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School Type and Structure as Predictors of Perceived School Climate and Student Academic Achievement among Middle School Students in Baltimore City Public Schools

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SCHOOL TYPE AND STRUCTURE AS PREDICTORS OF PERCEIVED SCHOOL
CLIMATE AND STUDENT ACADEMIC ACHIEVEMENT AMONG MIDDLE
SCHOOL STUDENTS IN BALTIMORE CITY PUBLIC SCHOOLS

BY

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Submitted in partial fulfillment of the requirements for the degree
Doctor of Education
Department of Education Leadership, Management, and Policy
Seton Hall University
April 2014

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SETON HALL UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN SERVICES
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APPROVAL FOR SUCCESSFUL DEFENSE

Doctoral Candidate, Rhonda Richetta, has successfully defended and made the required modifications to the text of the doctoral dissertation for the Ed.D. during this Spring Semester 2014.

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ABSTRACT

This study examined the impact of school type and school structure on perceived school climate and student achievement, for middle grades students in a large urban school district. The specific school types examined were charter schools, transformational schools, and traditional schools. For school structure, the grade configurations of K-8, 6-8, and 6-12 were examined. The total sample number for the first data set, the climate survey, was 12,258 students, and for the second data set, test scores, it was 17,472, and a total of 103 schools.

Multiple linear regression analyses were conducted to measure the association among school types, school structure, and school climate factors. A significant finding was that students who attended charter schools had a more positive perception of school climate than students who attended both transformational and traditional schools, and students who attended transformational schools had the lowest perceptions of school climate of all three, school types.

Multiple logistic regression analyses were conducted to measure the association among school types, school structure, and state assessment results, both in reading and math. The findings revealed that students who attended charter schools had almost twice the odds of passing the state assessment in both reading and math, than students who attended traditional schools, and students who attended transformational schools had the lowest percentage of students passing the state test in both reading and math than students in charter and traditional schools.

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To Frankie, I wish you had stayed until the end.

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love, support, and reassurance, not just for this work, but also for so much more, I would never have been able to accomplish it. I never stop being in awe of how lucky I am to have you as my husband. In my eyes, you are the greatest man in the whole, wide world. I will love you and appreciate you forever and always.

DEDICATION

This work is dedicated to my father, Frank Anthony Richetta, who believed that girls should not go to college, and to my mother, Vivian Marie Richetta, who fought with him to let me go.

From Daddy I learned the important truths of hard work, integrity, and loyalty. From Mother, I learned that where there's a will there's a way, so never, never, never give up. I will never stop hearing her words, "I can't is not a word in the dictionary!" The lessons learned from them, define me today.

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CHAPTER I: INTRODUCTION

Background Information

The question of what variables have significant impact on student achievement and school culture has been debated, studied, and researched extensively. The impact of race and socioeconomic status on student achievement has been well documented throughout the research literature. The research of Coleman (1966) discouraged educators with the claim that things they could not control--race and socioeconomic status-- rather than school characteristics they could control, accounted for student achievement. In spite of Coleman's disheartening reports (1966, 1973, 1975), researchers continued to explore approaches and strategies that could combat the effects of race and socioeconomic status on school performance and school climate and still continue this exploration today.

Looking back at the history of education in the United States, most schools in the early 20th century were one-room schools serving only elementary-grade students in rural areas, probably due to the feelings of most farm families at the time that a high school education was unnecessary. Later in the 20th century, K-12 schools began surfacing in these rural areas, and they accounted for most of the increase in student enrollment in schools.

With the invention of the automobile and improvements in other modes of transportation, along with the decline in rural economics, it became fiscally necessary to consolidate schools across wide geographic areas, causing the disappearance of very small schools and K-12 schools (Howley, 2002). According to Howley, "in 1997, of

approximately 82,000 public schools in the United States, only about 1,100 were K-12 schools, and for the most part, those schools served rural areas. Today, the most common grade-span configurations are K-5, K-6, 6-8 or 7-9 and 9-12, with the popularity of each configuration varying according to locale” (para. 7). Despite Coleman’s findings in the 1960s, educators still sought solutions within their control, to improve troubling schools. Hence, the emergence of middle schools in this country. “People thought 12 and 13 year-old students had particular needs that could be best met when students were housed in a separate building” (Cromwell, 2005, para. 3). However, in the 1990s the pendulum of education reform was about to swing back when much skepticism in regards to stand-alone middle schools began to arise. Much of the skepticism was supported by research, which caused causing a swing back to the K-8 and K-12 configuration.

The Coleman Report (1966) prompted the desegregation of schools through the busing of Black students from poor urban schools to schools in the wealthier, White suburbs with the thought that student achievement was more positively impacted by the social composition of a school, specifically when the majority of students were White, rather than the quality of a school. However, 9 years later Coleman (1975) reported that busing had failed based on research he had done, which found that busing caused White families to flee from the desegregated schools, therefore diminishing the impact it could have.

Furthermore, during this period, the extensive macrosocial research of social scientist Christopher Jencks and his colleagues (1973) on the familial and social effects of the inequality of education in America further supported Coleman’s conclusions about the unimportance of characteristics of school quality, which we can control. Jencks’s

research (1972) found that schools had minimal influence on children when compared with the influence of home and, in the rare instances where school has had influence, that influence did not carry into adulthood (Jencks et al., 1972). Jencks et al.'s research heightened the feelings of hopelessness and romanticism in regards to raising the academic achievement of children living in poverty and the quality of their schools equal to that of their upper and middle class peers.

In the late seventies and early eighties a movement known as the effective schools movement, led by Ronald R. Edmonds (1982), disputed Coleman's (1973) and Jencks's (1972) claims regarding the inconsequentiality of school characteristics other than those of race and wealth. Edmonds's work generated hope for the education of all children regardless of race and socioeconomic status and for our ability to affect the achievement gap. The thinking of Edmonds and his colleagues of educators, citizens, and policymakers who made up the effective schools movement can be summed up by the famed quote of Edmonds (1979),

It seems to me, therefore, that what is left of this discussion are three declarative statements: (a) We can, whenever and wherever we choose, successfully teach all children whose schooling is of interest to us; (b) We already know more than we need to do that; and (c) Whether or not we do it must finally depend on how we feel about the fact that we haven't so far. (p. 15).

Edmonds and his colleagues from Michigan State and Harvard University continued into the nineties to study and write about the characteristics of schools that were outliers, in that their students achieved at high academic levels, in spite of being from low-income families. Many of the characteristics identified were school climate

characteristics.

In 1992 a new movement began with the opening of the first charter school in Minnesota. Since then, 41 states and the District of Columbia have passed charter school laws, with over 6000 charter schools existing in the United States today, serving approximately 2.3 million students (National Charter School Resource Center, n.d.). The charter school movement began over dissatisfaction with the quality of schools in this country. It was, and still is, increasingly viewed as an effort to reform education and to improve the quality of schools in a state or district, albeit a very controversial strategy.

According to the Center for Education Reform (2012), “throughout its 20 year-long history, charter schools have proven to those who once said poverty was an excuse for failure that everyone can learn if given the right environment that personalizes the learning process” (para, 8). The National Charter School Resource Center provided this definition for charter schools:

Charter schools are public elementary and secondary schools that are newly created or adapted from existing schools by developers, to pursue specific educational objectives and are exempt from significant state or local rules that inhibit flexible management. Charter schools are not exempt from federal laws that cover equal rights, access and discrimination. Students attend charter schools by choice of their parents or guardians rather than by assignment by a school district. As public schools, charter schools are not allowed to charge tuition. If applications to attend a charter school exceed spaces available, enrollment is decided by lottery (National Charter School Resource Center, n.d., para. 1).

The hope generated by the effective schools movement created a whole new

focus, but the solutions have yet to become solidly clear and embraced. Thus, the question of what variables, regardless of socioeconomic status, have the most significant impact on student achievement has been, and continues to be, a question of utmost importance and urgency for high poverty, urban schools throughout the world.

Most of the research on school climate is based on teachers' views. In contrast, the present research examined the views of students in middle grades regarding the school climate. As the well-known saying goes, *out of the mouths of babes*, a child's view can be remarkable and insightful, especially those of adolescents. School systems have embraced the use of student surveys to examine and rate school climate.

Some of the most revolutionary reform strategies taking hold today in school districts across this country are the implementation of non-traditional approaches to education, through the emergence of charter schools and the restructuring of schools by different grade combinations. Baltimore, Maryland has been especially aggressive in the opening of charter schools and the reconfiguring of grades in schools as improvement plans. Of the 52 charter schools in the state of Maryland, 38 are in Baltimore. In addition, many of the kindergarten through fifth grade elementary schools have been converted to kindergarten through eighth grade schools, and many grade 9 to grade 12 high schools have changed to grades 6 to 12. The expectation is that these reform strategies will ultimately have a positive effect on school climate and student achievement. A review of the literature found that there are conflicting reports about the impact of charter schools, as well as the impact of school structure on student achievement. Since transformational schools are a new concept specific to Baltimore, research has yet to be conducted (A. Perkins-Cohen, personal communication, December

31, 2013)

Purpose of the Study

For large urban school districts such as those in Baltimore, with a low income rate of 84% based on qualification for Free or Reduced Meal Service (FARMS), the question of what school characteristics can influence school climate and student achievement, is critical to the successful lives of the children attending its schools, and central to the future of the entire community. In addition, Baltimore is a place where improvement strategies, such as the use of school climate surveys, changes in school structure, the creation of transformation schools, and the authorization of charter schools, are being used to provide specific answers to this question. Providing support for these strategies with empirical evidence is quite relevant. Therefore, the purpose of this study is to investigate the extent to which school structure and school type, impact school climate and academic achievement, for middle school students, grades 6 through 8, in the Baltimore City Public Schools (BCPS).

Problem Statement

There is an abundance of research that has documented the impact of socioeconomic status on student academic achievement, and research that examined school climate as a predictor of student achievement, regardless of socioeconomic status. Some researchers painted a bleak picture for the education of minority and poor students, claiming that these uncontrollable variables mattered most, and that variables that can be controlled, like school characteristics, did not matter (Coleman, 1966; Jencks, 1973). It appears that educators who have accepted the findings of this research possess a feeling of powerlessness, causing them to give up on their ability to educate some children. In

spite of these findings, there are researchers who refuse to believe that there are no controllable variables that can offset the power of socioeconomic status.

There is literature that supports the existence of factors within our control that are predictors of student achievement and school climate. This literature begins with the effective schools movement led by Edmonds in the late seventies that disputed the claims of Coleman (year?) and Jencks (year?). More recently, the research of Hoy, Tarter, and Woolfolk Hoy (2006) introduced a construct called *academic optimism*, a measure of school climate, which proved to have a strong, positive relationship with student achievement, regardless of socioeconomic status, previous performance, and other demographic variables. Furthermore, this study looked at the extent to which school type, school structure, and the influence of grade and gender, impacted school climate and student achievement.

Specifically, this study investigated the extent to which school structure and school type, influenced school climate and academic achievement, for middle school students, grades 6 through 8. The influence of variables such as grade and gender on attitudes regarding school climate, and the effect of grade on student achievement within different school types and school structures were also investigated.

Research Questions

The present study investigated what influence, if any, school structure and school type had on school climate as measured by the BCPS School Climate Survey for Students and academic achievement, as measured by the Maryland State Assessment (MSA) in reading and math for students in grades 6 through 8, when controlling for grade and gender.

Four research questions were investigated:

1. To what extent do middle grades students in charter schools or transformational schools perceive their school climate more positively than students of traditional public schools, when controlling for grade and gender?
2. To what extent do middle grades students in combined elementary/middle schools perceive their school climate more positively than students in stand-alone middle schools or combined middle/high schools, when controlling for grade and gender?
3. To what extents do middle grades students in charter schools or transformational schools have greater rates of math and/or reading test achievement, as measured by receiving a proficient or advanced test score, than middle grades students in traditional public schools?
4. To what extent do middle grades students in combined elementary/middle schools have greater rates of math and/or reading test achievement, as measured by receiving a proficient or advanced test score, than middle grades students in stand-alone middle schools or combined middle/high schools?

Organization of the Study

This dissertation is organized into five chapters. The introduction (Chapter I) provides background, significance, and the purpose of the study. The problem statement and the research questions follow the introduction in the same chapter. A conceptual framework from the literature that provided the basis for this study follows the research questions. At the end of the introductory chapter a glossary is provided for further clarity on some of the terms used in this study.

Chapter II provides a review of the relevant and related literature on charter schools, school structure, school climate, and student achievement. Chapter III provides a description of the study design, data source, data collection methodology, the statistical analysis used to address the research questions, and a hypothesis proposed for each research question. Chapter IV contains displays and a description of the results from the statistical analysis of the data. Lastly, Chapter V provides discussions of the findings from the research; recommendations for policy, practice, and research in this area; and a conclusion for this study.

References, in alphabetical order, the climate survey used in this study, and the results from additional statistical analysis were compiled, collated, and placed in the appendices.

Conceptual Framework

Both Jencks's (1972) work on inequality in schools and Edmonds's (1979, 1982, 1995) work on effective schools were significant contributions to the conceptual background for this study. The recent and ongoing research of Hoy, Tarter, and Woolfolk Hoy (2006), to investigate the properties of schools that could transform school climate and improve student achievement, also informed the background of this research. The work in which the theory of academic optimism is grounded, Albert Bandura's social cognitive theory (Bandura, 1986) and self-efficacy theory (Bandura, 1977), Martin Seligman's work on learned optimism (2006), and James Coleman's social capital theory (1990) broadened the base of this study. Existing research, regarding the extent to which charter schools and various school structures influence climate and student achievement, was also embraced as a basis for this study.

The application of social capital theory to the behavior of people in schools clearly sheds light on the topic of school climate and student achievement. Social capital theory offers an explanation for the dependent relationship among characteristics of school climate and the cause-effect created by blending certain characteristics together. Furthermore, social capital theory explains the potential of characteristics of climate to harmonize with student achievement.

In addition, research on charter schools, including the research conducted by Stanford University's Center for Research on Education Outcomes (CREDO, 2009, 2013) examined the achievement of charter schools in various states across this country, as well as research on different grade configurations in schools, helped to further form the context of this study.

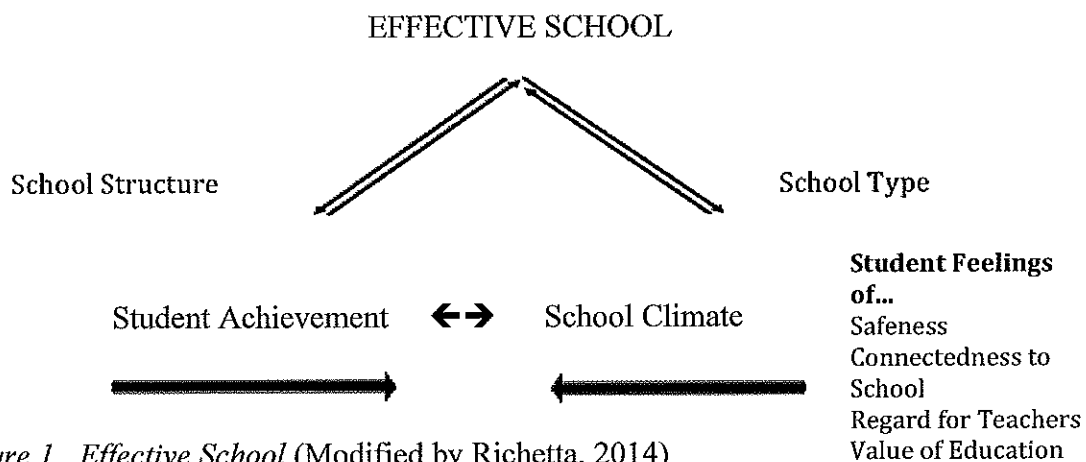


Figure 1. *Effective School* (Modified by Richetta, 2014)

Significance of the Study

There is a need for more research-to test the findings of previous studies that examined school qualities that can be controlled and that have a positive influence on student achievement and school climate, such as school type and school structure. This study focused on grades 6 to 8, in a large, urban school district. This research provided middle grades educators in urban schools with evidence of school-based characteristics,

specifically school grade configurations or school types that positively impacted student achievement and school climate. For a topic as significant and as debatable as this, evidence from numerous studies must be amassed for a solid body of evidence to surface. This study adds to the already existing research on the effects of characteristics that can be controlled, specifically, the creation of charters or other school types, and the redesigning of school grade configurations to improve academic and climate outcomes for students.

Limitations/Delimitations

This study was delimited to include only sixth through eighth graders in schools in Baltimore City, and also was limited by the use of secondary data, some without student identifiers.

Definition of Terms

Academic emphasis. The school emphasizes academics.

Academic optimism. A collective set of beliefs held by a faculty, as a whole comprised of three elements, academic emphasis, academic efficacy, and faculty trust in students and parents.

Collective efficacy. The school faculty believes in the ability of their colleagues to teach all children.

Faculty trust. The school faculty has trust in parents and students.

Stand alone elementary schools. Schools consisting of grades kindergarten (in some schools, pre-kindergarten, as well) through fifth grades.

Elementary/middle schools. Combined elementary and middle schools consisting of grades kindergarten (in some schools, pre-kindergarten, as well) through seventh or

eighth grades.

Middle/High schools. Combined middle and high schools consisting of grades 6 through 12.

Stand alone middle schools. Schools consisting of sixth through eighth grades.

Charter schools. Public schools that are publicly funded but operated by a private organization under contract with the state or local school district. Parents choose to send their children to these schools, and when overenrolled, entrance is through a lottery.

Traditional schools. Conventional public schools.

Transformational schools. Secondary public schools with a special focus and unique curriculum operated by an independent education entity. Enrollment is by lottery.

Low income level. Determined by qualification for Free and Reduced Meals Service (FARMS), a federally funded program.

Social capital. The value of social relations including the benefits of support and cooperation between individuals and groups.

Macrosocial research. Research characterized by a well-defined population, analyzing the social institutions through which that population passes, and brings together research results and reanalysis of data from a number of sources that characterize the same population.

Socioeconomic status (SES). The social and economic standing or class of an individual as measured by income, education, and occupation.

Urbanicity. The degree to which a geographical area is urban.

CHAPTER II: REVIEW OF THE LITERATURE

Introduction

The review of the literature forms a theoretical, as well as an empirical foundation for this study. The literature included in this review helps establish a logical basis for understanding that school type and school structure can serve as predictors of perceived school climate and student achievement, as well as the role that grade or gender may play in supporting this thesis. Empirical studies on the educational impact and significance of school climate, as well as the theories that form the basis of characteristics found to be common in organizations with positive climate and successful attainment of goals, were included in the literature review, and supported the opinion that school climate, along with student academic achievement, are important factors in determining school effectiveness. Empirical research on the academic success of charter schools and on the impact of different grade configurations of schools on academic success and positive school climate, were also included. In addition, the literature review includes scholarly views on standardized testing that the practice of using standardized testing as the sole determinant of a school's success.

As revealed in the beginning of this chapter, the literature selected for this review was both theoretical and empirical. The decision to examine school climate as a measure of school effectiveness in addition to academic achievement, was influenced mostly by the theoretical literature that supports the identified characteristics of school climate as having a positive effect on school effectiveness. The decision to look at school structure and school type was initially influenced by the theoretical literature that supports the notion that things that can be controlled can impact student achievement. The review of

empirical literature further influenced the decision to study the impact of school structure and school type on school climate and academic achievement, particularly for students in the middle grades 6 through 8; the grades where changes in school structure were most likely to occur.

The theory of academic optimism had the most influence on me because it inspired deep thinking about the belief that school characteristics that can be controlled could predict both academic achievement and perceived school climate, such as school structure and school type, regardless of socioeconomic status and other significant variables that can influence school success. This theory further influenced the decision to not limit the study to the analysis of student achievement data, but to also include a look at school climate data as a viable measure of school success.

Academic Optimism Theory

Refusing to simply accept the findings of Coleman (1966) that student achievement is driven by socioeconomic status, Hoy et al. (2006) proceeded to study a new construct, *academic optimism*, to see if it could be used to justify student achievement, while they controlled for socioeconomic status, urbanicity, and previous student achievement. They conducted research on a sample of 96 high schools. Their findings were that school characteristics of academic emphasis, collective efficacy, and faculty trust in parents and students, combined to form a construct of academic optimism that significantly impacted student achievement regardless of socioeconomic status, urbanicity, and previous student achievement. Academic optimism is a school characteristic, rather than a characteristic of individuals. There is research and theories that explain the connection of academic emphasis, collective efficacy, and faculty trust in

parents and students into the single construct of academic optimism, with its potent energy to effect student achievement.

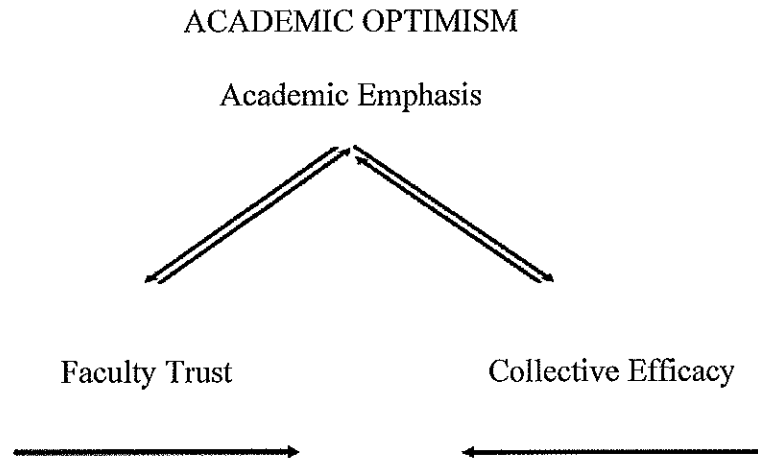


Figure 2. (Hoy, Tarter, & Woolfolk Hoy, 2006).

Positive psychology, social cognitive, social capital, and self-efficacy are theories that explain the functions of academic emphasis, collective efficacy, and faculty trust in parents and students, as a construct named academic optimism (Hoy et al., 2006). There is also general research on optimism, trust, and collective efficacy, not specific to schools, which supports the concept that these three characteristics bonded together, form a construct of academic optimism that could be a force to significantly impact schools.

The research giving birth to the concept of academic optimism stems from 2006, when Hoy, Tarter, and Woolfolk Hoy (2006) first reported on this underlying, collective characteristic of schools. They continued to study the impact of academic optimism as a school construct in elementary schools (Smith & Hoy, 2007) in addition to high schools (Hoy et al., 2006) located in urban, suburban, and rural settings. Their findings continued to support the notion that schools that possess the traits of collective efficacy, a high priority on academic emphasis, and extreme levels of trust in students and parents, had a

positive effect on student achievement, regardless of the socioeconomic status of their population. Their work implies that because all of these traits are elements that are within the control of a school, schools that work to improve their academic optimism rating will correspondingly improve student achievement, regardless of socioeconomic status. This, of course, contradicts the works of Coleman (1966) and Jencks (1973) who noted that things that were beyond the control of the school, like poverty and home influence, were the strongest predictors of student achievement.

Although somewhat more limited than the research done on the high school level due to a smaller sample size, the correlation between academic optimism and student achievement in elementary schools found by Smith and Hoy (2007) was statistically significant ($r = .60, p < .01$). At the high school level, Hoy et al. (2006) conducted a 2-year study that compared the test scores of students at two data points, ninth grade and twelfth grade, and the school measurement of academic optimism through teacher survey data. They looked at the test scores across academic subjects, including reading, math, science, social studies, and writing. The conclusion that academic optimism is a latent construct that implies a positive impact on student achievement was supported by the findings of a correlation coefficient of .23 for collective efficacy, .24 for academic emphasis, and .21 for trust in students and parents. Collectively, trust in students and parents, academic emphasis, and collective efficacy shape the existence of the academic optimism of a school, which, according to this research, was a predictor of student academic achievement even when controlling for socioeconomic status.

The school's measure of academic optimism is determined by surveys of the school's faculty that cover the three components of collective efficacy; the faculty

believes in each other's ability to teach even the most difficult students; academic emphasis--the faculty emphasizes academics; and faculty trust--the faculty trusts students and parents. These three components cover three dimensions. Collective efficacy is cognitive, faculty trust is affective, and academic emphasis is behavioral. By encompassing these three components, academic optimism is set apart from most other conceptions of optimism.

Scoring the responses from the faculty on the survey items results in standardized scores for each component, as well as a standardized score for all three combined, or the school's academic optimism rating, thus observing the school as the unit of analysis.

Most recently, in an effort to understand the social context in schools, Kirby and DiPaola (2011) conducted research on academic optimism and community engagement in urban elementary schools using correlation, multiple regression, and factor analyses. Kirby and DiPaola (2011) recognized the value of pushing academic optimism research into urban elementary school settings. The purpose of their research was to study the relationship among academic optimism, community engagement, and student achievement, in all of the 35 elementary schools in one urban district in the state of Virginia. Their findings showed that community engagement was strongly correlated with academic optimism, when the influence of socioeconomic status of students was controlled. Largely, they found that students performed at higher levels when their teachers believed in their abilities and when the community was involved in their education, irrespective of their socioeconomic status. An interesting aspect of this study is that because an alternate measure for one of the three dimensions of academic optimism was used, a second-order factor analysis was performed to analyze the

existence of academic optimism as a unified construct. An alpha of .98 was found as to the reliability of the survey items, and the single factor, academic optimism, explained 87% of the total variance. Using principal component analysis, collective teacher efficacy and trust in students and parents, loaded at .90 and .95 respectively; both very strong. This second-order factor analysis supported the claim that academic emphasis, collective efficacy of teachers, and trust in students and parents, formed a latent construct in schools, termed academic optimism, which had a positive correlation with student achievement.

In a related study, Mascall, Leithwood, Strauss, and Sacks (2008) examined the relationship between distributed leadership and teachers' academic optimism using a modified version of the teacher academic optimism measure developed by Hoy et al. (2006). In particular, they looked at the degree to which the performances of leadership functions were either planned or spontaneous, and how this related to the academic optimism of teachers. Their findings showed a positive and significant relationship between planned leadership distribution and academic optimism, as well as a negative and significant relationship between unplanned, unaligned, leadership distribution and academic optimism. Although this study did not look at student achievement, it did find a positive correlation between academic optimism and school characteristics that represent high quality.

Within all of the academic optimism literature there is a fundamental belief that greatly influenced my research. It is the belief that school characteristics that can be controlled can positively impact the ability of a school to educate children.

Several theories, including Albert Bandura's social cognitive theory and self-

efficacy theory, Martin Seligman's work on positive psychology theory and learned optimism, and James Coleman's social capital theory, support the existence of academic optimism as a construct. Research on collective efficacy, self-efficacy, academic emphasis, effective schools, and trust, also edifies the study of the relationship between school climate and student achievement.

Social Capital Theory

The theory of social capital played a significant role in the fusion of all of the literature reviewed, to form a basis for studying school type and school structure as predictors of perceived school climate and student achievement, mostly because of its emphasis on looking at people as part of a group, and how the group impacts outcomes.

Alejandro Portes (1998) reviewed the research on social capital, including that of Bourdieu (1985), Coleman (1990), and Loury (1981). Portes (1998) examined the similarities among the findings of all three and how these similarities formed social capital as a theory in sociology, and one that could be used to explain phenomenon beyond the field of sociology, such as economics and education. There is consensus in the literature that membership in a group, in and of itself, results in benefits for the individual, as well as the group. Group enforcing norms are a major aspect of social capital.

According to Portes (1998), the work of Pierre Bourdieu was paramount to establishing social capital as a theory, however being published first in French, rather than English, diminished its credit. Bourdieu described the rewards to the individual by writing, "the profits which accrue from membership in a group are the basis of the solidarity which makes them possible" (Bourdieu, 1985, p. 249). In addition to

emphasizing the benefits gained by an individual through participation in the group, Bourdieu also emphasized the need to be deliberate in developing social capital: It does not just happen on its own by simply putting people together in a group.

While examining neoclassical theory on racial income inequality, economist Glen Loury (1981) discovered the term social capital. It supported his conflict with most economic theorists whose theories focused mostly on individual human capital. Loury (1981) pointed out that because people do not live in isolation from each other, or as he puts it, “no one travels the road entirely alone” (p. 843), individual competencies cannot solely explain or be responsible for ones’ achievements. Influenced by Loury’s work, Coleman (1990) began his examination of social capital and how it related to human capital. Both Loury and Coleman supported the idea of the power of the group, and that power being something elusive that is above and aside from the tangible qualities possessed by the individuals.

It is worthy here to note that social capital theory can be applied to and can explain the success of self-help and 12-step programs like Alcoholics Anonymous, Narcotics Anonymous, and Overeaters Anonymous; groups that have a history of changing outcomes for an extraordinary number of people worldwide. Within each of these groups, peoples’ behavior is controlled by the power of the addiction, yet, as powerful a phenomenon as addiction can be, the power of the group can be used to overcome the addiction. In summation of much of the current research, a positive school climate can be likened to this power, as the presence of it in a school has dominance over socioeconomic status (SES), even though SES may be viewed as being a driving force as strong as addiction. Taking a deeper look at how social capital can be applied to self-

help programs, Jimmy Kennon, the founder and creator of Narcotics Anonymous--a fellowship of men and women seeking help from each other because their lives had become controlled by drug addiction--was one of the greatest leaders without authority. Drug addiction is an extremely powerful phenomenon, yet Kennon was able to lead an organization to incredible growth and success. Kennon started Narcotics Anonymous in 1950 as a small organization in California comprised of a handful of local chapters or meetings (Narcotics Anonymous, 2002). Its growth was slow initially, but its eventual tremendous growth resulted in it becoming an international, multilingual organization consisting today of 58,000 meetings, in 131 countries with literature published in 39 languages. Kennon's principles of leadership are rooted in the power of the group and trust, as well as a singular emphasis on the organizations primary purpose, to help the suffering addict. This is an organization that believes that its leaders are "trusted servants" (Narcotics Anonymous, 2008, p. 60) who do not govern. The power of the group comes essentially from trusting and believing in each other, and always emphasizing their primary purpose (Narcotics Anonymous, 2011).

Positive Psychology Theory

Peterson and Seligman (2004) developed an extensive list of 24 human strengths that they classified under six virtues: wisdom and knowledge, courage, humanity, justice, temperance, and transcendence. Positive psychologists have studied these strengths and virtues across cultural boundaries and have concluded that these strengths and virtues exist. The study of human attitudes is another facet of positive psychology. Optimism is a human attitude that has been studied for centuries. The study of optimism is addressed in more detail later in this chapter.

Seligman's theory of positive psychology was born out of a personal experience with his 5-year old daughter. While working in his garden, his daughter asked him if he remembered the time before she was 5 years old when she was a whiner. She declared that when she turned 5 she decided not to whine anymore, and it was the hardest thing she had ever done. She went on to tell her father that if she could stop whining, then he could stop being a grouch. Seligman (as cited in Seligman & Csikszentmihalyi, 2000) described this interaction with his daughter as giving him the awareness that, "raising children...is more than fixing what is wrong with them. It is about identifying their strongest qualities, what they own and are best at, and helping them find niches in which they can best live out these positive qualities" (p. 293). It was at this point that Seligman altered his thinking and revised his practices as a psychologist. Thus was born a new approach to healing and psychological wellbeing.

Seligman, Gillham, Linkins, and Reivich (2009) looked at schools through the lens of positive psychology and concluded that there existed something called *positive education*, which they defined as "education for both traditional skills and happiness" (p. 294). They discussed quizzing parents about what they wanted most for their children, and the answer they got was always *happiness* or some synonym for happiness. However, when they asked what schools taught, the answers were always words that described accomplishment, but not happiness. Seligman et al. reasoned that since depression in children was ten times higher at the time of their writing than it was 50 years prior to it, and since there was more and better of just about everything in the world than there was 50 years prior to their writing, happiness could not have come from the environment. They concluded that schools should teach wellbeing because it would fight

depression, increase life satisfaction, and increase learning and creative thinking. They went even further to claim that teaching wellbeing in schools would result in learned optimism.

Seligman and his colleagues (2009) conducted the first empirical study of a positive psychology curriculum for adolescents using a 2.8 million dollar grant from the United States Department of Education. Their subjects were 347 grade 9 students who were randomly assigned to language arts classes that contained a positive psychology curriculum. The major findings were that students in the positive psychology program reported increased enjoyment and engagement in school, their teachers reported improvement in their learning and engagement, and increased language arts achievement for students in non-honors classes. This research supports the notion that learned optimism has a positive impact on student achievement.

As an aside to this study, Seligman et al. (2009) found it important to point out that positive psychology is a theory supported by empirical research. Examples of recent noteworthy research that supports the theory of positive psychology are Geleijnse, Hoekstra, Schouten, and Zitman's (2004) study that found that optimistic people were less likely to die of heart attacks than pessimistic people; a study by Fredrickson and Johnson (2005) that found that the existence of a positive emotion reduced racial biases; the ratio of positive statements to negative statements is 2.9:1 for economically flourishing corporate teams with regards to positive statements made at business meetings with stagnating teams having a much lower ratio, and a 5:1 ratio for flourishing marriages (Fredrickson & Losada, 2005, Gottman & Levinson, 1999); findings by Diener and Seligman (2002) that the future income of happy teenagers was significantly higher

than that of less happy teenagers; the findings of Peterson, Park, and Seligman (2005) that the pursuit of meaning and engagement was a much better predictor of life satisfaction than the pursuit of pleasure (Peterson, Park, and Seligman, 2005); and the findings by Duckworth and Seligman (2005) that self-discipline had twice the predictive power on high school grades than IQ. All of these studies provided empirical evidence to support their findings, and this gives credibility to positive psychology as a theory, not just a feel-good attitude or approach.

Positive psychology theory marked a shift in the field of psychology from mending what is wrong, to focusing on the positive traits within individuals and examining the environments in which individuals flourish. Seligman and Csikszentmihalyi (2000) described the field of positive psychology as being about “valued subjective experiences: well-being, contentment, and satisfaction (in the past); hope and optimism (for the future); and flow and happiness (in the present)” (p. ??). Positive psychology is relevant to this study because it seeks to examine the traits and characteristics of schools that allow them to thrive rather than focusing on their shortfalls.

Social Cognitive Theory

Social cognitive theory is founded on two assumptions, one of which is human agency. Human agency is when individuals proactively seek to control situations. In describing human agency, Bandura (1997) asserted that, “the human mind is generative, creative, and proactive, not just reactive” (p. 5). When acting to control, with efforts that are based in a belief in one’s ability to reach their goal, this essentially is describing a sense of self-efficacy. The second assumption on which social cognitive theory is founded is *triadic reciprocal determinism*. This refers to three dimensions of human

agency: personal factors, behaviors, and the environment. These three dimensions interact and influence each other in a manner that flows back and forth through one to the other. Although each dimension exists separately, the manner in which they interact is mutually influenced.

In recent research, Kurz (2006) described the application of social cognitive theory to the study of academic optimism as, “teachers’ sense of efficacy represents teachers’ personal factors, teachers’ trust in their students and parents form a trusting environment, and teachers’ sense of academic emphasis creates behaviors that press for achievement” (p.15). This application embodies the personal, behavioral, and environmental interacting as well as the proactivity of human actions that is representative of social cognitive theory, and also suggests a very strong connection between the theory of academic optimism and social cognitive theory. Social cognitive theory and the work of Bandura (1977, 1986, 1994, 1995, 1997) form the underpinning philosophy found in all of the academic optimism research, and it can be used to explain the significance of school climate in evaluating school effectiveness.

Collective Efficacy Research

Collective efficacy is a group-level property that has an impact on the group rather than on individual members. Collective efficacy embodies shared knowledge and group dynamics and interactions. It is the belief of the group in their abilities and competencies as a group.

Some interesting research conducted in Italy (Borgogni, Latham, Petitta, and Russo (2009) distinguished between group collective efficacy and organizational collective efficacy. In this research a positive correlation was found between commitment and

collective efficacy, but a higher correlation was found between group collective efficacy and commitment than between organization collective efficacy and commitment. These results imply that there are benefits to the decentralization of power in organizations. In this study, the more confident individuals were in the ability of their group members to perform difficult tasks, the more successful their group. However, this confidence did not transfer to the organization as a whole.

Likewise, in a study conducted in Hong Kong (Lee, Zhang, & Yin, 2011), a positive and significant correlation was found between collective teacher efficacy and school-level teachers' commitment to students, with a variance existing among schools. Regardless of the distinction between group and organization collective efficacy, the results were similar to the findings of significant positive correlations between collective efficacy and commitment. There were other interesting findings in the Hong Kong study. Leadership was not found to be a factor in teachers' commitment to students, but faculty trust in colleagues was found to be a positive factor on teachers' collective efficacy with regards to both instructional strategies and student discipline. At first look, this particular finding by Lee and his colleagues seems to contradict some of the findings in the academic optimism and collective efficacy research that pressed the importance of all participants having equal positive perceptions, including school leaders, faculty, students, and parents, as well as the findings of Mascall et al. (2008) on distributive leadership and academic optimism. It appears to align with the research that a school would not have a high rating of academic optimism if the principal did not hold the components as a high priority; therefore leadership would be a factor (Mascall et al., 2008). After more closely reviewing the findings of Lee et al. (2011), there certainly is not a contradiction. The

leadership influence was not a factor in teacher commitment to students, which was different from the leadership influence on collective efficacy.

Research On Academic Emphasis

Academic emphasis, as defined by Goddard, Hoy, and Sweetland (2000) is “a general perspective of the importance of academics in a school held by administrators, teachers, and students themselves” (p. 683). The research on effective schools has identified academic emphasis as a characteristic of successful schools. Lawrence Lezotte (1991) developed from the work of Edmonds (1982) seven correlates that were the characteristics of schools, which clearly place emphasis or high value on academics. These were developed from the study of schools that, in spite of high rates of poverty, had 90% of students performing at a successful level of achievement that allowed them to be successful in their next grade.

All of the research on effective schools supports an emphasis on academics. Lezotte (1991) lucidly described the first and second generation correlates of effective schools as safe orderly environment, climate of high expectations for success, instructional leadership, clear focused mission, opportunity to learn and student time on task, frequent monitoring of student progress, and home-school relations. An emphasis on safety and educational values is emphatically clear in the list of correlates of effective schools, which was developed through years of extensive research on what characteristics are found to be common among all effective schools studied.

Most researchers seeking to define the characteristics of effective schools conducted comparison studies of these characteristics in effective schools versus ineffective schools. Recognizing a need for a priori studies that make predictions, test,

and confirm the organizational attributes that are related to student achievement, rather than comparison studies, Goddard, Hoy, and Sweetland (2000) conducted a study that sought to test a hypothesis, and they developed a theory of effective schools development. Their study, conducted on a randomly selected sample of 45 Midwestern, urban, elementary schools, examined the climate variable of academic emphasis. Two-thirds of the students in the sample received free or reduced lunch and 60% were African American. Goddard and his colleagues collected survey data from both teachers and students, and demographic and achievement data, from the school district central office. The achievement data was reading and math data that was collected from two data points, current year and a year prior. The findings were that the differences in student achievement among schools were positively related to academic emphasis. It is also significant to emphasize that the demographic make-up of the students in the sample, therefore demonstrating that academic emphasis, a characteristic that can be controlled by a school, had a positive impact on student achievement for poor and minority students in an urban school setting.

Trust Research

The research of Kagy (2010) demonstrates the importance of relational trust within the school climate, particularly the trust that exists between teachers and the principal. Kagy stated that the existence of strong, positive relationships was the most common description of relational trust given by teachers and principals. In this study Kagy classified principal behaviors that affected relational trust. When looking at the kind of trust that is a part of the academic optimism construct, it refers to the trust that exists in teachers for their students through the trust teachers have in parents. Although this is

different from the trust that Kagy examined, the description of trust as strong, positive relationships, and the fact that behaviors of actors can either create or hinder relational trust, are both common to relational trust, no matter who the actors or what the situation.

The research of Goddard, Tschannen-Moran, and Hoy (2001) went one step further by asking the question, what is it that makes relationships strong? Their answer was trust. Their work found that trust strengthened relationships that helped students, particularly disadvantages students, to learn.

The work of Dimitri Van Macle and Micke Van Houtte (2010) further supports the value of school-level characteristics. Using the trust scales developed by Hoy, et.al. (2006) and Tschannen-Moran (2004), Van Macle and Van Houtte developed another measure for trust in students. Their study was conducted in Belgium on 2,104 teachers in 84 secondary schools. The results of their study showed that school characteristics and composition significantly predicted the level of teacher trust in students. More importantly, their work revealed that the student engagement in the learning process was directly related to the level of the teachers' trust in them.

The most noteworthy research examined on trust was that of Goddard, Salloum, and Berebitsky (2009). This research is significant because it directly examined the relationship between trust and student achievement, and it has considerable generalizability. It also looked at how poverty and race impacted teachers' trust in parents and students. Their findings were that socioeconomic status and race were not directly related to student achievement when controlling for trust, but were directly related to trust, and that trust strongly predicted student achievement. This indicated that trust and student achievement are positively related in elementary schools.

The research of Goddard, Salloum, and Berebitsky (2009) also raises some questions that could possibly be the subject for future research on this topic. If socioeconomic status and race are directly related to trust, and trust is directly related to student achievement, how does a school with a large population of students with low socioeconomic status develop trust in parents, when these parents are typically disengaged in their children's education? What are the characteristics of a school with a highly positive climate and a high percentage of students with low socioeconomic status that allows it to overcome this obstacle? Further research could analyze if it is the personal qualities of the teachers that brings about the existence of trust in parents, who typically do not possess the qualities that would warrant trust, or whether it the collective qualities of the school. This question was somewhat addressed in the research of Lee, Zhang, and Yin (2011) who examined the commitment of teachers to students, but further research that looks specifically at this question would further expand the research on school climate and trust.

The research on trust, collective efficacy, and academic emphasis, all provided evidence of characteristics that could positively impact school climate, as well as academic performance. This research generated broader thoughts about what kinds of schools possess these characteristics, and further influenced the decision to study school type and school structure as predictors of both perceived school climate and student achievement.

Research On Charter Schools

In June 2009, the Center for Research on Education Outcomes (CREDO) at Stanford University released a report on its landmark study of charter schools that

showed less than favorable results. According to the report, only one in five charter schools performed well, and most students attending charter schools performed no better or worse than students who attended traditional public schools (CREDO, 2009). The study was highly criticized by Stanford University researcher, Carolyn Hoxby (2009) who maintained that the study was flawed, mostly because, “it contains a serious statistical mistake that causes a negative bias in its estimate of how charter schools affect achievement” (para. 1). In addition, Hoxby’s criticism of the study specifically included disputing it as a national study since it only included 15 states. She claimed that it ignored the “gold standards of research” by not employing apples to apples comparisons, and she questioned its use of free and reduced lunch data as a measure of poverty. CREDO reacted to Hoxby’s criticism and fervently stood by their research.

Research conducted by Hoxby of 93% of all test-taking charter school students, from 2001 through 2008, in grades 3 through 12, in New York, found strikingly different results. The results showed that in spite of increased likelihood that charter school students in New York came from more disadvantaged homes, those who attended a charter school from kindergarten through eighth grade closed 86% of the achievement gap in math and 66% of the achievement gap in English (Hoxby, 2009).

In June 2013, CREDO released an updated report that had been expanded to include 26 states that revealed somewhat different results from those found in the 2009 study; charter schools were improving. CREDO attributed the improvement to under-performing charters being closed, and more higher-performing charters being in existence. Results showed particularly strong performance from Black students, students in poverty, and English language learners in charter schools, as compared to their peers in

traditional public schools. Although improvement was indicated, overall, the findings showed that in comparison to traditional public schools, 75% of charters performed no better or worse in reading and 71% of charter schools scored no better or worse in math (CREDO, 2013).

Research conducted in Tennessee examined 12 charter schools to answer six questions; one question focused on the progress made in student achievement and another question focused on school climate. Results in this study showed that school climate stood out as a definite strength of charter schools based on the School Climate Inventory (SCI). Charter schools scored higher than the national norms on all dimensions of the scale (Bol, McDonald, McSparrin-Gallagher, & Ross, 2006). In student achievement, which was reported in a separate report, the results were mixed and less conclusive, with no consistency in charter school students performing significantly higher than the control students (McDonald et al., 2008).

Similar to the results found by Hoxby (2009), were the results of a study of three inner-city schools serving mostly African American students that utilized a matched, treatment-controlled, student analytical design. Students attending charter schools were individually matched with highly comparable control students who attended non-charter schools. The researchers found that charter school students showed more progress in student achievement as measured by state assessments and very positive perceptions of school climate (McDonald et al., 2008).

Following the huge devastation caused by Hurricane Katrina in 2005, New Orleans totally revamped its already failing education system, making it one of the first large scale implementations of charter schools (Center for Education Reform, 2012). The

new system consisted of two school districts, one run by the state and one locally controlled, but both offering parents school choice, including a large number of charter schools. A study conducted by researchers from RAND Education for the Scott S. Cohen Institute for Public Education Initiatives at Tulane University (2011) in the 2008-2009 academic year, found that charter school status could not reliably predict annual improvement in academic achievement.

In summary, the review of the literature on charter schools initially revealed that the research findings are inconclusive, as evidenced by the debate between the CREDO researchers (2009) and Hoxby (2009). More recent research on the impact charter schools are having on student achievement, school climate, and other characteristics of schools that influence overall outcomes for students, has shown a positive effect (CREDO 2013).

The literature reviewed on charter schools provides evidence that is empirical, and was chosen based mostly on its significance within the broad topic, sample size, and its demographic similarity to the sample population of this study. The review of the literature on charter schools further led to the decision to examine school type as a predictor of perceived school climate and student achievement.

Research On School Structure

The research of Paglin and Fager (1997) found that sixth graders in K-8 and K-12 schools outperformed students in stand-alone middle schools or junior high schools, and cited the number of transitions as a significant factor (Fager & Paglin, 1997).

In 1996, using data from the Louisiana Public Schools that was collected from the 1992-1993 school year, Franklin and Glascock (1998) conducted research that found that

there were more suspensions of sixth grade boys in middle or junior high schools than in elementary schools, and the researchers suggested that this could, in part, be due also to the effects of the transition, as well as the school organization or school size (Franklin & Glascock, 1998).

Contributing further to the uncertainty about the success of housing middle grades students in stand-alone schools was the research of Alspagh and Harding (1995) that found significant loss in achievement for students in their first transition year. Also, Alspagh and Harding found that it was possible for students to regain this loss, but spending time in school recouping a loss in achievement due to a transition to a new school is not ideal, and not all students were able to recoup the loss within the time studied.

In Baltimore Maryland in the late 1990s, there was a movement among elementary schools to retain fifth graders, rather than to send them to a middle school, thereby converting the existing K-5 school to a K-8 school by adding an additional grade starting with 6 to 8 each year. Research was conducted to examine student achievement and attendance in K-5 and 6-8 schools versus K-8 schools and the conclusions were that reading, language arts, and math scores were significantly higher for students in K-8 schools than for students in K-5 and 6-8 schools (Connolly, Russo, & Yakimowski-Srebnick, 2002).

As with the literature on charter schools, the review of the literature on school structure included empirical research and was selected based on its similarity to the study population, as well as its like focus on grade, one of the controlling variables of this study. Review of this literature influenced the decision to examine school structure as a

predictor of perceived school climate and academic achievement. School structure is a characteristic that is within our control and is worth examination, to determine its impact on student success.

Literature On Student Academic Achievement Testing

Seeking to reexamine the impact of socioeconomic status on high-stakes testing, Baker and Johnston (2010) studied the state test scores in reading of 14,049 eighth graders from 51 public middle schools in Florida. Socioeconomic status was determined by the Title I and non-Title I status of students. All students were equally funded, even though 9,321 students qualified for Title I, and 4,728 and did not qualify. Sixty-five percent of students attending non-Title I schools passed the state assessment, while only 39% of students attending Title I schools passed. The conclusions drawn by Baker and Johnston were that socioeconomic status did impact student achievement, however, funding, which is an environmental factor, did not impact student achievement. Furthermore, they concluded that motivational factors, rather than environmental factors, are predictors of student achievement. This final conclusion was not based on concrete results from their study, but rather on assumptions made from their results. The significance of this study is the finding that environmental factors alone do not predict student achievement, and the implication that motivational factors do.

With much of the current focus in education on high-stakes testing, many experts in the field of education are questioning what measures truly determine the success or value of a school. Criticism abounds of the practice of using scores on a standardized test as the single measure of school success. Giving a practitioner's view on the turnaround of failing schools, this question was posed by Berkeley (2012); "should multiple choice tests

be the sole criterion for determining the success of schools? Might society want to consider whether or not schools are motivating students to be productive members of society and equipping them with the skills and habits that they will need to be productive?" (p. 34).

Daniel Koretz (2008) attempted to educate the general public, as well as practitioners on the widely held misunderstandings about testing. Mainly, he pointed out that scores on a single test do not give conclusive information about student achievement, and they do not inform us irrefutably about school quality. Furthermore, Koretz articulated that, "trends in scores over time, whether down or up, are often influenced by social factors and, in the case of seeming improvements, by inappropriate teaching to the test. Not all low-scoring schools offer as weak an educational program as their scores might suggest" (p. 36). If social factors have high influence, then measuring the presence of a positive, motivating, school climate may be a better test of school success than achievement test scores. There is research that supports the views of Berkeley (2012) and Koretz (2008) about what educational testing truly tells us about schools. From this research, a hypothesis could be made that a measure of school climate gives a truer picture than achievement testing, of the quality of teaching and learning present in a school, thus the focus of this study on both school climate and achievement testing.

Literature Review Conclusions

Synthesizing this literature review requires attention to the broader scholarly literature or theoretical influences relevant to this study. The theories of academic optimism (Hoy et al., 2006), social capital (Coleman, 1990), positive psychology (Seligman, 2000), and social cognitive theory (Bandura, 1997) give credence to the

phenomena of characteristics of school climate forming a construct that can be tied to school success; thus the decision to examine school climate, as well as student academic achievement. The inclusion of collective efficacy (Borgogni, et al., 2009; Lee, Zhang, & Yin, 2011), academic emphasis (Goddard, Hoy, & Sweetland, 2000), and trust research (Kagy, 2011) is justified by the support found in each that one's perceptions are paramount to the quality of their outputs, and therefore can be related to school success. Their inclusion is further explained by the view that collective efficacy, academic emphasis, and trust are all school characteristics, which raised questions about the kinds of schools that possessed these characteristics and, therefore, influenced the decision to examine school type and school structure as predictors of perceived school climate and student achievement.

The decision to include the research conducted by CREDO (2009) was made because it was a landmark study. It was the largest study conducted on charter schools, particularly the second study conducted in 2013. Decisions to include the other studies in the literature review were based mostly on the demographics of the population being similar to the demographics of the population in the present study. The charter school literature reviewed was primarily empirical literature.

The literature reviewed on school structure was largely empirical, but began with a brief overview of the history of education in this country as it related to the grade configuration or structure of schools. The historical synopsis gave insight into the reasons for changes to school structure, and provided an understanding for why there may be so many different structures found throughout the country today. The question of whether one grade configuration over another, yields higher student outcomes,

particularly higher student achievement, has been debated for years and continues to be debated. It was clear that more research was needed to solidly answer the question of what school configuration, if any, results in the most positive learning environment and the highest student achievement.

Finally, the literature review looked at student achievement and high-stakes, standardized testing, including a practitioner's critique of the use of standardized tests (Berkeley, 2012). The decision to include this literature was made in support of the decision to not limit the focus of this study to student academic achievement (as measured by standardized testing) as the only dependent variable, but to also examine student perceptions of school climate when looking at school type and school structure as predictors.

The collective themes in the literature review are that school climate characteristics are grounded in theory and are within our control, and that things within our control can influence student achievement. School type and school structure are characteristics that can be controlled. In the history of education, school type and school structure have both been used as strategies for school improvement. Further established in the literature review is the notion that in addition to student achievement, as measured by student test scores, school climate is a viable measure of school effectiveness.

CHAPTER III: DESIGN AND METHODOLOGY

Introduction

Like many other large urban school districts in this country, the Baltimore City School Public Schools (BCPS) has long recognized the need to measure the climate in its schools. The school climate survey used by this district, the BCPS School Climate Survey for Students Grades 6-8, was designed to evaluate the culture of every public school in Baltimore City, including charter schools. The district has a diverse set of schools as a result of its board maintaining a desire to provide parents with choices when it comes to selecting a school for their children to attend. The BCPS has the highest number of charter schools in the state of Maryland, with 42 of the 46 charters in the state existing in Baltimore City.

This research utilized a cross-sectional study design to investigate students' perceptions of school climate in different school types and different school structures, and students' rates of reading and math achievement in different school types and different school structures, controlling for grade and gender. The investigation focused on individual level data analysis of students in grades 6, 7, and 8 and examined the hypotheses using multiple data sources.

Data Source

The first set of data was obtained from the climate survey conducted by the BCPS among students in the 6-8 grades during the 2011-2012 school year. All surveys were mandatory and all responses were anonymous, containing no respondent identifier.

The second set of data included the test scores for the Maryland State Assessments (MSA), which was obtained from the BCPS for children who were tested in 6-8 grades

during the 2011-2012 school year. The MSA Reading was administered to students citywide during the second week of March, 2012, and MSA Math was administered to students citywide during the third week of March, 2012. A make-up period was provided in the fourth week of March for students who were absent for any part of either the reading or math tests. Maryland State Department of Education (MSDE) certificated district employees administered the tests with the assistance of trained test proctors, and the assessment programs in every school in the district were heavily monitored through funds obtained from a federal grant. The State required a participation rate of 95% of students enrolled on the day of the test. The MSA is discussed in further detail later in this chapter.

The third set of data consisted of student and school characteristics, such as student demographics, school type, and school structure. This data was obtained directly from the BCPS Office of Achievement and Accountability and the School Profiles located on the BCPS web site (www.baltimorecityschools.org). Demographic characteristics included race, income level, and enrollment numbers for the 2011-2012 school year. School type refers to whether the school is a (a) traditional public school, (b) charter school, or (c) transformational school. Traditional public school refers to a conventional public school that is fully operated by the school district. Students are assigned by the district to attend these schools, usually based on their address. Charter school refers to a school that receives public funds but is operated by a private organization under a charter or performance contract with the district. Each operator's contract details its program, goals, and methods of assessment. Charter schools have increased autonomy in making decisions for their school in many areas, but are bound by

Maryland Charter Law. Parents can choose to send their children to charter schools and there are no entrance criteria, so charters are open to all students throughout the city. When there are more students wanting to attend a charter school than there are seats available, students are admitted through a lottery. Transformational school refers to a secondary school that has a specific theme and a unique curriculum that focuses on college, career, or alternative programming and is operated by an independent education entity. These schools have no entrance criteria and students are admitted through a lottery. As described by Alison Perkins-Cohen, Executive Director of the Office of New Initiatives, in a request for information,

transformation schools were created to serve students in grades 6-12, to help ensure these students had high-quality options, make sure students are graduating from high school, ease the transition from middle to high school and reduce the dropout rate. The schools offer a range of programming for middle and high school grades so that students can select programs that address their interests and needs through the choice process. A number of these schools serve students who have struggled in school, are overage, and under credit. Transformation schools are similar to charters, have many of the same autonomies and go through the same renewal process but are funded differently – they are funded like a traditional school through fair student funding. (A. Perkins-Cohen, personal communication, December 31, 2013).

Climate Survey

BCPS has sporadically conducted surveys of school climate in some form or fashion since 1991; however, the practice of assessing school climate system-wide has

been in place since 2005, and it was developed in response to considerable turmoil in schools at the time. According to a report released in the summer of 2005,

A needs-assessment revealed that an unwieldy array of unrelated measures were in use across the System, with scant analysis and discussion of any findings. Perhaps the most important of these school climate assessments was the expansive survey employed by the Urban Institute (UI) research team charged with evaluation of the Gates Foundation grant. To bring order to the many scattershot assessments, to protect the integrity of UI's continuing evaluation, and to provide decision-makers with an institutionalized and systemic mechanism to assess school climate, a panel of internal and external partners convened to design and vet a set of measures.

These would become the exclusive and official climate survey instruments for use in BCPSS. (Baltimore City Public School System, 2005, p. 4).

Since 2005, the BCPSS Division of Research, Evaluation, Assessment and Accountability (now known as, BCPS Achievement and Accountability Office) has revised the instrument annually, to ensure item reliability and validity based on ongoing analysis of the survey data, and feedback from teachers and administrators.

Climate Survey Instrument

The climate survey instrument administered to obtain the data used in this study was the BCPS School Climate Survey-Students Grades 6-8. The survey used a Likert-type scale that measured the extent of agreement or disagreements with statements, *strongly disagree, disagree, agree, and strongly agree*, and it had four questions pertaining to transportation to school, attendance at the same school last year, student grade, and student gender. Grade and gender of students were used as control factors in

examining school type and school structure as predictors of perceived school climate. The BCPS School Climate Survey-Students Grades 6-8 had a total of 61 questions, including the six questions previously described. Teachers administered the survey in the classroom.

Maryland State Assessment (MSA)

The MSA tests are administered annually in March to students in grades 3 through 8, to assess achievement in both reading and math. Assessment data from the 2012 administration provided by the Maryland State Department of Education (MSDE) were obtained from the district and used for this study. In an effort to comply with the federal testing requirements of the No Child Left Behind Act (NCLB) of 2001, the Maryland State Board of Education has established regulations that require the administration of assessments in schools throughout the state (COMAR, 2009). The regulations address test administration, security, data reporting, and test procurement, and “are grounded in accepted professional standards regarding the administration and use of tests [cf. *The Standards for Educational and Psychological Tests* (1999), published by the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education]” (MSDE, n.d.). According to the MSA Technical Report-Reading 2011 (MSDE), the MSA has been administered to Maryland students since 2003. It was initially introduced to students in grades 3, 5, and 8, and it was extended to grades 4, 6, and 7 in 2004. It is aligned with statewide standards that were developed to inform stakeholders about what students were learning in school, and to hold schools accountable for teaching the standards. To measure student performance against the standards, reading and math tests were developed

through a collaborative effort of MSDE and hundreds of educators statewide. As reported in the MSA Technical Report 2003 (MSDE), performance on the MSA is measured by three, achievement levels; basic, proficient, and advanced. A score in the proficient or advanced level is considered passing. Scoring at the basic level is considered not passing. Adequate Yearly Progress (AYP) was determined by the percentage of students scoring at the proficient or advanced levels. School level improvement efforts across the state are based on the analysis of these assessment results. This information provided the rationale for combining the proportion of students achieving advanced or proficient scores for each of the test subjects and comparing them to students who achieved basic scores.

Student And School Demographics

Income level was determined by the Free and Reduced Meals Service (FARMS) data, as defined by federal guidelines for the qualification for free or reduced lunch, and was obtained directly from the BCPS Office of Achievement and Accountability. Data on school type and school structure were obtained from the school profiles on the BCPS web site (www.baltimorecityschools.org).

Data Management

Numerous variables were coded before statistical data analysis could begin. Variable coding for responses to climate survey questions were as follows: *1=strongly disagree, 2=disagree, 3=agree, and 4=strongly agree*; for grade, 6=sixth grade, 7=seventh grade, 8=eighth grade; for gender, male=1, female=2. School type was coded as follows: ch=charter, td=traditional, tf=transformational. For school structure, coding was as follows: em=elementary/middle school, mh=middle/high school, sm=stand alone

middle school. Information on the FARMS recipient within each of the BCPS was downloaded from the BCPS district URL. Distribution of FARMS was computed by categorizing the number (and percent) of schools that received 25-50%, 51-75%, 76-90% and 91-100% of FARMS. For race/ethnicity distribution, the proportion of each race/ethnic group within each school and the total number of students enrolled in each school, was downloaded from the BCPS district URL. The proportion was then used to input the number of students in each race/ethnic group within each of the 103 schools. The number of students taking the MSA tests was used for the input. School type and structure, once identified, were assigned as the two independent measures to each student in the survey and MSA test data sets.

Statistical Analysis

Several steps in the data management process and statistical procedures were used to analyze and interpret the study results.

First, exploratory data analysis was conducted to examine data quality and to ensure accurate analysis of data. Frequency distribution and box-plot analysis of school and student characteristics from the climate survey responses and the MSA test results were used to identify missing data and outliers. Missing data and outliers were excluded from further analysis if all survey items and all test scores for a particular student were not available. Also excluded was one school that had 41 records that did not fall under one of three categories of school types being investigated.

Second, a frequency distribution of items in the school climate survey was done for all schools and all grades, 6 through 8, and was also done for each grade within all schools. Similarly, a frequency distribution of reading achievement and math

achievement scores by school and grade was done using the percent basic, proficient, and advanced scores on the state assessment. In a separate analysis, students who had proficient or advanced test scores were combined and were compared with students who had basic test results.

The benchmarks in the reading assessment for a score of proficient were 381 for grade 6, 385 for grade 7, and 391 for grade 8. For the advanced level, the benchmarks were 421 for grade 6, 425 for grade 7, and 425 for grade 8. All other scores below the proficient benchmark were considered basic level, or not passing. For the math assessment, the benchmarks for proficient were 396 for grade 6, 396 for grade 7, and 407 for grade 8. For the advanced level the benchmarks were 447 for grade 6, 451 for grade 7, and 444 for grade 8. All other scores below the proficient benchmark were considered basic level, or not passing. The rationale for combining the advanced and proficient scores was that the state views both levels as a passing score, whereas the basic level is considered not passing. Combined proficient/advanced scores are reported by the state to districts and the public when reporting final assessment results. This combined proficient/advanced percentage was subsequently used as the achievement score for each school.

Third, school composition of type, structure, grades, and gender were also examined as part of the study population distribution. Frequency distributions of all available demographic characteristics of the students in the climate survey, MSA tests, as well as the school characteristics such as type, structure, FARMS, and race/ethnicity distribution were conducted as part of descriptive analysis.

Study Population

The study population consisted of all Baltimore City Public School students in grades 6 through 8. The Baltimore City Public Schools district is a large urban school district with a total population of 85,306 students, 8,000 teachers, 195 schools, and a low-income rate of 84 %, as determined by the number of students receiving free or reduced lunch. Of the 85,306 students, 85% are African American, 8% are White, and 5% are Hispanic/Latino. Four percent are English language learners.

Sampling Framework

The sampling for this study was based on the Baltimore City location, the CEO/Superintendent's expressed consent to conduct the study in the district, and the Maryland State Assessment administered to students in grades 6 through 8. The students and schools remained anonymous.

The total sample number for the first data set, the climate survey, was 12,258 students. The sample number by grade was, for grade 6, 4,259; for grade 7, 4,247; and for grade 8, 3,752. The total sample number of schools was 103. All students in grades 6 through 8, who were present on the day of the survey administration, were required to take the survey.

The total sample number for the second data set, test scores, was 17,472 in grades 6 through 8. The sample number by grade was, for grade 6, 5,942; for grade 7, 5,891; and for grade 8, 5,639. The total sample number of schools remained the same as in the first data set, 103.

The difference in the total sample number in the two data sets is explained by the higher level of accountability the state places on schools, to administer the achievement

tests to all students versus the accountability level for the climate survey. There are make-up testing dates provided for students who were absent on the date of the test administration for both reading and math. There were no make-up dates provided for students who were absent on the date the survey was conducted. The state required a minimum of 95% of the students enrolled on the date of the test, to take the test, in order for a school's scores to be considered valid. There is no percent of enrollment requirement for the student climate survey.

Factor Analysis

Through principal component analysis of the climate survey data, a factor analysis was done to identify conceptual domains or constructs. An internal consistency reliability test was then conducted to test the equivalency of the items. This produced a Chronbach's alpha for each of the five domains. Both the initial and rotated eigenvalues were calculated, as well as the percent of variance explained by each factor and the intraclass correlation coefficient (95% CI). These were computed for construct validation and reliability testing of each factor using Statistical Package for the Social Sciences (SPSS, v21.0). A mean and a sum score of the items identified within a factor were computed for each factor.

The first factor had seven items with an initial eigenvalue of 13.754 and a rotated eigenvalue of 4.618. The percent of variance explained by this factor was 25.007 (initial) and 8.397 (rotated), with a Chronbach's alpha of .876.

The second factor had 10 items with an initial eigenvalue of 4.069 and a rotated eigenvalue of 4.183. The percent of variance explained by this factor was 7.398 (initial) and 7.606 (rotated), with a Chronbach's alpha of .829.

The third factor had nine items with an initial eigenvalue of 4.069 and a rotated eigenvalue of 4.183. The percent of variance explained by this factor was 7.398 (initial) and 7.606 (rotated), with a Chronbach's alpha of .829.

The fourth factor had four items with an initial eigenvalue of 2.934 and a rotated eigenvalue of 3.807. The percent of variance explained by this factor was 5.335 (initial) and 6.922 (rotated), with a Chronbach's alpha of .866.

Factor five had seven items with an initial eigenvalue of 1.465 and a rotated eigenvalue of 3.776. The percent of variance explained by this factor was 2.663 (initial) and 8.866 (rotated), with a Chronbach's alpha of .785. It is worthy to note that all five factors combined, explained about 48% of the variance.

Research Question 1

To what extent do middle grades students in charter schools or transformational schools perceive their school climate more positively than students of traditional public schools, when controlling for grade and gender?

To analyze the association between school type and climate survey factors, an analysis of variance (ANOVA) was conducted to examine the mean of the mean and sum scores between three school types: traditional, charter, and transformational.

Bonferroni's multiple comparison tests were utilized to examine group differences. A value of $p < .05$ was considered as a statistically significant difference among groups. Additional comparison groups included gender and grades to measure their differences on the climate survey factors.

Multiple linear regression analyses were conducted to measure the association among school types and school climate factors after controlling for available covariates.

The parameter coefficient estimate, standard error of the beta coefficient, and *t*-statistics were computed for each variable. R^2 was computed to measure the model variance, while *f*-statistic was computed to measure the statistical significance of the model.

Research Question 2

To what extent do middle grades students in combined elementary/middle schools perceive their school climate more positively than students in stand-alone middle schools or combined middle/high schools, when controlling for grade and gender?

Similarly, as with question 1, an analysis of variance (ANOVA) was conducted to examine the mean of the mean and sum scores between the three school structures-- elementary-middle schools, stand-alone middle schools, and middle-high schools--to analyze the association between school structure and climate survey factors. Again, Bonferroni's multiple comparison tests were utilized to examine group differences. A value of $p < .05$ was considered as a statistically significant difference among groups. Additional comparison groups included gender and grades, to measure their differences on the climate survey factors.

Multiple linear regression analyses were conducted to measure the association among school structures and school climate factors after controlling for available covariates. The parameter coefficient estimate, standard error of the beta coefficient, and *t*-statistics were computed for each variable. R^2 was computed to measure the model variance, while *f*-statistic was computed to measure the statistical significance of the model.

To further complete this study, analysis of variance (ANOVA) was conducted to examine the interaction between school type and school structure on climate perception.

School type and school structure were examined together to determine the mean and standard deviation for each of the five climate factors.

Research Question 3

To what extent do middle grades students in charter or transformational schools have greater rates of math and/or reading achievement, as measured by receiving a proficient or advanced test score, than middle grades students in traditional public schools?

Chi-square statistics were computed for the analysis of MSA test results for both reading and math by school type. The percent receiving proficient/advanced test scores was compared with the percent receiving basic test scores among the different school types and grades, all grades, and each grade separately.

Multiple logistic regression analyses were conducted to measure the association among school types and MSA test results, both reading and math, after controlling for available covariates. The odds ratios and their 95% confidence intervals were computed to determine the odds of receiving a proficient/advanced test score when compared to the odds of receiving a basic test score. A -2 log likelihood chi-square statistics was computed to examine the model.

Research Question 4

To what extent do middle grades students in combined elementary-middle schools have greater rates of math and/or reading achievement, as measured by receiving a proficient or advanced test score, than middle grades students in stand-alone middle schools or middle-high schools?

As was conducted for question three, chi-square statistics were computed for the

analysis of MSA test results for both reading and math by school structure: elementary-middle schools, stand-alone middle schools, and middle-high schools. The percent receiving proficient/advanced test scores was compared with the percent receiving basic test scores among the different school structures, and for all grades, as well as for each grade separately.

Multiple logistic regression analyses were conducted to measure the association among school structures, and reading and math MSA test results, after controlling for available covariates. The odds ratios and their 95% confidence intervals were computed to determine the odds of receiving a proficient/advanced test score when compared to the odds of receiving a basic test score. A -2 log likelihood chi-square statistics was computed to examine the model.

Hypothesis Specific Analysis

The following hypotheses were tested:

1. Middle grades students in charter schools or transformational schools perceive their school climate more positively than students of traditional public schools, when controlling for grade and gender.
2. Middle grades students in combined elementary/middle schools perceive their school climate more positively than students in stand-alone middle schools or combined middle/high schools, when controlling for grade and gender.
3. Middle grades students in charter schools or transformational schools have greater rates of math and/or reading test achievement, as measured by receiving a proficient or advanced test score, than middle grades students in traditional public schools, when controlling for grade.

4. Middle grades students in combined elementary/middle schools have greater rates of math and/or reading test achievement, as measured by receiving a proficient or advanced test score, than middle grades students in stand-alone middle schools or combined middle/high schools, when controlling for grade.

Data Acquisition and Institutional Review Board Approval

The CEO/Superintendent of the Baltimore City Public Schools also known as the school district, was contacted through a Letter of Solicitation (see Appendix A) to request permission to conduct research as per the research protocol of Seton Hall University. The request was forwarded to the Institutional Review Board (IRB) of the district, as per the research review protocol of the district. Subsequent conversations with the chair of the IRB resulted in a conditional approval of research. The condition required was that I utilize the climate survey that was already administered to staff of the district, rather than the survey that I proposed in the initial request through the Letter of Solicitation (see Appendix A). The district had concerns about overburdening its staff with requests to complete surveys, particularly in regards to school climate. I agreed to this condition, final approval was given, and climate survey data files were given to me.

After numerous telephone conversations and face-to-face meetings with the IRB chairperson for the district, to develop an accurate understanding of the purpose of the study, several raw data files were obtained, as well as school climate survey data, MSA data, and demographic data. After organizing the data in several excel spreadsheets, it was transferred to the Statistical Analysis for the Social Sciences (SPSS v. 21) software.

Threats to Validity

Reliability and validity of the test data were based on assurance from the state in

their reporting of the data and multiple years of test reporting from the state. Experts assured that the survey instruments were reliable and valid, based on annual analysis and revisions of survey items.

CHAPTER IV: RESULTS

Introduction

This chapter presents the results of the data analysis conducted on sixth, seventh, and eighth grade students' state assessment data in reading and math, as well as their climate survey responses in a large urban school district, Baltimore City Public Schools. The study was cross-sectional in design and included an analysis of mean scores on the climate survey domains, and proficiency percent scores on the achievement assessments, designed to examine the extent to which school type and school structure, influenced academic achievement and perceptions of school climate. Principal component factor analysis was conducted and showed that the distribution of rotated factor scores yielded five exploratory constructs or domains from the climate survey items based on the a priori determined eigenvalue. Chronbach's alpha was also computed to measure the internal consistency reliability for the items within the construct, as well as the percent of variance explained by the factor for all five factors identified.

The first section of this chapter describes the sample population and presents the descriptive statistics for the dependent variables of perceptions of school climate and academic achievement, and for the independent variables of school type and school structure. Restatements of the hypotheses associated with the research questions are presented, followed by an analysis for hypotheses 1 and 2, which have the same dependent variable, perceptions of school climate; and an analysis for hypotheses 3 and 4, that have the same dependent variable of academic achievement.

Population Characteristics

The total population size for the school climate survey was 12, 258, and it was

separated by grade level (grade 6, $n=4259$ or 34.7 %; grade 7, $n=4247$ or 34.6 %; grade 8, $n=3752$ or 30.6 %). Gender distribution included males, $n=5921$ or 48.3 %; females, $n=6248$ or 51 %; unknown, $n=89$ or .7 %. For school type, there were 8566 students in traditional schools (69.9%), 2283 in charter schools (18.6%), and 1409 in transformational schools (11.5 %). Similarly for school structure, 8409 students attended elementary-middle schools (68.6%), 1357 students attended stand-alone middle schools (11.1%), and 2492 students attended middle-high schools (20.3 %).

The total number of students who took the MSA was 17,472, and when this total number was separated by grades, there were 5942 or 34 % of the students in grade 6, 5891 students or 33.7 % in grade 7, and 5639 students or 32.3 % in grade 8. When separated by school type, there were 12,276 students in traditional schools (70.3 %), 2852 students in charter schools (16.3%), and 2344 students in transformational schools (13.4%) that took the MSA. When separated by school structure, there were 11,034 students in elementary-middle schools (63.2%), 2520 students in stand-alone middle schools (14.4 %), and 3918 in middle-high schools (22.4%).

There were 74 or 71.8 % traditional schools, 19 or 18.4 % charter schools, and 10 or 9.7 % transformational schools. By school structure there were 74 or 71.8 % elementary-middle schools, 10 or 9.7 % stand-alone middle schools, and 19 or 18.4 % middle-high schools. In regards to race/ethnicity composition, there were 14,081 or 86.43 % African American students, 1375 or 8.44 % White students, 730 or 4.48 % Hispanic students, and 106 or .65 % who marked other. The percent receiving free and reduced meals (FARMS) showed that there were five schools or 4.9% that had 25-50% FARMS, seven or 6.8 % had 51-75% FARMS, 47 schools or 45.6 % had 76-90%

FARMS, and 44 or 42.7 % had 91-100% FARMS.

Descriptive Statistics

The items receiving the highest percentage of students responding positively were: It is important to finish high school (*strongly agree*, 70.1% and *agree*, 21.5 %); It is important to try hard in school (*strongly agree*, 63 % and *agree*, 30.3 %); It is important to come to class prepared (*strongly agree*, 56.7 % and *agree*, 36.3 %); It is important to come to school everyday (*strongly agree*, 58 % and *agree*, 33.2 %); and I know my teachers expect me to perform in class (*strongly agree*, 47.5 % and *agree*, 40.8 %).

On the other hand, the items receiving the lowest percentage of positive responses were: I like the food offered at my school (*strongly agree*, 4.5% and *agree*, 20.2%); The bathrooms in my school are clean (*strongly agree*, 6.6% and *agree*, 18.6%); Students get along well with each other (*strongly agree*, 5.6 % and *agree*, 29.9%); Fighting among students is not a problem (*strongly agree*, 6.5 % and *agree*, 21 %); and Students picking on other students is not a problem (*strongly agree*, 7.4 % and *agree*, 20 %).

For sixth graders, the items with the highest percentage of positive responses and the items with the lowest percentage of positive responses, mirrored what was true for all grades, 6 through 8.

For seventh graders, the items with the highest percentage of positive responses and the items with the lowest percentage of positive responses also reflected what was true for all grades.

As it was for sixth and seventh graders independently, it holds true that the items with the highest percentage of positive responses and the items with the lowest percentage of positive responses are the same for eighth graders as for all grades

combined.

For MSA math achievement, students scoring proficient/advanced for all schools and all grades (grades 6, 7, and 8) ranged from 16.1% to 92.0%. There was one school that had no student who scored proficient/advanced on the math MSA. In sixth grade, the range was from 18.8% to 94.3%. In seventh grade, the range was from 12.7% to 99%. In eighth grade, the range was from 4.4% to 86%. There was one school that had no student who scored proficient/advanced.

For MSA reading achievement, students scoring proficient /advanced for all schools and all grades (grades 6, 7, and 8), regardless of grade, the range was from 20% to 91.5%. For grade 6, the range was from 34.6% to 95.8%. For grade 7, the range was from 14.3% to 91.8%. For grade 8, the range was from 9.1% to 92.5%

Seven items were identified as factor one, which reflected students' feelings of safeness. The seven items within this factor were students possessing weapons like knives/guns is not a problem; students setting fires is not a problem; student drug/alcohol abuse is not a problem; gangs are not a problem; outsiders getting into my school is not a problem; physical or verbal abuse of teachers is not a problem; and student vandalism of school property is not a problem. This factor had a mean score of 19.3, a standard deviation of 5.7, and a factor eigenvalue of 4.6. The percent of variance explained by the factor was 8.4, with an intraclass correlation coefficient of 0.876. The Chronbach's alpha for this factor was 0.876.

Ten items were identified as factor two. These items reflected students' connectedness with their school. The ten items within this factor were, I would rather keep going to this school; I like my school; I feel safe at this school; overall, I am

satisfied with my school; my school offers interesting elective courses; music, art, dance, and theatre make my school an exciting place to be; I feel safe going to and from school; creativity is encouraged in my school; I learn a lot at my school; and my core courses are challenging. This factor had a mean score of 27.0, a standard deviation of 5.7, and a factor eigenvalue of 4.2. The percent of variance explained by the factor was 7.6, with an intraclass correlation coefficient of 0.829. The Chronbach's alpha was 0.829.

Factor three consisted of nine items that showed the students' regard for teachers. The nine items were, teachers care about their students; teachers believe all students can do well if they try; I like my teachers; teachers encourage me to work hard in class; students are rewarded for positive behavior; teachers are well organized and prepared; I know my teachers expect me to perform in class; teachers can handle students who disrupt class; and my school has clear rules about student behavior. This factor had a mean score of 27.1, a standard deviation of 5.1, and a factor eigenvalue of 4.2. The percent of variance explained by the factor was 7.6 with an intraclass correlation coefficient of 0.839. The Chronbach's alpha was 0.829.

Factor four consisted of four items, which showed that the student values education. The items within this factor were, it is important to try hard at school; it is important to come to class prepared; it is important to finish high school; and it is important to come to school everyday. This factor had a mean score of 14.2, a standard deviation of 2.3, and the factor eigenvalue was 3.8. The percent of variance explained by the factor was 6.9, with an intraclass correlation coefficient of 0.866. The Chronbach's alpha was 0.866.

Factor five consisted of seven items that disclosed teacher-parent-student

communication. The items in this factor were, my teacher talks to my parent or guardian; when I do something bad, my parent hears about it; the school involves parents; when I do something good, my parent hears about it; there is someone at school who can give me extra academic help; my parent or guardian feels welcome at this school; and there is someone at my school who I can talk to about personal problems. This factor had a mean score of 20.5, a standard deviation of 4.8, and the factor eigenvalue was 3.8. The percent of variance explained by the factor was 6.9, with an intraclass correlation coefficient of 0.782. The Chronbach's alpha was 0.785.

Findings For Hypotheses 1 And 2

H1: Middle grades students in charter schools or transformational schools perceive their school climate more positively than students of traditional public schools, controlling for grade and gender.

H2: Middle grades students in combined elementary/middle schools perceive their school climate more positively than students in stand-alone middle schools or combined middle/high schools, controlling for grade and gender.

Bivariate analysis was conducted to examine the association of school type and school structure with school climate factors. Mean scores were calculated based on the mean of items within each factor. For school type, all factors were significant ($p=.000$ for all five factors). Charter schools consistently had a higher mean score than traditional and transformational schools for all five factors. For feeling of safeness (factor one), charter schools had a mean score of 2.94 ($SD=0.81$) compared to 2.69 ($SD=0.80$) for traditional schools and 2.68 ($SD=0.81$) for transformational schools. For factor two, connectedness with school, charter schools had a mean score of 2.83 ($SD=0.55$)

compared to 2.67 ($SD=0.57$) for traditional schools and 2.65 ($SD=0.60$) for transformational schools. For factor three, regard for teachers, charter schools had a mean score of 3.59 ($SD=0.55$) compared to 3.53 for both traditional schools ($SD=0.59$) and transformational schools ($SD=0.62$). Factor four, student values education, had a mean score of 20.26 ($SD=5.79$) for charter schools, 18.50 ($SD=5.66$) for traditional schools, and 18.31 ($SD=5.79$) for transformational schools. The mean score for charter schools for factor five, teacher-parent-student communication, was 27.90 ($SD=5.60$), for traditional schools it was 26.26 ($SD=5.82$) and for transformational schools it was 25.99 ($SD=6.09$). The mean scores for transformational schools were lower than for both charter schools and traditional schools, for four of the five factors. For one factor, regard for teachers, the mean scores for traditional schools and transformational schools were equal (see Table 1).

Students' feelings of safeness was not significantly different ($p=0.558$) among the three school structures, but the remaining four factors were significant; connectedness with school had a p value of 0.000, regard for teachers had a p value of 0.002, student values education had a p value of 0.001, and teacher-parent-student communication had a p value of 0.000.

In identifying the school structure with the highest mean scores for these significant factors, the results were mixed. Elementary-middle schools had the highest mean scores for two of the four factors, regard for teachers ($M=3.55$, $SD=0.57$) and student values education ($M=18.89$, $SD=5.62$). Stand-alone middle schools had the highest mean scores for connectedness with school, ($M=2.74$, $SD=0.59$) and teacher-parent-student communication, ($M=18.63$, $SD=6.05$). When compared to elementary-

middle schools and stand-alone middle schools, middle-high schools had the lowest mean scores for all four significant factors (see Table 1).

Table 1

Association of School Type and Structure with School Climate Factors

School Type	Mean														
	F1			F2			F3			F4			F5		
	No.	Mean	SD	No.	Mean	SD	No.	Mean	SD	No.	Mean	SD	No.	Mean	SD
Traditional	8556	2.69	0.80	8566	2.67	0.57	8521	3.53	0.59	8556	18.50	5.66	8566	26.26	5.82
Charter	2282	2.94	0.81	2282	2.83	0.55	2272	3.59	0.55	2282	20.26	5.79	2282	27.90	5.60
Transformational	1409	2.68	0.81	1409	2.65	0.60	1404	3.53	0.62	1409	18.31	5.79	1409	25.99	6.09
<i>p</i> values		.000			.000			.000			.000			.000	
Structure															
Elementary-Middle	8402	2.74	0.79	8408	2.70	0.56	8373	3.55	0.57	8402	18.89	5.62	8408	26.63	5.75
Stand-alone Middle	1354	2.72	0.85	1357	2.74	0.59	1345	3.48	0.63	1354	18.63	6.05	1357	26.81	6.10
Middle-High	2491	2.73	0.84	2492	2.66	0.59	2479	3.54	0.61	2491	18.62	5.96	2492	26.08	6.01
<i>p</i> values		.558			.000			.002			.001			.000	

Note. F1: Factor 1: Feeling of Safeness, F2: Factor 2: Connectedness with School, F3: Factor 3: Regard for Teachers, F4: Factor 4: Student Values Education, F5: Factor 5: Teacher-Parent-Student Communication. Mean score based on mean of items within each factor.

In the analysis of the association of school type and structure with school climate factors, the mean scores were based on the mean of items within each factor. For cross validation purposes, further analysis was conducted using the sum of items within each factor to compute the mean scores. For school type, the results were the same. All five factors were significant ($p=.000$) and the mean scores for all five factors were higher for charter schools than for traditional and transformational schools (see Table 2).

When using the sum of items within each factor to compute the mean scores for school structure, factor one, feelings of safeness, was not significant ($p=.063$), and factors two through five were significant. Connectedness with school was significant with a p value of .000, regard for teachers had a p value of .016, student values education had a p value of .000, and teacher-parent-student communication had a p value of .004. Stand-alone middle schools had the highest mean scores for all four significant factors except for one;

factor four, student values education. For this factor, elementary-middle schools had the highest mean and stand-alone middle schools had the lowest mean score. Connectedness with school had a mean score of 26.81 ($SD=6.10$) for stand-alone middle schools, 26.63 ($SD=5.75$) for elementary-middle schools, and 26.08 ($SD=6.01$) for middle-high schools. Regard for teachers had a mean score of 26.91 ($SD=5.73$) for stand-alone middle schools, 26.76 ($SD=5.20$) for elementary middle schools, and 26.45 ($SD=5.63$) for middle-high schools. Student values education had a mean score of 14.05 ($SD=2.45$) for elementary-middle schools, 13.97 ($SD=2.65$) for middle-high schools, and 13.72 ($SD=2.73$) for stand-alone middle schools. Teacher-parent-student communication had a mean score of 20.44 ($SD=4.72$) for stand-alone middle schools, 20.16 ($SD=4.32$) for elementary-middle schools, and 19.94 ($SD=4.75$) for middle-high schools (see Table 2).

Table 2

Association of School Type and Structure with School Climate Factors

School Type	Sum															
	F1			F2			F3			F4			F5			
	No.	Mean	SD	No.	Mean	SD	No.	Mean	SD	No.	Mean	SD	No.	Mean	SD	
Traditional	8556	18.50	5.66	8566	26.26	5.82	8565	26.59	5.30	8521	13.95	2.53	8515	19.95	4.42	
Charter	2282	20.26	5.79	2282	27.90	5.60	2282	27.44	5.22	2272	14.19	2.38	2272	21.11	4.21	
Transformational	1409	18.31	5.79	1409	25.99	6.09	1408	26.29	5.72	1404	13.96	2.70	1400	19.76	4.84	
p values		.000			.000			.000			.000			0.000		
Structure																
Elementary-Middle	8402	18.89	5.62	8408	26.63	5.75	8407	26.76	5.20	8373	14.05	2.45	8370	20.16	4.32	
Stand-alone Middle	1354	18.63	6.05	1357	26.81	6.10	1357	26.91	5.73	1345	13.72	2.73	1339	20.44	4.72	
Middle-High	2491	18.62	5.96	2492	26.08	6.01	2491	26.45	5.63	2479	13.97	2.65	2478	19.94	4.75	
p values		.063			.000			.016			.000			.004		

F1: Factor 1: Feeling of Safeness, F2: Factor 2: Connectedness with School, F3: Factor 3: Regard for Teachers, F4: Factor 4: Student Values Education, F5: Factor 5: Teacher-Parent-Student Communication. Mean score based on sum of items within each factor

Finally, multiple linear regression analysis was performed to examine the relationship between school type and school structure on students' perception of school climate. Grade and gender were the two factors that were controlled in the regression analysis. For school type, all five factors were significant for charter schools ($p=0.000$).

Students in charter schools felt better about all five factors than students in traditional schools. Specifically, students in charter schools felt better about safeness than students in traditional schools. Students in transformational schools also felt better about safeness than students in traditional schools, but the beta for charter schools ($\beta = .139, SE = .021$) was greater than the beta for transformational schools ($\beta = .031, SE = .031$). Students in charters felt more connected with their school than students in traditional schools. Students in transformational schools also felt more connected to their school than students in traditional schools, but the beta was again greater for charters ($\beta = .139, SE = .014$) than for transformational schools ($\beta = .036, SE = .022$). Students in charter schools felt higher regard for their teachers ($\beta = .073, SE = .014$), valued education greater ($\beta = .041, SE = .015$), and felt better about teacher-parent-student communication ($\beta = .116, SE = .015$) than students in traditional schools. Compared to traditional schools, these three factors were not significantly different for transformational schools (see Table 3).

For school structure, the feeling of safeness was not significant for stand-alone middle schools, but students in middle-high schools felt less safe ($\beta = -.055, SE = .025$) than students in elementary-middle schools. Students in stand-alone middle schools felt more connected to their school ($\beta = .019, SE = .017$) and had more regard for their teachers ($\beta = .023, SE = .022$) than students in elementary-middle schools, and students in middle-high schools felt less connected to their school ($\beta = -.075, SE = .017$) and had less regard for their teachers ($\beta = -.024, SE = .018$) than students in elementary-middle schools (see Table 3).

Examining the effect of student grade as a covariate, the results showed that students' feelings of safeness were not significant for all grades. However, for feelings of

connectedness, students in seventh grade felt less connected to their school ($\beta = -.092$, $SE = .012$) and had less regard for their teachers ($\beta = -.104$, $SE = .012$) than students in sixth grade, and students in eighth grade felt even less connected to their school ($\beta = -.167$, $SE = .013$) and had even lower regard for teachers ($\beta = -.181$, $SE = .013$) than students in sixth grade. Students in seventh grade felt less positive about teacher-parent-student communication than students in sixth grade, and students in eighth grade felt less positive about this communication than both sixth and seventh graders (see Table 3).

For gender as the other covariate, there was no significant difference between males and females for feelings of safeness. However, male students felt more connected with their school ($\beta = .058$, $SE = .010$) and had higher regard for their teachers ($\beta = .053$, $SE = .010$) than female students, but females valued education more than males ($\beta = -.040$, $SE = .011$). Male students felt better about teacher-parent-student communication than female students ($\beta = .024$, $SE = .011$) (see Table 3).

After controlling for gender and grade, the adjusted r -square value for students' feeling of safeness was 1.6% with an f -statistic of 29.245 (d.f.= 7, $p < 0.001$). The adjusted r -square value for students' feeling of connectedness with school was 4.1% with an f -statistic of 76.065 (d.f.=7, $p < 0.001$). For students' regard for teachers, the adjusted r -square value was 3.3% with an f -statistic of 60.428 (d.f.= 7, $p < 0.001$). For student educational values, the adjusted r -square value was 1.8% with an f -statistic of 33.019 (d.f.=7, $p < 0.001$). The adjusted r -square value for parent-student-teacher communication, was 3.4% with an f -statistic of 61.656 (d.f.= 7, $p < 0.001$) (see Table 3).

Table 3

Multiple Linear Regression of Student Climate Survey Factors (Mean) by School Type and Structure

	Safeness (Factor 1)				Connectedness w/Schools (Factor 2)				Connectedness w/Teachers (Factor 3)			
	Beta	SE	t-stat	p value	Beta	SE	t-stat	p value	Beta	SE	t-stat	p value
School Type												
Traditional (Ref)	----	----			----	----			----	----		
Charter	.139	.021	13.931	.000	.139	.014	14.141	.000	.073	.014	7.395	.000
Transformational	.031	.031	2.570	.010	.036	.022	2.990	.003	-.007	.022	-5.51	.582
School Structure												
Elementary-Middle (Ref)	----	----			----	----			----	----		
Stand-alone Middle	-.009	.024	-9.99	.318	.019	.017	2.049	.040	.023	.017	2.446	.014
Middle-High	-.055	.025	-4.390	.000	-.075	.017	-6.110	.000	-.024	.018	-1.978	.048
Grade												
Grade 6 (Ref)	----	----			----	----			----	----		
Grade 7	.012	.017	1.185	.236	-.092	.012	-9.034	.000	-.104	.012	-10.160	.000
Grade 8	.011	.018	1.083	.279	-.167	.013	-16.470	.000	-.181	.013	-17.708	.000
Gender: Female (Ref)												
Male	.005	.015	.526	.599	.058	.010	6.451	.000	.053	.010	5.863	.000
F-Statistics (df), p value	29.245 (7), p<0.001				76.065 (7), p<0.001				60.428 (7), p<0.001			
R-Square	0.017				.042				.034			
Adj. R-Sqr.	0.016				.041				.033			

	School Values & Commitment (Factor 4)				Communication (Factor 5)			
	Beta	SE	t-stat	p value	Beta	SE	t-stat	p value
School Type								
Traditional (Ref)	----	----			----	----		
Charter	.041	.015	4.144	.000	.116	.015	11.713	.000
Transformational	.019	.022	1.576	.115	.020	.023	1.633	.103
School Structure								
Elementary-Middle (Ref)	----	----			----	----		
Stand-alone Middle	-.036	.017	-3.873	.000	.029	.018	3.102	.002
Middle-High	-.022	.018	-1.794	.073	-.044	.019	-3.571	.000
Grade								
Grade 6 (Ref)	----	----			----	----		
Grade 7	-.070	.013	-6.790	.000	-.096	.013	-9.377	.000
Grade 8	-.138	.013	-13.360	.000	-.165	.014	-16.169	.000
Gender: Female (Ref)								
Male	-.040	.011	-4.375	.000	.024	.011	2.696	.007
F-Statistics (df), p value	33.019 (7), p<0.001				61.656 (7), p<0.001			
R-Square	.019				.034			
Adj. R-Sqr.	.018				.034			

Findings For Hypotheses 3 And 4

H3: Middle grades students in charter schools or transformational schools have

greater rates of math and/or reading test achievement, as measured by receiving a proficient or advanced test score, than middle grades students in traditional public schools, when controlling for grade.

H4: Middle grades students in combined elementary/middle schools have greater rates of math and/or reading test achievement, as measured by receiving a proficient/advanced test score, than middle grades students in stand-alone middle schools or combined middle/high schools, when controlling for grade.

Chi-square statistics were computed to examine the association of school type and school structure with math MSA results. The test was conducted for all grades, as well as each grade separately. There were no differences in the by grade results when compared to the results for all grades combined. The p values for both school type and school structure were less than 0.05, and therefore significant. Thus, school type was found to be a significant predictor of achievement on the math MSA. (Chi-square value=161.591, $df=4$, and $p=.000$) as well as school structure (Chi-square=382.289, $df=4$, and $p=.000$) (see Table 4). Further examination of student test scores revealed that transformational schools had the lowest percentage of students in grades 6, 7, and 8 scoring proficient or advanced on the MSA in math than students who attended charter schools or traditional schools. Also revealed was that charter schools had a larger percentage of students who scored proficient or advanced on the MSA in math than students who attended traditional schools or transformational schools. Similarly, more students who attended combined elementary-middles schools in grades 6, 7, and 8, scored proficient or advanced on the MSA in math than students who attended stand-alone middle schools or combined

middle-high schools. Middle-high schools had the lowest percentage of students who scored proficient or advanced in math (see Table 4).

Table 4

Association of School Type and Structure with MSA Results – Math

School Type	All grades						Grade 6					
	Basic		Proficient		Advanced		Basic		Proficient		Advanced	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Traditional	5538	48.6	4441	38.9	1424	12.5	1354	35.0	1860	48.1	651	16.8
Charter	1110	40.5	1239	45.2	393	14.3	319	32.7	504	51.7	152	15.6
Transformational	1220	56.5	800	37.1	139	6.4	305	40.4	368	48.7	82	10.9
Chi-square (df)	161.591 (4)						23.823 (4)					
p value	.000						.000					
School Structure	Basic		Proficient		Advanced		Basic		Proficient		Advanced	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Elementary-Middle	4569	43.5	4372	41.6	1566	14.9	1155	31.4	1834	49.8	692	18.8
Stand-alone middle	1210	54.8	820	37.2	177	8.0	270	39.0	324	46.8	99	14.3
Middle-High	2089	58.2	1288	35.9	213	5.9	553	45.3	574	47.0	94	7.7
Chi-square (d.f.)	382.289 (4)						127.902 (4)					
p value	.000						.000					

School Type	Grade 7						Grade 8					
	Basic		Proficient		Advanced		Basic		Proficient		Advanced	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Traditional	1910	50.2	1510	39.7	386	10.1	2274	60.9	1071	28.7	387	10.4
Charter	358	39.6	445	49.2	102	11.3	433	50.2	290	33.6	139	16.1
Transformational	484	60.7	284	35.6	29	3.6	431	71.0	148	24.4	28	4.6
Chi-square (df)	93.912 (4)						82.545 (4)					
p value	.000						.000					
School Structure	Basic		Proficient		Advanced		Basic		Proficient		Advanced	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Elementary-Middle	1536	44.2	1514	43.5	429	12.3	1878	56.1	1024	30.6	445	13.3
Stand-alone Middle	471	58.4	304	37.7	32	4.0	469	66.3	192	27.2	46	6.5
Middle-High	745	61.0	421	34.5	56	4.6	791	69.0	293	25.5	63	5.5
Chi-square (df)	172.324 (4)						98.783 (4)					
p value	.000						.000					

Chi-square statistics were also conducted to examine the association of school type and school structure with reading MSA results. As with math, the results examined by grade mirrored the results examined by all grades combined. For reading, the p values for both school type and school structure were less than 0.05, and were therefore, significant. Accordingly, school type was found to be a significant predictor of

achievement on the reading MSA (Chi-square value=175.336, $df=4$, and $p=.000$) as well as school structure (Chi-square=277.419, $df=4$, and $p=.000$) (see Table 5). Further examination of the association of school type and school structure with student reading test scores revealed that more students in grades 6, 7, and 8, who attended charter schools, scored proficient and advanced than students who attended traditional or transformational schools. With regards to school structure, more students who attended elementary-middle schools scored proficient or advanced than students who attended stand-alone middle schools or middle-high schools. Stand-alone middle schools had the lowest percentage of students scoring proficient or advanced in reading (see Table 5).

Table 5

Association of School Type and Structure with MSA Results – Reading

School Type	All grades						Grade 6					
	Basic		Proficient		Advanced		Basic		Proficient		Advanced	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Traditional	4410	38.7	4787	42.0	2192	19.2	1381	35.8	1783	46.2	696	18.0
Charter	785	28.6	1343	48.9	621	22.6	272	27.8	513	52.5	192	19.7
Transformational	951	44.0	935	43.3	274	12.7	293	38.8	375	49.7	87	11.5
Chi-square (df)	175.336 (4)						43.992 (4)					
p value	.000						.000					

School Structure	Basic		Proficient		Advanced		Basic		Proficient		Advanced	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
	Elem-Middle	3603	34.3	4563	43.4	2341	22.3	1179	32.1	1733	47.1	765
Stand-alone Middle	1024	46.7	904	41.2	265	12.1	298	43.1	321	46.4	73	10.5
Middle-High	1519	42.2	1598	44.4	481	13.4	469	38.3	617	50.4	137	11.2
Chi-square (df)	277.419 (4)						98.363 (4)					
p value	.000						.000					

School Type	Grade 7						Grade 8					
	Basic		Proficient		Advanced		Basic		Proficient		Advanced	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Traditional	1448	38.0	1544	40.6	814	21.4	1581	42.5	1460	39.2	682	18.3
Charter	265	29.3	430	47.6	209	23.1	248	28.6	400	46.1	220	25.3
Transformational	1581	42.5	1460	39.2	682	18.3	301	50.0	221	36.7	80	13.3
Chi-square (df)	59.986 (4)						86.490					
p value	.000						.000					

School Structure	Basic		Proficient		Advanced		Basic		Proficient		Advanced	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
	Elem-Middle	1171	33.7	1457	41.9	851	24.5	1253	37.4	1373	41.0	725
Stand-alone Middle	365	45.3	338	41.9	103	12.8	361	51.9	245	35.3	89	12.8
Middle-High	534	43.5	518	42.2	176	14.3	516	45.0	463	40.4	168	14.6
Chi-square (df)	111.276 (4)						77.983					
p value	.000						.000					

Multiple logistic regression analysis was performed to measure the odds of achieving proficient or advanced on the reading MSA by school type, controlling for grade and school structure. Three regression models were generated to examine the best estimates (see Table 6). Model 1 looked at the crude association between school type and reading MSA. Model 2 looked at the association between school type and reading MSA, controlling for student grade. The third and final model looked at the association

between school type and reading MSA, controlling for student grade with the addition of school structure as a second controlling variable.

Model 1 showed the odds ratio for charter schools to be 1.968 (95% CI: 1.748; 2.216) and for transformational schools to be 1.245 (95% CI: 1.134; 1.366), which was interpreted as, students attending charter schools had almost two times the odds than traditional schools of scoring proficient or advanced on the reading MSA, and transformational schools had almost 25% higher odds than traditional schools of scoring proficient or advanced on the reading MSA.

Model 2 showed the odds ratio for grade 7 to be .893 (95% CI: 0.826; 0.965), and for grade 8 to be .765 (95% CI: 0.707; 0.827), thus seventh graders had 11% lower odds than sixth graders of scoring proficient or advanced on the reading MSA, and eighth graders had 23% lower odds of scoring proficient or advanced on the reading MSA.

Model 3 showed the odds ratio for stand-alone middle schools to be .596 (95% CI: 0.542; 0.655) or 40% lower odds than elementary-middle schools of scoring proficient or advanced on the reading MSA. The odds ratio for middle-high school was found to be .589 (95% CI: 0.528; 0.656) or 41% lower odds than elementary-middle schools of scoring proficient or advanced on the reading MSA. Chi-square for model 1 was 21456.010, $df=1$, and p value was less than 0.001. Chi-square for model two was 21410.689, $df=5$, and p value was less than 0.001. For model 3, chi-square was 21248.83, $df=7$, and p was less than 0.001 (see Table 6).

Table 6

Multiple Logistic Regression of Maryland State Assessment (MSA) READING by School Type

	Total No.	% Prof/Adv	Model 1		Model 2		Model 3				
			O.R.	95% CI		O.R.	95% CI		O.R.	95% CI	
				LL	UL		LL	UL		LL	UL
School Type											
Traditional (Ref)	11389	68.7	1.000	---	---	1.000	---	---	1.000	---	---
Charter	2749	19.3	1.968	1.748	2.216	1.982	1.760	2.232	1.512	1.329	1.720
Transformational	2160	11.9	1.245	1.134	1.366	1.257	1.145	1.379	.829	.729	.942
Grade											
Grade 6 (Ref)	5592	35.9				1.000	---	---	1.000	---	---
Grade 7	5513	33.9				0.893	0.826	0.965	.903	.835	.976
Grade 8	5193	30.2				0.765	0.707	0.827	.775	.716	.839
School Structure											
Elementary-Middle (Ref)	10507	68.0							1.000	---	---
Stand-alone Middle	2193	11.5							.596	.542	.655
Middle-High	3598	20.5							.589	.528	.656
-2 log likelihood Model Chi-Square (df), p value			21456.010 (1), <i>p</i> <.001			21410.689(5), <i>p</i> <.001			21248.83 (7), <i>p</i> <.001		

Multiple logistic regression analysis was performed to measure the odds of achieving proficient or advanced on the math MSA by school type, controlling for grade and school structure. Three regression models were generated to examine the best estimates (see Table 7). Model 1 looked at the crude association between school type and math MSA. Model 2 looked at the association between school type and math MSA, controlling for student grade. The third and final model looked at the association between school type and math MSA, controlling for student grade with the addition of school structure as a second controlling variable.

Model 1 showed the odds ratio for charter schools to be 1.910 (95% CI: 1.704; 2.141), and for transformational schools to be 1.376 (95% CI: 1.254; 1.510), which is interpreted as, students attending charter schools had almost two times the odds than traditional schools, of scoring proficient or advanced on the math MSA, and transformational schools had 38% higher odds than traditional schools of scoring proficient or advanced on the math MSA.

Model 2 showed the odds ratio for grade 7 to be .548 (95% CI: 0.508; 0.592), and for grade 8 to be .355 (95% CI: 0.328; 0.384), thus seventh graders had 45% lower odds than sixth graders of scoring proficient or advanced on the math MSA, and eighth graders had 65% lower odds of scoring proficient or advanced on the math MSA.

Model 3 showed the odds ratio for stand-alone middle schools to be .622 (95% CI: 0.565; 0.684) or 38% lower odds than elementary-middle schools of scoring proficient or advanced on the math MSA. The odds ratio for middle-high school was found to be .404 (95% CI: 0.362; 0.451) or 60% lower odds than elementary-middle schools of scoring proficient or advanced on the math MSA. Chi-square for model one was 22456.104, $df=1$, and p value was less than 0.001. Chi-square for model 2 was 21756.170, $df=5$, and p value was less than 0.001. For model 3, chi-square was 21456.852, $df=7$, and p was less than 0.001.

Table 7

Multiple Logistic Regression of Maryland State Assessment (MSA) MATH by School Type

64	No.	%	Model 1			Model 2			Model 3		
	v	Prof/Ad	O.R.	95% CI		O.R.	95% CI		O.R.	95% CI	
			LL	UL	LL	UL	LL	UL			
School Type											
Traditional (Ref)	11403	69.5	1.000	---	---	1.000	---	---	1.000	---	---
Charter	2742	19.3	1.910	1.704	2.141	1.987	1.768	2.233	1.264	1.111	1.438
Transformational	2159	11.1	1.376	1.254	1.510	1.433	1.304	1.576	.691	.606	.788
Grade											
Grade 6 (Ref)	5595	42.9				1.000	---	---	1.000	---	---
Grade 7	5508	32.7				.548	.508	.592	.548	.507	.592
Grade 8	5201	24.5				.355	.328	.384	.356	.329	.386
School Structure											
Elementary-Middle (Ref)	10507	70.4							1.000	---	---
Stand-alone Middle	2207	11.8							.622	.565	.684
Middle-High	3590	17.8							.404	.362	.451
-2 log likelihood Model Chi-Square (df), p value			22456.104 (1), $p<.001$			21756.170(5), $p<.001$			21456.852 (7), $p<.001$		

Multiple logistic regression analysis was performed to measure the odds of achieving proficient or advanced on the reading MSA by school structure, controlling for

grade and school type. Three regression models were generated to examine the best estimates (see Table 8). Model 1 looked at the crude association between school structure and reading MSA. Model 2 looked at the association between school structure and reading MSA, controlling for student grade. The third and final model looked at the association between school structure and reading MSA, controlling for student grade with the addition of school type as a second controlling variable.

Model 1 showed the odds ratio for stand-alone middle schools to be .596 (95% CI: 0.543; 0.654), and for middle-high schools to be .714 (95% CI: 0.661; 0.772), which is interpreted as students attending stand-alone middle schools had 40% lower odds than elementary-middle schools of scoring proficient or advanced on the reading MSA, and middle-high schools had 30% lower odds than elementary-middle schools of scoring proficient or advanced on the reading MSA.

Model 2 showed the odds ratio for grade 7 to be .899 (95% CI: 0.831; 0.971), and for grade 8 to be .770 (95% CI: 0.712; 0.833), thus seventh graders had 10% lower odds than sixth graders of scoring proficient or advanced on the reading MSA, and eighth graders had 23% lower odds than sixth graders of scoring proficient or advanced on the reading MSA.

Model 3 showed the odds ratio for charter schools to be 1.512 (95% CI: 1.329; 1.720) or 50% higher odds than traditional schools of scoring proficient or advanced on the reading MSA. The odds ratio for transformational schools was found to be .829 (95% CI: 0.729; 0.942) or 17% lower odds than traditional schools of scoring proficient or advanced on the reading MSA. Chi-square for model 1 was 21441.864, $df=1$, and p value

was less than .001. Chi-square for model 2 was 21398.816, $df=5$, and p value was less than .001. For model 3, chi-square was 21248.103, $df=7$, and p was less than .001.

Table 8

Multiple Logistic Regression of Maryland State Assessment (MSA) READING by School Structure

	No.	%	Model 1		Model 2		Model 3				
			O.R.	95% CI		O.R.	95% CI		O.R.	95% CI	
			Prof/Adv	LL	UL	LL	UL	LL	UL		
School Structure											
Elementary-Middle (Ref)	10507	70.4	1.000	---	---	1.000	---	---	1.000	---	---
Stand-alone Middle	2207	11.8	.596	.543	.654	.597	.544	.655	.596	.542	.655
Middle-High	3590	17.8	.714	.661	.772	.714	.661	.772	.589	.528	.656
Grade											
Grade 6 (Ref)	5595	42.9				1.000	---	---	1.000	---	---
Grade 7	5508	32.7				.899	.831	.971	.903	.835	.976
Grade 8	5201	24.5				.770	.712	.833	.775	.716	.839
School Type											
Traditional (Ref)	11403	69.5							1.000	---	---
Charter	2742	19.3							1.512	1.329	1.720
Transformational	2159	11.1							.829	.729	.942
Model Chi-Square (df), p value			21441.864 (1), $p < .001$		21398.816(5), $p < .001$		21248.103 (7), $p < .001$				

Multiple logistic regression analysis was performed to measure the odds of achieving proficient or advanced on the math MSA by school structure, controlling for grade and school type. Three regression models were generated to examine the best estimates (see Table 9). Model 1 looked at the crude association between school structure and math MSA. Model 2 looked at the association between school structure and math MSA, controlling for student grade. The third and final model looked at the association between school structure and math MSA, controlling for student grade with the addition of school type as a second controlling variable.

Model 1 showed the odds ratio for stand-alone middle schools to be .634 (95% CI: 0.578; 0.695), and for middle-high schools to be .553 (95% CI: 0.512; 0.597), which is interpreted as students attending stand-alone middle schools had 37% lower odds than elementary-middle schools of scoring proficient or advanced on the math MSA, and

middle-high schools had 45% lower odds than elementary-middle schools of scoring proficient or advanced on the math MSA.

Model 2 showed the odds ratio for grade 7 to be .549 (95% CI: 0.508; 0.593), and for grade 8 to be .356 (95% CI: 0.329; 0.385), thus seventh graders had 45% lower odds than sixth graders of scoring proficient or advanced on the math MSA, and eight graders had 64% lower odds of scoring proficient or advanced on the math MSA.

Model 3 showed the odds ratio for charter schools to be 1.264 or 26% higher odds than traditional schools of scoring proficient or advanced on the math MSA. The odds ratio for transformational schools was found to be .691 (95% CI: 0.606; 0.788) or 31% lower odds than traditional schools of scoring proficient or advanced on the math MSA. Chi-square for model 1 was 22305.931, $df=1$, and p value was less than .001. Chi-square for model 2 was 21613.861, $df=1$, and p value was less than .001. For model 3, chi-square was 21456.852, $df=7$, and p was less than .001 (see Table 9).

Table 9

Multiple Logistic Regression of Maryland State Assessment (MSA) MATH by School Structure

	No.	%	Model 1		Model 2		Model 3				
			O.R.	95% CI	O.R.	95% CI	O.R.	95% CI			
			Prof/Adv	LL	UL	LL	UL	LL	UL		
School Structure											
Elementary-Middle (Ref)	10507	70.4	1.000	---	---	1.000	---	---	1.000	---	---
Stand-alone Middle	2207	11.8	.634	.578	.695	.636	.579	.699	.622	.565	.684
Middle-High	3590	17.8	.553	.512	.597	.542	.501	.586	.404	.362	.451
Grade											
Grade 6 (Ref)	5595	42.9				1.000	---	---	1.000	---	---
Grade 7	5508	32.7				.549	.508	.593	.548	.507	.592
Grade 8	5201	24.5				.356	.329	.385	.356	.329	.386
School Type											
Traditional (Ref)	11403	69.5							1.000	---	---
Charter	2742	19.3							1.264	1.111	1.438
Transformational	2159	11.1							.691	.606	.788
Model Chi-Square (df), p value			22305.931 (1), $p<.001$			21613.861(1), $p<.001$			21456.852 (7), $p<.001$		

Finally, analysis of variance was conducted to examine the interaction between school type and structure. The mean score and standard deviation were determined for each of the five climate factors by school type and structure together in eight different interactions: traditional-elementary/middle, traditional-stand alone middle, traditional-middle/high, charter-elementary/middle, charter-stand alone middle, charter-middle/high, transformational-stand alone middle, transformational-middle/high. The interaction between transformational-elementary/middle was not examined because no schools of this type and structure existed in the study (see Table 10).

Table 10

Interaction between School Type and School Structure on Climate Perception

School Type and Structure Together		Safeness (Factor 1)	Connectedness w/Schools (Factor 2)	Regard for Teachers (Factor 3)	Values Education (Factor 4)	Communication (Factor 5)
.00 Traditional-Elem/Middle	<i>N</i>	7157	7163	7162	7133	7130
	Mean	2.7098	2.6735	2.9974	3.5392	2.8998
	<i>SD</i>	.782	.561	.557	.571	.595
1.00 Traditional-Stand Alone Middle	<i>N</i>	985	988	988	977	972
	Mean	2.6076	2.6576	2.9724	3.4295	2.8973
	<i>SD</i>	.846	.594	.610	.660	.651
2.00 Traditional-Middle/High	<i>N</i>	414	415	415	411	413
	Mean	2.5971	2.5741	3.0154	3.5369	2.8576
	<i>SD</i>	.882	.624	.624	.658	.702
3.00 Charter-Elem/Middle	<i>N</i>	1245	1245	1245	1240	1240
	Mean	2.9334	2.8432	3.0731	3.5874	3.0482
	<i>SD</i>	.807	.557	.574	.569	.579
4.00 Charter-Stand Alone Middle	<i>N</i>	168	168	168	167	167
	Mean	3.0404	3.0277	3.2891	3.6592	3.2745
	<i>SD</i>	.836	.495	.493	.513	.519
5.00 Charter-Middle/High	<i>N</i>	869	869	869	865	865
	Mean	2.9351	2.7639	3.0544	3.5683	3.0109
	<i>SD</i>	.809	.634	.545	.534	.580
7.00 Transformational Stand Alone Middle	<i>N</i>	201	201	201	201	200
	Mean	3.0320	2.9149	3.2263	3.5883	3.1547
	<i>SD</i>	.705	.501	.488	.484	.534
8.00 Transformational Middle/High	<i>N</i>	1208	1208	1207	1203	1200
	Mean	2.6218	2.6186	2.9191	3.5189	2.8409
	<i>SD</i>	.812	.601	.623	.643	.663
Total	<i>N</i>	12247	12257	12255	12197	12187
	Mean	2.7376	2.6952	3.0078	3.5378	2.9247
	<i>SD</i>	.806	.571	.572	.586	.611

CHAPTER V: SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

This chapter provides a discussion of the findings in this study, of school type and school structure as predictors of school climate and student achievement, controlling for grade and gender. It also offers recommendations for practice, policy, and future research.

Findings

Research Question 1

Investigating the answer to the question, to what extent student perception of school climate among middle school students vary by school type, there were significant findings; the first one being that middle school students who attended transformational schools had the lowest perceptions of school climate when compared to middle school students in both charter schools and traditional schools. Students in transformational schools felt less safe, less connected with their school, less positive about the value of education, and less positive about teacher-parent and teacher-student communication than students in the other two types of schools.

The findings also showed that middle school students who attended charter schools had more positive perceptions of school climate than students who attended both transformational and traditional schools. Specifically, middle school students in charter schools felt safer, more connected with their school, had higher regard for their teachers,

had more positive attitudes about the value of education, and felt better about communication between teacher-parent and teacher-student.

Research Question 2

Question 2, to what extent student perception of school climate among middle school students vary by school structure, looked at the different grade configurations by which schools are structured, specifically those that serve students in grades 6, 7, and 8. Looking first at the comparison between middle-high schools and elementary-middle schools, the findings showed that students in grades 6, 7, and 8 who attended middle-high schools felt less connected to their school, had lower regard for their teachers, and felt worse about teacher-parent-student communications than students in the same grades in elementary-middle schools. Feelings of safeness and educational values were not significant for middle-high schools. However, looking at the comparison between elementary-middle schools and stand-alone middle schools, the findings were mixed among the five school climate factors. Sixth through eighth grade students in stand-alone middle schools felt more connected to their schools, had higher regard for their teachers, and felt better about communication, but placed a lower value on education than the same grade students in elementary-middle schools. Safeness was not significant for stand-alone middle schools.

Research Question 3

The third question, to what extent academic performance among middle school students vary by school type, was investigated using multiple logistic regression analysis to measure the odds of achieving a passing score (proficient or advanced) on the reading and math MSA by school type, while any influence of grade and school structure were

controlled.

For reading, the findings showed that sixth, seventh, and eighth grade students who attended charter schools had almost twice the odds of passing the MSA than students who attended traditional schools. Students who attended transformational schools had 25% higher odds of passing than students who attended traditional schools. The findings also showed that both seventh graders and eighth graders had lower odds of passing the reading MSA than sixth graders, and both students attending stand-alone middle schools and students attending middle-high schools had approximately 40% lower odds of passing than students attending elementary-middle schools.

Findings for math were similar. Sixth, seventh, and eighth grade students who attended charter schools had almost two times the odds of passing the math MSA than students who attended traditional schools, and students who attended transformational schools had 38% higher odds of passing than traditional schools. Sixth graders had a better chance of passing with the odds of passing for seventh graders, 45% lower, and for eighth graders, 65% lower than sixth graders. When adding school structure as a second controlling variable, students attending stand-alone middle schools had 38% lower odds of passing the math MSA and students attending middle-high schools had 60% lower odds of passing than students attending elementary-middle schools.

Research Question 4

The fourth and final question, to what extent academic performance among middle school students vary by school structure, was also investigated using multiple logistic regression analysis to measure the odds of achieving a passing score (proficient or advanced) on the reading and the math MSA by school structure, while grade and

school type were controlled.

For reading, the results showed that sixth, seventh, and eighth grade students attending elementary-middle schools had better odds of achieving proficient or advanced scores. Those same grade students attending stand-alone middle schools had 40% lower odds of passing and those attending middle-high schools had 30% lower odds of passing than students attending elementary-middle schools.

For math, students attending elementary-middle schools had better odds of achieving a proficient or advanced score. Sixth, seventh, and eighth grade students attending stand-alone middle schools had 30% lower odds than those attending elementary-middle schools, and students in the sixth, seventh, and eighth grades attending middle-high schools had significantly lower odds, 45%, of achieving a proficient or advanced score in math than students attending elementary-middle schools.

Grade and Gender

Interestingly, when controlling for grade, sixth graders had higher odds of performing better in both reading and math on state tests, and had better perceptions of school climate for feelings of connectedness with school and regard for teachers, than students in seventh grade, and this trend increased even more for students in eighth grade.

When controlling for gender, gender was not significant for academic achievement, but for perceptions of school climate, there were gender differences. Females felt less connected to school, had lower regard for teachers and felt less positive about communications than males, but held education higher in value than males.

Conclusions

A feeling of safeness promotes trust. The research of Goddard, Tschannen-Moran, and Hoy (2001) showed that trust develops the kind of strong relationships that students, particularly disadvantaged students, need to learn. Bourdieu (as cited in Portes, 1998) pointed out the benefits to an individual that come from being part of a group, describe feelings of connectedness, and he emphasized that organizations need to be deliberate in developing social capital because it did not happen automatically when individuals are positioned together as part of a group. The findings of this study seem to indicate, that transformational schools have not been successful at developing social capital, and that charter schools have been more deliberate in this area. The lack of the existence of higher values placed on education and better communication with teachers, parents, and students in transformational schools, as well as these being significant factors in charter schools when compared to traditional schools, brought the present research into line with the academic optimism research (Hoy et al., 2006) that supported the school characteristics of academic emphasis, collective efficacy, and faculty trust in parents and students, combined to form a construct that significantly impacts student achievement regardless of socioeconomic status, urbanicity, and previous student achievement. It will be discussed later in this chapter that lower student achievement and lower perceptions of school climate were found, not in the traditional schools, but in the transformational schools, and that higher student achievement was found consistently at charter schools, as well as better perceptions of school climate. This would support the findings of not only Hoy, et. al. (2006, 2007), but also those of Edmonds (1982), that

showed school characteristics that can be controlled, such as school climate factors, had a positive relationship with student achievement.

The finding of this study that students in charter schools felt better about school climate factors as compared to students in traditional schools supported the findings of other research conducted in New York (Hoxby, 2009) and Tennessee (Bol, McDonald, & Ross, 2006), as well as research conducted in several inner-city schools serving mostly African American students, utilizing a matched treatment-controlled student analytical design (McDonald et al., 2007). In all of these studies the findings were aligned: Students in charter schools had greater positive perceptions of school climate as compared to students in traditional schools.

The findings of the present study showed that in regards to school type and student achievement, students who attended charter schools in the sixth, seventh, and eighth grades had higher odds of passing state tests in both reading and math, than students who attended transformational or traditional schools. These findings support and add to the literature on charter schools. Interestingly, transformational schools had the lowest percentage of students in grades 6, 7, and 8 that scored proficient or advanced on the MSA in both math and reading when compared with the same grades students in charter schools or traditional schools.

With regards to school structure, the findings showed that sixth, seventh, and eighth graders who attended elementary-middle schools, that is, schools with the grade configuration of K (or PK) to eighth grade, had higher odds of passing state tests in both reading and math. These findings are aligned with the results found in a previous study conducted in Baltimore on school structure in 2002 (Connolly, Russo, & Yakimowski-

Srebnick, 2002).

When adding school grade to the model, the findings showed that in both reading and math, sixth graders had higher odds of passing state tests than both seventh and eighth graders. These findings support the findings of Fager and Paglin (1997) that sixth graders in K-8 and K-12 schools outperformed students in stand-alone middle schools or junior high schools.

Study Strengths and Limitations

Strengths

The sampling size represents over 75% of the students on roll in the district in the grades examined. This strengthens the evidence that there is a relationship between school type and structure and perceived school climate, as well as student academic achievement.

Limitations

Although this study used district-wide data from a large urban school district, there were limitations that should be considered when interpreting the data.

The desire of the district to protect the anonymity of students when taking the climate survey, while valid, does limit the uses of this data. This made it impossible to link survey responses with test results. In addition, the district does not have in place the same level of accountability for survey respondents as it does for test takers, therefore creating a large discrepancy in the number of test results and survey responses. Again, this made data linkage impossible.

Variables, such as SES, race, and ethnicity were not available in the data sets

obtained from the district, and the lack of these independent variables limited the analyses that could be conducted.

The use of secondary data causes limitations. The data limitations must be emphasized. Mindful consideration of these limitations should be given when drawing conclusions from the data.

Recommendations for Practice

The reaction to these findings, in terms of student achievement for students in middle grades, is that the best school structure for these students is an elementary-middle school setting and the best type of school for these students is a charter school. However, it is not practical nor possible for practitioners to place all students in these kinds of schools, therefore practitioners should take a deeper look at the characteristics of elementary-middle schools and charter schools to determine what they do differently that influences student academic success in these educational settings, and could be replicated in their existing school structure and existing school type.

Charter school students also had higher positive perceptions of the climate in their schools in this study and in the literature, so the question for practitioners is what are charter schools doing to get these results?

Also noteworthy is the finding that transformational schools did not fare well in student perception of school climate and student achievement when compared to the other school types. Since transformational schools were designed to bring about high quality choices and better results for students, these findings should be quite troubling for practitioners.

In this study, there were five factors identified as forming a construct. There is

alignment with the school climate factors identified as a construct in this research, and the factors identified in the academic optimism research, academic emphasis, trust in parents and students, and teacher efficacy (Hoy et al., 2006). Academic emphasis is related to valuing education, and trust in parents and students, is related to teacher-parent-student communication. Since the factors in this study were drawn from student surveys rather than teacher surveys, it would not be possible to relate teacher efficacy to factors derived from student responses. However, it is reasonable to conclude that feelings of efficacy are related to feelings of connectedness and regard, which are the underlying feelings that form the basis for the other factors in the construct in this study: connectedness to school and regard for teachers. Consequently, practitioners should pay attention to these school climate factors and focus on fostering these characteristics in schools.

With regards to grade, more support should be provided for seventh and eighth graders as they move up in grade from sixth to seventh to eighth grade to prevent a decline in performance. Perhaps an advisory program, or something similar, which is usually found in high schools, should be implemented as early as the seventh grade.

Recommendations for Policy

For practitioners, students in the middle grades (sixth, seventh, eighth) are frequently a topic of discussion and a cause of frustration due to the unique challenges they pose with regards to attitudes about school and performance. Many educators have questioned what happens to children when they reach the middle grades. This study sought to find solutions that can be controlled, such as school type and school structure, to achieve better outcomes for students in these grades. Since variables like race and

poverty cannot be controlled, policy makers should look at school type and school structure as ways to address the unique challenges of students in these grades.

Policy makers should pay attention to the finding that achievement decreased after sixth grade, decreased in seventh grade, and continued to decrease in eighth grade, and the finding that students' feelings of connectedness to school, and regard for teachers also lessened from sixth grade to seventh grade, and even more so in eighth grade. Programs that provide additional support for students in seventh and eighth grade are needed.

The findings in this study did not support the creation of transformational schools as a high quality option for students in grades 6, 7, and 8. The review of the literature also did not reveal research that supported positive outcomes for transformational schools. Policy makers should thoughtfully evaluate the creation of transformational schools and question whether there is research to support the opening of more of these types of schools.

Charter schools should also have the attention of policy makers. The authorization of charter schools should be a serious consideration for state and local policy makers, as an option other than traditional public schools, especially where there is concern about the effectiveness of schools. Charter operators that convert or take over already existing schools that are failing, to turn them around, should especially be given thoughtful consideration.

Recommendations for Research

By definition, there is no mold for charter schools; they are all different. Each school has been given the autonomy to design their own programs. It is difficult to

control for the many variables that exist with charter schools. There are many differences in charter school approaches and designs. Each has a singular, unique focus and designs its own approach to student achievement. In addition, states have autonomy over how they fund, authorize, and regulate charter schools, and there is a wide array of models among states. Nevertheless, more research is needed.

If charter schools are out-performing traditional schools, then future research should seek to identify what is consistent about all charter schools that could be attributed to their success, both in academic performance and school climate. A holistic approach should be taken by future research to examine not only academic performance, but also the views of students, parents, and teachers, and funding and policy of charter schools.

Research on transformational schools is needed. There currently does not exist a body of research that either supports or disputes outcomes for transformational schools. The findings from this study do not reveal positive results for transformational schools, and this reflects the need for more research.

The research on school structure as a predictor of school climate was inconclusive. This may be due to the many different variables that exist in examining school structure, such as school size, school organization, and the effects of transition (Franklin & Glaskow, 1996), therefore more research is needed. Research should be conducted on school structure so that decisions regarding grade configurations in schools are made based on research rather than reasons of convenience. Research that examines different variables would add to the current body of research.

The findings of the present study showed that the elementary-middle school structure had better odds of high performance in reading and math for sixth, seventh, and

eighth graders, therefore future research should examine the variables that influence this performance, in comparison to other school structures.

There were indications in the present research study that grade and gender are influenced by school structure; therefore, more research should be conducted that further examines the impact of school structure on grade and gender, particularly for male and female students in the middle grades, where so many different structures appear to exist. Dr. Gregory Thornton, recently appointed CEO of Baltimore City Public Schools, was quoted as referring to the middle grades as, “the range of the strange” (Thornton, personal communication, February 18, 2014) because of the many challenges faced in educating adolescents in these grades. These are the grades where a change in school structure is most likely to occur. Educators need research on which to base these decisions regarding school structure.

Finally, research that could link individual student achievement with individual student perceptions of school climate would provide insight on the impact of school climate on student achievement. In Baltimore, there was a policy of protecting anonymity when collecting school climate data and while this policy may have value, it did inhibit the ability to conduct research that required the linking of student climate survey data with student achievement data: research that could ultimately provide valuable information. This type of research could give evidence of characteristics that can be controlled, which results in high academic performance for all children, regardless of any variables that may be of influence over them.

Conclusion

In conclusion, the findings of the present research study provide evidence that school characteristics that can be controlled matter, and can influence school climate and student achievement. Particularly, charter schools were found to produce positive outcomes for students in sixth through eighth grades in Baltimore, while transformational schools did not. The former CEO of Baltimore City Public Schools, Dr. Andres A. Alonso, instituted many major reforms during his tenure as superintendent, and under his leadership from 2006-2013, the district made significant gains. Among his reform efforts were increasing the options for parents by crafting a district portfolio with an increased number of school types. Dr. Alonso frequently stated, “All of my decisions must be based on what is best for kids.” (Alonso, personal communication, May 23, 2011). Optimistically, more education leaders will have the wisdom and humility to make bold decisions based on what is best for kids, as determined, of course, from research.

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APPENDIX

How much do you agree or disagree with the following statements about your school? Mark one response in each row.

	Strongly Disagree	Disagree	Agree	Strongly Agree
32. Teachers encourage me to work hard in my classes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. Teachers believe all students can do well if they try	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Teachers are well organized and prepared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. It is important to come to school every day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. It is important to come to class prepared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. It is important to try hard in school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. It is important to finish high school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. The school building is clean	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. Sometimes it is too hot or too cold at my school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. The bathrooms in my school are clean	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. There are a lot of broken windows, doors, or desks at my school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. Students have enough school supplies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. There is someone at school who can give me extra academic help when I need it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. There is someone at my school who I can talk to about personal problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. My school has programs to deal with violence and conflicts between students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. My parent or guardian feels welcome at this school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. My teacher talks to my parent or guardian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. When I do something good at school, my parent or guardian hears about it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. When I do something bad at school, my parent or guardian hears about it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. The school involves parents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. Overall, I am satisfied with my school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. I keep working at schoolwork that is hard until I figure it out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54. If my homework is hard, I keep working at it until I figure it out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. When I'm taught something that I don't understand, I spend time going over it until I get it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Definitely Cannot	Probably Cannot	Unsure	Probably Can	Definitely Can
56. I can finish my homework every day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57. I can pass all subjects at school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

58. How do you usually get to school? Mark one response.

- Walk School bus MTA bus Car

59. Did you attend this school last year?

- Yes No

60. What grade are you in this year? Mark one response.

- 6 7 8 9 10 11 12

61. What is your sex?

- Male Female