behavior (Dis)</td>
<td>57</td>
<td>104.76</td>
<td>739.68</td>
<td>451.46</td>
<td>145.904</td>
</tr>
<tr>
<td>Principal Openness</td>
<td>57</td>
<td>202.61</td>
<td>730.67</td>
<td>512.15</td>
<td>108.425</td>
</tr>
<tr>
<td>Teacher Openness</td>
<td>57</td>
<td>319.02</td>
<td>712.06</td>
<td>488.01</td>
<td>72.573</td>
</tr>
</tbody>
</table>
Table 22 presents climate scores for schools that were classified as low growth.

Table 22

_School Climate Comparison (low growth)_

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supportive Behavior (S)</td>
<td>128</td>
<td>204.33</td>
<td>761.03</td>
<td>540.67</td>
<td>126.699</td>
</tr>
<tr>
<td>Directive Behavior (D)</td>
<td>128</td>
<td>20.63</td>
<td>895.63</td>
<td>473.62</td>
<td>150.579</td>
</tr>
<tr>
<td>Restrictive Behavior (R)</td>
<td>128</td>
<td>-337.42</td>
<td>952.90</td>
<td>410.81</td>
<td>226.297</td>
</tr>
<tr>
<td>Collegial Behavior (C)</td>
<td>128</td>
<td>124.16</td>
<td>793.31</td>
<td>495.91</td>
<td>133.180</td>
</tr>
<tr>
<td>Intimate Behavior (Int)</td>
<td>128</td>
<td>115.42</td>
<td>956.54</td>
<td>514.80</td>
<td>165.431</td>
</tr>
<tr>
<td>Disengaged Behavior (Dis)</td>
<td>128</td>
<td>104.76</td>
<td>977.78</td>
<td>533.51</td>
<td>180.723</td>
</tr>
<tr>
<td>Principal Openness</td>
<td>128</td>
<td>237.18</td>
<td>798.71</td>
<td>552.07</td>
<td>115.391</td>
</tr>
<tr>
<td>Teacher Openness</td>
<td>128</td>
<td>202.48</td>
<td>712.25</td>
<td>492.39</td>
<td>119.652</td>
</tr>
</tbody>
</table>

In order to test Hypothesis III a Pearson Product-Moment correlation coefficient was computed to assess the relationship between the school climate and student growth for schools based on three categories of growth scores: high growth, average growth and low growth (Table 19). Below are the results for all three categories.

A Pearson correlational analysis was conducted to assess the correlation of school climate among schools with high growth. Of the 10 possible combinations, 3 sets of schools demonstrated a significant correlation. Table 23 shows there was a positive correlation between School 1 and School 3, $r = 0.94$, $p < 0.01$, between School 1 and School 5, $r = 0.84$, $p < 0.05$, and between School 3 and School 5, $r = 0.92$, $p < 0.01$. Based on these results,
there is a correlation between school climates of schools with high growth results, but it is not consistent among all of the schools.

Table 23

*Correlation Between Schools with High Growth and School Climate (N = 6)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>School 1</td>
<td></td>
<td>.66</td>
<td>.94**</td>
<td>.69</td>
<td>.84*</td>
<td>538.59</td>
<td>95.217</td>
</tr>
<tr>
<td>School 3</td>
<td></td>
<td></td>
<td>.65</td>
<td>.36</td>
<td>.92**</td>
<td>555.96</td>
<td>56.865</td>
</tr>
<tr>
<td>School 5</td>
<td></td>
<td></td>
<td></td>
<td>.73</td>
<td>.80</td>
<td>567.35</td>
<td>63.365</td>
</tr>
<tr>
<td>School 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.51</td>
<td>526.81</td>
<td>48.160</td>
</tr>
<tr>
<td>School 8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>497.25</td>
<td>98.437</td>
</tr>
</tbody>
</table>

*p < 0.05  **p < 0.01

Likewise, a Pearson Product-Moment correlational analysis was conducted to assess the correlation of school climate among schools with average growth. No significant correlation existed between the only possible combination, shown in Table 24. No significant correlation is present among schools with average growth results.

Table 24

*Correlation Between Schools with Average Growth and School Climate (N = 6)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>School 2</td>
<td></td>
<td>-.31</td>
<td>481.49</td>
<td>84.260</td>
</tr>
<tr>
<td>School 11</td>
<td></td>
<td></td>
<td>524.493</td>
<td>57.274</td>
</tr>
</tbody>
</table>

*p < 0.05  **p < 0.01
A Pearson Product-Moment correlational analysis was also conducted to assess the correlation of school climate among schools with low growth. Of the six possible combinations between the schools, no significant correlation exists among these sets, shown in Table 25. There is no significant correlation among schools with low growth results.

Table 25

*Correlation Between Schools with Low Growth and School Climate (N = 6)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. School 4</td>
<td>--</td>
<td>.51</td>
<td>-.13</td>
<td>-.19</td>
<td>531.80</td>
<td>49.989</td>
</tr>
<tr>
<td>2. School 7</td>
<td>--</td>
<td>--</td>
<td>-.14</td>
<td>-.02</td>
<td>529.33</td>
<td>64.227</td>
</tr>
<tr>
<td>3. School 9</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>.79</td>
<td>489.00</td>
<td>132.800</td>
</tr>
<tr>
<td>4. School 10</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>467.75</td>
<td>105.145</td>
</tr>
</tbody>
</table>

*p < 0.05  **p < 0.01

Summary

The results of the data analyses used to test the stated hypotheses were presented in this chapter. The data were analyzed through the use of Pearson Product-Moment correlational coefficient analyses and regression analyses using the software SPSS, PSAW 18. The results indicate a strong relationship between school climate and student growth (Hypothesis I), a small or weak relationship among schools with similar school climate (Hypothesis II), and no significant relationship among schools with similar growth results (Hypothesis III). The results of the regression analyses provided statistical evidence indicating there is a significant direct relationship between school climate and student growth.
in charter schools. Furthermore, a major percentage (50% math and 28% reading) of student growth can be explained by the principal and teacher openness of the school.

Chapter V provides the summary, conclusion, implications for practice and discussion, and recommendations for further research.
CHAPTER V: SUMMARY, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

Introduction

Schools are organizations made up of a collection of individuals with their own unique cultures, backgrounds, and perceptions that serve to define the learning environment (Stolp & Smith, 1995). In Building an Intentional School Culture, Charles Elbot & David Fulton (2008) noted “climate or culture has a great influence on a student’s chance for success.” Unlike school culture, which is the collective and established norms, values, and traditions of the organization, school climate is the current and dynamic character of the school. Similar to the concept of weather the climate of a school ebbs and flows, with seasonal and yearly fluctuations (Stringer, 2002). Freiberg (1999) suggests that understanding the relationship between school climate and student outcomes has significant implications to the field of education. Identifying and studying the variables surrounding school climate and the factors that contribute to student learning was the topic of this research study.

Therefore, this study built upon the established tradition of Argyris (1958), Pace & Stern (1958), March & Simon (1958), Halpin & Croft (1963), Tagiuri (1968), as well as the more contemporary work of Anderson (1982), Brookover et al. (1978), Hoy & Clover (1986), Hoy, Tarter, & Kottkamp (1991), Freiberg (1999), Stringer (2002), and Cohen et al. (2009). Although the topic of school climate has been thoroughly researched and studied for many years (Cohen et al., 2009), the focus of past research has primarily been in comparison to student achievement, rather than that of student growth. Using the amount of academic growth a student makes throughout the course of a school year was the basis for this research. Additionally, this study sought to investigate these variables within the
contemporary environment of charter schools. While charter schools are state funded public schools, they are new to the educational stage and provide a fresh opportunity to examine how these factors impact the school environment and, ultimately, student learning.

The purpose of this study was to determine if a relationship exists between school climate and student growth in Michigan charter schools. The researcher used a non-experimental, correlational design in this quantitative study to examine the relationship between school climate, based on teacher perceptions of principal and teacher openness and student outcomes, and the percent of normal growth. Data were collected through the use of a school climate survey, the Organizational Climate Descriptive Questionnaire for Elementary Schools (OCDQ-RE) and from student assessment data. The (Revised) OCDQ-RE by Hoy, Tarter, and Kottkamp (1991) was used to assess teacher perceptions of the school climate. Student growth data, in the form of fall and spring scaled scores on a standardized assessment, were gathered from the authorizer who chartered the 11 schools who participated in the study. The population of this study included 355 teachers from 11 charter schools in Michigan.

This study was guided by the following research questions:

1. What is the relationship between the independent variable (school climate) as measured by the OCDQ-RE and the dependent variable results (student gain scores in reading and math), as measured by the Performance Series or MAP tests?

2. What are the common characteristics of schools with similar climate results, as measured by the OCDQ-RE?
3. What are the common characteristics of schools with similar student growth, as measured by the Performance Series or MAP tests?

More specifically, the following hypotheses were tested:

1. There will be no relationship between perceived school climate and student growth;

2. Schools with similar school climate results will not have common growth results; and

3. Schools with similar student growth results will not have common climate characteristics.

Summary of Findings

Data were analyzed through the use of Pearson Product-Moment correlation analyses and linear regression analyses. Out of the three hypotheses tested, two were rejected with a p-value <0.01. The results indicated small to moderate, positive correlations between school climate and student growth when analyzing math and Supportive Behavior (S), \( r = .18, p < 0.01 \); math growth and Collegial Behavior (C), \( r = .20, p < 0.01 \); and math and Intimate Behavior (Int), \( r = .20, p < 0.01 \). Conversely, there was a relatively small to moderate negative correlation between math and Disengaged Behavior (Dis), \( r = -.20, p < 0.01 \), and a small negative correlation between math and Directive Behavior (D), \( r = -.08, p < 0.01 \).

There was also a relatively weak positive correlation between math and principal openness, \( r = .12, p < 0.01 \), and between math and teacher openness, \( r = .26, p < 0.01 \).

Reading results were analyzed and of the 21 pairs of variables, 10 were significantly correlated. There were weak positive correlations between reading growth and Supportive Behavior (S), \( r = .09, p < 0.01 \); between reading and Collegial Behavior (C), \( r = .10, p <
and between reading and Intimate Behavior (Int), \( r = 0.12, p < 0.01 \). Conversely, there was a small negative correlation between reading and Disengaged Behavior (Dis), \( r = -0.12, p < 0.01 \), and between math and Directive Behavior (D), \( r = -0.05, p < 0.01 \). As with math, there was a weak positive correlation between reading and principal openness, \( r = 0.06, p < 0.01 \), and the same between math and teacher openness, \( r = 0.14, p < 0.01 \).

Next, multiple regression analyses were conducted to examine the relationship among six profiles of school climate based on teacher perceptions in Hypothesis II. The combination of variables to predict math growth from principal openness and teacher openness were statistically significant, \( F(4, 3989) = 983.28, p < 0.001 \); with high principal openness explaining 50% of the variance of student growth in math, with low principal openness as the constant \((R^2 = .50)\). Average principal openness and high teacher openness were also moderately strong predictors of math growth. Average teacher openness was a relatively low predictor of math growth with low teacher openness as the constant. The combination of variables to predict reading growth from principal openness and teacher openness were also statistically significant, \( F(4, 3907) = 369.84, p < 0.001 \), with high teacher openness and average teacher openness explaining 28% of the variance of student growth in reading, with low teacher openness as the constant \((R^2 = .28)\). High principal openness and average principal openness were also moderate predictors of reading growth.

Additionally, there was a positive correlation between the math growth and school openness variables, \( r = 0.18, p < 0.01 \) and a positive correlation between the reading and school openness variables, \( r = 0.12, p < 0.01 \). Using the openness index variable to predict math growth, a regression analysis provided results that were statistically significant, \( F(1, 3992) = 3181.73, p < 0.001 \); with school openness explaining 44% of the variance of student
growth in math, with the closed school index as the constant ($R^2 = .44$). In regard to reading, the regression analysis provided results that were also statistically significant $F(1, 4014) = 261.58, p< 0.001$; with openness explaining 25% of the variance in student growth in reading, with the closed school index as the constant ($R^2 = .25$).

Finally, after testing Hypothesis II, there was a positive correlation between School 1 and School 3, $r = 0.94, p < 0.01$, between School 1 and School 5, $r = 0.84, p < 0.05$, and between School 3 and School 5, $r = 0.92, p < 0.01$. Based on these results, there is a correlation between school climates of schools with high growth results, but it is not consistent among all of the schools analyzed. There is no significant correlation among schools with average growth results or among schools with low growth results.

Conclusion

While examining the relationship between the variables of school climate and student growth, the researcher found significant statistical evidence to reject two of the three null hypotheses (Hypothesis I and Hypothesis II), but did not find statistical evidence to reject the third hypothesis (Hypothesis III). The data analyses and results of this study have provided a basis for the following conclusions:

1. School climate is correlated to student outcomes. This conclusion is consistent with earlier studies looking at the relationship between school climate and student outcomes, namely student achievement (Brookover, 1978; Hoy et al., 1991; Cohen 2009). The results of correlation analyses and multiple regression analyses for both math and reading, with associated $p$-value of $<0.01$, provided statistical evidence to support this conclusion. Therefore, the researcher concluded that there is a significant relationship
between school climate, based on teacher perceptions and student math and reading growth from fall to spring, within a school year as tested in Hypothesis I.

2. Furthermore, the researcher concluded that schools with similar school climates produce similar student math and reading growth results, based on the results of correlation analyses and multiple regression analyses for both math and reading, with associated p-value of <0.01. These analyses provided statistical evidence to support this conclusion, tested in Hypothesis II.

3. Finally, schools with similar math and reading growth scores may not have similar school climates. Based on the results of Hypothesis III, there was little statistical evidence to support the conclusion that math and reading results predict the climate of a school, with associated p-value of <0.01.

Implications of Findings and Discussion

This study has contributed to the literature by examining the school environment within Michigan charter schools and determined what relationship exists between school climate and student growth. The findings of this study are similar to those of previous research. Providing additional support for the work of Brookover (1978) and Hoy et al. (1986, 1991, & 2004), the findings conclude that there is a relationship between school climate and student outcomes. These conclusions provide additional support to the notion that the school environment, which is experienced by and affects the behaviors of its participants, plays a significant role in the learning process of students.

Although this study adds further support to the already sound research on school climate and its impact on student outcomes, it is the approach of using student growth within
a school year that lends additional implication for practice in the field of education. The
design used in this study provides school leaders and educational researchers with a reliable
method to measure various factors that contribute to the learning environment, at a specific
point in time. By using the pre-test and post-test approach (fall and spring test results), this
study provided a model that focuses the impact of the chosen variables within a controlled
environment, a single school year. And, unlike student achievement that is influenced by a
multitude of factors, including students’ past academic experiences, socioeconomic status,
and home life, student growth focuses on the amount of academic progress a student has
made, despite the students’ current level of educational attainment.

Additionally, by using the charter school environment as the unit of analysis this
study provided additional clarification school climate’s influence on student learning within a
charter school. As a relatively new field of study much of the research on charter schools is
either focused on student achievement as the measure of student outcomes, or overlooks the
school environment as a factor in the school’s influence on student performance (Miron &
Nelson, 2002; Hoxby & Rockoff, 2004). Furthermore, charter schools now provide a choice
for parents, and the school environment is a key factor in their decision to enroll in a school
other than the traditional public school (Rinehart & Lee, 1991; Bulkley & Fisler, 2002;
Kayes & Maranto, 2006). Whether it is perception or the actual school climate that plays a
critical role in a student’s overall success, Rinehart and Lee (1991) suggest the setting in
which a child spends their time at school is a high priority for parents.

Yet, in today’s high stakes environment of state and federal accountability, many
schools have turned away from the approach of building an intentional school climate and
have focused their time on “rigorous” instructional practices (Frymier & Joekel, 2004).
Although student academic success is the primary focus of the public school system, Cohen (2006) argues “the goals of education need to be reframed to prioritize not only academic learning, but also social, emotional and ethical competencies.” In fact, there is an increasing amount of research blending past and present school climate research from the psychology field to better address students’ holistic needs, not just that of an academic nature (Becker & Luthar, 2002; Roney, Coleman, & Schlichting, 2007).

This research points to the need for principals and school leaders to look holistically at the teaching and learning process, as well as the students’ social and emotional health (Becker & Luthar, 2002; Cohen, 2006; Haynes, Emmons, and Ben-Avie, 2010). As Scherz (2004) suggests, the school environment is a key factor in social and emotional well-being of students and highly contributes to the overall health of a school. By spending vast amounts of time and resources on the curriculum, instructional strategies and preparing for standardized assessments, many schools fail to establish a safe and supportive environment in which students can learn and grow (Haynes, Emmons and Ben-Avie, 2010). Not only may students perform better on tests that measure student academic performance in a school with a healthy climate, they may also acquire the necessary skills and confidence fundamental for a productive life (Haynes, Emmons, and Ben-Avie, 2010).

Likewise, addressing students’ social-emotional health has been linked to increased student achievement in minority and lower socioeconomic communities (Becker & Luthar, 2002; Shindler, Jones, Williams, Taylor, & Cadenas, 2009). Outlining a strategy for policy makers and school leaders, Becker and Luther (2002) make the case that to decrease the achievement gap between white and black students, schools need to create an intentional school climate that focuses on the “social emotional components that influence achievement
performance (academic and school attachment, teacher support, peer values and mental health).” Due to the fact that high populations of minority and at-risk students are found in urban areas charter schools, which tend to be concentrated in and around large metropolitan communities, they have an opportunity to address these issues and focus their resources on building a healthy school community (Merseth, 2009). Of the several characteristics that have been identified as being necessary to achieve strong student outcomes, Merseth (2009) in her research on urban charter schools lists many elements associated with school climate, which include a collaborative staff, high expectations, parent and community involvement, and a supportive environment.

If school climate is a significant factor in student outcomes, and ultimately a school’s overall health, then what (or who) determines the school’s climate? As the day-to-day leader within the school, is the principal an integral component in defining the school’s climate? In a study exploring the relationship between leadership and school climate Kelly, Thornton, and Daugherty (2005) found that “Education leadership is possibly the most important, single determinant of an effective learning environment.” Much more, Elbot and Fulton (2008) describe principals as “the catalysts for helping members of the school community think and act in more integrated ways.” The research clearly states it is the principal that is the greatest single influence in defining and setting the climate for the school (Stringer, 2002).

Building a positive school climate will not only work to improve student outcomes, but will promote higher moral, staff performance, and an overall healthy environment. Furthermore, because schools are complex and ever changing organizations, principals must be intentional about their actions and equip themselves in order to build continuous school improvement (Kelly et al., 2005). In order to accomplish this, Kelly and colleagues (2005)
conclude that principals need to be in tune to the school environment and “understand effective leadership behaviors and teacher’s perceptions of their behaviors.” But school leaders themselves do not solely define the school’s climate; he or she must engage all stakeholders, including the faculty, staff, parents, and the community (Stronge, Richard, & Catano, 2008). It is the school leader who must ensure the relationships are established that will lead to a successful and sustainable organization (Fullan, 2001). Therefore, understanding the relationship between school climate and student outcomes, and the factors associated with influencing a school’s climate, is significant to a principal’s success.

In summary, the body of literature and research regarding the relationship between school climate and student achievement has a long-standing tradition (Anderson, 1982; Frieberg, 1999; Cohen et al., 2009; Zullig, 2010). Although the association of student achievement to student growth has been explored by way of year-to-year gain (Betebenner, 2008), more research is needed and this study lends additional support to the focus on how school climates affect student growth within a school year. Additionally, this study continues to provide support to the importance of school climate on the social-emotional implications of a student’s well-being, let alone their academic success (Becker & Luthar, 2002; Haynes, Emmons, & Ben-Avie, 2010). This study also provides school leaders with a better understanding of the importance of school climate in the broader context of school activities, and the ability for him or her to influence the current school climate.

Consequently, the results of this study reinforce prior research, present a compelling argument for school climate being a significant factor in a student’s successful school experience, and suggest the new implication insomuch that these attributes are also present in the environment of a charter school and how leaders can foster an intentional school climate
to increase outcomes for all students. It’s crucial that, today more than ever, school leaders are conscious of all variables that influence student outcomes and focus their time and energy on factors that impact the teaching and learning process; of which school climate is a significant factor.

Recommendations for Further Research

The findings of this study offer implications for future researchers who may be interested in studying school climate and student growth.

This study could be replicated among a larger population of charter public or traditional public schools in Michigan, or across the nation provided that the schools administer a standardized test in the fall and spring of the identified school year. Empirical data collected from other populations could allow school leaders to analyze the relationship between school climate and student growth in schools chartered by other authorizers or even traditional district schools, not just those chartered by a single state university authorizer. Additionally, using a private school as the unit of analysis could shed additional light on the climate of other populations and their effects on student outcomes.

Because this study limited the scope of research to school climate, future research could include additional variables that contribute to the overall school environment, or more specifically, leadership practices. Such factors related to a school’s geographical location, the physical school building, class size, length of teacher tenure and attrition, principal turnover, student enrollment and attrition, and gender could all be investigated. Socioeconomic factors, which have been shown to have a strong correlation to student outcomes (Maylone, 2002), would also be appropriate in further research in the area of school climate. Another research opportunity, due to the fact that this study limited the
research to teacher perceptions of school climate, would be to look at the factors that contribute to school climate, and the relationships among those factors.

It should be further noted that this study did not compare the student growth results with those of student achievement. This practice limited the findings to the relationship between school climate and student growth, without consideration for the level of student attainment. As noted in the literature, student achievement has been correlated to socioeconomic status and geographical location of schools. Because this study was limited to climate and growth, it did not seek to rank the achievement level of the schools. Therefore, there is additional opportunity for research in exploring the relationship of student growth and student achievement, and that of school climate.

Finally, a qualitative or mixed-methods study could also be executed to further investigate how school culture contributes to the school environment and plays a role in the learning process. Conducting a study that seeks deeper understanding on the human element schooling, teacher beliefs, attitudes, and values, as well as those of the principal and students would add additional knowledge to this topic. By way of observations, organizational documents, and interviews, a researcher could gather rich empirical data that was not extracted by this quantitative research study. Furthermore, investigating the similarities and differences of school climate to that of school culture is an area of educational research that is still yet to be fully explored.

Summary

Chapter V provided a summary of the findings, conclusion, and implications of the findings and discussion, as well as recommendations for possible topics of further research.
This research concluded that there is a relationship between school climate and student growth, based on data from select Michigan charter schools.

The results of this study should be used as a basis for additional research in the area of school climate and student growth. Continued research in the areas of school climate and student growth, and other variables surrounding the learning environment, may allow school leaders to establish and maintain healthier schools and, ultimately, improve student outcomes.
REFERENCES


APPENDICES
### OCDQ-RE

**Directions:** The following are statements about your school. Please indicate the extent to which each statement characterizes your school.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Rarely Occurs</th>
<th>Sometimes Occurs</th>
<th>Often Occurs</th>
<th>Very Frequently Occurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The teachers accomplish their work with vim, vigor, and pleasure.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Teachers’ closest friends are other faculty members at this school.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Faculty meetings are useless.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. The principal goes out of his/her way to help teachers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. The principal rules with an iron fist.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Teachers leave school immediately after school is over.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. Teachers invite faculty members to visit them at home.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. There is a minority group of teachers who always oppose the majority.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. The principal uses constructive criticism.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. The principal checks the sign-in sheet every morning.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. Routine duties interfere with the job of teaching.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. Most of the teachers here accept the faults of their colleagues.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. Teachers know the family background of other faculty members.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. Teachers exert group pressure on non-conforming faculty members.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. The principal explains his/her reasons for criticism to teachers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. The principal listens to and accepts teachers’ suggestions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. The principal schedules the work for the teachers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. Teachers have too many committee requirements.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. Teachers help and support each other.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. Teachers have fun socializing together during school time.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21. Teachers ramble when they talk at faculty meetings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22. The principal looks out for the personal welfare of teachers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23. The principal treats teachers as equals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24. The principal corrects teachers’ mistakes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25. Administrative paperwork is burdensome at this school.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26. Teachers are proud of their school.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27. Teachers have parties for each other.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28. The principal compliments teachers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29. The principal is easy to understand.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30. The principal closely checks classroom (teacher) activities.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>31. Clerical support reduces teachers’ paperwork.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>32. New teachers are readily accepted by colleagues.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>33. Teachers socialize with each other on a regular basis.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>34. The principal supervises teachers closely.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>35. The principal checks lesson plans.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>36. Teachers are burdened with busy work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>37. Teachers socialize together in small, select groups.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>38. Teachers provide strong social support for colleagues.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>39. The principal is autocratic.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>40. Teachers respect the professional competence of their colleagues.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>41. The principal monitors everything teachers do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>42. The principal goes out of his/her way to show appreciation to teachers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix B

Subject: Re: Requesting Permission to Use a Survey Tool
Date: Monday, June 7, 2010 2:24 PM
From: Wayne Hoy <whoy@mac.com>
To: Ben Jankens <bjankens@charter.net>
Conversation: Requesting Permission to Use a Survey Tool

Hi Ben,

You have permission to use any of my instruments in your research.

Sent from my iPhone

On Jun 7, 2010, at 1:06 PM, Ben Jankens <bjankens@charter.net> wrote:

Dr. Wayne K. Hoy, D. Ed.
Novice Fawcett Chair In Educational Administration
School of Educational Policy and Leadership
Ohio State University
Columbus, OH 43210

Dear Dr. Hoy:

As I near the end of my course work in Eastern Michigan University’s (EMU) educational leadership doctoral program, I am working with my dissertation proposal and would like to request your permission to use the school climate survey instruments you have developed at Ohio State University.

In regard to my dissertation, I intend to conduct a quantitative analysis of the variables between school climate, leadership and student outcomes. Ultimately, I am looking to explore the relationship between school climate and student growth in a portfolio of Michigan charter schools. It’s my intent that student assessment data will be extracted from 28 Michigan charter school’s fall and spring test results from the Northwest Evaluation Association’s Measures of Academic Progress. The climate data will be extracted from a survey instrument distributed to the schools.

In summary, I’d be honored if you would allow me permission to use your Organizational Climate tools as the survey instrument in my dissertation with EMU. At this time the OCDQ –RE appears to be the appropriate vehicle for acquiring the data necessary in a K-8 environment. Additionally, I would be willing to supply you with my full results and comply with any requirements you have on the use of your tools. Any feedback you have in this area would be welcomed and greatly appreciated.

Please let me know if you have any questions, or would like additionally information on my study, as I can be reached at (989) 944-0290 or bjankens@charter.net. I look forward to hearing from you.

Sincerely,

Benjamin P. Jankens
2320 Rosewood N.
Mount Pleasant, MI 48858
bjankens@charter.net
Appendix C

EASTERN MICHIGAN UNIVERSITY

Education First

February 14, 2011

To: Benjamin Jenkins
Leadership & Counseling

Re: UHSRC #110114
Approval Date: February 10, 2011

Category: EXEMPT #2

Title: "The Relationship between School Climate and Student Growth in Select Michigan Charter Schools"

The Eastern Michigan University Human Subjects Review Committee (UHSRC) has completed their review of your project. I am pleased to advise you that your research has been deemed as exempt in accordance with federal regulations.

The UHSRC has found that your research project meets the criteria for exempt status and the criteria for the protection of human subjects in exempt research. Under our exempt policy the Principal Investigator assumes the responsibility for the protection of human subjects in this project as outlined in the assurance letter and exempt educational material.

Renewals: Exempt protocols do not need to be renewed. If the project is completed, please submit the Human Subjects Study Completion Form (found on the UHSRC website).

Revisions: Exempt protocols do not require revisions. However, if changes are made to a protocol that may no longer meet the exempt criteria, a Human Subjects Minor Modification Form or new Human Subjects Approval Request Form (if major changes) will be required (see UHSRC website for forms).

Problems: If issues should arise during the conduct of the research, such as unanticipated problems, adverse events, or any problem that may increase the risk to human subjects and change the category of review, notify the UHSRC office within 24 hours. Any complaints from participants regarding the risk and benefits of the project must be reported to the UHSRC.

Follow-up: If your exempt project is not completed and closed after three years, the UHSRC office will contact you regarding the status of the project and to verify that no changes have occurred that may affect exempt status.

Please use the UHSRC number listed above on any forms submitted that relate to this project, or on any correspondence with the UHSRC office.

Good luck in your research. If we can be of further assistance, please contact us at 734-487-0042 or via e-mail at human.subjects@emich.edu. Thank you for your cooperation.

Sincerely,

Deb de Laski-Smith, Ph.D.
Interim Dean
Graduate School
Administrative Co-Chair
University Human Subjects Review Committee
Appendix D

School Approval Form

Study Title: The relationship between school climate and student growth in select Michigan charter schools.

Researcher: Benjamin P. Jankens, Eastern Michigan University

Dr. Ron Williamson, Ed.D. (Advisor), Eastern Michigan University

As a student researcher working to fulfill the requirements of a doctorate degree in educational leadership from Eastern Michigan University, and to better understand the school environment in Michigan charter schools, I am seeking your assistance in collecting meaningful data. The study that I am conducting seeks to better understand the relationship between school climate and student growth in charter schools. Your school was selected as a setting in which this study seeks to conduct research, and your support in this activity would be greatly appreciated.

What is the purpose of this study? Since the inception of public education in America educators and researchers have been attempting to understand the dynamics within the school environment and how it impacts student outcomes. The study that is being conducted seeks to understand the specific relationship between school climate and student growth, in select Michigan charter schools. Using a survey to gather school climate data, this information will be analyzed with student growth data to help determine if a relationship exists between these variables.

What are the benefits of participating in the study? The information gathered in this study will help shed light on the impact school climate plays in the role of leadership practices in charter schools. The participation of your school is necessary to collect a meaningful amount of data, in order to achieve valid results. The results of this blind study will be published in a dissertation in partial fulfillment of the requirements for the degree of Doctor of Education in Educational Leadership from the College of Education at Eastern Michigan University. It is the hope of this student researcher that the findings produced by this study will contribute to the greater knowledge surrounding school climate, student growth and charter schools.

Will the school or participants receive any compensation for participation? There is no compensation, monetary or otherwise, for participating in this survey.

Is participation voluntary? Participation in this study is voluntary. You may choose not to participate. If you do decide to participate, you can change your mind at any time and withdraw from the study without negative consequences.

How will the data be gathered? Anonymous school climate questionnaires will be distributed to teachers in the school building by someone other than the principal or teacher supervisor (lead teacher, librarian, curriculum coordinator, assessment coordinator, etc.). Non-student identifiable assessment data for students in grades 3 through 8 will be used in order to calculate student growth. Student data for this study will be in the form of aggregated Performance Series or MAP reading and math results from fall 2010 and spring 2011. The data will be accessed through public records maintained by this school’s authorizer, Central Michigan University, which is not a party to this research project.
How will this information be used? The information gathered in the survey will be used for student purposes only. The information collected in this blind study is solely being used in a student dissertation research project, in part fulfillment of a doctorate degree from Eastern Michigan University.

Will the school or teachers be named in this study (Confidentiality)? No, all results will be anonymous and at no time will the school or any teacher be named or information released that will identify the participants.

Who can I contact for information about this study? You may either contact the student researcher or Eastern Michigan University’s Graduate School at the following addresses for further information about this study:

Benjamin P. Jankens (researcher)  The Graduate School
2320 Rosewood N.  200 Boone Hall
Mount Pleasant, MI 48858  Eastern Michigan University
Cell: 989.944.0920  Ypsilanti, MI, USA 48197
bjankens@charter.net  Phone: 734.487.0042

Consent to participate: You are free to refuse to participate in this research project or to withdraw your consent and discontinue participation in the project at any time without penalty or loss of benefits to which you are otherwise entitled. Your participation or non-participation will not affect your relationship with the institution(s) involved in this research project.

If you are not satisfied with the manner in which the study is being conducted, you may report (anonymously if you so choose) any complaints to the Eastern Michigan University’s Human Subjects Committee co-chairs: Dr. Karen Saules, 487-4988; Dr. Deb deLaski-Smith, 487-0042.

I grant my authorization for this study to commence in the school specified below. I understand that teachers in the school will be provided with a questionnaire that they can choose, or not choose to complete and return and that their participation is dependent on the school’s approval to allow this study to participate. I also acknowledge the release of Performance Series or MAP test data by this school’s authorizer, Central Michigan University. This data will be anonymous, will not include any student identifiable information and will not be used for any other purpose other than that which is stated within this agreement. I have read this agreement form and I hereby consent and do voluntarily allow the study to proceed.

School Name__________________________________________ Phone____________

Total number of teachers, teacher assistance and paraprofessionals completing the survey________

Person Identified to Distribute Surveys____________________ Position____________

Principal’s Name __________________________________________

Principal’s Signature*____________________________________ Date____________
* A signature is not necessary if the form is being returned electronically. An email response will serve as the signature.
Appendix E

Adult Consent Form

Study Title: The relationship between school climate and student growth in select Michigan charter schools.

Investigator: Benjamin P. Jankens, (Student Investigator), Eastern Michigan University
Dr. Ron Williamson, Ed.D. (Advisor), Eastern Michigan University

Introductory Statement: As a student researcher working to fulfill the requirements of a doctorate degree in educational leadership from Eastern Michigan University, and to better understand the school environment in Michigan charter schools, your assistance is being sought in collecting school climate data. The study in which this data will be used seeks to better understand the relationship between school climate and student growth, and through a school climate survey. Your involvement in the study will help to ensure its success, and will be greatly appreciated.

What is the purpose of this study? Since the inception of public education in America educators and researchers have been attempting to understand the dynamics within the school environment and how it impacts student outcomes. The study in which this survey is being used seeks to understand the specific relationship between school climate and student growth, in select Michigan charter schools.

School climate, or the enduring quality of the school environment that affects behaviors in schools, is the main focus of the study. By understanding if a school has an “open” or “closed” climate, this study then intends to see if there is a correlation to student growth data from the fall and spring Performance Series or MAP tests. Furthermore, the environment in which the study takes place is made up of a cohort of select charter schools in Michigan. By using charter schools as the setting, the study then seeks to understand the dynamics within the charter school environment and how they contribute to improved student outcomes.

What will I do in this study? You will be asked to complete a short survey about your perception of school climate in the organization in which you work. The survey is comprised of 42 questions regarding the current climate in the school, based on teachers and principal behaviors.

How long will it take me to do this? The survey contains a total of 42 questions, and should take between 5 to 10 minutes (approximately) to complete.

Are there any risks of participating in the study? There are no foreseeable risks to you by completing the survey, as your individual results will be kept completely confidential between you and the investigator.

What are the benefits of participating in the study? The information gathered in the study will help shed light on the impact school climate plays in the role of leadership practices in charter schools. Participation in the survey will help ensure a meaningful amount of data has been collected, in order to achieve valid results. It is the hope of this investigator that the findings produced by the study will contribute to the greater knowledge surrounding school climate, student growth and charter schools.
Will anyone know what I do or say in this study (Confidentiality)? Only a code number will identify your questionnaire responses. The results will be stored separately from the consent form, which includes your name and any other identifying information you provide. At no time will your name be associated with your responses to the questionnaires.

The information gathered in the survey will be used for student purposes only. The results of the survey responses will be published in a doctoral dissertation by Eastern Michigan University, as authored by the investigator. The information gathered in this study may also be used in scholarly work (e.g., professional article, publication or conference presentation). Where will the data be stored? All data published will be non-identifiable and your responses will remain confidential. All survey results will be stored in a secure location at the following address:

Benjamin P. Jankens, 2320 Rosewood N., Mount Pleasant, MI 48858  (989) 944-0290

Will I receive any compensation for participation? There is no compensation (monetary or otherwise) for completing the survey.

Is my participation voluntary? Participation in the study is completely voluntary. You may choose not to participate. If you do decide to participate, you can change your mind at any time and withdraw from the study without negative consequences. No rights may be denied to you while participating in the study.

Who can I contact for more information about this study? You may either contact the investigator or Eastern Michigan University’s Graduate School at the following addresses for further information about the study

<table>
<thead>
<tr>
<th>Benjamin P. Jankens (Investigator)</th>
<th>The Graduate School</th>
</tr>
</thead>
<tbody>
<tr>
<td>2320 Rosewood N.</td>
<td>200 Boone Hall</td>
</tr>
<tr>
<td>Mount Pleasant, MI 48858</td>
<td>Eastern Michigan University</td>
</tr>
<tr>
<td>Office: 989.774.7354</td>
<td>Ypsilanti, MI, USA 48197</td>
</tr>
<tr>
<td>Cell: 989.944.0920</td>
<td>Phone: 734.487.0042</td>
</tr>
<tr>
<td><a href="mailto:bjankens@charter.net">bjankens@charter.net</a></td>
<td>Fax: 734.487.0050</td>
</tr>
</tbody>
</table>

Consent to participate: You are free to refuse to participate in this research project or to withdraw your consent and discontinue participation in the project at any time without penalty or loss of benefits to which you are otherwise entitled. Your participation will not affect your relationship with the institution(s) involved in this research project. This research protocol and informed consent document has been reviewed and approved by the Eastern Michigan University Human Subjects Review Committee for use from February 1 to May 31, 2011. If you have questions about the approval process, please contact Dr. Deb de Laski-Smith (734.487.0042, Interim Dean of the Graduate School and Administrative Co-chair of UHSRC, human.subjects@emich.edu).

Please read and complete the following agreement:

I have read or had read to me all of the above information about this research study outlined above, including the research procedures, possible risks, and the likelihood of any benefit to me. The content and meaning of this information has been explained and I understand. All my questions, at this time, have been answered. I hereby consent and do voluntarily offer to follow the study requirements and take part in the study.

_______________________________________________________        ______________________
Signature of Subject                                      Date Signed

I acknowledge that I have been provided with an additional copy of this consent form for my records