Student Academic Engagement and the Academic Achievement Gap between Black and

White Middle School Students: Does Engagement Increase Student Achievement?

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Renee Sbrocco

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Advisor: Dr. Karen Seashore

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- Jean (Iafigliola) Grassi

- Mary (Iannicicco) Sbrocco

- Phyllis (Iafigliola) Baum

Abstract

Too many students leave American high schools unable to read, write, or even do simple math. This academic failure falls disproportionately on students of color. In addition, student academic disengagement is ubiquitous in American schools. In 2004, The National Research Council and Institute of Medicine found that large numbers of American students are not fully engaged intellectually in the teaching and learning enterprise (Marks, 2000). The effects of student disengagement are most severe among minority students, a group which scores lower in achievement and higher in drop-out rates (Voelkl, 1997). Given the disparity between White and Black students in academic achievement and academic engagement, the purpose of this study is to examine the relationship between academic engagement and the achievement of eighth grade students in three suburban middle schools. The study utilizes a post-positivism philosophy given the quantitative methods used to analyze perceived levels of academic engagement of eighth-grade students. The engagement data was then analyzed compared to student academic achievement. In conclusion, the study showed that more engaged students demonstrated higher academic achievement. In addition, the effects of engagement have the ability to reduce the effects of race on academic achievement.

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Chapter One

"Knowledge will forever govern ignorance; and a people who mean to be their own

governors must arm themselves with the power which knowledge gives."

James Madison, 1822.

Problem Statement

American schools were created to educate people so that they could participate in

our democratic-republic society. The power granted to the people is evident by the words

of our founding documents; for example, the Constitution states "We the People of the

United States." The Constitution does not mandate the president, the courts, or even

congress, to create a *more perfect Union,* but rather that *We the People* – the citizens –

will. This mandate or responsibility can only come to fruition through the proper

education of the citizenry. Via education students can learn to become, as Madison states,

"their own governors." In 2009, Madison's words are still fresh. Schools are poised to

impart the knowledge, and therefore the power, that students need to participate in our

democracy (Hartoonian, 1989). Fortunately, today's *We the People* encompasses more of

populace than it did in 1822. In 1822 citizenship was only granted to white, land-owning

men who were at least 21years-old. Because *We the People* now includes everyone, the

necessity of education is even more crucial for giving power to citizens.

America's public schools have come a long way since the first *New England*

Primer and Horace Mann's common school movement. The push to create a public

school system in which all students truly have an equal opportunity to gain the

knowledge and power needed to participate in this democracy came with the watershed case of *Brown v. Board of Education* (1954). In this case the United States Supreme Court mandated an end to racial segregation in public schools. Since *Brown*, public schools have attempted to provide an equitable education to both black and white students. Unfortunately, an achievement gap persists between white and black students. Thernstrom and Thernstrom (2003) found that by the time the average black student is of age to graduate from high school, he or she is four years behind the average white student in academic achievement. In addition, black high school seniors score lower than white eighth graders in math, reading, U.S. history, and geography (Thernstrom & Thernstrom, 2003). The achievement gap between black and white students is a detriment to the American dream. The achievement gap prevents *We the People* from granting all citizens the ability to create a *more perfect union.*

Purpose of the Study

The study had two main purposes:

1. To determine the relationship between students' engagement in school and their academic achievement.

2. To determine if engagement can moderate the association between race and student academic achievement.

To accomplish this goal, all eighth-grade students in Bloomfield Public Schools' three middle schools were asked to take a survey assessing engagement. The data were then analyzed together with the students' grade point averages, Minnesota

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Comprehensive Assessment II (MCA) test results, and the Computerized Achievement

Levels Tests (CALT) results.

Research Questions

The study has five specific research questions. The questions and related sub

questions are as follows:

1. What is student academic engagement?

    a. What forms of student academic engagement emerge?

    b. What are the relationships between these types of student academic

       engagement?

    c. How does student academic engagement emerge by school, by

       demographic indicators, and overall?

2. What is the relationship between student academic engagement and student

   academic achievement?

    a. What is the relationship between student academic engagement and

       performance on the Reading and Math portions of the MCA II?

    b. What is the relationship between student academic engagement and

       performance on the CALT Math and Reading assessments?

    c. What is the relationship between student academic engagement and GPA?

3. What is the relationship between white and black students' academic engagement and academic achievement?

    a. What is the relationship between student academic engagement and MCA II Math and Reading?

    b. What is the relationship between student academic engagement and CALT Math and Reading?

    c. What is the relationship between student academic engagement and GPA?

4. What is the relationship between students' academic engagement, developmentally appropriate schooling, and teacher support?

    a. What is the relationship between student academic engagement and teacher support?

    b. What is the relationship between student academic engagement and developmentally appropriate schooling?

    c. What were the differences between black and white students' experience of both teacher support and developmentally appropriate schooling?

5. To what degree can student academic engagement decrease or increase the effects of ethnicity on student academic achievement?

Context for the Study

   The following background section is divided into three parts. The first section

describes the academic achievement gap between white and black students. The second

section discusses the prevalence of academic disengagement in students. The final section

examines how middle-level students have been shown to require a different and more

developmentally-appropriate educational model.

   The Academic Achievement Gap.

In the United States, the difference in academic achievement between white students and

students of color is often referred to as "the gap." It is defined as "the persistent presence

of different average achievement levels for racial or ethnic groups" (J. Astor, personal

communication, May 23, 2007), specifically for this study, the difference between white

and black students. By the time the average black student is 18, he or she is four years

behind the average white student in academic achievement. Many black students leave

American high schools unable to read, write, or even do simple math (Thernstrom &

Thernstrom, 2003). Black students are far more likely to lack in basic skills than their

white counterparts. Jencks and Phillips (1998) state that the scores of black students on

standardized tests are 75% to 85% below those of Whites. This is disconcerting for two

reasons. First, the population of ethnic minorities has been increasing and is expected to

comprise 45% to 50% of the United States population by 2042 (U.S. Census Bureau,

2000). Second, Jencks and Phillips (1998) posit that reducing the achievement gap is

necessary for substantially reducing racial inequality in educational attainment and earnings.

Many theorists have attempted to explain achievement gap between white and black students. Historically, the gap was attributed to segregation and attempts to desegregate. The U.S. Supreme Court issued a decision in the 1896 *Plessy v. Ferguson* case, claiming that "separate but equal" education was constitutional. Based on this ruling, schools could legally be segregated based on race. In 1954 *Brown v. Board of Education* reversed this decision. The *Brown* case required all public schools to be desegregated "with all deliberate speed." In addition to desegregation, the United States government examined unequal civil rights and poverty as possible reasons for the achievement gap (States' Impact on Federal Education Policy [SIFEP], 2006). Segregation, civil rights, and poverty have historically been attributed to the achievement gap between black and white students.

In addition to politicians' attempts to reduce the achievement gap by enacting governmental policies, social scientists have developed theories to explain the gap. Most of these theories fall into the following three areas: test bias, heredity and home environment, and PK-12 schooling (Jencks & Phillips, 1998, Hedges & Nowell, 1999). Each of these concepts will be further explained in the following section.

Jencks (1998) identifies both labeling bias and selection bias as two possible sources of racial biases in testing. Labeling bias occurs when a test claims to measure something that is an assumed innate trait – intelligence, for example – but the test may

not be measuring the actual intelligence of the taker. Selection bias occurs when schools use a test to select students for entrance into something, like college, honors classes, or job opportunities. Selection bias is embedded in the use and make-up of the test. Both types of test bias are critically important because more tests are administered than ever before, and with higher stakes. In addition to academic consequences of test bias, there are social implications for black students, starting with achievement in K-12 schooling, continuing with college admissions, and eventually job and lifestyle opportunities.

Due to popular publications like *The Bell Curve* (Herrnstein & Murray, 1994) genetics has also been used to explain the achievement gap. *The Bell Curve* implies that Blacks are genetically intellectually inferior to Whites, and this is why there is a gap in achievement. After a review of the evidence, researchers have shown there is almost no support for a genetic explanation of the intelligence quotient (IQ) difference between Blacks and Whites (Nisbett, 1998). Conversely, parental involvement has been shown to be positively related to students' academic performance (Epstein, 1995; Jeynes, 2003) and may reduce the effects of poverty, parents' educational attainment, and race on achievement (Eamon, 2002, Schreiber, 2002). In addition, family income has only a modest effect on the gap (Duncan & Brooks-Gunn, 1997; Mayer, 1997), while parenting practices are an important predictor of children's test performance (Berlin et al., 1995; Bradley et al., 1994). It is evident from the research that improving the home environments of black students, who are more likely to lack parental support, may help

narrow the achievement gap between white and black students (Berlin et al., 1995; Bradley et al., 1994).

Finally, research has shown that schools' practices can contribute to or reduce the achievement gap between black and white students. Many education researchers believe that black children start elementary school with fewer academic skills than their white peers, and that this gap continues throughout school (Phillips, Crouse, & Ralph, 1998). In contrast, many parents, educational reformers, and sociologists think that black and white children start school with similar skills and that the institution of school and teachers creates the achievement gap (Phillips, Crouse, & Ralph, 1998). Despite these conflicting beliefs, research shows that about half of the gap in both reading and math at the end of K-12 schooling can be attributed to the fact that black students start school with fewer academic skills than white students. The other half, then, can be attributed to the fact that Blacks learn less in school than Whites with similar initial academic skills (Phillips, Crouse, & Ralph, 1998). The idea that black students learn less in school compared to Whites means that currently, schools are perpetuating the gap rather then closing it.

The gap in academic achievement between black and white students is prevalent in American schools. This gap has produced an inherent inequity of education between white and black citizens. This gap can be traced through the historical and political events of American history. In addition, this gap can be explained by test bias and family environmental backgrounds. Furthermore, the achievement gap between white and black

students can be attributed to the education experience of students. In the next section the concept of academic engagement is examined as a possible antidote to the achievement gap between Blacks and Whites.

Academic Engagement.

The Prevalence of Disengagement.

Student academic disengagement is ubiquitous in American schools. The National Research Council and Institute of Medicine (2004) has found that large numbers of American students are not fully engaged intellectually in the teaching and learning enterprise (Marks, 2000). A high school survey of student engagement conducted by Indiana University and given to more than 300,000 students since 2004 shows that most students perceive that their school experience does not contribute substantially to personal gains in solving real world problems, developing personal values, understanding themselves or making their community a better place – all activities that are highly associated with democratic schooling (High School Survey on Student Engagement (HSSSE, 2005).

This is troubling, as low levels of academic engagement has negative effects, one being a lack of academic achievement (Voelkl, 1997, Fredricks, Blumenfeld, & Paris, 2004). Dropping out of school is the most severe effect and is the culmination of many forms of disengagement - absenteeism, poor overall attitude about school, and greater number of discipline referrals (Finn, 1993). These effects of student disengagement are most severe among minority students, whose group scores are lower in achievement and

higher in drop-out rates (Voelkl, 1997). Due to this trend, the concept of academic engagement has received increasing attention. Academic engagement is seen as a possible antidote to declining student academic motivation and achievement (Fredricks, Blumenfeld, & Paris, 2004).

The concept of academic engagement, and its link to student achievement may provide a new perspective from which to examine the achievement gap. Studies of engagement can be especially hopeful because engagement is responsive to variation in environment (Connell, 1990; Finn & Rock, 1997; Fredricks, Blumenfeld, and Paris, 2004). Teacher behaviors, a school's climate, and the elimination of racist beliefs can positively impact students' academic engagement (Finn, 1993; Marks, 2000, Ogbu, 2003). By examining practices through the lens of engagement, teachers and schools may be able to narrow the achievement gap. The next section identifies three types of academic engagement, behavioral, emotional, and cognitive. Research shows that these three types of engagement have positive effects on student academic achievement (Fredricks, Blumenfeld, and Paris, 2004).

Behavioral engagement.

Behavioral engagement is usually defined as active participation in both academic and nonacademic school activities. Behavioral academic engagement is linked to overall positive student conduct – following the rules in the classroom and a lack of disruptive school behavior (Finn, 1993; Finn, Pannozzo, & Voelkl, 1995; Finn & Rock, 1997). In addition, displaying academic behaviors, such as making an effort, showing persistence,

asking questions, and maintaining concentration, are also indicators of behavioral

engagement (Finn et al., 1995; Skinner & Belmont, 1993).

Emotional engagement.

Emotional engagement, which is similar to behavioral engagement, refers to an

array of student emotions and actions related to schools and classrooms. Students'

affective reactions (boredom, sadness, and anxiety) are a mechanism of emotional

engagement (Connell & Wellborn, 1991, Skinner & Belmont, 1993). Researchers have

also assessed emotional engagement by measuring student reactions to school, and

teachers and have found that students who are more emotionally engaged in school show

higher academic achievement (Lee & Smith, 1995; Stipek, 2002).

Cognitive engagement.

Cognitive engagement research has stressed an overall investment in learning

(Fredricks, Blumenfeld, & Paris, 2004). Students who show an investment in learning

have higher grades and test scores and are less likely to be disruptive, truant, or drop out

(Klem & Connell, 2004). Newmann, Secada, & Wehlage (1995) define engagement in

academic work as a "student's psychological investment in and effort directed toward

learning, understanding, and mastering the knowledge, skills, or crafts that the academic

work is intended to promote" (p. 12). Cognitive engagement has also been characterized

as an investment in learning, wherein students demonstrate behavior that goes beyond

stated expectations and seek academic challenges (Connell & Wellborn, 1991).

Developmentally Appropriate Schooling at the Middle Level.

The Carnegie Council on Adolescent Development is a group comprised of educators, researchers, government officials, and media leaders dedicated to examining the conditions of American 10- to 14- year-olds in an effort to improve their education. Middle-level students are in a period of rapid physical, intellectual, and social change (Carnegie Council on Adolescent Development, 1989). The transition from elementary school to a less supportive middle-school environment has been associated with lower self-esteem, decline in academic self-esteem, and decline in school identification (Jackson & Davis, 2000). Unfortunately, there has been a gross mismatch between the intellectual, emotional, and interpersonal needs of middle-level learners and the organization of middle schools (Carnegie Council on Adolescent Development, 1989). Studies show that middle-level students are not academically engaged enough to develop the skills necessary to make economic and social contributions needed as adults (Jackson & Davis, 2000). Students' lack of engagement hinders their ability to solve complex problems, communicate well with others, and think abstractly (Carnegie Council on Adolescent Development, 1989).

Yair's (2000) research shows the importance of a school environment that is positive, wherein students feel cared about, they are supported in believing that they can succeed, and wherein academic success in an important goal. Student engagement increases in schools that do not set up specific curriculum tracks, but rather have small class sizes, rigorous standards, and a culture of shared decision-making (Marks, 2000;

Fredricks, Blumenfeld, & Paris, 2004). Students who do not identify with the school are often disengaged. Disengagement increases in schools that are bureaucratically organized (Newmann, 1981, cited in Marks, 2000). Schools that allow for meaningless, low-level work and impersonal relationships with peers and teachers produce disengaged students. Research on restructured schools – schools that have less departmentalization, more heterogeneous grouping, and more team-teaching – found consistently positive effects on both engagement and achievement (Lee & Smith, 1993).

This study's purpose is to further the research on student academic engagement by expanding the relationship between engagement and achievement. This study uses data collected from 8th grade students because engagement is a key component of a developmentally-appropriate middle school model. This model calls for a school structure that is engaging for 10- to 14- year-old students. Using a responsive middle-school model to enhance engagement has the possibility of increasing student achievement and, in turn, narrowing the achievement gap between white and black students.

Significance of the study

While there are numerous studies on both the achievement gap and student academic engagement, there are few that examine the relationship between the two. Given the disparity between white and black students in academic achievement, a major goal of this study is to examine the relationship between academic engagement and the academic achievement of 8th grade students in three suburban middle schools. Academic

engagement variables have been defined by a factor analysis of survey data to include

behavioral engagement, emotional engagement, and, in addition, disengagement. Student

scores on the MCA II, a criterion-referenced test, and the CALT, also a criterion-

referenced test, as well as a more subjective GPA score, are used to define student

academic achievement. In addition, a variable of teacher support and the implementation

of developmentally-appropriate tenets are derived from student surveys via factor

analysis. These variables measure students' perceptions of how supportive their teachers

are to them personally and academically, as well as the extent to which their school has

successfully implemented a developmentally-appropriate middle school model (Turning

Points, 2000). These variables are examined in relationship with students' academic

engagement and academic achievement.

The overarching purpose of this study is to examine student academic

engagement as a possible antidote for low student academic achievement, as well as a

way to combat the achievement gap. Academic engagement, in conjunction with the

implementation of developmentally appropriate schooling and adequate teacher support,

represent research-based strategies that hold promise in the effort to decrease the

achievement gap.

Definition of Key Terms

Academic Achievement Gap.

Is defined as "the persistent presence of different average achievement levels for racial or ethnic groups" (J. Astor, personal communication, May 23, 2007), specifically, for this study, the difference in the academic achievement between white and black students.

Behavioral Engagement.

Is defined by overall positive student conduct – following rules in the classroom and a lack of disruptive school behavior (Finn, 1993; Finn, Pannozzo, & Voelkl, 1995; Finn & Rock, 1997). In addition, behavioral engagement implies a student's involvement in learning and academic behaviors in the classroom, such as effort, persistence, asking questions, and concentration (Finn et al., 1995; Skinner & Belmont, 1993).

Emotional Engagement.

Similar to behavioral engagement, emotional engagement refers to an array of student actions and emotions related to their classroom and school. Several emotions indicate a lack of engagement. These include, but are not limited to, boredom, sadness, and anxiety (Connell & Wellborn, 1991; Skinner & Belmont, 1993). These responses can be directed at school, teachers, other students, and/or a combination of all of these

Disengagement.

Students who are emotionally and mentally disengaged from school most often are bored, distracted, mentally troubled, or do not see the value of schooling (National Research Council and Institute of Medicine, [NRCIM], 2003). The ultimate form of disengagement is dropping out of school. Younger students are most often compliant enough to attend school because they do not have the means to avoid it.

Developmentally Appropriate School Model (DASM).

DASM is a list of recommendations that are designed to provide a comprehensive approach to educating young adolescents - particularly students in grades six-eight. The model is made up of the following components:

1) Curriculum grounded in rigorous, public academic standards;

2) Instructional methods designed to prepare all students to achieve higher standards and become lifelong learners;

3) Teachers who are expert at teaching young adolescents;

4) Organized relationships for learning to create a climate of intellectual development and a caring community of shared educational purpose;

5) Govern democratically;

6) Provide a safe and healthy school environment as part of improving academic performance and developing caring and ethical citizens;

7) Involve parents and communities in supporting student learning and healthy development (Jackson & Davis, 2000).

Teacher Support.

Teachers set the climate and are essentially "in-charge" of the classroom. Teacher support is present when teachers maintain positive interpersonal relationships with their students (Jackson & Davis, 2000). Students who perceive their teachers as supportive and caring show higher correlations with participation in learning and on-task behaviors (Battistich, Solomon, Watson, & Schaps, 1997) and less disruptive behavior (Ryan & Patrick, 2001). Marks' (2000) research indicates that when a student feels supported by both teachers and peers in a classroom environment, he reports higher levels of engagement.

Organization of the Study

The following visual is a graphic understanding of this study. It shows a large arrow connecting student academic engagement to student academic achievement with a mix of variables that may influence students' engagement or achievement, or both. This study will analyze how well engagement can predict and decrease the effects of race on student achievement. In addition, this study will determine the degree in which the DASM model and teacher support correlate with both engagement and achievement.

Developmentally
Appropriate
School Model

Middle School
Attended

**Student
Academic
Engagement**

**Student
Academic
Achievement**

Race

Teacher
Support
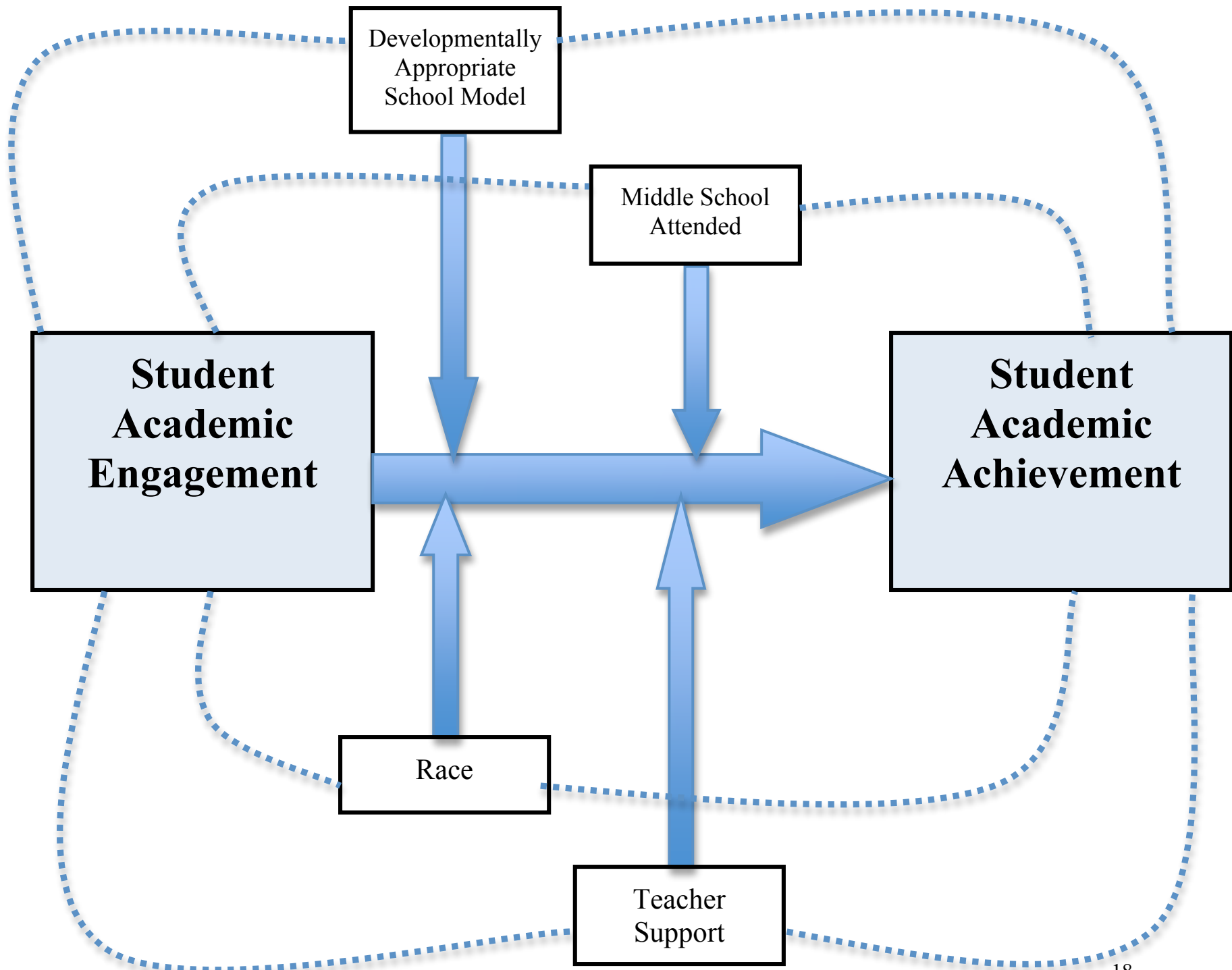
Delimitation and Limitations of the Study

Limitations are conditions that restrict or weaken the generalizability of the study because they are unable to be controlled as part of the study design (Creswell, 2003). One limitation of this study is that perceptions of student participants are relied upon for the collection of data on student academic engagement. The accuracy of student participants is limited by their ability and maturity to understand and accurately report their feelings described in the instrument. This study has a large sample size (n=659), which helps mitigate sampling error and supports greater generalizability. The survey instrument, although developed from previously-tested and reliable sources and research, has never been tested in a study. The survey has never been used to assess student academic engagement, and therefore may be limited in its ability to accurately measure the intended target.

Delimitations identify the populations to which a study's generalizations apply (Creswell, 2003). The delimitation in this study is that it focuses on only three middle schools in the same school district and only 8th grade students; thus the generalizations may be limited to those three schools and students in the eighth grade. Chapter three provides more discussion on the limitations and delimitations of this study.

Thesis Organization

The continuation of this thesis will be organized in the following format: Chapter two will examine the body of literature surrounding the concepts of the academic achievement gap, student academic engagement, developmentally appropriate school models, and teacher support. In addition, Chapter two provides a history of the educational policies related to the equity of education between white and black students

in the United States. Chapter three provides the explanation of the quantitative methodology used in conducting this study. Chapter three also describes the process for selecting the sample, and rationale for conducting a survey. Chapter four summarizes the data collected from the survey of students and the data collected regarding student achievement. Finally, chapter five is a discussion regarding the results of the data analysis. This chapter provides ideas on emerging themes and theories, and it ends with possible implications for K-12 education regarding policies and practices.

Chapter Two

Review of Literature

This chapter reviews current literature on the differences in academic achievement between black and white students. For the purpose of this review the achievement gap will be defined as the persistent presence of different average achievement levels for racial or ethnic groups, specifically the difference between white and black students. This review also examines academic engagement and racism within schools as well as other factors noted by social science research, as possible explanations for the persistence of academic differences between groups of students. In addition, this review also describes policy decisions designed to reduce achievement inequities. The achievement gap is then discussed in the context of student engagement, in which school factors, such as school culture, classroom/teacher structure, and racism may influence or reduce the achievement gap between white and black students.

The Academic Achievement Gap

By the time the average black student is of age to graduate from high school, he or she is four years behind the average white student in academic achievement. Black high school seniors score lower than White eighth graders in math, reading, U.S. history, and Geography (Thernstrom and Thernstrom, 2003). Between 1970 and 1990 there was a narrowing of the test score gap on the National Assessment of Educational Progress (NAEP) tests (Hedges & Nowell, 1999; Jencks & Phillips, 1998; Grissmer, Flanagan, & Williamson, 1998), but since then the gap has widened (Waks, 2005; Hedges & Nowell, 1999). The United States government has reacted by enacting policies and legislation that have affected, both positively and negatively, the academic divide between white and

black students. The following is the history of policy of the United States government's involvement in the achievement gap.

Educational Policy Legacies Contributing to the Achievement Gap.

In 1896 the U.S. Supreme Court issued a decision in the *Plessy v. Ferguson* (1896) case, claiming that "separate but equal" education, which amounted to racial segregation, was constitutional. Based on this ruling, schools could legally be segregated by race. In 1954 the *Brown v. Board of Education* decision reversed *Plessy v. Ferguson* (1896), declaring that racial segregation is "inherently unequal." The *Brown* case required all public schools to be desegregated "with all deliberate speed." Desegregation did not come swiftly or easily, however. For example, in 1957, nine Black students were prevented from attending Little Rock Central High School in Arkansas. Then-governor of the state, Orval Faubus, deployed the National Guard to prevent the nine students from entering the school building. In response, President Eisenhower dispatched federal troops to ensure the safety of the students, who were escorted in to the school (Central High, 2007). In protest of the *Brown* decision and Eisenhower's action, the Little Rock school board cancelled the entire 1959 school year, rather than comply (Central High, 2007). Before 1954 black schools and white schools were unequal in terms of funding, facilities, and resources (Garibaldi, 1997). After 1954, in accordance with the *Brown* decision, the U.S. government enacted legislation to promote educational equity between the races (Garibaldi, 1997). The following is a summary of the education legislation passed by the U.S. Congress in reference to equalizing the education of black and white students.

The 1960s.

During the political upheaval of the 1960s, Lyndon Johnson, through his *Great Society* agenda, placed an educational emphasis on civil rights and poverty (States' Impact on Federal Education Policy [SIFEP], 2006). In 1964, he signed the *Civil Rights Act*, which outlawed segregation in public places, including schools (Civil Rights, 2007). *Title VI* of the act prevents discrimination by government entities, including schools that receive federal funding (Civil Rights, 2007). If a school is found to be in violation of *Title VI,* the school can lose its federal funding (Civil Rights, 2007). Also in 1964, the U.S. Office of Education created the *Compensatory Education for Cultural Deprivation*, which recognized that large urban school districts and small rural areas needed additional financial assistance (Bloom, 1964). Next, in 1965 the *Elementary and Secondary Act* (ESEA) was passed, it allowed for primary and secondary education funding. One of its major components was *Title I*, which gave the United States Department of Education the capability to distribute funding to schools and districts with a high percentage of students living in poverty (ESEA, 1965). In addition *Head Start* was established to assist preschool-aged children living in poverty

The Equality of Educational Opportunity Study (EEOS), also known as the *Coleman Report*, was commissioned by the United States Department of Health, Education, and Welfare in 1966. Its purpose was to determine whether compensatory education or racial integration was the best strategy to equalize educational opportunities for poor minority students (SIFEP, 2006). The conclusion of the *Coleman Report* was that racial integration did little to increase the academic achievement of poor minority students in urban schools (SIFEP, 2006). In addition, the report stated that compensatory

education, whether offered in racially integrated or in racially segregated schools, was unlikely to improve the academic achievement of poor minority students (SIFEP, 2006). Rather, the *Report* found that children's family backgrounds and their school's SES makeup were the best predictors of academic success, rather than the quality of schools they attended (SIFEP, 2006).

The 1970s and 1980s.

The 1970s began with an important public education decision by the United States Supreme Court in *Swann v. Charlotte-Mecklenburg Board of Education* (1971). The court determined that busing students was an appropriate way to solve the problem of racial imbalance among schools. Consequently, in 1974 another busing case came to the United States Supreme Court: *Milliken v. Bradley* (1974). This case exempted suburban school districts from helping to desegregate schools in the inner city.

The 1970s and 1980s saw a shift in public education ideology. Instead of focusing on improving the education of poor and minority students, it shifted toward more accountability for federally funded programs (SIFEP, 2006). During the Nixon administration (1969-1974), the National Assessment of Educational Progress (NAEP) was created. NAEP is a national system of tests designed to assess student achievement throughout the country over time. The goals of NAEP were twofold: the first was to test students, so schools would know how to improve; and second was to assess the effectiveness of federally-funded programs.

Between 1977 and 1980, President Carter struggled with how to provide equal opportunities to diverse groups of students, how to pay for all the new programs that federal courts had demanded, and how to show that these programs worked (SIFEP,

2006). It was during this era that both program evaluation and student assessment became top priority for federal education decisions. This was most evident in the 1980s, during the Reagan presidency; when huge cuts in federal educational categorical aid programs began, and control shifted from the federal government back to state and local governments. These decisions were part of the *Educational Consolidation and Improvement Act* (ECIA), that ultimately cut federal aid to schools by more than one billion dollars (15%) in the 1982-1983 academic year, its first in existence (SIFEP, 2006). In addition to the ECIA, the Reagan administration issued *A Nation at Risk: The Imperative for Educational Reform (1983). A Nation at Risk* (1983) used standardized tests to claim that the nation's public schools were failing, stating that average achievement of high school students on most tests was lower than they it was in 1957. The report lambasted public schools for prioritizing access and equity over achievement and called for a nationwide system of standardized testing controlled by state and local governments. This system "marked a new era in federal educational policy, an era in which equal educational opportunities would be measured not so much in terms of financial aid, special programs, or even racial desegregation but, rather, in terms of standardized tests" (SIFEP, 2006, p. 49). Overall, the 1980s saw a decline in educational funding and a shift in beliefs, from equity of input to more equitable results.

The 1990s and 2000s.

The time period between 1990 and the present day marks yet another shift in educational ideology. A focus on accountability remains, but with an emphasis on standards rather than just standardized tests. *Goals 2000* was a set of educational goals and national standards launched by President George H.W. Bush in 1990 to be attained

by the year 2000. *Goals 2000* was an edict without much funding – each state and school had the capacity within the mandate to author its own standards and goals. This indicated a lack of a national educational agenda. One aspect of *Goals 2000* endured, however, and eventually became part of the *No Child Left Behind Act* (NCLB) of 2001. This was the promise of federal support for improving achievement through standards, assessments, and specific requirements of accountability (SIFEP, 2006). As opposed to *Goals 2000*, however, NCLB mandated that each state have standards and assessments that remain constant for all students, with some accommodations for students with special needs. "Accountability" remains paramount, as NCLB allows for sanctions to be issued against "failing" schools. Schools must meet the following requirements to stay in compliance with NCLB:

1) By the year 2014 all students must be performing at a proficient level in math, reading, and science;

2) Each school, every year, must meet "adequate yearly progress," at the necessary rate to reach 100 percent proficiency by 2014;

3) Annual rate of progress is not only for the aggregate student enrollment per school, district, or state, but also holds within disaggregated groups, based on income, race, gender, English language ability, and special education status (SIFEP, 2006).

One aspect of NCLB that provides a challenge for schools is that if any one group performs below expected annual progress, then the entire school is considered "failing." The passage of NCLB marked one of the first times that schools were to be held responsible for all students' performance.

Summary of Educational Policies.

It's clear that The United States has attempted to address desegregation and equity through educational policies, beginning with the *Brown v. Board of Education* Supreme Court decision, continuing during the 1960s push for civil rights and realization of the *Great Society* agenda. The 1970s and 1980s ushered in a shift in public education ideology from equity and access to accountability for federally funded programs, which remains a focus in 2009. The 1990s and 2000s has been defined by the NCLB legislation, which mandates that *all* students, regardless of race, must be academically proficient by 2014.

Contextual and Social Theories Explaining the Achievement Gap.

The federal government has a limited constitutional role in providing education, but has played a significant part in the attempt to equalize the achievement of black and white students. Unfortunately, the gap between these groups still persists. The literature shows four prominent theories about the sources of the achievement gap. The first is the differences in social class between white and black students. The second theory focuses on standardized test bias. Arguments about heredity and home environment are the third; and finally, the fourth theory is differences in practices in PK-12 schooling (Jencks & Phillips, 1998, Hedges & Nowell, 1999). The following sections address each of these themes in depth.

Differences in Social Class.

Since the 1960s, social class or poverty has been stated as one of the causes of the achievement gap. Poverty is an indicator of lower achievement (NAEP, 2005), but it does not account for the gap that exists between black and white students on standardized tests

(NAEP, 2005). Research continues to show that even when a student's socio-economic status (SES) is controlled, the gap narrows, but still exists between white and black students (National Center for Educational Statistics, 2001, Jencks & Phillips, 1998). At every grade level, black students have lower math and reading scores compared to Whites (National Center for Educational Statistics, 2001), and controlling for parental SES has little to no effect on these results (National Center for Educational Statistics, 2001). The National Assessment of Educational Progress (NAEP) data confirms this finding, as there has consistently been a gap in test scores between white and black students, even when SES and level of parent education are controlled (NAEP, 2000). As social class is not solely responsible for the gap, researchers have examined other explanations, including test bias.

Test Bias.

Test bias has long been considered a possible factor in the achievement gap. Jencks (1998) identifies five possible types of racial bias in testing: 1) labeling bias; 2) content bias; 3) methodological bias; 4) prediction bias; and 5) selection system bias. Labeling bias occurs in tests that claim to measure intelligence or aptitude, which is assumed to be an innate trait; however, psychologists today agree that a student's score on an intelligence or aptitude test depends on both genetic makeup and environmental influences (Jencks, 1998). Snyderman and Rothman (1987), in their survey of 1,020 social scientists with expertise in testing, found that all but eight scientists believed that the black-white test score gap was completely genetic in origin. While this belief is no longer prominent, labeling bias will continue until test names change and researchers no longer claim that testing instruments measure innate intellectual ability. Content bias is

similar to labeling bias, as it occurs when a test claims to measure one capacity, but in essence measures something else. In content bias, test questions favor one group over another.

Methodological bias arises when a test examines a student's mastery of a specific skill or body of knowledge by using a technique that does not accurately measure the ability of the student. The technique is the questionable concern. Black students receive lower test scores on a difficult test when they are told that it measures a specific ability than if no reference is made to ability (Steele & Aronson, 1998). The effect of methodological bias on black-white achievement gap in test scores is unclear, but there is no existing testing method that has sharply reduced the gap (Jencks, 1998).

Using a test to predict a student's future performance is known as prediction bias. Research shows that these tests may not be accurate in actually predicting success. The Scholastic Assessment Test (SAT) is an example of a test used to predict success in college. Predication bias is present if the test used always predicts bias in one direction or the other. Tests like the SAT may not accurately predict success; for example, white undergraduates usually earn higher grades than blacks with the same SAT score (Kane, 1998).

Selection bias may seem similar to prediction bias in that they both deal with future success or opportunity, but they are fundamentally different. Selection bias occurs when three conditions are met: 1) performance depends partly on cognitive skills and partly on other traits; 2) it is easy to measure cognitive skills but hard to measure the other traits that determine performance; and 3) the racial disparity in cognitive skills is larger than the racial disparity in the other, unmeasured traits that influence performance

(Jencks, 1998). Selection bias occurs when schools use a test, rather than actual performance, to select a candidate for admission. Performance-based selection has a better chance to yield more qualified students and a more diverse student population (Jencks, 1998).

In summary, the increased use of standardized tests in American schools to assess student achievement has perpetuated an entrenched imbalance between black and white students. Labeling and selection system bias is one established reason for the achievement gap between black and white student test scores, although researchers have determined that other factors are also at work.

Heredity and Home Environment.

One factor that has been soundly rejected as a reason for the achievement gap is heredity. In the 1880s Sir Francis Galton (1883) and his idea of Eugenics spread throughout the United States and the world. This concept of intellectual genetic differences between the races is an old and dangerous belief. Adolph Hitler believed that the so-called Aryan race was genetically superior to all others. The institution of slavery in the United States used genetics to support the bondage of humans. This legacy continued with the publication of *The Bell Curve* (Herrnstein & Murray, 1994). Herrnstein and Murray (1994) allude that blacks have a lower mean intelligence then whites because of genetic differences. This belief has been debated and its conclusion refuted. After a review of the evidence, research has shown that there is almost no support for genetic explanations of the intelligence quotient (IQ) difference between blacks and whites (Nisbett, 1998).

As Nisbett (1998) argues, it is difficult to logically claim that IQ is based on racial heritability between white and black students because thirty percent of the black American gene pool consists of white (European) genes. If the genetic difference hypothesis supported by Herrnstein and Murray (1994) is correct, then research should show that black students with more white (European) genes should perform better on IQ tests than black students with more black genes (Nisbett, 1998). In addition, Nisbett claims, black students with lighter skin colors or more white features should also have higher IQs. However, none of the above aspects affect IQ scores (Nisbett, 1998). Still, the social perception that ethnicity is a factor in IQ still persists.

While heredity is not a factor in student achievement, parental involvement and home environment have been shown to be significant. Parental involvement, as characterized by encouraging and supporting school activities, has been shown to be positively related to student's academic performance (Epstein, 1992; Jeynes, 2003) and may reduce the effects of poverty, parents' educational attainment, and race on achievement (Eamon, 2002, Schreiber, 2002). Parental involvement has been shown to narrow the achievement gap between black and white students. Studies show that white middle class family involvement has a tendency to be viewed as positive by teachers, whereas black family involvement is viewed as negative and lacking in the education of their children (Gavin & Greenfield, 1998; Fields-Smith, 2005).

Parental involvement is not the only variable contributing to the achievement gap; a student's family background may also contribute to the difference between black and white students' achievements. Using data from the Children of the National Longitudinal Survey of Youth (CNLSY) and National Longitudinal Survey of Youth (NLSY), Phillips,

et. al. (1998) studied the effects of a student's home environment on achievement. Home environment was determined by the mother's educational attainment and quality of schooling, family income, parenting practices, and neighborhood effects. When comparing black and white students' overall, white students are much more likely to live in home environments that support higher student achievement. Similarly, evidence shows that parental education affects children's test scores. When black and white parents have attended the same schools, their children's test scores may be similar (Phillips et al., 1998, Phillips, 1997).

While parental background is significant in terms of achievement, family income has only a modest effect on the gap (Duncan & Brooks-Gunn, 1997; Mayer, 1997). Parenting practices and involvement, however, is an important predictor of children's test performance (Berlin et al., 1995; Bradley et al., 1994).

Summary of Contextual and Social Theories.

There are many factors that contribute to the achievement gap between white and black students. Research clearly shows a link between SES and achievement. When researchers control for SES, the achievement gap decreases but is still significant. Further, standardized tests that are used to predict future success, select students for programs, and categorize students perpetuate the existing gap. Finally, a student's home environment has been shown to influence achievement, and parents' involvement in their children's academics may reduce the effects of poverty. It's clear that parents' education and parenting practices are also positively correlated with student academic achievement. Conversely, research on the link between ethnicity and IQ indicates that the achievement gap cannot be attributed to genetics.

School Theories that Contribute to the Gap.

While home life and background is clearly important, schools can contribute to or reduce the achievement gap between black and white students. Philips, Crouse, & Ralph (1998) have shown that many mainstream educators and psychologists believe that, on average, black children start elementary school with fewer academic skills than their white peers and that this gap continues throughout school. In contrast, many black parents, educational reformers, and sociologists believe that black and white children start school with similar skills and that the institution of school and teachers creates the achievement gap (Phillips, Crouse, & Ralph, 1998). In reality, the truth is that both perceptions hold truth. Research shows that about half of the total black-white gap in both reading and math at the end of K-12 schooling can be attributed to the fact that blacks start school with fewer academic skills than whites. This means, then, that half of the gap can be attributed to the fact that blacks learn less in school than whites do when they begin school with similar academic skills (Phillips, Crouse, & Ralph, 1998). Schools do tend to perpetuate the gap rather than eliminate it.

Research shows that there are several specific ways in which schools contribute to the gap. First, institutional racism manifests itself in schools and in teachers' expectations of students, which then impact student achievement. Second, pre-school experiences and the effects of compensatory preschool have a significant impact in later schooling. Third, the use of tracking in schools has been shown to provide more opportunities for academic achievement to white students. Fourth, poor or inappropriate instruction has a sizable negative effect on students. Finally, class size plays a role, albeit less significant that

other factors, in the academic achievement gap. These factors are fully examined in this section.

Institutional Racism.

Former Secretary of Education Rod Paige stated that eliminating the "soft bigotry of low expectations" would help reduce the achievement gap (U.S. Department of Education, 2003). Teachers are a key piece to the education of a child. Regardless of a school's resources, or the strategies used to place children into schools, or even how schools group children for instruction, students will spend their day in social interaction with their teachers (Ferguson, 1998). This teacher-student relationship is critically important to student success. Research has shown that teachers' low expectations negatively affect students' academic achievements (Ladson-Billings, 1994). The effects of racism and stereotypes permeate schools. Eliminating the effects of racism and stereotypes about the academic ability of black students involves both curricular content and pedagogical implementation (Steele, 1992). Ferguson (2003) and others found that teachers' perceptions, expectations, and behaviors on the whole can perpetuate the black-white achievement gap.

Pre-school education.

As stated previously, policymakers believe that providing preschool for at-risk children can compensate for factors attributed to coming from poor backgrounds. The link between a student's SES and school performance prompted President Johnson's *Great Society* education agenda. The inception of *Head Start* marks the first time the United States government recognized that that an actual gap between white and black students existed. *Head Start*, part of the *Economic Opportunity Act of 1964*, became the

first federal policy aimed at addressing the disparity in achievement. *Head Start* and other compensatory preschool programs aim to raise test scores for at-risk kindergarteners (Ferguson, 1998). Policymakers also hope that the academic boost provided by compensatory preschool may persist into adulthood (Ferguson, 1998). Current research shows that that while providing compensatory preschool does raise test scores in kindergarten, the long-term results are mixed (National Center for Educational Statistics, 2009).

Tracking.

Along with pre-school experiences, academic tracking is another component of schooling that impacts the achievement gap. White students are disproportionately enrolled in more advanced curriculum tracks, and black students are not represented equally in the higher tracks and ability groups (Ferguson, 1998, Oakes, 1990). While student placement in such tracks may or may not be attributed to racial bias (Braddock & Slavin, 1993), schools that place students into curriculum tracks based on teacher recommendations do show a racial bias (Braddock & Slavin, 1993). Schools that track students based on differences in academic proficiencies, on the other hand, show a racial imbalance, but not necessarily a racial bias (Ferguson, 1998). Regardless of the system used to select students, however, the use of tracking places black kids at a disadvantage. When they use tracking, schools either place students in higher tracks based on test scores, where there is a known achievement gap, or based on teacher recommendations that have been shown to reflect racial bias (Braddock & Slavin, 1993).

Weak or inappropriate instruction.

It is difficult to measure what makes one teacher more effective than another, but research shows that the difference between having a good teacher and a bad teacher can be a full grade level of student achievement in one school year (Hanushek, 1992, Ferguson, 1998). One way of measuring teacher effectiveness is to examine the colleges they attended and their scores on standardized tests (Greenwald, Hedges, & Laine, 1996). Ferguson (1998) reviewed evidence from the *Texas Examination of Current Administrators and Teachers* (TECAT) administered in 1986 to all Texas teachers. Overall, black teachers had lower scores than white teachers, and black teachers were more likely to teach in districts with more black students. Further, white teachers who taught in districts with a higher concentration of black students had lower scores compared to other white teachers (Ferguson, 1998). Using the TECAT data, Ferguson shows that teachers' scores on the test were important predictors for their student' mathematics scores. This research should also be critically examined by considering the effects of test bias on the TECAT. To combat this test bias effect, teacher certification testing might be able raise the level of teacher academic achievement, and in turn, raise the achievement of students (Ferguson, 1998).

Some researchers also suggest that students will learn more in a culturally congruent school – wherein a student's home and school environment are similar (Ferguson, 1998). However, the outcomes are mixed when studying whether black students perform better academically with black teachers. Farkas , et. al. (1990) found that black 7th and 8th graders were less-frequently truant when studying with black teachers. Conversely, Ehrenberg, Goldhaber, and Brewer (1995), working with the

National Educational Longitudinal Study (NELS: 88 data), found no statistically significant effects of teacher race on test scores for black and white students. Further, evidence also shows that a teacher's SES and personal test scores may have as much impact on student achievement as their race (Ferguson, 1998).

Class size.

Depending on who conducts the research and the methods used, different results occur for analyzing the effects of class size on student achievement (Greenwald, Hedges, & Laine, 1996; Ferguson, 1998). *Tennessee's Project Star*, an experimental study funded by the state legislature in 1985, found that children in small classes gained more in both reading and math (Word, et. al., 1990). However, this study shows that class size is finicky – gains were made in both reading and math from kindergarten through the end of 1st grade, but the class size advantage shrank between 1st and 3rd grade (Word et al., 1990; Ferguson, 1998). Still, students in the study who experienced small class sizes until the 3rd grade remained at an advantage until 7th grade (Word et al., 1990; Ferguson, 1998). The effect of the *Tennessee Project Star* was larger for black children than for Whites. Black students' gains on math and reading scores on the Stanford Achievement Test were typically twice as great as that of white students (Krueger, 1997). Furthermore, Konstantopoulos (2007) found that reductions in class size did not reduce the achievement gap between low and high achievers.

Summary of School Factors.

Phillips et al. (1998) identified in their research that half of the gap in achievement between black and white students could be attributed to black students learning less in school than white students. This section discussed how school factors,

such as institutional racism, compensatory preschool, tracking, quality of instruction, and class size attribute to the achievement gap between white and black students. In conclusion, there is agreement in the literature that school factors have a modest but significant effect on "the gap."

Student Academic Engagement

Rather than eliminating it, schools contribute to the achievement gap (Phillips, Crouse & Ralph, 1998). Unfortunately, some of the proven methods for narrowing of the gap, like parenting practices, parents' education levels, and parental income, are outside of a school's control. To really look at how schools can eliminate the gap, researchers need to examine factors that are malleable by the school. Student academic engagement may be one quantity that schools and teachers can increase, so that the achievement gap can narrow and eventually be eliminated.

Popular wisdom holds that student academic engagement is decreasing. Hans Zeiger, writing an opinion piece for The Seattle Times (2003) entitled *America's lazy students just don't stack up* says this about today's students, "The decline of the work ethic and character of students is the country's most significant academic plague." As a result of this trend, educators feel the pressure to engage and even entertain their students. In 1999, the Sallie Mae Trust for Education, in their *First Class Teacher Award* asked applicants to write an essay on this prompt: "As we approach the 21st century, one of the challenges facing classroom teachers is holding the attention of students who are more familiar with the glitz and speed of television and video games. How do you help your pupils focus on learning?" In addition to a perceived lack of engagement from students there also seems to be a general decline in students' respect for authority (Fredricks,

Blumenfeld, & Paris, 2004). Generation Y, and the current generation – yet to be named, no longer automatically respect and comply with the behavioral and academic expectations imposed by teachers and school administrators (Modell & Elder, 2002). Engagement becomes more important in a time when authority is less respected. Research suggests that the problems related to student disengagement most severely effect minority students whose group scores are lower in achievement and higher in drop-out rates (Voelkl, 1997). Due to this current state of education, the concept of academic engagement is receiving increased attention. Engagement has been proposed as a possible antidote to declining student academic motivation and achievement (Fredricks, Blumenfeld, & Paris, 2004).

Types of Academic Engagement.

Fredricks, Blumenfeld, and Paris (2004), in their meta-analysis of forty-four research articles related to school engagement, divided the existing research into three major engagement categories: behavioral, emotional, and cognitive. For the purposes of this review, the term engagement will be considered a multidimensional construct. There is a considerable amount of research on each type of engagement, but little has been done to examine engagement as an integrated concept. Researching all three categories allows for a more fruitful examination of the concept of engagement. As Fredricks, Blumenfeld, & Paris (2004) explain, " The fusion of behavior, emotion, and cognition under the idea of engagement is valuable because it may provide a richer characterization of children that is possible in research on single components" (p. 61).

It is also important to consider that engagement is influenced by the interaction between the individual and her environment. As Connell (1990) argues, levels of student

engagement vary depending on the educational setting. In an effort to create an environment conducive to high levels of engagement, schools can create opportunities for students to participate, develop interpersonal relationships and engage in intellectual activities (Fredricks, Blumenfled, and Paris, 2004). In addition, teachers also have the ability to promote or inhibit student engagement. Skinner, Wellborn, & Connell (1990) contend that teachers' involvement plays a role in supporting students' engagement in learning activities. An examination of engagement as a multidimensional construct is needed to explore how attempts to alter the educational context influences academic engagement. Studying engagement in this manner allows for a better understanding of student achievement and the achievement gap. Examining each of the three categories of engagement separately will build the connections between the three and show the similarities and differences between them.

Behavioral engagement.

Behavioral engagement is defined as both academic and nonacademic school behaviors, and is perhaps most significant in this study, in that it has been shown to influence academic achievement. Behavioral engagement can be seen as positive student conduct. For instance, following the rules in the classroom and showing a lack of disruptive school behavior (Finn, 1993; Finn, Pannozzo, & Voelkl, 1995; Finn & Rock, 1997). Another indicator of behavioral engagement is a student's involvement in learning and academic behaviors in the classroom – effort, persistence, asking questions, and concentration (Finn et al., 1995; Skinner & Belmont, 1993).

One of the difficulties in studying behavioral engagement is distinguishing between conduct, persistence, and participation. This is problematic because students

who follow all the rules, but do not meet the academic requirements, are different from students who are disruptive, but persist and complete the work (Fredricks, Blumenfled, and Paris, 2004). Research shows that positive behaviors, such as completing homework and complying with school rules indicate behavioral engagement (Finn et al. 1995). In addition, negative behaviors, such as truancy, fighting, getting in trouble, and interfering with peers' work, indicate behavioral disengagement (Finn, 1993; Finn et al., 1995, Finn & Rock, 1997). Researchers have measured levels of engagement by asking teachers to rate students' level of participation (Finn et al., 1995; Wellborn & Connell, 1987) and to utilize observational techniques (Lee & Anderson, 1993; Newmann, 1992; Stipek, 2002) to assess student behaviors. The majority of the studies related to behavioral engagement used data taken from the National Educational Longitudinal Study (NELS), but some were meta-analysis and theoretical research.

Emotional engagement.

Emotional engagement refers to an array of student actions and emotions related to their classrooms and school. As is the case with behavioral engagement, school identification is a component of emotional engagement, as well (Finn, 1989; Voelkl, 1997). Students' affective reactions, including boredom, sadness, and anxiety are indicators of emotional engagement (Connell & Wellborn, 1991, Skinner & Belmont, 1993). Plus, students' emotions and feelings regarding their perception of safety in school and feeling connected to friends and teachers are also indicators of emotional engagement. Further, Lee and Smith (1995) have assessed emotional engagement by measuring student reactions to school and their teachers (Stipek, 2002).

Research on emotional engagement is similar to research related to students'
attitude, motivation, values, and interest. In fact, emotional engagement is often
considered synonymous with motivation (National Research Council & Institute of
Medicine, 2004). Research in this area examines students' feelings towards and attitudes
about school using surveys with questions asking whether students liked or disliked
school, teachers, and schoolwork. In addition researchers pose questions about students'
emotions – feeling happy or sad in school and whether they felt bored or interested in
schoolwork (Epstein & McPartland, 1976). The difficulty in measuring emotional
engagement is that a student's source of emotional reaction may be attributed to a variety
of academic factors – success, friends, school, or their teachers (Fredricks, Blumenfeld,
& Paris 2004). It is difficult to pinpoint the causes and implications of emotional
engagement.

Most measures of emotional engagement are self-reported. Various survey items
have been used to determine emotions about schoolwork, people at school and the school
in general (Connell & Wellborn, 1991). Finn (1989) and Voelkl (1997) have considered
emotional engagement as a form of behavioral engagement, for example, the relationship
between teacher and student (Finn, 1989). Fredricks, Blumenfeld, & Paris (2004) found
that research traditionally measured emotional engagement as a single scale, combined
with behavioral engagement. In addition, a student's source of emotion was not clear;
survey items would address students' emotion, but not their causes (Fredricks,
Blumenfeld, & Paris, 2004).

Cognitive engagement.

Cognitive engagement research has stressed an overall investment in learning as its key indicator (Fredricks, Blumenfeld, & Paris, 2004). Students who show an investment in learning attain higher grades and test scores and are less likely to be disruptive, truant, or drop out (Klem & Connell, 2004). Newmann, Secada, & Wehlage (1995) define engagement in academic work as "student's psychological investment in and effort directed toward learning, understanding, mastering the knowledge, skills, or crafts that the academic work is intended to promote" (p. 12). Cognitive engagement has also been characterized by an investment in learning, wherein students demonstrate behavior that goes beyond stated expectations and seek academic challenges (Connell & Wellborn, 1991).

Like emotional engagement, the research on cognitive engagement is similar to research on motivation. For example Brophy (1987) examines students' motivation to learn and their desire for mastery and acquisition of knowledge, which is similar to the concept of emotional engagement, as well as cognitive engagement in academic pursuits. In addition, a plethora of research has been done on overall intrinsic motivation and how it connects with students' learning. The defining feature of cognitive engagement, however, is learning that is strategic or self-regulating. Students are cognitively engaged when they use metacognition strategies to analyze their learning or an academic task (Zimmerman, 1990). Effort in cognitive engagement refers to students' effort that is focused on learning (Fredricks, Blumenfeld, & Paris, 2004).

There are a limited number of studies addressing cognitive engagement, as determined by a psychological investment in learning. A theoretical article by Connell &

Wellborn (1991) describes survey items that address psychological investment, but no empirical studies have been performed using these measures (Fredricks, Blumenfeld, & Paris, 2004). Fredricks, Blumenfeld, & Paris (2004) have indicated that several issues complicate the measurement of cognitive engagement. First, observational techniques have been used in classrooms, but it is difficult to detect if students are trying to get work done to master the content, or rather to just complete an assignment. Second, it is difficult to measure a student's metacognition due to the lack of reliable and valid instruments. Finally, cognition is hard to assess. A researcher can only infer student cognition from student self-reports or student academic behavior.

Summary of Academic Engagement.

There has been a general decline in student academic engagement (Willems, 2003; National Research Council & Institute of Medicine, 2004) and disengagement seems to be more prevalent with minority students (Voelkl, 1997). A low level of academic engagement has negative effects, one being low academic achievement. Disengagement can also reveal itself in students with absenteeism, poor overall attitude about school, greater number of discipline referrals, and dropping out (Finn, 1993). Increasing student academic engagement, however, is an attainable goal for teachers and schools. Unlike home environment, schools can manipulate students' school experiences.

Middle Schools, Teacher Support, and Disengagement

Political leaders in the past two decades have pushed for legislation mandating high academic standards with high stakes assessments and accountability measures (SIFEP, 2006). The NCLB legislation asserts that absolutely every child, no matter her

race, SES, or disability, will be academically proficient by the year 2014 (U.S. Department of Education, 2001). Unfortunately, high stakes testing is unlikely to be effective unless students are motivated and engaged to meet such high standards (Melaville, Berg, & Blank, 2005). Academic engagement, and its link to student achievement, may have the potential to examine the achievement gap from a level playing field. Learning requires motivation, which requires an individual student to be conscious and purposeful in the learning process (National Research Council and Institute of Medicine, 2003). Teacher behaviors, a school's climate, and the elimination of racist beliefs can positively impact student's academic engagement (Finn, 1993; Marks, 2000, Ogbu, 2003). Engagement is malleable and results from an interaction between the student and the educational context, because engagement is responsive to variations in environment (Connell, 1990; Finn & Rock, 1997; Fredricks, Blumenfeld, and Paris, 2004). This section is divided into the following segments: the middle level model, teacher support, and disengagement and oppositional culture. The middle school level is a unique and challenging time for students. A DASM has been created to provide recommendations for increasing student engagement and achievement (Jackson & Davis, 2000). Teacher support is defined by a teacher's ability to deliver authentic instruction and create a classroom environment wherein students relate well to each other and to the teacher. The final section outlines the pressures that may be placed upon black students. Oppositional culture refers to the theory that minorities who have been historically oppressed may resist academic school goals (Ogbu, 1978). In addition, black students may be affected by the stereotype threat, which is a social-psychological predicament due to widely-recognized negative stereotypes (Jencks & Phillips, 1998; Ryan & Ryan, 2005;

Steele & Aronson, 1995). Each of these concepts will be explained in-depth in the following segments.

Developmentally Appropriate School Model at the Middle Level.

As mentioned previously, the Carnegie Council on Adolescent Development defined the time period of 10- to 14- years of age for adolescents as a period of rapid physical, intellectual, and social development (Carnegie Council on Adolescent Development, 1989). They also found that the transition from elementary school to a less-supportive junior high school environment has been associated with lower student self-esteem, decline in academic self-esteem, and decline in school identification (Jackson & Davis, 2000). The Carnegie Council (1989) states that schools need to foster and care for the intellectual, emotional, and interpersonal needs of middle-level learners.

Middle schools can implement developmentally appropriate conditions that foster student engagement. Engagement increases in schools where students feel like they belong, their values and goals are honored, and where they are allowed to have control (Yair, 2000; Marks, 2000; Lee and Smith, 1993). Yair's (2000) research shows the importance of a positive school environment. In schools and classrooms where students feel cared about, where they are supported in believing that they can succeed, and where academic success in an important goal, students have higher levels of academic achievement (Yair, 2000). Student engagement increases in schools that do not establish specific curriculum tracks. Instead, they have smaller class sizes, rigorous standards, and a culture of shared decision-making (Marks, 2000; Fredricks, Blumenfeld, & Paris, 2004).

Turning Points 2000 (Jackson & Davis, 2000) outlines a set of developmentally appropriate recommendations for increasing student academic engagement in middle school. They utilize the abovementioned concepts – creating a place where students feel like they belong, maintaining a positive school environment, pushing for academic success, ensuring smaller class sizes, and committing to shared decision-making. In addition, the DASM specifically calls for the use of the recommendations stated in Chapter One.

Students in schools that follow the abovementioned recommendations are more likely to identify with their schools and to display behavioral engagement. Behavioral engagement has shown to have a positive correlation with higher test scores for students in elementary and middle schools (Voelkl, 1997). Students who do not identify with their schools are often disengaged. Disengagement increases in schools that are bureaucratically organized (Newmann, 1981, cited in Marks, 2000). Schools that allow for meaningless, low-level work and impersonal relationships with peers and teachers produce disengaged students. Research on restructured schools, schools that have less departmentalization, more heterogeneous grouping, and more team-teaching, finds consistently positive effects on both engagement and achievement resulting from these interventions (Lee & Smith, 1993). Smaller schools and class sizes have also been shown to increase engagement. For example, schools that had relatively fewer 8th grade students demonstrated more academic engagement, a narrowing of the achievement gap between black and white students, less truancy, more participation, and students who reported a more caring school climate (Finn & Voelkl, 1993).

Climate is a factor that clearly depends on teachers. They are intimately connected to the classroom. They create the climate and are essentially "in-charge" of the classroom. Hammond and Youngs (2002), in defining "highly qualified teachers," show that teachers have the ability to influence the achievement of their students, more so than class size or class composition. Roughly seven percent of the total variance in student test score gains can be attributed to the differences in teachers (Rivkin, Hanushek, & Kain, 2005). Although there is less research that looks specifically at the middle school classrooms and contexts with respect to teacher quality, this section will apply more general findings to the DASM. This section will be divided into three parts, teacher support and classroom structure, authentic pedagogy, and the specific needs of students at the middle level. Teacher support can be defined as either academic or interpersonal support for students (Fredricks, Blumenfeld, Paris, 2004). Classroom structure is determined by how a teacher structures the classroom, such as the clarity of teacher expectations and the consequences of failing to meet those expectations (Connell, 1990). Authentic pedagogy refers to a type of instructional planning and assessment used by a teacher. Finally, students at the middle level are a unique population that has special needs. These needs will be explored in this section.

Teacher support.

Teacher support has been shown to influence student academic engagement at all levels, but is often assumed to have a more limited effect within secondary schools. The middle level model indicates, however, that teachers of young adolescents should incorporate more interpersonal support into regular classroom instruction. Teacher support and initial student engagement can create a reciprocal relationship. Ladd (1999)

found that a student's initial behavioral engagement influences his relationship with the teacher. Teacher support has been positively associated with student engagement, and in turn, this engagement elicits greater teacher support (Skinner & Belmont, 1993).

Students' perception that their teachers are supportive and caring has been correlated with higher participation in learning and on-task behaviors (Battistich, Solomon, Watson, & Schaps, 1997) and less disruptive behavior (Ryan & Patrick, 2001). Further, a perceived positive relationship with a teacher has been linked to a decrease in drop-out rates (Whehlage et al., 1989). Marks (2000) showed that a warm classroom environment, wherein students feel supported by teachers and peers, is associated with higher levels of engagement. Fredericks, Blumenfeld, & Paris (2004) similarly found that in middle school classrooms in which teachers create an atmosphere where academic challenge and student understanding of content are emphasized, engagement increases. In addition, teachers who pushed students for understanding and supported student autonomy also showed higher student engagement (Stipek, 2002). Finally, engagement has been shown to increase in classrooms with clear expectations, consistent responses, and recognized classroom norms (Connell & Wellborn, 1991; Skinner & Belmont, 1993; Fredricks, Blumenfeld, & Paris, 2004).

Authentic pedagogy is one-way teachers can capitalize on the benefits of a positive environment (Newmann, Secada, & Wehlage, 1995). Authentic pedagogy challenges students to participate in intellectual accomplishments that are significant and connect to the real world (Newmann, Secada, & Wehlage, 1995). Further, Wehlage et. al. (1989) identify that student participation in authentic tasks will be more likely to motivate students to work hard in academics and therefore be more engaged. Authentic

pedagogy varies, however, by school level: elementary students are more likely to experience it, and high school and middle school students are least likely to have teachers who practice this type of instruction (Louis & Marks, 1998).

Because of its potential to improve engagement, secondary teachers should have more exposure to the theory of authenticity. Authentic academic achievement is defined as the construction of knowledge, disciplined inquiry, and value of learning beyond the school (Newmann, Secada, & Wehlage, 1995). When students construct knowledge, they are being asked to produce original expressions of knowledge, not just to reproduce others' thoughts and ideas. Disciplined inquiry involves students utilizing a prior knowledge base, striving for in-depth understanding, and expressing their conclusions through elaborated communication. When students document competence apart from school generated success (i.e. good grades) they experience value beyond school (Newmann, Secada, & Wehlage, 1995; Jackson & Davis, 2000). Teachers that promote intellectual quality -- learning that is worthwhile, significant, and meaningful -- will help students develop higher order thinking skills, engage in substantive conversation, develop deep knowledge, and connect their learning to the outside world (Newmann, Secada, & Wehlage, 1995; Jackson & Davis, 2000).

Work in authentic instruction is critical to narrowing the achievement gap because studies have found that authentic pedagogy produces student achievement at high levels, regardless of student background (Newmann et al., 1996). Teachers who utilize the standards of authentic pedagogy elicit behaviors from students that indicate greater behavioral, emotional, and cognitive engagement (Fredricks, Blumenfeld, & Paris, 2004). Marks (2000) examined the impact of authentic instructional work on engagement in

schools and it was found that when elementary, middle, and high school students'

perceived their tasks to be authentic, they were more likely to be engaged. Authentic

pedagogy eliminates the trivial, contrived, and meaningless aspects of schooling.

Research shows that authentic instructional work contributes strongly to the overall

academic engagement of all students (Marks, 2000). Further, *Turning Points 2000*

indicates that authentic pedagogy is one of three instructional methods recommended to

meet the needs of middle level students (Jackson & Davis, 2000).

In classrooms where teachers and peers have created a caring and supportive

environment, students are more likely to meet their needs for relatedness or

connectedness to the school (Connell & Wellborn, 1991). It has been shown that students

who experience a feeling of being able to relate to their schools and teachers are more

engaged, and this engagement was shown to associate with lower at-risk behaviors and

persisting in school (Furrer & Skinner, 2003; Connell et al. 1995). Teachers who rated

their elementary students as more engaged were also students who rated that their

teachers had quality emotional relationships with them (Connell & Wellborn, 1991). In

Fredricks, Blumenfeld, and Paris' (2004) meta-analysis on engagement, found that all of

the studies demonstrated a direct link between the need for relatedness and engagement.

Research on middle school students' sense of relatedness to school is consistent in

showing that it is a key factor in their engagement and achievement (Wentzel, 1998).

Disengagement and oppositional Peer Culture.

In addition to the forms of positive engagement described above, many scholars

point to the alienation or active disengagement of students from schools, which is

behaviorally revealed through high rates of absenteeism and, in secondary schools, non-

completion or dropping out. In American schooling, perceived racism fuels the development of an oppositional culture that equates academic success with "acting white" (Fordham & Ogbu, 1986). Ogbu utilized ethnographies in his anthropological research on educating black students in schools. He found, as have others, that black students may view academic success as incompatible with black identity (Steinberg, 1996; Jencks & Phillips, 1998, Peterson-Lewis & Bratton, 2004). The oppositional culture hypothesis is that minorities in the United States, who have been historically oppressed, such as black Americans, resist school goals (Ogbu, 1978). The "acting white" concept leads high achieving black youths to experience achievement dissonance, a feeling that their achievement is racially inappropriate (Fordham & Ogbu, 1986).

Racism may also prevent black students from participating in achievement endeavors during school because they don't believe doing well in school will offer them any greater opportunities or resources (Ogbu, 1985). Acting white in school, for black students, means they are succeeding in academics and also rejecting their cultural identity. As the United States has a history of racial discrimination, Fordham and Ogbu (1986) found that black students doubt their intellectual abilities and define academic success as white people's domain. Black students may also discourage their peers, unconsciously, from emulating white people in academics (Fordham & Ogbu, 1986). Thomas Sowell (1994) writes in the *Atlanta Journal-Constitution* (1994) that "[t]he most painful of the new developments has been the growth of an attitude in ghetto schools across the country that trying to learn is "acting White." In some ways black students may feel that by doing well in school, they are actually taking on the characteristics of their oppressor (Ogbu, 1994).

The history of racial discrimination in the United States has pushed black students to doubt their own intellectual ability, discourage their peers, perhaps unconsciously, from emulating white people in academic striving (Fordham & Ogbu, 1986 in Jencks & Phillips, 1998, p. 376). Peterson-Lewis and Bratton (2004) interviewed sixty-four 16 and 17 year-old black high school students on what it means to "act Black." The data collected showed that the respondents' descriptions for "acting Black" were largely negative (i.e. getting poor grades and skipping class), except for the aesthetic/stylistic dimension of blackness (related music, clothing, hairstyles) (Peterson-Lewis and Bratton, 2004). Cook and Ludwig (1998) argue that both black and white students who excel in academics experience peer ostracism. The difference between a white "nerd" and a black student who is "acting White" is that being a nerd is a social label, not a racial label (Cook and Ludwig, 1998). According to Steele (1992), one major reason that Black students do poorly in school is that they experience ambivalence and dissonance in regard to academic effort and success (In Jencks & Phillips, 1998).

Blacks students may also be affected by a stereotype threat. The stereotype threat is a social-psychological predicament affecting black students due to widely known negative stereotypes, which means that "small" failures become over-emphasized. This threat most often affects academically successful Blacks (Jencks & Phillips, 1998; Ryan & Ryan, 2005), because getting a low score on a test will confirm the stereotype that all black people lack academic talent (Jencks & Phillips, 1998; Steele & Aronson, 1995; Steele, 1999). Steele and Aronson, for example, (1995), gave black and white undergraduate students from Stanford a thirty-minute test composed of items from the verbal Graduate Record Examination (GRE). Three studies were administered with three

different groups of students, but all students were given the same test. During the first study, test participants were told the exam was assessing their "psychological reasoning ability." In the second test, students were told the researchers would assess verbal reasoning. Finally, during the third experiment, participants were asked to record their race before taking the test. Black students made more mistakes when asked to record their race and when they believed the test was assessing their verbal reasoning ability, but made fewer mistakes when told the test only focused on psychological reasoning (Steele & Aronson, 1995). White students' performance was not affected by any of the testing situations (Steele & Aronson, 1995). These results suggest that black students suffer anxiety about conforming to the racial stereotype that black students are less academically talented than Whites.

The literature linking oppositional culture and stereotype threat to middle-level students is limited, but it has shown that both phenomena do indeed occur. McKown and Weinstein's (2003) research shows that stereotype threat affects black middle school students under diagnostic testing conditions. The ability of children to infer racial stereotypes increases during the middle-school years, and black students are more likely to be aware of broadly held stereotypes than their White peers (McKown & Weinstein, 2003). There is little-to-no research connecting oppositional culture to middle-school students; but it is during this time in adolescence that children are forging their own identities, learning new social roles, and developing their own code of ethics (Jackson & Davis, 2000).

Ogbu's "acting White" and oppositional culture theory has received positive attention in the field of education because of its cultural and historical appeal (Ainsworth-Darnell & Downey, 1998). Using the *National Education Longitudinal Study,* a large sample of African American, Asian American, and non-Hispanic white high school sophomores, Ainsworth-Darnell and Downey (1998), attempted to provide a critical examination of Ogbu's oppositional culture theory. Their research indicates that black students do wish for educational attainment and have more "pro-school" feelings than their white counterparts, but that black students lack the conditions that foster the development of skills and habits rewarded by teachers.

Black students may also disidentify with school (Steele, 1992; Jencks & Phillips, 1998, Steele & Aronson, 1995; Osborne, 1995; Osborne, 1997). Disidentification (Steele, 1992) explains the paradox between self-esteem and academic achievement of black students. Black students tend not to achieve as highly as white students academically, but report higher levels of global self-esteem (Osborne, 1995; Rosenberg, Schooler, Shoenback & Rosenberg, 1995). Steele (1992) uses the concept of disidentification to explain the paradox; black students do not identify with school academically to preserve their overall self-esteem (Steele, 1992; Steele, 1999 Steele & Aronson, 1995; Osborne, 1995; Osborne, 1997). School identification and academic engagement have been shown to be an important factor in academic success (Finn, 1989; Steele, 1992; Voelkl, 1997). The educational achievement of black students has and is lagging behind Whites. Black students are more likely not to graduate from high school, to take longer to complete college, and to have lower test scores and grade point averages (Steeele & Aronson, 1998). The stereotype threat triggers an internalized anxiety or low

expectancy about one's ability, which has already been established as a result of prior exposure to the stereotype (Steeele & Aronson, 1998). Experiencing this anxiety over time leads black students to disidentify or disengage with school and academics. Examining academic engagement in schools indicates that black students face additional barriers to academic success than their white peers.

Summary of Developmentally Appropriate School Model, Teacher Support, and Disengagement.

Traditionally, middle schools are less supportive than elementary schools, and middle-level students show a decline in self-esteem, school identification, and engagement (Jackson & Davis, 2000). Schools can foster student academic engagement by implementing the more developmentally appropriate model outlined in *Turning Points 2000* (Jackson & Davis, 2000). Teachers can create a classroom environment that is supportive and positive. Teacher support is defined by a teacher's interpersonal skills and interpersonal support to students. Skinner and Belmont (1993) find that teacher support has been positively associated with student engagement. Teachers can increase student engagement by providing authentic instruction and creating classrooms where students feel related, competent, and have autonomy. These behaviors may possibly narrow the achievement gap because students feel more behaviorally, emotionally, and cognitively engaged. In addition, black students may suffer from oppositional culture (Ogbu, 1978), stereotype threat (Steele & Arnson, 1995) and disidentification from school (Steele, 1992; Osborne, 1995). These concepts may limit black students' ability to engage in school and ultimately lower their academic achievement. These concepts directly relate to this study. Academic engagement can be increased or decreased by

actions taken by schools and teachers. In addition, black students face different and sometimes detrimental conditions in their pursuit of academic achievement.

Conclusion

This chapter has reviewed the nature and extent of the achievement gap and how examining student academic engagement may be one way to reduce the gap. A historical review of educational policy and leading theories behind the causes for the achievement gap were analyzed and shown to be lacking in solutions. Research on academic engagement, however, has been consistent in showing an increase in students' identification with school and achievement when they are engaged. This finding supports a connection between academic engagement and a decrease in the achievement gap. Furthermore, research was evaluated on how academic engagement is a malleable concept within the educational context. Research on middle schools and teachers was evaluated to show how each – the DASM and teacher support – have the potential to increase student academic engagement. Finally, the concepts of oppositional culture, stereotype threat, and disidentification were assessed based on their connection to create disengagement in Black students.

Chapter Three

Research Methods

The purpose of this study is to examine the relationship between white and black 8th graders' levels of academic engagement and their academic achievement. Therefore, the study is designed to examine whether greater engagement is associated with a smaller academic achievement gap. Collecting data provided by 8th graders and conducting a quantitative analysis connecting their levels of engagement to their scores on academic achievement measures addressed this purpose.

This chapter is divided into six sections. The first outlines and provides a rationale for the research design. The second section provides information about the three research sites and school district in which the study took place. The third section describes the sampling frame. The fourth section explains the survey instrument. The fifth section outlines the data collection and data analysis. The sixth and final section describes and acknowledges the limitations of the methods**.** For clarification, all proper names mentioned in this study are pseudonyms.

Rationale for the Research Design

This study is situated within a quantitative and behavioral science paradigm of inquiry described as post-positivism (Cresswell, 2003). Post-positivism emerged out of the traditional positivism mode of inquiry. The similarities between these paradigms can be seen in the use of a scientific method approach, where a researcher starts with a theory and then tests that theory through the collection of data (Cresswell, 2003). One of the important ways in which post-positivism differs from its predecessor is that post-positivism challenges the traditional notion of an absolute truth of knowledge (Cresswell,

2003). As Cresswell (2003) explains, researchers using a post-positivist inquiry recognize that they cannot be sure about claims to knowledge when studying the behavior and actions of humans. Since this study relies upon children to describe their perceptions of their own academic engagement, the data is limited to their understanding and interpretation of the survey's questions and their individual experiences. The perceptions of 8th grade students cannot be claimed as absolute truths; therefore the rationale for a post-positivism approach to this study is appropriate.

In general, post-positivism is concerned with explaining relationships through the probability of effects (Cresswell, 2003). A post-positivist investigation emphasizes the quantification of a phenomenon through the use of mathematics, as well as a way to express regularity in relationships **(**Bentz & Shapiro, 1998; Creswell, 2003). Post-positivism employs the use of scales to measure attributes of individuals or groups; as well as the use of mathematics to express relationships, such as correlations and causal relationships (Bentz & Shapiro, 1998). This researcher developed the use of a survey as a pre-constructed scale to measure student engagement. Creswell (2003) states five post-positivist assumptions, they are as follows:

1. Knowledge is conjectural and absolute truth can never be found; thus evidence established in research is imperfect and fallible.

2. Research is the process of making claims and then refining or abandoning some of them for other claims more strongly warranted.

3. Data, evidence, and rational consideration shape knowledge. The researcher collects information on instruments based on measures completed by the participants or observations recorded by the researcher.

4. Research seeks to develop relevant true statements—ones that can serve to explain the situation that is of concern or describes the causal relationship of interest.

5. Being objective is an essential aspect of competent inquiry; thus researchers must examine methods and conclusions for bias. As an example, standards of validity and reliability are emphasized (pp. 7-8).

Post-positivism mandates that the researcher remain as detached as possible from the data. She must reveal all biases and other influences that might detract from objectivity (Bentz & Shaprio, 1998, Ryan, 2006). Bentz and Shapiro (1998) assert that researchers' actions or beliefs may betray bias in their work (Ryan, 2006). Researchers can influence the outcomes of a study by acting in ways that could change the behavior or responses of participants or poorly constructing the survey instrument. This study avoided these hazards by following a methodology protocol, the use of statistical analysis, and conducting the analysis blindly – names were not attached to the student data examined. It is important to state that this researcher has some limitations due to her professional work in the school district prior to and during the current study. This perceived bias was also diminished due to the specific steps taken to follow a methodology protocol and the careful steps taken to keep the data confidential. These steps were followed to address the assumptions of post-positivism and to remain detached and objective to the subject matter**.**

The rationale for post-positivism in the current study is justified by the use of quantitative methods to analyze the perceived levels of academic engagement of 8th grade students. The researcher collected data from students with regard to their perception of

academic engagement. In addition, the study uses a scientific method – it is rooted in theory and seeks empirical evidence through the collection of data and analysis. Ryan (2006) states, "Post-positivist research principles emphasize meaning and the creation of new knowledge, and are able to support committed social movements, that is, movements that aspire to change the world and contribute towards social justice" (pp. 12). This research stems from the desire to create a better educational system for all students and to eliminate the achievement gap between white and black students.

This study uses a quantitative, cross-sectional, exploratory survey research design. The researcher collects data from 8th grade students (section), from a designated population (three middle schools targeted for the study), and assesses perceptions at one given time. The design is quantitative in that, through the survey instrument, numerical responses were collected with the purpose of generalizing findings to the population (Creswell, 2003). Since there has been limited empirical research assessing the relationship between student academic engagement and the academic achievement gap, the research design is exploratory. A survey method is utilized for the current research because of its efficiency in collecting large amounts of data necessary to assess trends and generalize findings (Creswell, 2003; Nardi, 2006, Dillman, 2000).

The Site

The participants in this study were middle-school students in the district of Bloomfield. Bloomfield, a first-ring suburb of a mid-western city, has a population of roughly 85,000 residents. Public schools were first established in Bloomfield in the 1850s. The city borders an international major airport and houses a large collection of hospitality enterprises. There are also a number of major national businesses whose

headquarters are located within the town's borders, as well as a "destination" shopping mall. The district serves over 10,500 students and employs over 645 teachers.

In 2001 Bloomfield Public Schools initiated "Strategy One" of its then-new strategic plan. This strategy called for the creation of three new middle schools, which were to be equal in structure, programming, and resources. In 1999, action teams were created to develop the new strategic plan. One of the teams had the task of determining the enrollment boundaries for these three new schools. A complicating factor in this task is that the demographics of Bloomfield vary depending on geographic location. West Bloomfield is affluent and is often referred to as "Prestigious West Bloomfield." This is a hold-over from the marketing campaign used to sell homes in the area when it was first developed in the 1960s. Conversely, East Bloomfield houses families of a lower average socio-economic status, and is often referred to as "The Ghetto" by Bloomfield residents. These unofficial, but very real intra-community borders, caused a major battle between members of the school community and members of the public over where to draw the middle school boundaries. In 2001, when Bloomfield opened the doors of three new middle schools, they enrolled students according to the traditional East-West divide. Eastview is on the East side of town, Westview is on the West, and Riverview sits in the middle. Each of the schools has widely different demographics based on race and socio-economics. Appendix H highlights the differences in demographics between the three middle schools.

Westview has the lowest percentage of black students (11%), while Eastview has the most (36%). Riverview, whose minority population is between the other two schools, has the largest number of students (850). Another critical demographic is the percentage

of students who qualify for free and reduced lunch. Eastview has more than double the percentage of eligible students than Westview Middle. Again, Riverview is between them.

While the schools were created with the promise of "equal structure, programming, and resources," the outcomes of the programs in each building have been unequal. Eastview has always posted lower test scores and higher rates of truancy and suspensions than the other schools.   Table 3.1 and Table 3.2 highlight the differences in reading and math proficiency in 2007, as measured by the MCA II.

Table 3.1 *MCA II Reading 2007*

	Eastview Middle	Riverview Middle	Westview Middle	District	State
All Students Proficiency	68.64	83.3	86.61	82.48	77.01
All Students AYP Status	Yes	Yes	Yes	Yes	Yes
White Students Proficiency	76.12	88.89	91.78	88.75	82.39
White Students AYP Status	Yes	Yes	Yes	Yes	Yes
Black Students Proficiency	56.79	61.54	63.85	64.61	53.35
Black Students AYP Status	No	Yes	Yes	Yes	No

Scores are reported in percentages.

SH indicates that the cell met AYP Safe Harbor target.

AYP Calculation was based on multi-year averaging.

Data retrieved from Bloomfield Public School website in December 2008

Table 3.2 *MCA II Math 2007*

	Eastview Middle	Riverview Middle	Westview Middle	District	State
All Students Proficiency Index	61.04	79.45	82.16	74.67	68.99
All Students AYP Status	Yes	Yes	Yes	Yes	Yes
White Students Proficiency Index	71.64	84.08	87.87	81.36	74.19
White Students AYP Status	Yes	Yes	Yes	Yes	Yes
Black Students Proficiency Index	41.35	56.49	53.85	55.87	41.68
Black Students AYP Status	Yes (SH)	Yes	Yes	Yes (SH)	Yes

Scores are reported in percentages.

SH indicates that the cell met AYP Safe Harbor target.

AYP Calculation was based on multi-year averaging.

Data retrieved from Bloomfield Public School website in December 2008

Eastview Middle posts scores that are consistently lower in both reading and math when compared to both Riverview and Westview Middle schools. Eastview's math proficiency index for all students (61.04%) is roughly eighteen percentage points lower than Riverview's (79.45%) and twenty percentage points lower than Westview 's (82.16%). While reading scores are better at Eastview (68.64%), they still lag significantly behind the other two schools, which score at (83.3%) and (86.61%). The differences are even more apparent between white and black students. On average, white students are proficient in reading at an eighty-five percent index, where black students are at sixty-percent rate. An even greater gap (30%) appears between the math scores of white and black children. This gap in achievement can also be seen at the state level with a twenty-nine percent gap in reading and thirty-three percent difference in math between white and black students. We also know that a similar gap appears in data encompassing students in the greater United States.

Sampling Frame.

All 8th grade students in Bloomfield Public Schools were asked to participate in the study (N=831). The sampling frame consists of all eighth-grade students and the sample is purposive. As Nardi (2006) explains, a purposive sample is selected for a specific reason because of some characteristics. Further, as Merriam (1998) puts it, purposive sampling "is based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned" (p. 61). A purposive sample was useful for this study because the (1)

researcher had access to the district's data on individual students and (2) the district was willing to sponsor the survey because it was interested in the results for its own planning purposes.

Data Collection Tools

The Survey Instrument.

Surveys are largely associated with quantitative research (Creswell, 2003), and in this case, one is used to measure 8th grade students' perceived academic engagement. Survey research was used in this study for several reasons. First, surveys can be administered confidentially and are useful for collecting information on sensitive matters (Nardi, 2006). Second, surveys are an efficient way to collect data (Nardi, 2006). In developing the survey instrument, this researcher compiled numerous sources regarding academic engagement. There are several existing survey items regarding engagement that reflect current thinking in the field. These were included on the survey used in Bloomfield. The survey also utilized new questions developed based on engagement-theory research. All of the perceptions of engagement were measured using four-point Likert (1932) scales (see Appendix G).

One example of a pre-existing survey of engagement is The National Education Longitudinal Study of 1988. The survey was first given in the spring of 1988 to a nationally representative sample of 8th graders. Then, the same students were resurveyed in 1990, 1992, 1994, and 2000. This survey reported on a range of items including "school, work, and home experiences; educational resources and support; the role in

education of their parents and peers; neighborhood characteristics; educational and occupational aspirations" (NELS, 2008). NELS data has been used in an array of research regarding engagement. For example, Finn and Rock (1997) used selected NELS data to study behavioral engagement in school and the classroom. Finn and Voelkl (1993) used NELS data to study overall school engagement, behavioral engagement, and emotional engagement. Osborne (1995 & 1997) looked at select questions in the NELS data to examine black students' disidentification with school and overall global self-esteem. The instrument created for this study uses select questions from the NELS that pertain to any of the following forms of engagement: behavioral, emotional, cognitive; as well as overall engagement and disengagement.

The Educational Longitudinal Study (ELS) of 2002 was also used to develop questions for the instrument in this survey. The ELS survey was designed to monitor the transition of a national sample of 10th graders through high school and on to postsecondary education or work (ELS, 2008). The ELS survey measured students' tested achievement and collected information about their attitudes and experiences. Using the National Educational Longitudinal Study, Lee and Smith (1993, 1995) find that students in schools with more elements of a community organization showed higher engagement and greater gains in engagement over time (Fredricks, Blumenfeld, & Paris, 2004). In addition to using items from the NELS, the instrument created for this study identified certain questions from the ELS that pertained to behavioral, emotional, cognitive, or

overall engagement, as well as disengagement. Once identified, the questions were either used in the same format or rewritten to be more accessible to eighth-grade students.

In addition to the NELS and ELS, the High School Survey on Student Engagement 2005 (HSSSE) was used to help create the instrument for this study. The HSSSE was developed by the Indiana University School of Education, and has been completed by nearly 300,000 students from high schools across 29 states. The survey is intended to assess the extent to which high school students engage in educational practices associated with high levels of learning and development (HSSSE, 2008). Although few studies have been completed on data collected on HSSSE, the survey articulates all areas of engagement and was written using the current cannon of knowledge on engagement, so items from it are included on the Bloomfield instrument, as well.

In addition to utilizing existing items on engagement from the NELS, ELS, and HSSSE, the survey for this study measures students' perceived thoughts on how well their teachers and schools utilize a developmentally appropriate school model and authentic instruction. To develop these questions, the researcher examined *Turning Points 2000* (Jackson & Davis, 2000). *Turning Points 2000* put forth a list of recommendations for schools to implement. These recommendations were developed to meet the unique needs of middle-level students. For this study, questions were developed using the list of recommendations outlined in *Turning Points 2000*. For example, one recommendation from this text reads, "Organize relationships for learning to create a

climate of intellectual development and a caring community of shared educational purpose" (p. 71). To assess how well the students' perceive their school's ability to do this, the survey asks the students to rate the statement, "My school is a caring community," on the Likert Scale. Overall, fifteen of 83 questions on the survey address the developmentally-appropriate school model.

Another area of interest in this study is students' perceptions about their teachers' ability to teach authentically, as the use of authentic pedagogy is one way to engage students (Newmann, Secada, & Wehlage, 1995). Wehlage (1989) contends that participation in authentic tasks will motivate students to work hard in academics, and therefore be more engaged. Authentic pedagogy is an instructional approach developed by Newmann, Secada, and Wehlage (1995) that includes the following components:

1) Higher Order Thinking

2) Deep Knowledge

3) Substantive Conversation

4) Connections to the World Outside the Classroom

To measure authentic instruction, survey questions were developed based on the abovementioned tenets. To assess how well the students' perceive their teachers' abilities, the survey asks students to respond to the following statements, among other items: "What I'm learning in my classes will help me in the real world," and "I'm required to talk with my classmates about the subject we are learning during class." Overall, five questions on the survey instrument address authentic pedagogy.

Finally, additional survey questions were developed to assess teacher support and school climate and culture. Both teacher support and school climate have been shown to affect student academic engagement. Also, the DASM assumes that teachers of young adolescents incorporate more interpersonal support into regular classroom instruction. Teacher support and student engagement can create a reciprocal relationship. Students used the Likert Scale to rate their perceptions of the support they were given by their teachers. Sample items include, "My teachers are interested in me," and "My teachers are willing to give extra help if I need it." A total of fourteen questions address teacher support on the survey instrument.

In addition to teacher support, school climate has been shown to increase student academic engagement. I order to measure the students' perceptions of their school's climates, they were asked to use the Likert Scale to respond to the following types of statements: "My school honors academic achievement," and "Discipline rules at my school are fair." Seventeen total questions address school climate on the survey instrument.

Table 3.3 is a breakdown of the survey instrument with sample questions and the number of questions per area of interest:

Table 3.3 *Survey Instrument*

Factors	Sample Questions	Number of Questions
Behavioral Engagement	I participate in class discussions.	8
Emotional Engagement	I like coming to my school.	10
Cognitive Engagement	I like when I have to think really hard about an academic problem.	14
Overall Engagement	I have been sent to the office/quiet room because I was misbehaving.	8
Teacher Support	When I work hard on schoolwork, my teachers praise my effort.	14
School Climate/Culture	At my school students are expected to do homework.	17
Authentic Pedagogy	I'm required to talk with my classmates about the subject we are learning during class.	5
Developmentally Appropriate School Model	My teachers are preparing me to be a lifelong learner.	15

Potential Limitations of the Survey Instrument.

This study marks the first time a survey instrument on student academic engagement, the middle school model, teacher support, and authentic pedagogy has been administered to students. Therefore, an important limitation is that both the validity and the reliability of the instrument have not been established when measuring the perceptions of eighth-grade students. However, this limitation may have been mitigated by the demonstrated validity and reliability of the NELS, ELS, and HSSSE surveys that were used to develop several questions on the survey in this study. Another limitation is the intercorrelation between the types of engagement found in previous research (Fredricks, Blumenfeld, & Paris, 2004). This intercorrelation adversely affects construct validity. Overall, the survey instrument is sound in that it relies on the validity and reliability of previous instruments that measure engagement.

Achievement Data.

In addition to the data collected from the students' surveys, data was collected on the achievement of all 8th grade students. Joe Astor, Bloomfield's Director of Research and Evaluation, retrieved and gave this researcher achievement data for all participants. The data collected were the CALT and MCA-II test scores, GPA in core classes, as well as discipline and attendance records. The CALT is a criterion-referenced test that measures students' knowledge and skills based on Bloomfield curriculum standards. The CALT also allows schools and the district to compare individual and aggregate student growth in learning to national norms. There are multiple levels of the CALT that make it

possible to give each student a test that matches his current achievement level. Unlike other standardized tests, The CALT allows for accurate tracking of development because student achievement growth can be measured at the student, class, school, and district level. Like the CALT, the MCA-II is a criterion-referenced test that aligns with the state of Minnesota's current academic standards. The test is given in math and reading from grades three through eight. The purpose of the MCA-II test is to measure students' progress towards the state academic standards in reading and mathematics and to comply with the federal No Child Left Behind accountability requirements. Student, school, and district results on the MCA-II are used to determine whether districts and schools in Minnesota are making Adequate Yearly Progress on the proficiency indicators. Both the MCA-II and CALT achievement scores were collected for all Bloomfield 8th grade students and then merged with their survey responses.

In addition to the students' standardized achievement scores on both the MCA-II and CALT tests, data was collected on the participants' grade point averages (grades 6-8 in all core classes: science, math, reading, social studies, and language arts), attendance (absences and tardies), and discipline records (number of discipline referrals by year). The GPA data was collected to provide a non-standardized score of achievement. In addition, the collection of attendance and truancy data was gathered to provide a scale of engagement for each student in addition to her/his self-reported perceived level of engagement, as determined by the survey instrument. One issue that emerged from the collection of data was that some components of the data were missing for certain

participants. There were students who had recently moved to Bloomfield who took the survey, but had no record of achievement data scores (MCA-II or CALT). Furthermore, there were students who had achievement data, but who left the district before the survey was administered. Only students who had both survey and achievement data were used in the data collection.

Overview of the Data Collection Process

    The Survey.

Once the modifications were made (see Appendix A) to the survey after the pilot study was complete, the instrument was ready for data collection. After the sample frame was identified and the Institutional Review Board at the University of Minnesota granted approval, the data collection process began. This section outlines the data collection process.

This study utilized an online, web-based, survey data collection process. Bloomfield Public Schools has created an online survey tool, and this was employed in the study. The Tailored Design Method (Dillman, 2007) offers guidelines to improve the efficacy of surveys. Although the Tailored Design Method is useful and important, in this study, some of the methods did not pertain. This section will detail the elements utilized from the Tailored Design Method, as well as the rationale for employing the method of data collection by examining the characteristics of the Bloomfield online survey tool.

Use of a Modified Tailored Design Method.

The Tailored Design Method is comprised of the following five elements

(Dillman, 2007):

1. a respondent-friendly questionnaire,

2. up to five contacts with the questionnaire recipient,

3. inclusion of stamped return envelopes,

4. personalized correspondence, and

5. a token financial incentive that is sent with the survey request.

Dillman claims that by instituting the above methods, survey implementation

should achieve good results. As stated previously, this study implemented a modified

Tailored Design Method. Creating a respondent-friendly questionnaire is the most

germane to this study, and it is satisfied here by creating a user-friendly online, web-

based questionnaire. The survey is visually appealing, which facilitates comprehension.

The instrument also presents interesting questions, based on the students' level of

understanding, to draw the respondent to the survey, which is one of Dillman's

recommendations. Further, the current study utilized the services and knowledge of Joe

Astor, an experienced instructional designer, to construct the web survey instrument and

also set up the downloaded data into Statistical Package for the Social Sciences (SPSS).

The nature of the questions assessing the students' perceived emotions regarding

engagement theory, and other components outlined earlier, were designed to be

interesting and stimulating to participants. The questions gave voice to middle school

students who may often feel as if they do not get to express their feelings regarding school-related conditions and practices. Although the survey has eighty-three questions, the burden upon the respondents was low, as it takes no longer than twenty minutes to complete. Overall, the survey was designed to specifically comply with Dillman's recommendation that it be respondent-friendly.

Dillman's second element is the use of multiple contacts, which is shown to increase response rate. Since this survey was administered in the school setting and authorized by the schools and school district (See Appendix C), numerous contacts about survey completion were not needed; however multiple contacts were made to students, teachers, and parents involved in the study to provide updates and reminders of the survey's date and purpose. The first contact to participants in this study included a pre-notice letter given to participating teachers to deliver to their students (see Appendix D). This communication was brief and was sent prior to the instrument administration, which is consistent with the Tailored Design Method (Dillman, 2007). This pre-notice communication announced the study and explained the procedures for the survey. It also explained the authorization of the study and the researcher's plans for the data. Dillman (2007) states that pre-notices have been shown to have a positive effect on response rates.

The second contact in this case was also a letter delivered to students via their teacher (see Appendix E). This included a letter of assent, formally asking them to be part of this study. It also explained that taking the survey was optional. In addition, at this time, a letter was given to parents of the sample frame (see Appendix F). This letter was a

passive consent form that outlined the research, procedures, background information, risks and benefits, and confidentiality. This letter granted parents the opportunity to opt out of the study by sending a statement of waived consent back to the school. Consistent with the Tailored Design Method, the letter specified the importance of the study, assured the parents and student participants that their responses were confidential, provided an information sheet for the study, and gave them a point of contact for questions (Dillman, 2007). Finally, the third contact was administered as a cover letter to the online survey. Students read the assent statement before they took the survey. This letter was identical in content to the second contact sent to students.

Although it is an element of the Tailored Design Method, this study did not utilize the use of personalized correspondence in letters sent home and to students. Providing a personal, randomly derived, survey identification number did personalize the survey correspondence, however. Students were given this identification number before they took the survey and entered it into online survey system. This took the place of personalized correspondence in this study.

Finally, the last element of the Tailored Design Method was not implemented here. Student participants were not given a token financial incentive. Students may have felt it was a "treat" to take the survey instead of participating in the curriculum of the course that day, but this was not designed or presented as an incentive in this case.

In summary, the five elements of improving response rate, outlined by Dillman (2007) provided a basic structure for an effective survey implementation system,

although this study did not adhere to all elements of the Tailored Design Method. The researcher did, however, use those that pertained to a school setting and middle-school aged participants.

Online Web Based Survey Limitations.

Dillman (2007) identifies two limitations to web-based surveys. Online surveys, he claims, can be limited in terms of coverage because they rely on participants having access to computers. Also, online surveys assume participants are computer- and internet-literate (Dillman 2007). The extensive use of technology in Bloomfield Public Schools increased the probability that the student participants knew how to use computers and since students took the survey in a computer lab with their teachers, they all had access to the required technology.

The Sample and Response Rate.

Coverage error was not a concern with data collection because of the in-class administration of the survey. Ninety-four percent (n = 779) of the surveys were completed, out of 831 students in the sample frame. This high response rate reduced the probability of non-response bias. The response rate for this study was calculated by dividing the total number of complete, usable responses (779), by the number in the sample frame (831). The resulting response rate (94%) exceeded the norm for other research using web survey for data collection, as a result was acceptable for data analysis and supported generalizability of the study by reducing non-response bias.

Measurement error was examined before the survey was administered to the participants. The survey instrument was evaluated by conducting a pilot survey with over thirty seventh-grade students in one of the middle school sites (see Appendix B). The data collected from the pilot study was used to eliminate confusing questions and misunderstandings. In addition, five seventh-grade students and two eighth grade teachers were asked to participate in a think-aloud (see Appendix C). The think-aloud generated a better survey instrument because the students and teachers were able to identify confusing language and directions. In addition, non-response error did not emerge as a problem. The participants were directed by their teachers to complete the online survey. Even with direct consultation with the teachers, there were students who skipped or missed survey questions. To replace the missing survey data, an average score was generated from similar item questions. The sample consists of only students who took the survey and also had achievement measures gathered from the school district. The final sample size for the survey was 779, but only 659 students had both the survey and the achievement data; therefore, the sample size for this study is 659.

In addition to the response rate, the number of participants supported the generalizability of the study by reducing the chance of sampling error. Sampling error refers to the extent to which participants are representative of the population (Creswell, 2003). This study utilized a non-probability sample that can only be used to describe, explain, and predict information about the sample frame (Nardi, 2006). Creswell (2003) states that an optimum number of participants for descriptive survey research is 350

participants. The current study had 779 participants who completed the entire survey, and 659 who had both achievement data and survey results. The sample size exceeded the optimum number of responses for survey research.

After examining the data, no one group had emerged as systematically responding less or more frequently than any others. Dillman (2007) recommends that participants' interest in the research study can increase response rates. Because the survey focused on the engagement of 8th grade students, participants may have been more interested in the study then their normal school-day activities. In addition, both the teacher volunteers and principals at each school were supportive and interested in the study. These factors reduced issues that could have negatively affected response rate.

The response rate and the number of participants were adequate for data analysis and supported the generalizability of the study. The generalizability of the study is somewhat limited because the study utilizes a non-probablity sample. However, the response rate for this study was higher than other research using web surveys for data collection and number of participants reduced the probability of sampling error.

Data Preparation

Once the responses from the surveys were collected, the data was prepared for analysis. This required transforming the data from the raw uninspected form, to a more useable form for analysis. The survey data were ordinal, derived from a scale of 1-4. Categorical data was also available in the form of demographic information (e.g.

ethnicity). This section outlines the inspection process and the associated remedies to missing and incorrect data.

To ensure the usability of the scores for analysis, the database was inspected to ensure completeness and validity of scores, meaning that there was not any missing data and that the values of the scores were within the acceptable range. The data was initially examined in SPSS. To ensure the validity of scores, the values of the ranges were visually inspected to make sure that they were within the acceptable bounds, 1-4. To facilitate this process, within SPSS, a "frequency" check was run on each question to determine the frequency of valid responses. If missing data was located, the scores of similar questions were averaged and the average score replaced the missing data. As mentioned previously, in many students' cases, there were survey scores, but no achievement scores existed for either the MCA-II or CALT, or both. When this occurred, the student's entire case was eliminated from the sample. The same was true if the student had achievement scores, but no survey responses. Once the data was complete and valid, there were a total of 659 cases to examine.

Variable Construction

To facilitate analysis, the data were transformed and prepared. Preparation included inspecting the data to ensure all response values were valid and calculating values for missing data. Variable construction involved calculating new variables by running a factor analysis for distinct groups of questions and coding them according to appropriate research and analysis. This process made the data more useful for analysis.

Students' perceptions of their engagement, based on the academic engagement model, were calculated based on their responses to the survey, which included 24 items specifically corresponding to academic engagement. Of these, eight items were intended to measure behavioral engagement, ten were to measure emotional engagement, and fourteen were to measure cognitive engagement. In addition, eight items measured overall engagement. Participants responded to statements by rating their feelings or actions on a scale of 1-4 with 1 indicating that they never felt or acted in a certain way, and 4 indicating that they almost always did.

To determine independent variables and confirm the presence of similar types of engagement that the survey was intended to measure, a component factor analysis with varimax-rotation was conducted. Six factors emerged with eigenvalues over 1.0, but some of the factors that emerged had only one or two questions that corresponded. After an evaluation of the research and analysis of the data, three factors were considered viable, based on having more than two items with a factor loading of .5 or higher. All three factors had a Cronbach's Alpha of .69 or above, calculated by examining the items that loaded high on the factor.

Behavioral Engagement: This factor had a Cronbach's Alpha of .882. This factor had high loadings on items such as, "I do my homework," "I do my school work because I want to get good grades," and "I follow classroom rules." All of these items reflected the operational definition of behavioral engagement, where students are actively and positively involved in school-like behaviors.

Emotional Engagement: This factor had a Cronbach's Alpha of .730. This factor had high loadings on items such as "I feel safe in my school" and "I like coming to my school." Most of these items reflected the operational definition of emotional engagement, but one item – "I like when I have to think really hard about an academic problem" – was initially connected to cognitive engagement.

Disengagement: This factor had a Cronbach's Alpha of .692. This factor had high loadings on items such as "I feel I do not have much to be proud of in my school," and "I feel as if I don't have a lot of control over my grades." Two of the items corresponded with the definition of disengagement, while two other items that had high loadings in this factor were originally intended to measure emotional engagement.

The survey was created to assess students' academic engagement, defined as an aggregate of behavioral, emotional, and cognitive types of engagement. Both behavioral and emotional engagement emerged from the factor analysis as viable variables, but cognitive engagement did not. Although the survey was created in conjunction with already-established engagement surveys, this variable did not materialize. As noted in Chapter two, research on cognitive engagement is more limited than the other three types, and survey items have not been previously developed for middle-school students. In addition, it is possible that the concept of cognitive engagement is conceptually less relevant to students of this age. Middle-school students may not be mature enough to analyze their metacognition. Questions intended to measure cognitive engagement questions were not "lost," but rather loaded on all three engagement variables. For

example, both behavioral engagement and disengagement had two items that were originally coded as cognitive engagement questions. The cognitive engagement questions that did load on the different engagement variables could either have loaded with other engagement questions or were alone. The correlation matrix and factor results can be viewed in Appendix I. Rather than trying to force the items into the categories that were derived from the literature review, the researcher decided to proceed with the three scales that emerged from the factor analysis. The three engagement variables were computed by averaging students' scores. For example, averaging nine items from the survey instrument created the variable of behavioral engagement. Similarly, averaging students' scores on five survey items created the variable of emotional engagement, and four averaged survey items created the variable of disengagement.

In addition to engagement, twenty questions on the survey pertained to authentic pedagogy, school climate, and teacher support. To determine independent variables and confirm the presence of possible factors, a component factor analysis with varimax-rotation was conducted. Six factors emerged with eigenvalues over 1.0, but some of the factors that emerged had only one or two questions that related to each other. After an evaluation of the research and analysis, only one viable factor emerged. Loading was considered high if it was greater than .5. This factor had a Cronbach's Alpha of .879, calculated by examining the items that loaded high on the factor.

Teacher support: This factor had high loadings on items such as "My teachers are interested in me," "My teachers believe I can do well in school," and "My teachers praise my efforts when I work hard." All of these items reflected the definition of teacher support for this study. A few items that had high loadings for teacher support were written to assess authentic pedagogy, but also connected to teacher support. For example, "My teachers require me to think hard about the subjects we are learning."

Neither authentic pedagogy nor school climate emerged as distinct variables from the factor analysis. This is, perhaps, not surprising because the survey questions developed to address teacher support, authentic pedagogy, and school climate did not utilize already established indices. Instead, the researcher developed the questions based on information gathered from studies addressing the concepts mentioned. This section of the survey was exploratory, to determine what factors emerged from the students. The survey was structured to ask students about teacher support, authentic pedagogy, and school climate, but the concepts were derived for this research specifically.

Developmentally appropriate school model.

Thirteen questions on the survey pertained to the effectiveness of the DASM. To determine if the questions asked actually correlated to a similar factor, a component factor analysis with varimax-rotation was conducted. One factor emerged with an eigenvalue over 1.0. Loading was considered high if it was greater than .5, and this factor had a Cronbach's Alpha of .871.

This factor had high loadings on items such as "My teachers are good at teaching eighth-grade students," "Teachers and administrators support student leadership," and "My school is a caring community." All of these items reflected the operational definition of the DASM.

Achievement variables were also constructed to facilitate effective analysis. MCA II math and reading scores were averaged to create one combined MCA II variable. In addition, student achievement on the CALT math and reading tests were also averaged to create one combined CALT variable. Students core GPA was used as it was originally presented.

Data Analysis Methods

The data analysis of the current study involves descriptive statistics, as well as inferential statistical tests that correspond with the research questions. Descriptive statistics is used to give information regarding the relative meanings of scores, and also to assess how representative the sample is of the population (Creswell, 2003). Inferential statistics is used to provide information on the relationship and predictability between variables.

Descriptive Statistics.

First, data collected from the district regarding the participants' demographics were tabulated. This information was used to report the demographic characteristics of the participants. The demographic characteristics of ethnicity, especially whether a student participant is white or black, were most relevant to the current study.

Second, demographic data was used to compare schools. As stated previously, Bloomfield's three middle schools are different in terms demographics, and through the use of descriptive statistics, this study compares the sample with each school's overall population.

Inferential Statistics.

To address the research questions pertaining to relationships, this study looked at the correlations between variables. For example, correlations were run between the different types of engagement (behavioral, emotional, and disengagement). In addition, correlations were run on each type of engagement and its relationship to student academic achievement. Once the relationships were determined, step-wise regressions were run in order to examine engagement variables to see which variables are associated with student achievement, over and above the control variable of student ethnicity. Correlations were also run to determine the relationships between the DASM and teacher support to student engagement. Table 3.4 states the statistically analysis for each research question.

Table 3.4 *Data Analysis by Research Question*

Research Question	Specific Statistical Test
1. What is student academic engagement?	Factor Analysis
1a. What forms of student academic engagement emerge?	Factor Analysis
	Bivariate Correlations
1b. What are the relationships between these types of student academic engagement?	Descriptive Statistics
1c. How does student academic engagement emerge overall, by school and demographic indicators?	
2.What is the relationship between academic engagement and student academic achievement (and all subquestions)?	Bivariate Correlation
3. What is the relationship between white and black students' academic engagement and academic achievement (and all subquestions)?	Bivariate Correlation
4. What is the relationship between students' academic engagement, the developmentally appropriate school model and teacher support (and all subquestions)?	Bivariate Correlation
5. To what degree can student academic engagement decrease or increase the effects of ethnicity on student academic achievement (and all subquestions)?	Stepwise Regression

Ethical Considerations

This study adhered to the ethical standards of conducting scholarly research and complied with the specific regulatory requirements for studies involving human subjects. Creswell (2003) and the Institutional Review Board at the University of Minnesota identify three ethical considerations when conducting research with human subjects. This section outlines the ethical considerations for carrying out research and delineates the human subject consent and IRB review process.

Respecting the rights of participants is the first general ethical consideration (Creswell, 2003). Participants have the right to be informed of the aim of the research and the use of the results. A participant's anonymity should be protected and confidentiality ensured. This study addressed these considerations by providing to participants and their guardians a full explanation of the purpose of the study and the intentions regarding the results in two separate documents (see Appendix E and F). In addition, participants were guaranteed that their survey responses would be kept confidential. By using a secure server monitored by the school district to collect web survey data, participants' responses were indeed confidential. In addition, the researcher, upon successful defense of the dissertation and related requirements, will delete the raw data from all servers.

Creswell (2003) also states that researchers should honor the research site by gaining permission for access, being unobtrusive, and mitigating potential risks to participants. This study accomplished this by petitioning the Bloomfield School District (see Appendix C) and seeking the permission of the IRB at the University of Minnesota.

Data collection was unobtrusive to the school sites and posed minimal psychological risks to the participants. Keeping individual responses confidential lessened the risk of negative impact on the participants' school environment.

Creswell (2003) further states that the third general ethical consideration when dealing with human subjects pertains to reporting research fully and honestly. Data should be reported honestly and be void of altered findings. Other studies should not be plagiarized and sources should be clearly identified (Creswell, 2003). In addition, the true purpose of the study should be clearly stated and practical in nature (Creswell, 2003). This study addresses these ethical considerations by reporting the data honestly without distorting the findings. This study also follows a well-planned, methodical, data analysis plan. Plus, the work of others was cited to provide this study with academic integrity. Lastly, this study provides significance by potentially developing empirical evidence in support of academic engagement as one way to lessen the achievement gap between white and black students.

This study followed the rules and guidelines requested by the University of Minnesota's Institutional Review Board. IRB ensures that two standards are upheld in all research pertaining to human subjects. First, subjects should not be placed at undue risk; and second, that they give uncoerced, informed consent to their participation (University of Minnesota Web Page, January 2009). This researcher sought the approval of the IRB to conduct this study. To do this, the level of review needed to be determined. This study was eligible for expedited review because the research involved only minimal risk

procedures and subjects were not exposed to any stressful situations (63 FR 60364-60367, November 9, 1998). Since the current study was eligible for an expedited review, an IRB designee reviewed the research proposal. The study and appropriate materials were reviewed and the decision was made regarding the approval of the study.

Chapter Summary

A quantitative cross-sectional web-based survey method design was executed to examine how 8th grade students' perceived academic engagement related to their academic achievement. This design was selected because it was an efficient and appropriate way of collecting generalizable data. The online survey instrument was created using the NELS, ELS, and HSSSE survey as models and was administered to 8th grade students during one of the core curricular classes in a school computer lab. Dillman's (2007) Total Design Method was used to collect data and to increase responses and ensure the study's generalizability. The collected data were checked and transformed using factor analysis. The data were then analyzed using descriptive and inferential statistics to address the research questions. In addition, this chapter reviewed the ethical issues that pertained to this study. This study required prior IRB approval and Bloomfield Public School's permission to conduct research on human subjects (students). Chapter four will present the results from the analysis of the data collected.

Chapter Four

Survey Results

The purpose of this study is to assess the relationship between students' perceived academic engagement and their academic achievement. The concept of academic engagement, which has been well studied, is particularly important because it may provide a deeper understanding of the reasons for the academic achievement gap between white and black students. The study was therefore designed to examine whether greater engagement in school is associated with a smaller academic achievement gap.

To address the above question, the researcher collected survey data from 8th grade students that revealed their perceptions of their own engagement with schooling and other academic experiences, and made use of existing data on demographic characteristics and academic achievement. This chapter presents data to answer the more detailed research questions posed in chapter one, and concludes with a summary of the findings related to each question and subquestion.

Research Question Analysis

This study addressed the following research questions:

1. What is student academic engagement?

    a. What forms of student academic engagement emerge?

    b. What are the relationships between these types of student academic engagement?

c. How does student academic engagement emerge by school, by demographic indicators, and overall?

2. What is the relationship between student academic engagement and student academic achievement?

   a. What is the relationship between student academic engagement and performance on the Reading and Math portions of the MCA II?

   b. What is the relationship between student academic engagement and performance on the CALT Math and Reading assessments?

   c. What is the relationship between student academic engagement and GPA?

3. What is the relationship between white and black students' academic engagement and academic achievement?

   a. What is the relationship between student academic engagement and MCA II Math and Reading?

   b. What is the relationship between student academic engagement and CALT Math and Reading?

   c. What is the relationship between student academic engagement and GPA?

4. What is the relationship between students' academic engagement, the middle school model, and teacher support?

   a. What is the relationship between student academic engagement and teacher support?

b. What is the relationship between student academic engagement and the middle school model?

c. What were the differences between black and white students experience of both teacher support and the middle school model?

5. To what degree can student academic engagement decrease or increase the effects of ethnicity on student academic achievement?

Demographic Characteristics of Participants

Bloomfield's Office of Research and Evaluation provided students' demographic information. This included each student's ethnicity, free and reduced lunch status, gender, and the middle school he or she attended. This section presents demographic characteristics of all participants.

Demographic Characteristics of Participants.

While as many as 779 students completed some portion of the survey, only the results of 659 participants who had both survey and achievement data are included in this report. Of these, 219 attended Westview Middle School, 237 attended Riverview Middle School, and 203 attended Eastview Middle School. Of these students, 344 were identified as male, and 315 as female. An analysis of the ethnic distribution revealed that 1.4% are American Indian, 7.9% are Asian, 8.5% are Hispanic, 16.4% are black, and 43.4% are white. The age of the students was not collected, but as all students were in 8th grade, the vast majority of them were thirteen or fourteen years-old at the time of data collection. Of the 659 participants, 198 qualified for free and reduced lunch, 61 received Special

Education services, and 26 had Limited English Proficiency (LEP). (see Table 4.2, for a

summary of the demographic characteristics of participants).

Table 4.2 *Demographic data*

	Middle Schools			Gender		Ethnicity				
	WestView	Riverview	Eastview	Male	Female	Am. Indian	Asian	Hispanic	Black	White
Total Number	219	237	203	344	315	9	52	56	108	434
Frequency	33.2%	36%	30.8%	52.2%	47.8%	1.4%	7.9%	8.5%	16.4%	65.9%

	Free & Reduced Lunch		Special Education		Limited English Proficiency	
	Yes	No	Yes	No	Yes	No
Total Number	198	461	61	598	26	633
Frequency	30.0%	70.0%	9.3%	90.7%	3.9%	96.1%

Research Question One: What is student academic engagement?

Research question one attempts to determine the variables that emerge regarding engagement. To determine these variables, a factor analysis was conducted and bivariate correlations were run on each engagement variable that emerged. This section analyzes subquestions a-c.

Research Question 1a: What forms of student academic engagement emerge?

To determine engagement variables and confirm the presence of similar types of engagement that the survey was intended to measure, a component factor analysis with varimax-rotation was conducted. As noted in Chapter three, after an evaluation of the research and analysis of the data, three factors were considered viable. These were labeled as behavioral, emotional, and cognitive.

Subquestion 1b: What are the relationships between these types of student academic engagement?

This research question was analyzed by looking at the correlations between the three engagement variables (behavioral, emotional, and disengagement) in order to account for highly correlated variables or multicollinearity (see Table 4.4). Research question one identified three academic engagement variables by conducting a factor analysis. Assessing multicollinearity among three academic engagement variables was important for future data analysis requiring regression.

Table 4.4 *Engagement Correlations*

		Behavioral Engagement	Emotional Engagement	Disengagement
Behavioral Engagement	Pearson Correlation	1.000	.579[**]	-.454[**]
	Sig. (2-tailed)		.000	.000
	N	659	659	659
Emotional Engagement	Pearson Correlation	.579[**]	1.000	-.341[**]
	Sig. (2-tailed)	.000		.000
	N	659	659	659
Disengagement	Pearson Correlation	-.454[**]	-.341[**]	1.000
	Sig. (2-tailed)	.000	.000	
	N	659	659	659

**. *Correlation is significant at the 0.01 level (2-tailed)*

In examining the correlations, a positive and significant correlation emerged between behavioral engagement and emotional engagement ($\alpha = .579$). There is also a negative, but significant correlation between behavioral engagement and disengagement ($\alpha = -.454$). Emotional engagement is also negative, but significantly correlated with disengagement ($\alpha = -.341$). These results suggest that although the engagement variables are moderately correlated, multicollinearity is not a significant problem here since there is no correlation over .70.

Subquestion 1c: How does student academic engagement emerge by school, by demographic indicators, and overall?

This research subquestion was analyzed using descriptive statistics (mean and standard deviation) for each academic engagement variable. Behavioral engagement had a mean score of 3.19 (SD = .55), emotional engagement had a mean score of 2.57 (SD = .57), and disengagement had a mean score of 1.84 (SD = .57). The mean scores for each academic engagement variable were based on a scale of 1-4. The range, mean, and standard deviation for each of the mean scores for academic engagement are depicted in Table 4.5.

Table 4.5 *Summary of descriptive statistics for academic engagement*

	N	Minimum	Maximum	Mean	Std. Deviation
Behavioral Engagement	659	1.44	4.00	3.1978	.55242
Emotional Engagement	659	1.00	4.00	2.5772	.57456
Disengagement	659	1.00	4.00	1.8403	.57757
Valid N (listwise)	659				

Research subquestions 1c asks how student academic engagement varies by school. The results are shown in Table 4.6, which shows a significant difference between the three schools. Riverview middle school exhibits higher mean scores in behavioral engagement, emotional engagement, and the lowest score in disengagement. Table 4.7 shows the significant differences between the three schools.

Table 4.6 *Summary of Descriptive statistics by each school (Westview , Riverview, and Eastview)*

	Mean (S.D.)		
Type of Engagement	Westview (N=219)	Riverview (N=237)	Eastview (N=203)
Behavioral	3.17 (.57)	3.28 (.54)	3.12 (.52)
Emotional	2.60 (.55)	2.66 (.56)	2.44 (.58)
Disengagement	1.89 (.60)	1.72 (.54)	1.91 (.56)
Valid N = 659			

Table 4.7 *ANOVA to Determine if There is a Significant Difference Between Schools on Engagement Scores*

	Behavioral Engagement	Emotional Engagement	Disengagement
	F (Sig.)		
Between Groups	4.800 (.009)	8.722 (.000)	7.040 (.001)

Research subquestion 1c also asks whether student academic engagement varies by demographic characteristics (gender, ethnicity, LEP, and special education). The results of this analysis are shown in Table 4.8, which shows that female students had higher scores for both behavioral engagement and emotional engagement and lower scores on disengagement.

Table 4.8 *Descriptive Statistics Comparing Male and Female Students on Academic Engagement*

	Mean (S.D.)	
Type of Engagement	Male (N=344)	Female (N=315)
Behavioral	3.11	3.29
	(.55)	(.53)
Emotional	2.56	2.58
	(.56)	(.58)
Disengagement	1.87	1.79
	(.59)	(.55)
Valid N = 659		

The results of an ANOVA (Table 4.9) indicate a significant difference between 8th grade males and females in terms of engagement. 8th grade girls exhibit a significantly higher mean score on behavioral engagement, but not on either emotional engagement or disengagement.

Table 4.9 *ANOVA to Determine if There is a Significant Difference Between Genders on Engagement Scores*

	F (Sig.)		
	Behavioral Engagement	Emotional Engagement	Disengagement
Between Groups	17.349	.235	3.183
	(.000)	(.628)	(.075)

The mean scores of academic engagement were also calculated by ethnicity. There were only nine subjects in the study who were American Indian. Because of this small number, that group is left out of the data presented in Table 4.10. Table 4.10 shows that behavioral engagement is lower among Hispanic and black students, and higher among Asian and white students. The ANOVA (table 4.11) indicates that this difference is significant. Emotional engagement is, on the other hand, roughly equivalent among all three groups, and is not significantly different. Disengagement is most prevalent among the Hispanic students, and lowest among the white students.

Table 4.10 *Descriptive Statistics Comparing Ethnicities on Academic Engagement*

Type of Engagement	Mean (S.D.)			
	Asian (N=52)	Hispanic (N=56)	Black (N=108)	White (434)
Behavioral	3.20 (.55)	3.03 (.54)	3.04 (.56)	3.26 (.53)
Emotional	2.55 (.57)	2.58 (.59)	2.54 (.62)	2.59 (.56)
Disengagement	1.85 (.50)	2.13 (.55)	1.89 (.57)	1.78 (.57)
Valid N = 659				

Table 4.11 *ANOVA to Determine if There is a Significant Difference Between Ethnicities on Engagement Scores*

	F (Sig.)		
	Behavioral Engagement	Emotional Engagement	Disengagement
Between Groups	6.318	.312	5.345
	(.000)	(.870)	(.000)

The last part of research subquestion 1c required the analysis of the academic

engagement on special education students, students who have limited English

proficiency, and students who qualify for free and reduced lunch – in other words,

students who may be disadvantaged in a school setting due to factors that are distinct

from race and ethnicity. Students who did not qualify for free and reduced lunch had a

significantly higher score on behavioral engagement and significantly lower score on

disengagement than those who did (Table 4.12).

Table 4.12 *Descriptive Statistics Comparing Students who Qualify and do not Qualify for Free and Reduced Lunch, LEP, and*

Special Education on Academic Engagement

Type of Engagement	Mean (S.D.)					
	No-Free Reduced Lunch (N=461)	Yes-Free Reduced Lunch (N=198)	No-SPED (N=598)	Yes-SPED (N=61)	No- LEP (N=633)	Yes- LEP (N=26)
Behavioral	3.27 (.52)	3.02 (.58)	3.22 (.54)	2.93 (.59)	3.21 (.54)	2.88 (.58)
Emotional	2.56 (.56)	2.59 (.59)	2.58 (.57)	2.53 (.60)	2.57 (.57)	2.70 (.58)
Disengagement	1.78 (.56)	1.97 (.57)	1.81 (.57)	2.07 (.58)	1.82 (.57)	2.31 (.55)

Valid N = 659

Even though students who did not qualify for free and reduced lunch had a slightly higher emotional engagement mean, this difference was not significant (see Table 4.13). Similarly, students receiving special education services had a significantly lower score in behavioral engagement and a significantly higher score on disengagement. Special education students also had a lower mean score on emotional engagement, but the difference here was not significant. Finally, students who received LEP services had a significantly lower score in behavioral engagement and a significantly higher score in disengagement than those who did not. LEP students also had a higher score in emotional engagement, but the difference was not significant.

Table 4.13 *ANOVA to Determine if There is a Significant Difference Between Free and Reduced Lunch, Special Education,*

and Limited English Proficiency on Engagement Scores

	F (Sig.)		
	Behavioral Engagement	Emotional Engagement	Disengagement
Between Groups	28.188	.369	16.913
Free & Reduced	(.000)	(.544)	(.000)
Between Groups	15.616	.318	11.557
Special Education	(.000)	(.573)	(.001)
Between Groups	8.560	1.396	18.968
Limited English	(.004)	(.238)	(.000)

Research Question Two: What is the relationship between student academic engagement and student academic achievement?

Research question two addresses the relationship between academic engagement and student academic achievement. To examine this relationship, bivariate correlations were conducted on each engagement variable and achievement measurements. This section analyzes subquestions a-d.

Subquestion 2a: What is the relationship between student academic engagement and performance on the reading and math portions of the MCA II?

The relationship between the engagement variables – behavioral, emotional, and disengagement - and academic achievement as measured by a combined MCA II scores in math and reading were examined using bivariate correlation. MCA II is Minnesota's criterion-referenced test to measure student achievement. It is used to determine if students, schools, and districts are making adequate yearly progress toward Minnesota's academic standards. MCA II math and reading scores were averaged in this study to create a single MCA II achievement score. Behavioral engagement and MCA II results were positively and significantly correlated at .379. Emotional engagement and MCA II math and reading were positively and significantly correlated at .199. Disengagement was negatively and significantly correlated with MCA II with a correlation of -.288. All engagement and MCA II correlations were moderate to low but significant at the .01 level (2-tailed). Table 4.14 shows the correlations between the achievement scores on MCA II and the three engagement variables.

Table 4.14 *Correlations between MCA II achievement and Student Academic*

	Combined MCA II (Math and Reading)		
	Behavioral Engagement	Emotional Engagement	Disengagement
Pearson Correlation	.379[**]	.199[**]	-.288[**]
Sig. (2-tailed)	.000	.000	.000
N	589	589	589

**. Correlation is significant at the 0.01 level (2-tailed)

Subquestion 2b: What is the relationship between student academic

engagement and performance on the CALT math and reading assessments?

As with the MCA II scores, the CALT is a criterion-referenced test, which is used by Bloomfield Public Schools to assess students' achievement based on district standards. The CALT achievement scores in math and reading were averaged to create a combined CALT achievement measure. Bivariate correlations were run on all three engagement variables and the CALT achievement measure. Behavioral engagement and CALT scores were positively and significantly correlated at .388. Emotional engagement and CALT scores were positively and significantly correlated at .172. Disengagement was negatively and significantly correlated with CALT scores with a correlation of -.324. All three engagement variables and CALT correlations were moderate to low, but significant at the .01 level (2-tailed). Table 4.15 shows the correlations between the achievement scores on CALT and the three engagement variables.

Table 4.15 *Correlations between CALT achievement and Student Academic Engagement*

	Combined CALT (Math and Reading)		
	Behavioral Engagement	Emotional Engagement	Disengagement
Pearson Correlation	.388**	.172**	-.324**
Sig. (2-tailed)	.000	.000	.000
N	615	615	615

**. *Correlation is significant at the 0.01 level (2-tailed)*

Subquestion 2c: What is the relationship between student academic engagement

and GPA?

A GPA score was created for all students by averaging their grades in the core

subject areas of math, language arts, science, social studies, and reading. GPA is a

measurement of achievement, but also a measurement of student academic engagement.

Unlike a standardized test, grades are subjective to teachers' perceptions of student work

and behavior. For this analysis, GPA was considered a measurement of achievement.

Behavioral engagement and GPA are positively and significantly correlated at .565.

Emotional engagement and GPA are positively and significantly correlated at .199.

Disengagement and GPA are negatively and significantly correlated at -.323. All three

engagement variables and GPA correlations were moderate to low, but significant at the

.01 level (2-tailed). Table 4.16 shows the correlations between the achievement scores on

GPA and the three engagement variables.

Table 4.16 *Correlations between GPA achievement and Student Academic Engagement*

	GPA		
	Behavioral Engagement	Emotional Engagement	Disengagement
Pearson Correlation	.565**	.199**	-.323**
Sig. (2-tailed)	.000	.000	.000
N	649	649	649

**. Correlation is significant at the 0.01 level (2-tailed)

Research Question Three: What is the relationship between white and black students' academic engagement and academic achievement?

Research question three addresses the relationship between white and black students' academic engagement and academic achievement. To examine this relationship, bivariate correlations were conducted on each engagement variable by ethnicity and achievement measurements. This section analyzes subquestions a-d for research question three.

Subquestion 3a: What is the relationship between student academic engagement and MCA II Math and Reading?

This analysis is similar to the analysis for research question two, in that the MCA II achievement measure is a composite of both the reading and math scores. In the analysis, black students show a positive and significant (0.05 level, 2-tailed) correlation of .219. Black students' emotional engagement and MCA II achievement scores showed a positive, but not significant correlation (.060). In contrast, disengagement showed a negative and significant (0.01 level, 2-tailed) correlation of -.342. Comparably, white students had a positive and significant (0.01 level, 2-tailed) correlation of .383 for behavioral engagement and .226 for emotional engagement. Disengagement and MCA II scores for white students indicated a negative and significant correlation of -.309. Table 4.17 shows the correlations of both white and black students for academic engagement and academic achievement.

Table 4.17 *White and Black Students Correlations for Academic Engagement and MCA II Achievement.*

		White Students Combined MCA II	Black Students Combined MCA II
Behavioral Engagement	Pearson Correlation	.383[**]	.219[*]
	Sig. (2-tailed)	.000	.042
	N	413	87
Emotional Engagement	Pearson Correlation	.226[**]	.060
	Sig. (2-tailed)	.000	.583
	N	413	87
Disengagement	Pearson Correlation	-.309[**]	-.342[**]
	Sig. (2-tailed)	.000	.001
	N	413	87

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Subquestion 3b: What is the relationship between student academic

engagement and CALT Math and Reading?

Similar to the analysis of subquestion 2b, the CALT achievement measure is an

average of both the math and reading scores on this test. Black students show a positive

and significant (0.01 level, 2-tailed) correlation of .270. Black students' emotional

engagement and CALT achievement scores showed a positive, but not significant

correlation (.093). In contrast, disengagement showed a negative and significant (0.01

level, 2-tailed) correlation of -.369. Comparably, white students had a positive and

significant (0.01 level, 2-tailed) correlation of .346 for behavioral engagement and .195

for emotional engagement. Disengagement and CALT scores for white students indicated

a negative and significant correlation of -.287. Table 4.18 shows the correlations of both

white and black students for academic engagement and academic achievement on the

CALT.

Table 4.18 *White and Black Students Correlations for Academic Engagement and CALT Achievement.*

		White Students Combined CALT	Black Students Combined CALT
Behavioral Engagement	Pearson Correlation	.346**	.270**
	Sig. (2-tailed)	.000	.009
	N	415	92
Emotional Engagement	Pearson Correlation	.195**	.093
	Sig. (2-tailed)	.000	.377
	N	415	92
Disengagement	Pearson Correlation	-.287**	-.369**
	Sig. (2-tailed)	.000	.000
	N	415	92

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Subquestion 3c: What is the relationship between student academic engagement

and GPA?

Black students show a positive and significant (0.01 level, 2-tailed) correlation of

.498 between behavioral engagement and core GPA. Black students' emotional

engagement and GPA achievement score showed a positive and significant (0.05 level, 2-

tailed) correlation (.232). In contrast, disengagement showed a negative and significant

(0.01 level, 2-tailed) correlation of -.269. Comparably, white students had a positive and

significant (0.01 level, 2-tailed) correlation of .559 for behavioral engagement and .189

for emotional engagement. Disengagement and GPA for white students indicated a

negative and significant correlation of -.314. Table 4.19 shows the correlations of both

white and black students for academic engagement and academic achievement on

students' core GPA.

Table 4.19 *White and Black Students Correlations for Academic Engagement and GPA Achievement.*

		White Students GPA	Black Students GPA
Behavioral Engagement	Pearson Correlation	.559**	.498**
	Sig. (2-tailed)	.000	.000
	N	429	103
Emotional Engagement	Pearson Correlation	.189**	.232*
	Sig. (2-tailed)	.000	.018
	N	429	103
Disengagement	Pearson Correlation	-.314**	-.269**
	Sig. (2-tailed)	.000	.006
	N	429	103

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Summary of Research Question Three and Subquestions.

For both groups, behavioral engagement and disengagement show stronger associations to achievement than emotional engagement. The relationships are slightly stronger for white students, but are significant for both groups. The associations between GPA and behavioral and emotional engagement are stronger than for the two standardized test measures, which suggests that grades may be more sensitive to the way in which both black and white students present themselves in the classroom setting.

Research Question Four: What is the relationship between students' academic engagement and the developmentally appropriate school model and teacher support?

Research question four addresses the relationship between academic engagement, the DASM, teacher support, and academic achievement. To examine these relationships bivariate correlations were conducted on each engagement variable the DASM and teacher support. This section analyzes research question four and subquestions a-c.

Subquestion 4a: What is the relationship between student academic engagement and teacher support?

This research question was analyzed by examining the correlations between the three engagement variables (behavioral, emotional, and disengagement) and the variable of teacher support. The bivariate correlations between student academic engagement and teacher support show moderate associations between the variables. Teacher support is positively and significantly correlated with behavioral engagement ($\alpha = .474$) and emotional engagement ($\alpha = .519$). In addition, teacher support is negatively and

positively correlated with disengagement (α = -.305). Table 4.20 shows the correlations

between teacher support and the three engagement variables.

Table 4.20 *Correlations between Teacher Support and the Three Engagement Variables.*

	Teacher Support		
	Behavioral Engagement	Emotional Engagement	Disengagement
Pearson Correlation	.474**	.519**	-.305**
Sig. (2-tailed)	.000	.000	.000
N	659	659	659

**. *Correlation is significant at the 0.01 level (2-tailed)*

Subquestion 4b: What is the relationship between student academic

engagement and the developmentally appropriate school model?

Research question 4b was analyzed by examining the correlations between the

three engagement variables (behavioral, emotional, and disengagement) and the measure

of student experiences that correspond to the DASM. After running a bivariate

correlation between student academic engagement and the DASM, moderate correlations

emerged between the variables. The DASM is positively and significantly correlated with

behavioral engagement ($\alpha = .454$) and emotional engagement ($\alpha = .542$). In addition, the

DASM is negatively and positively correlated with disengagement ($\alpha = -.283$). Table 4.21

shows the correlations between the DASM and the three engagement variables.

Table 4.21 *Correlations between the Developmentally Appropriate School Model and the Three Engagement Variables.*

| | Developmentally Appropriate School Model | | |
	Behavioral Engagement	Emotional Engagement	Disengagement
Pearson Correlation	.454[**]	.542[**]	-.283[**]
Sig. (2-tailed)	.000	.000	.000
N	659	659	659

**. Correlation is significant at the 0.01 level (2-tailed).

Subquestion 4c: What were the differences between black and white students'
experiences of both teacher support and the developmentally appropriate school
model?

Research question 4c was analyzed using descriptive statistics. The mean scores for the DASM and teacher support were identified for both white and black students. Black students had a mean score of 2.96 (SD = .58) for the DASM and 2.98 (SD = .53) for teacher support. White students had a mean score of 3.04 (SD = .50) for the DASM and 3.00 (SD = .48) for teacher support. When comparing mean scores on the DASM and teacher support, white students had higher mean scores than black students and a higher mean when compared to the entire sample. The range, mean, and standard deviation for each of the mean scores for both black and white students are depicted in Table 4.22

Table 4.22 *Summary of Descriptive Statistics for the Developmentally Appropriate School Model and Teacher Support for Black and White Students.*

	Mean (S.D.)		
	Black Students (N=108)	White Students (N=434)	All Students (N=659)
Teacher Support	2.98 (.55)	3.00 (.49)	3.00 (.49)
Developmentally Appropriate School Model	2.97 (.58)	3.04 (.51)	3.03 (.51)

A one-way ANOVA was run to determine if the differences between white and black students on both the DASM and teacher support were significantly different. The analysis revealed no significant difference between white and black students on the DASM. In addition, teacher support is also not significantly different between white and black students (Table 4.19).

Table 4.19 *ANOVA: White and Black Students and the Developmentally Appropriate School Model and Teacher Support*

	F (Sig.)	
	Developmentally Appropriate School Model	Teacher Support
Between Groups	1.762	.138
	(.185)	(.710)

Summary of Research Question Four and Subquestions.

Research question four addresses the relationship between students' academic engagement and the developmentally appropriate school model and teacher support. To examine this relationship, bivariate correlations were conducted on each engagement variable, as well as on the DASM and teacher support. In addition, descriptive statistics were run between the three middle schools and ethnicity and their mean scores on the DASM and teacher support. A moderate positive and significant correlation emerged between academic engagement and teacher support. Emotional engagement showed the highest correlation to teacher support at .519. The DASM and academic engagement had a positive and significant moderate correlation. Similar to the findings on teacher support, the DASM and emotional engagement had the highest correlation at .542. White students had higher mean scores than black students on both the DASM and teacher support. The discussion of these findings (Chapter five) will provide further analysis of the differences between white and black students' academic achievement and engagement.

Research Question Five: To what degree can student academic engagement decrease or increase the effects of ethnicity on student academic achievement?

To address question five, stepwise linear regressions models were run, with the dependent variable being the three areas of student achievement (CALT, MCA II, and GPA). Stepwise regression was used to examine which engagement variables are associated with student academic achievement and the effects ethnicity has on achievement. Ethnicity was entered as a dummy variable (1 = White), followed in the second step by all three academic engagement variables (behavioral, emotional, and

disengagement). This regression model was conducted three times, each time changing only the dependent variable to another student academic achievement measure.

A stepwise regression was selected because it only allows a variable to enter the equation if it meets certain criteria. In addition, variables are removed if certain criteria are not met. In this case, if the probability associated with the test of significance is less than or equal to the default in SPSS of .05, the predictor variable with the largest correlation with achievement enters the equation first. The second variable is selected based on the highest partial correlation. If the second variable can pass the entry requirement (PIN = .05), it is also entered into the equation. In addition, the variables already in the equation are examined for removal according to the removal criterion (POUT = .10). Finally, variables not in the equation are examined for entry. Selection ends when no more variables meet entry and removal criteria. In sum, the stepwise regression approach used here results in the most parsimonious model for predicting the dependent variable.

The first regression examined the effects of engagement on student academic achievement measured by the combined MCA II variable. Table 4.20 presents the results. Entering ethnicity on the first step suggests that it has a moderate to high effect. Ethnicity achieved significant regression coefficients that account for approximately 14% of the variance in MCA II achievement variable explained. The second step in the equation, which adds the behavioral engagement variable, suggests that it also has a significant effect on student MCA II math and reading achievement. The R^2 increased to .25, and the regression coefficient for behavioral engagement is significant. The third equation added disengagement and also increased the R^2 to .27. Although emotional engagement was

entered into the stepwise regression, it did not meet the criteria established in the stepwise regression model. If the changes in the beta coefficients are examined, we see that the initial beta value for ethnicity (.37) is reduced to .32 by adding behavioral engagement. This indicates that even though behavioral engagement does not eliminate the academic achievement gap, it does reduce the association between ethnicity and achievement. In addition, both ethnicity and behavioral engagement have roughly the same beta value when presented in the same equation (.324 and .330), suggesting that they are equally powerful predictors of achievement.

Table 4.20 *Regression of MCA II Student Academic Achievement based on engagement and ethnicity.*

Predictors	β	t	Sig.	R^2
1 (Constant)		97.74	.000	
Ethnicity	.373	8.965	.000	.139
2 (Constant)		96.916	.000	
Ethnicity	.324	8.220	.000	
Behavioral Engagement	.330	8.385	.000	.246
3 (Constant)		90.421	.000	
Ethnicity	.328	8.445	.000	
Behavioral Engagement	.246	5.574	.000	
Disengagement	-.177	-4.063	.000	.270
Model	F	61.141	Sig.	.000

In the second regression, in which the dependent variable is the combined CALT achievement measure, ethnicity is entered as a dummy variable first, followed by all three academic engagement variables (behavioral, emotional, and disengagement). Table 4.21 presents the results this regression. The first step, in which ethnicity was entered, suggests a moderate to high effect. Ethnicity achieved significant regression coefficients with about 18% of the variance in CALT math and reading achievement variable explained. The second step, which adds the behavioral engagement variable, suggests that it also has a significant effect on student CALT achievement. The R^2 increased to .271, and the behavioral engagement variable is significant. The third step added disengagement and also increased the R^2 to .294. Although emotional engagement was entered into the stepwise regression, it does not meet the criteria established in the stepwise regression model and does not emerge as a viable variable.

As with the previous model, entering the engagement variables into the equation reduces the beta score of the Ethnicity variable (from .43 to .38), again indicating that even though behavioral engagement does not eliminate the academic achievement gap it does decrease the association between ethnicity and achievement.

Table 4.21 *Regression of CALT Student Academic Achievement based on engagement and ethnicity.*

Predictors	β	t	Sig.	R²
1 (Constant)		18.650	.000	
Ethnicity	.426	10.595	.000	.182
2 (Constant)		16.503	.000	
Ethnicity	.378	9.812	.000	
Behavioral Engagement	.303	7.872	.000	.271
3 (Constant)		16.786	.000	
Ethnicity	.382	10.062	.000	
Behavioral Engagement	.222	5.152	.000	
Disengagement	-.169	-3.969	.000	.294
Model	F	15.757	Sig.	.000

The third regression examined the effects of engagement on student academic achievement measured by the GPA variable. Table 4.23 presents these results. The first step, in which ethnicity was entered, suggests a moderate to high effect. Ethnicity achieved significant regression coefficients with about 19% of the variance in the GPA achievement variable explained. The second step, which adds the behavioral engagement variable, suggests that it also have a significant effect on student GPA achievement. The R^2 increased to .431, and the behavioral engagement variable is significant. The third step added emotional engagement (which was not a viable variable in the first two regression models) and also increased the R^2 to .448. In addition, the fourth equation added disengagement and increased the R^2 to .454. In this regression the engagement variables clearly have a major effect on the variance explained. In addition, the size of the beta coefficient is reduced, after the addition of the engagement variables, from .44 to .35, indicating again that even though behavioral engagement does not eliminate the academic achievement gap it does decrease the association between ethnicity and achievement. In addition, the beta coefficient for behavioral engagement is larger than that of ethnicity (.50 compared with .347).

Table 4.23 *Regression of GPA Student Academic Achievement based on engagement and ethnicity.*

Predictors	β	t	Sig.	R^2
1 (Constant)		-4.974	.000	
Ethnicity	.435	11.112	.000	.189
2 (Constant)		-10.099	.000	
Ethnicity	.347	10.417	.000	
Behavioral Engagement	.500	15.022	.000	.431
3 (Constant)		-9.418	.000	
Ethnicity	.338	10.259	.000	
Behavioral Engagement	.592	14.734	.000	
Emotional Engagement	-.157	-3.961	.000	.448
4 (Constant)		-7.302	.000	
Ethnicity	.338	10.302	.000	
Behavioral Engagement	.560	13.233	.000	
Emotional Engagement	-.169	-4.249	.000	.454
Disengagement	-.085	-2.339	.020	
Model	F	5.471	Sig.	.020

Summary of Research Question Five.

Research question five sought to determine the degree to which student academic engagement can predict student academic achievement. In addition, the question also addressed the degree in which ethnicity determines student academic achievement and whether engagement could decrease (or increase) the effects of ethnicity on academic achievement. Three stepwise regressions revealed that ethnicity accounts for a good degree of the variance in student achievement and also accounts for a high rate of change (beta value) in achievement. But, behavioral engagement also accounts for a good degree of variance in student achievement and in this research always decreases the effects of ethnicity on student academic achievement. For example, by adding behavioral engagement with ethnicity to GPA achievement, the ethnicity beta score goes from .435 to .347. This decrease indicates that behavioral engagement can lessen the association between ethnicity and student academic engagement.

Chapter Summary

This chapter presented the quantitative results of the data collected to examine how student academic engagement can be used to predict student academic achievement and mediate the effects of ethnicity. The chapter presented the demographic characteristics and the results of the research questions. Both descriptive and inferential statistics were used to analyze the research questions. For research question one, the data revealed that three student academic engagement variables emerged (behavioral, emotional, and disengagement) and that there was a significant moderate to low correlation between the three engagement variables. For research question two, the data revealed that there is a significant relationship between student academic engagement and

student academic achievement. Research question three data revealed that there is a significant relationship between student academic engagement and student academic achievement, for both black and white students. White students show a higher positive and significant correlation between behavioral and emotional engagement and student academic achievement. Black students show a higher negative and significant correlation between disengagement and student academic achievement, which corresponds with the literature on the achievement gap. For research question four, data revealed that there was a positive and significant correlation between academic engagement and teacher support and the developmentally appropriate school model. Finally, research question five used regression to determine how much of the variance in student academic achievement can be attributed to student academic engagement. Overall in this study, behavioral engagement has been shown to decrease the association of ethnicity and student academic achievement. The interpretation of the results and conclusions will be presented in Chapter five.

Chapter Five

Conclusions

The study was guided by the following research questions: What is the relationship between students' engagement in school and their academic achievement? And, Can engagement moderate the association between race and student academic achievement? This chapter begins by reviewing the purpose and significance of the study. Next, the chapter presents a summary of findings, interpretation of the data, limitations of the study, and implications for practice. Finally, the chapter offers recommendations for further research.

Purpose and Significance of the Study

The purpose of this study was to assess 8th grade students' level of engagement with school, and how this either contributes to or detracts from their academic achievement. This was accomplished by collecting data provided by 8th grade students and Bloomfield Public Schools to conduct a quantitative analysis of the effects of student academic engagement on academic achievement. The problem motivating this study is the persistent achievement gap between white and black students. The research questions address whether the academic achievement gap could be narrowed by an increase in students' academic engagement in school. In addition, the questions assess whether the concept and/or theory of academic engagement could reduce the academic achievement differences between white and black students in middle school.

Summary of the Findings

     Student Engagement.

Three engagement variables emerged from a factor analysis of the measures designed to tap engagement – behavioral, emotional, and disengagement. Behavioral engagement, emotional engagement, and disengagement variables were correlated and found to show significant relationships. Overall, the three categories of engagement were shown to complement each other in a meaningful way.

The students' levels of engagement varied based on their race. White students had higher levels of behavioral and emotional engagement and lower levels of disengagement when compared to black students. This finding is not surprising. Black students often feel that school is the white students' realm, not theirs (Ogbu, 1978). This sense of school as "white space" as well as the subtle institutional racism embedded within schools could be reasons why white students score higher on measures of academic engagement. It is important to note that the difference in the mean scores for black and white students was not significantly different, meaning white and black students had similar levels of engagement, although white students' engagement is slightly higher.

Engagement and Academic Achievement.

One major purpose of this study was to determine whether a relationship exists between academic engagement and student academic achievement. It is clear from the data that, indeed, a relationship does exist, and that this relationship is positive and significant[1]. Conversely, disengagement shows a negative and significant relationship with academic achievement.

Behavioral engagement shows the strongest relationship with all forms of academic achievement (grades, state criterion referenced tests, and a criterion referenced test used by the district). This is not an unexpected finding: it makes sense that students who are behaviorally engaged in school (i.e. do their homework, participate in class discussion) would consequently achieve better on academic achievement measures. The strongest relationship exists between behavioral engagement and the student's grade point average. Since GPA is a subjective measure of achievement, determined by teachers, a student who is more behaviorally engaged in the classroom has a better chance to receive a higher grade. In a sense, behavioral engaged students "play school well," and their teachers appreciate this behavior. In addition, students who are more engaged may learn more since they are participating more in class and doing their homework.

Emotional engagement is also positively related to academic achievement, although not as strongly as behavioral engagement. Students who feel safe in their school and report that they enjoy coming to school are more likely to academically achieve.

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[1] The reverse of this correlation is also accurate, meaning there is a positive and significant relationship between increased achievement and engagement (Yeh, 2004). For the purpose of this research the relationship indicating an increase in engagement is positively correlated with an increase in academic achievement will be examined.

Furthermore, it is clear that students who are disengaged (i.e. have nothing to be proud of in school, don't feel as if they have much control over their grades) are more likely to score lower on indicators of achievement. Disengagement and academic achievement are both significantly and negatively correlated. Students who feel disconnected from their school and teachers are also disconnected from their academic work. The conclusion can be drawn from this research and from previous research that disengagement is a serious condition that can inhibit students from reaching their full academic potential.

Race, Engagement, and Academic Achievement.

White students in this sample have, on average, higher academic achievement scores than black students. On average, white students also have higher engagement scores. In addition, white students show a higher positive correlation between behavioral and emotional engagement and academic achievement. Black students, on the other hand, show a stronger association between achievement and disengagement. This finding is extremely important. It suggests that becoming disengaged is more likely for black students, and when it occurs, it has a greater (negative) effect on black students' academic achievement, compared to white students. The data show that reducing disengagement may be critical to improving the academic success of black students.

The core purpose of this study was to determine whether student academic engagement predicts academic achievement, and whether engagement is a factor that helps to explain the difference in academic achievement between black and white students. In the end, this study shows that behavioral engagement accounts for a substantial proportion of the variance in student academic achievement. Adding emotional engagement and disengagement to the equation increases the variance

explained, but the data suggest that behavioral engagement is the best predictor of both GPA and scores on state-developed achievement tests. In addition, behavioral engagement appears to lessen the effects of race on student academic achievement. It follows, then, that if behavioral engagement can be increased for black students, the "achievement gap" may be diminished. Although an increase in engagement would not eliminate the entire achievement gap, it would have a positive effect.

School Model, Teacher Support, and Engagement.

Two concepts emerged in this study as ways to increase behavioral engagement in schools. Both the DASM and teacher support are positively and significantly correlated with behavioral engagement and can be used to increase levels of student academic engagement.

Developmentally Appropriate School Model.

The transition from elementary school to middle school has been associated with lower self-esteem, decline in academic self-esteem, and decline in school identification (Jackson & Davis, 2000). These phenomena can lead to lower student academic engagement. Yair's (2000) research highlights the importance of a school environment that is positive, where students feel cared for, and wherein academic success is an important goal.

The DASM is group of recommendations designed to provide a comprehensive approach to educating students in grades six through eight. The model, which was described in detail in Chapter two, is compromised of seven components, which, when implemented, increase students' engagement and achievement.

Successful implementation of the DASM and high levels of teacher support can increase student academic engagement. This information is important, especially to Bloomfield Public Schools. In 2000, Bloomfield attempted to create three new middle schools based on the developmentally appropriate school model outlined by *Turning Points* (2000). Bloomfield was right to attempt to create schools based on the tenets of a developmentally appropriate school model, and it appears that Riverview has implemented this goal at a higher level than the other two schools.

The DASM measure was found to have a positive and significant relationship with behavioral engagement. This bond is not surprising: how engaged a student is in her academics connects to how well the school implements the DASM. Riverview Middle School posts the highest mean score on the DASM and in behavioral engagement, when compared to the other two middle schools in this study. Riverview Middle School may post higher average scores in the DASM because it has had the least amount of turnover in staff when compared to the two other middle schools. Furthermore, at the time of the data collection, the leadership (principal and assistant principal) had both been in place since the school opened in 2000 as a middle school. This stability may grant the opportunity for Riverview to fully implement the tenets of the middle school originally outlined in the strategic plan.

Teacher Support.

Teacher support is defined by how a teacher develops the climate of the classroom, and the interpersonal support teachers provide to students in their classrooms (Jackson & Davis, 2000). Students who perceive their teacher as supportive and caring show higher correlations with participation in learning and on-task behaviors (Battistich,

Solomon, Watson, & Schaps, 1997) and less disruptive behavior (Ryan & Patrick, 2001). Furthermore, Marks (2000) shows that a classroom environment in which students report feeling supported by both teachers and peers is associated with higher levels of engagement. This study replicates those findings: students' reports of teacher support were positively and significantly correlated with behavioral engagement. With regard to differences between the three schools, the findings are similar to those reported for the developmentally appropriate school model. Riverview posted the highest mean scores on teacher support when compared to the other two middle schools. Race is also a factor in student's experience of teacher support: White students, again, had higher mean scores than black students on the teacher support variable. This may be due to a lack of black teachers in Bloomfield Schools. Of the thirty 8th grade teachers, only one is black. In addition, because of the abovementioned concern, black students may feel subtle racism from their teachers. Overall, the results of this study show a connection between successful implementation of the DASM, high levels of teacher support, and student engagement. Schools may increase levels of student engagement by directing their efforts to fully implement the DASM and increase teacher support.

In summary, this study shows that student engagement is significantly correlated with academic achievement. This relationship was found to be true for both black and white students, but the lack of engagement (disengagement) has more of a negative effect on black students. Raising the level of engagement for students can be accomplished by implementing the developmentally appropriate school model and increasing teacher support. Both concepts were shown to have a positive and significant relationship with

engagement. This finding is especially important because higher levels of behavioral

engagement diminish the effects of race on academic achievement.

Policy Considerations and Possible Implications

The results of this quantitative study highlight many policy considerations and

possible implications for reducing the achievement gap at the middle school level. The

considerations and implications are presented at three levels: federal and state policies,

district and school policies, and classroom policies and practices.

Implications for Federal and State Policy.

There are four significant federal and state policy considerations with regard to

this study and student academic engagement. The first is in response to the *No Child Left*

Behind legislation that requires states to evaluate students and schools with standardized

tests. These tests are focused solely on what the students know, rather than the conditions

that lead to learning. NCLB could require schools to complete surveys that address

student academic engagement, which effects student learning. The second policy

implication is that both federal and state legislation could recognize that student academic

engagement is an appropriate predictor of student academic achievement. Laws could

then require schools and districts to include engagement measures in their improvement

plans. This would require both schools and districts to be conscious and deliberate about

their attempts to increase student academic engagement. The third implication is that

state and federal funds should be allocated for the transition between elementary to

middle school. Research shows that this transition is crucial for the development of

engagement in students. States should mandate that all junior high schools be converted

to middle schools, with the understanding that the seven middle school components

outlined by *Turning Points* (2000) should guide this process. In addition, current middle schools should be required to assess the extent to which they've implemented the DASM, and then be obligated to work toward full implementation. Finally, federal and state policy should require a middle school teaching licensure. Currently, most states require a K-6, K-8, or 7-12 teaching license. Instead, states should require a 5-8 middle school licensure and mandate that middle schools only hire teachers who have this license. The DASM, as one if its components, calls for teachers who are experts at teaching young adolescents – requiring licensure would ensure that each teacher has adequate training in this specific field.

Implications for Districts and School Administrators.

Many policy considerations for districts and school administrators emerge from this quantitative study. The first implication is that districts and schools could be deliberate about implementing the DASM. The seven components outlined in the model require schools and districts to consider many facets of schooling. The most important aspect is creating a school that is developmentally responsive to students aged 10 to 14. Schools in transition to the DASM should send teams to visit schools that have successfully implemented it. Also, districts need to provide funding both for the transition from junior high to middle school, and for the staff development that will be required to make the change successful.

In addition, school administrators will need to hire teachers and staff that are committed to and knowledgeable about educating students at the middle level. As mentioned previously, middle schools should be staffed with teachers who are experts at teaching young adolescents. This may require school administrators to hire teachers with

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the aforementioned middle school teaching license. School districts should also provide

staff development for middle level teachers in the areas of student academic engagement.

Skinner and Belmont (1993) indicate in their research that changing teacher behaviors

from those that undermine to those that promote the engagement of students should be a

top priority for any district. Requiring teachers to be trained in the needs of the middle

level student, and also providing them with staff development designed to help them

become more developmentally responsive and deliberate about teaching engagement will

be beneficial to the education of students in grades 6-8.

School districts need to support school administrators in creating a school climate

dedicated to enhancing student academic engagement. School administrators should lead

democratically and allow for teacher leaders to emerge within the school. One way for

school administrators to implement policies to enhance student engagement is to adopt

programs like Positive Behavior Interventions and Supports (PBIS) – a school climate

initiative aimed at creating a positive, more engaging school climate for students and

staff. Finn and Voelkl (1993) indicate in their research that smaller schools that have fair

discipline systems increase student engagement by following a response to intervention

model outlined by the PBIS program. PBIS allows for teachers and school staff to

directly teach the expectations, and for students to be positively rewarded when they

exhibit the expected behaviors. When students do not meet the outlined expectations,

students are given consistent and fair consequences. This consistency and fairness helps

to increase student engagement. The Konopka Institute at the University of Minnesota

published a report analyzing dropout prevention in Minnesota. This report, published in

2009, indicated the following barriers keep young students from staying in school: unfair,

uncaring, unconnected staff and inconsistent and/or rigid policies. Districts should support administrators and teacher leaders so they can create positive school climates dedicated to student academics and student engagement.

Finally, school administrators should implement student engagement surveys to assess the current level of student engagement in their schools. Based on the survey data, school administrators and teacher leaders can enhance, change, or eliminate current practices in order to increase student engagement. The HSSSE survey would be an effective survey for districts and schools to implement to assess their current level of engagement. Even though the HSSSE is currently being used at the high school level, it could be manipulated to be applicable to the middle school as well.

Implications for Teachers.

Three implications for individual teachers emerge from this study. The first implication is that teachers should use instructional methods designed to prepare all students to achieve higher standards. Teachers should implement instructional methods that utilize the work of Fred Newmann's (1995) authentic instruction and Grant Wiggins and Jay McTighe's (1998) "understanding by design." Teachers should seek out staff development offerings based on the aforementioned authentic education instructional methods. By implementing an authentic education design in classrooms, teachers will increase their students' engagement in academic work and in school. In addition, students will achieve higher standards and increase their ability to academically achieve. Although this study did not directly connect cognitive engagement to lessening effects of the race on academic achievement, it is still important to continue practices that have been shown by other studies to increase achievement. Teachers and schools should aim to increase

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engagement of their students, while still utilizing sound pedagogy and a curriculum grounded in standards.

The second implication is that teachers need to be experts at teaching young adolescents. Teachers who teach at the middle level should be licensed to teach grades five through eight. If they do not have this license they should be required to receive it and be put on a temporary license until it is accomplished. In addition, school districts could offer staff development for current middle school teachers to help gain this important license. The third implication for teachers is increasing the level of teacher support they provide in their classrooms. Furrier and Skinner (2003) highlight in their research that students who feel connected to their classroom and teacher showed an increased level of behavioral engagement. This connection between teacher and student should be a goal for all middle level teachers. This can also be seen as interpersonal skills in the classroom – whether a teacher can elicit trust from students and create a classroom climate wherein students feel cared about and safe enough to learn. Pre-service teacher preparation and staff development could help train or guide teachers to have more teacher support in their classroom. This could also be accomplished by school administrators, peer coaches, and teacher mentors who, when observing and working with teachers, could assess and examine a teacher's interpersonal skills with students along with their instructional pedagogy. If teachers show a deficiency in this area, staff development could be offered in the areas of compassion, sensitivity, and interpersonal skills.

Implications for Further Research.

The findings and limitations of this study offer five opportunities for future research. First, the study should be replicated in various geographic locations to see if the findings are similar. Broadening the population would provide further support for the generalizability of the findings.

The second opportunity for future research is a qualitative study that examines the nuances of Riverview Middle School. Possible a case study that examines why that school, over the other two middle schools in Bloomfield, had greater degrees of engagement, DASM, and teacher support, that led to a greater correlation between engagement and student academic achievement. It would be interesting to examine why Riverview Middle emerged as very different from the other two middle schools, in a school district that allocates the same funding and programming for each school. A few reasons emerge as the possible reason for Riverview's higher scores in the areas of engagement and middle school model traits. First, as mentioned previously, when this study was conducted, the same principal and assistant principal had been in place since the opening of the school. It is possible that the consistency in leadership has granted the school the opportunity to emerge over the other two in the areas discussed. The other two schools have each had multiple principals and assistant principals during the same time period. With any change in leadership comes changes in the operation and culture of the school, and this may have prevented Westview and Eastview from fully developing the original middle school model vision outlined when all three schools opened. Second, Riverview Middle School is the largest of the three middle schools. This is the case because they have the highest number of students who choose, due to open enrollment in

Bloomfield, to attend Riverview. This choice aspect may lead Riverview to have students who are more committed to the school since they actually selected the school over their home school or the other middle school in the district. Third, Riverview Middle School, at the time of this study, was in its second year of PBIS. Eastview had yet to incorporate PBIS and Westview was only in its first year of implementation. PBIS is a philosophy and program dedicated to increasing students' engagement to their school. Since Riverview had already implemented PBIS in their schools, students were aware of behavioral expectations and in turn may be more engaged in reaching those expectations.

The third opportunity for future research would be to further investigate how the stereotype threat or oppositional culture theories affect student academic engagement. In this study, the DASM and teacher support are assessed by the survey, while the theories of oppositional culture or stereotype threat are not. Each of these theories have been investigated in connection to academic achievement at the college and high school level, but no research has been conducted looking at either oppositional culture or stereotype threat and student academic engagement at the middle school level. This research could expand the literature regarding the achievement gap and student academic engagement.

In addition, further research would be beneficial in examining the negative effects of disengagement on black students. This study did not examine antecedent conditions that could explain black students' increased levels of disengagement in school. For example, issues surrounding mobility, negative experiences with teachers, special education, and socio-economic status could be further scrutinized. The disengagement of black students in school is a concern that requires further research.

Finally, further research could be conducted on the concept of cognitive engagement at the middle school level. Cognitive engagement was one variable expected to emerge from this study, but it did not. Future studies could be carried out to determine whether cognitive engagement is an actual concept for middle school students that could affect student academic achievement. In addition, cognitive engagement could be further studied in conjunction with behavioral engagement. Research in this area could expand the literature regarding engagement, and also determine the effect of metacognition on students' ability to academically achieve.

Critique of the Study

Although this study adhered to standards of educational research, there were several limitations. This section will critique this study by discussing the limitations of the instrument and of data collection. This section concludes with a discussion of the generalizability of the study.

Limitations of the Survey Instrument.

The first limitation involves the survey instrument. The survey instrument assesses student perceptions of academic engagement, the DASM, teacher support, and authentic pedagogy. This was the first time this survey had been administered to students. Thus, the first limitation is that both the validity and the reliability of the instrument have not been established when measuring the perceptions of 8th grade students. This limitation may have been mitigated by the validity and reliability of the NELS, ELS, and HSSSE surveys that were used to help create this survey instrument. In addition, the instrument was used to support a cross-sectional methodology, thus it only captured the perceptions of 8th graders at the time of data collection. The instrument did not collect

longitudinal data or note any factors that may affect perceptions over time. Despite the limitations, the survey instrument served the purpose of the study and can be used for other studies involving 8th grade students. Finally, the survey instrument was unable to detect students' level of cognitive engagement. This may have occurred because of the age of the students, the way the questions were worded, or some unknown reason. The majority of research conducted on cognitive engagement has been conducted at the high school level. Plus, as stated in Chapter two, there have been a limited number of studies addressing cognitive engagement ,and cognitive engagement has been difficult to measure due to a lack of reliable and valid instruments to measure student metacognition. These factors may have contributed to cognitive engagement not emerging as a viable variable in this study.

Limitations of the Data Collection Process.

There were two limitations associated with the data collection process. First, the generalizability of the study is limited because data was only collected from three middle schools in the same school district in Minnesota. However, the response rates and sample size were sufficient for analysis, and the findings were applicable to 8th grade students within these three middle schools. Since the sample size was sufficiently large in this study, the findings can be cautiously generalized to other middle schools. Second, the data collected were quantitative in nature. Quantitative research is appropriate for collecting limited data from a large number of people. Quantitative data is limited, however, in its ability to explain phenomena or allow respondents to provide deeper insights into their stated perceptions. A mixed-method design – one that included more

qualitative data – could have provided more explanatory data and insights that may have provided for a richer explanation of the experience of the 8th graders.

Chapter and Study Summary

The purpose of this quantitative study is to examine the relationship between student academic engagement and student academic achievement and also to determine whether student academic engagement can mitigate the effects of race on student academic achievement. Specifically, this quantitative survey research examines eighth grade students' levels of academic engagement and how their levels of engagement either contribute to or detract from their academic achievement. To accomplish this goal, all 8th grade students in Bloomfield Public Schools were asked to take an engagement survey and their standardized academic scores were retrieved. The study took place in three middle schools from the same Minnesota school district. The result of this study is that student academic engagement can predict student academic achievement, and in some cases, can mitigate the effects of race. In addition, both the DASM and teacher support were two variables that emerged as ways to increase student academic engagement in schools.

This dissertation began with a quote from James Madison, the fourth president of the United States who stated, "Knowledge will forever govern ignorance; and a people who mean to be their own governors must arm themselves with the power which knowledge gives" (1822). With the knowledge gained from this study, more can be done to increase the academic engagement of all students so they can have a better chance to achieve academically, and in turn, govern themselves to participate democratically in the United States of America. Between the time this study began and the time this

dissertation was written, the forty-fourth president of the United States has been elected and inaugurated, making Barak Obama our first black president. The actions and achievements of schools should mirror life in our country, and progress should be made in the area of the achievement gap.

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AppendixA

FREQUENCIES - 8th Grade Student Survey on Engagement

Thank you 8th graders for taking the time to complete this important survey. This survey will ask you questions about your experience as a student. Please take your time and answer each question based on your feelings and actions.

What is academic engagement? Academically engaged students participate in school and class activities, and also feel connected to the school and/or teachers.

Directions: When answering each response think about how you act or feel on an average day in school.

Please place an ⊠ in the box that most accurately describes your behaviors/actions:

		ALWAYS	OFTEN	SELDOM	NEVER
1	I do my homework.	10	10	3	0
2	I participate in class discussions.	5	13	5	0
3	I participate in class activities.	15	6	3	0
4	I follow classroom rules.	9	11	1	0
5	If I do not understand something in class I keep working until I find the answer.	9	9	3	0
6	I am able to concentrate during class.	10	10	2	1

Please place an ⊠ in the box that most accurately describes you:

		YES	NO
7	I like solving academic problems.	11	12
8	I like when an assignment is challenging.	7	16
9	I like when I have to think really hard about an academic problem.	6	17
10	I like to learn.	23	3
11	I take pride in my assignments.	23	3
12	I like coming to my school.	16	7
13	I participate in extra-curricular activities (like: clubs or sports).	19	4
14	I feel safe in my school.	23	3

The following set of questions address basic math skills -this is NOT a test of your math ability.

Please place an ⊠ in the box you think is the correct answer. NO CALCULATORS

15	Sally and her family are driving 911 miles from St. Paul to Denver. After driving 287 miles, they stopped for lunch. Estimate how many miles they have left to drive.	200 miles	500 miles	600 miles **16**	800 miles
16	Devin wants to sort his football cards into boxes that hold 50 cards each. He has	100 boxes	50 boxes	20 boxes **18**	13 boxes

	620 football cards. About how many boxes will Devin need to hold all his cards?				
17	The parking lot at Festival Foods has 24 rows that hold 99 cars each. About how many cars can park at Festival's lot total?	2400 cars **16**	1000 cars ☐	240 cars ☐	125 cars ☐
18	Ms. Washington has 250 shares of IBM stock. She wants to double the number of shares she owns. About how many shares of stock should Ms. Washington buy?	500 shares ☐	350 shares ☐	300 shares ☐	250 shares **7**

The following set of questions address additional basic math skills AND these questions WILL BE used to compare your math ability to other students.

Please place an ☒ in the box you think is the correct answer. NO CALCULATORS

19	Joey is buying donuts at the bakery for his classmates in primetime. He wants to buy twice as many donuts as students in his primetime. Joey has 18 students in primetime. About how many donuts should Joey buy?	20 donuts ☐	40 donuts **24**	50 donuts ☐	60 donuts ☐
20	The gas tank on your mom's car holds about 15 gallons. If gas costs $.99 a gallon, about how much does it cost to fill the tank if it is empty?	$13.00 ☐	$15.00 **19**	$18.00 ☐	$20.00 ☐
21	Ahmed has 22 boxes of CDs. Each box has 12 CDs. About how many CDs does Ahmed have?	34 CDs ☐	124 CDs ☐	135 CDs ☐	150 CDs **8**
22	The fish aquarium holds about 30 gallons of water. If five fish can live in one gallon, about how many fish can you put in the tank?	100 fish ☐	125 fish ☐	135 fish ☐	150 fish **13**

The following set of questions will ask you about social things, like your friends and values you hold.

Please place an ☒ in the box that most accurately describes you:

			YES	NO
23	I have friends.		23	0
24	My friends like to do well academically in school.		4	19
25	One reason I have the friends I have is because they want to do well academically in school.		14	9
26	When I get a good grade on a test my friends are proud of me.		1	22
27	I get put down (picked on) by my friends, because I do well academically in school.		0	23
28	I like to make fun of my friends when they do well academically in school.		1	22

29	Sometimes I'm afraid to do well in school because I think my friends won't like me.		**22**	**1**
30	I want to do well academically in school.		**22**	**1**

Appendix B

THINK ALOUDS - for 8th Grade Student Survey on Engagement

> **Thank you** 8th graders for taking the time to complete this important survey. This survey will ask you questions about your experience as a student. Please take your time and answer each question based on your feelings and actions.

What is academic engagement? Academically engaged students participate in school and class activities, and also feel connected to the school and/or teachers.

Directions: When answering each response think about how you act or feel on an average day in school.

Please place an ⊠ in the box that most accurately describes your behaviors/actions:

		ALWAYS	OFTEN	SELDOM	NEVER
1	I do my homework.	10	10	3	0
2	I participate in class discussions.	5	13	5	0
3	I participate in class activities.	15	6	3	0
4	I follow classroom rules.	9	11	1	0
5	If I do not understand something in class I keep working until I find the answer.	9	9	3	0
6	I am able to concentrate during class.	10	10	2	1

Please place an ⊠ in the box that most accurately describes you:

		YES	NO
7	I like solving academic problems.	11	12
8	I like when an assignment is challenging.	7	16
9	I like when I have to think really hard about an academic problem.	6	17
10	I like to learn.	23	3
11	I take pride in my assignments.	23	3
12	I like coming to my school.	16	7
13	I participate in extra-curricular activities (like: clubs or sports).	19	4
14	I feel safe in my school.	23	3

The following set of questions will ask you about social things, like your friends and values you hold.

Please place an ⊠ in the box that most accurately describes you:

		YES	NO
23	I have friends.	23	0
24	My friends like to do well academically in school.	4	19
25	One reason I have the friends I have is because they want to do well academically in school.	14	9

Renee Sbrocco 11/9/07 5:19 PM
Comment: Change to Experience Means nothing to the two 7th graders

Renee Sbrocco 11/9/07 5:32 PM
Deleted: FREQUENCIES

Renee Sbrocco 11/9/07 5:21 PM
Comment: 7th graders said they knew they were being "thanked"
One of the 7th graders did not remember or acknowledge "take your time"

Renee Sbrocco 11/9/07 5:22 PM
Comment: Might be leading – expressing what is "good" or the "right" answers.
7th graders did not have much to say about this section – one said "this means that you are a good student" – should eliminate.

Renee Sbrocco 11/9/07 5:23 PM
Comment: 7th graders had no problems with this and were able to express what I wanted from the directions.

Renee Sbrocco 11/9/07 5:24 PM
Comment: One of the 7th graders could not explain what seldom means – may need to change scale – since NEVER is hardly selected.

Renee Sbrocco 11/9/07 5:25 PM
Comment: Academic seems to be a tough word for both 7th graders and the two teachers – I need to find a better word.

Renee Sbrocco 11/9/07 5:31 PM
Comment: Not an effective question – shown by ALL students answering yes.

26	When I get a good grade on a test my friends are proud of me.		**1**	**22**
27	I get put down (picked on) by my friends, because I do well academically in school.		**0**	**23**
28	I like to make fun of my friends when they do well academically in school.		**1**	**22**
29	Sometimes I'm afraid to do well in school because I think my friends won't like me.		**22**	**1**
30	I want to do well academically in school.		**22**	**1**

Appendix C

<div align="center">

Research Request Form
BXXXXXXX Public Schools
Department of Research and Evaluations

</div>

Name: Renee Sbrocco Date: 10/16/07
Address: XXXX 3rd St. NE Minneapolis, MN 55418
Phone: 612-XXX-1XX9 (c) 952-XX1-6XX8 (w)
Organization: University of Minnesota
If the study is part of your work for a degree, indicate type of degree:
Undergraduate ___ **M.A. or M.S.** ___ **Ph.D** ___ **Ed.D.** _X_

Advisor's Name: Dr. Karen Seashore   **Phone**: 612-626-8971
Address: Room 330 Wulling Hall, 86 Pleasant St. SE, Minneapolis, MN 55455

1. Purpose of Study:

Problem Statement:
      By the time the average black student is of age to graduate from high school they are four years behind the average white students in academic achievement; black seniors score lower than white 8th graders in math, reading, U.S. history, and geography (Thernstrom and Thernstrom, 2003). There is an academic achievement gap between white and black students.
Research Proposal:
      Given the disparity between white and black students in academic achievement, the purpose of this study is to examine the relationship between academic engagement and the achievement gap of 8th grade students in three suburban middle schools. Specifically the study will examine the following context levels of engagement: Behavioral, emotional, and cognitive.

2. What requests are you making of the BXXXXXXX Public Schools? Give specific information on sampling, measuring instruments, time schedule, amount of time required by students or staff, number and names of schools to be involved. If nonstandardized instruments are to be used, attach copies please.

Sampling:
- All 8th grade students will be surveyed.

   Measuring Instruments:
- Student Survey
- Grades 3-5 Achievement Composite
- Grades 6-8 Achievement Composite
- Attendance Data
- Discipline Data

Time Schedule:
- January 2008 – Conduct Student Surveys
- February 2008 - Collect Attendance, Discipline, and Achievement Data
- March 2008 – Analyze the Data
- April – November 2008 – Finish Dissertation Writing

Amount of Time Required by:
- Students – 20 minutes to take an online survey
- Teachers (6 social studies teachers) have granted a time out of each of their classes to complete the survey.
- Administration in each building have indicated that they are willing to have their students take the survey and teachers to conduct the survey during the school day.

Number and Names of Schools to be Involved:
- Three Schools – Middle Schools
- XXXX View Middle, XXXXX Middle, and XXXX Middle School

Nonstandardized Instruments:
See Attached Documents: Student Survey

3. If you have discussed this proposal with BXXXXXX Public School personnel, indicate with whom you have talked and the nature of your discussion.

I met with Dr. J. A. spring of 2007 and asked him to think of topics that the district is interested in knowing more about. One of those topics was the achievement gap between white and black students. After completing some preliminary research and meeting with my doctoral advisor I decided to examine the achievement gap by measuring students' academic engagement. I met again with Dr. A. in the spring of 2007 to discuss my ideas.

During the fall of 2007 I met again with Dr. A. to share with him my research progress – I had completed my review of the literature and wanted to discuss methodology.

4. What practical implications does your study have for the BXXXXXX Public School system?

I think that my study will have practical implications for BXXXXXX Public Schools.
- BXXXXXXX is concerned about the transition of students from the elementary to the middle school. My research will examine student data before and after this critical transition period.
- Many attempts to "solve" the achievement gap have proven fruitless. As a school or school district we can not change a student's socioeconomic status or parental involvement, but we can manipulate instruction, school climate, and leadership – all concepts that can lead to higher academic engagement for students.

5. Have you conducted previous studies in the BXXXXXX Public Schools: Yes ___
No _X_

6. List the names of all personnel who will be involved in carrying out field operations.
      Renee Sbrocco

7. Do you have any objection to publicity of your study at this time? Yes ___ No _X_

8. Do you have the support of your supervisor? Yes _X_ No ___

9. If you have a formal research proposal, please include it with this request.
      See Attached Documents.

Appendix D

<div align="center">

Introductory Letter
First Contact with Participant and Parent/Guardians

</div>

Date
Renee Sbrocco
1300 West 106th St.
BXXXXX, MN 55XXX

<Participant's address or classroom teacher's name>
Dear <participant's name>,

There is a disparity between White and Black students in academic achievement. This achievement gap is a serious issue in the field of education and for the citizens of the United States of America.

I am a doctoral candidate at the University of Minnesota, and I am conducting research on 8th grade students' level of academic engagement. I am interested in how a student's level of academic engagement is related to their level or academic achievement. By exploring students' level or engagement and achievement will hopefully provide insights on how to eliminate the achievement gap between students.

I am asking you to participate in this study because you are an 8th grade student in the BXXXXXX Public School system. About 1000 8th grade students in BXXXXX will be asked to participate in this study.

If you choose to participate in this study you will be asked to take a short (30 minute) survey on academic engagement. I will also be examining student academic achievement by looking at test scores, GPA, attendance, and discipline records. All information gathered will be confidential. Your name will not be used in the research report.

Information gathered from the surveys and records will be used in my dissertation. Both the University of Minnesota and BXXXXX Public schools have approved this study. In addition the Institutional Review Board at the University of Minnesota has reviewed by proposed research and granted me the right to conduct the study. The findings from this study may be published.

Thank you for taking the time to read this letter and consider how valuable your participation is in this study. If you would like to contact me regarding any questions or concerns you might have, please feel free to call me at 952-6X1-6XX8 or email me at teacher@email.com

I look forward to working with you soon.
Sincerely,

Ms. Renee Sbrocco

Appendix E

March 3, 2008
Dear BXXXXXX 8th Grader

I am asking if you are willing to take a survey about your engagement (interest) in school, because I am trying to learn more about the academic engagement of students your age. I'm really interested in learning more about the achievement gap between students (why some students do well in school and some do not). The survey on engagement will help me learn about student achievement and the gap that exists.

Since you are an 8th grade in BXXXXXX, I am asking you to be in the study. The study will consist of taking a survey that will take no longer than 30 minutes. The survey will be taken on a computer during your class. In addition to the survey I will be reviewing your academic records (test scores, GPA, attendance, and discipline). Don't worry; I will be the only one who will be working with this data. Your name and confidentiality will be kept secret.

You can ask any questions that you have about this study. If you have a question later that you don't think of now, you can ask your teacher or call/e-mail me. If you don't want to be in this study, just let your teacher know. Remember, being in this study is up to you, no one will be mad at you if you don't want to participate or even if you change your mind later.

The survey will be give to you during either the 2nd or 3rd week in March. Your teacher will let you know the exact day.

Thank you,

Renee Sbrocco
Dean of Students
XXXXX Middle School

Appendix F

Passive Consent Form

Student Academic Engagement and the Academic Achievement Gap Between Black and White Students: Does Engagement Increase Student Achievement?

You child is invited to be in a research study examining student academic engagement. Your child was selected as a possible participant because they are an 8th grade student in BXXXXXX Public Schools. We ask that you read this form and ask any questions you may have before agreeing to have your child participate in the study.

This study is being conducted by: Renee Sbrocco, who is a doctoral candidate in the Department of Educational Policy and Administration at the University of Minnesota.

Background Information
The purpose of this study is to examine student's level of academic engagement and determine if higher engagement leads to higher student academic achievement.

By the time the average Black student is of age to graduate from high school they are four years behind the average White student in academic achievement; Black seniors score lower than White eighth graders in math, reading, U.S. history, and Geography. Between 1970 and 1990 there was a narrowing of the Black-White test score gap on the National Assessment of Educational Progress (NAEP) tests but since then the gap has widened. There is an academic achievement gap between White and Black students.

Given the disparity between White and Black students in academic achievement, the purpose of this study is to examine the relationship between academic engagement and the reading and math achievement of 8th grade students in three suburban middle schools.

Specifically this study will answer the following questions:
1. What is the relationship between 8th grade White and Black students' level of academic engagement and the achievement gap?
2. What is the relationship between the middle school model (school climate, teacher/classroom support, instructional practices) and the achievement gap?

Procedures:
If you agree to have your child participate in this study, they would be asked to complete an online survey regarding their level of engagement. The survey will be asking students to assess their level of engagement by asking questions regarding their emotions and behavior in school. This survey will take no longer than thirty minutes and will be conducted during one of their classes. In addition, I will be looking at your child's educational records, but the records will be kept ***anonymous with no direct identifiers***.

Risks and Benefits of being in the Study

**Risks are minimal for participating in this study**. The survey will be asking students to evaluate their own feelings about school (i.e. I like coming to school every day).

As to the benefits of participating in this study, there are none for the participants. With the exception that some people find participating in a survey to be beneficial because it give them a chance to express and reflect on issues that matter to them. Also, information provided may be used to help inform those who work in education to increase student academic achievement.

Confidentiality:
The records of this study will be kept private. In any sort of report we might publish, we will not include any information that will make it possible to identify a subject. Research records will be stored securely and only researchers will have access to the records.

Voluntary Nature of the Study:
Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Minnesota or BXXXXXX Public Schools. If you decide to participate, you child is free to not answer any question or withdraw at any time with out affecting those relationships.

Contacts and Questions:
If you have any questions please feel free to contact Ms. Renee Sbrocco at 952-6X1-6XX8 or by e-mail at Email This study has been approved by the University of Minnesota and by BXXXXXX Public Schools. It has also been approved by the Institutional Review Board of the University of Minnesota. The researcher's advisor is Dr. Karen Seashore. She can be reached at 612-626-8971 or at Email for questions regarding this study.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), **you are encouraged** to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

Statement of Waived Consent:
I have read the above information. I have asked questions and have received answers. If you **do not want** your child to participate in the study, please return the following document. _**If you child does not participate in the study they will have the opportunity to work on homework or class work while the other students are taking the survey**_

Signature of parent or guardian:_____Date: _____

Signature of Investigator:_____Date: _____

Appendix G

8th Grade Student Experience Survey

> **Thank you** 8th graders for taking the time to complete this important survey. This survey will ask you questions about your experience as a student. Please take your time and answer each question based on your feelings and actions.

Directions: When answering each response think about how you act or feel on an average day in school.

Please place an ⊠ in the box that most accurately describes *your behaviors/actions*:

		ALMOST ALWAYS	OFTEN	SOMETIMES	NEVER
I am able to concentrate during class.	1				
I am able to do school as well as most other students.	2				
I do my homework.	3				
I do my school work because I know it will help me in high school.	4				
I do my school work because I want to get good grades.	5				
I do my school work because I want to learn as much as I can.	6				
I feel as if I don't have a lot control over my grades.	7				
I feel good about myself.	8				
I feel I do not have much to be proud of in school.	9				
I feel safe in my school.	10				
I follow classroom rules.	11				
I learn more outside school than inside.	12				
I like coming to my school.	13				
I like when I have to think really hard about an academic problem.	14				
I often count the minutes until school ends.	15				
I often feel bored at school.	16				
I participate in class activities.	17				
I participate in class discussions.	18				
I take pride in my assignments.	19				
If I do not understand something in class I keep working until I find the answer.	20				
In school, good luck is more important than hard work for success.	21				

Most of my school work is interesting.	22				
The topics we are studying in school are challenging.	23				
The topics we are studying in school are usually interesting.	24				

Directions: When answering each response think about how you act or feel on an average day in school.

Please place an ☒ in the box that most accurately describes *your school and teachers*:

		STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
At my school students are expected to take their homework seriously.	25				
Discipline rules at my school are fair.	26				
Disruptions by other students get in the way of my learning.	27				
I'm required to talk with my classmates about the subject we are learning during class.	28				
I'm required to talk with my teacher about the subject we are learning during class.	29				
In my school students place a high priority on learning.	30				
Misbehaving students often get away with it.	31				
My school honors academic achievement.	32				
My teachers are interested in me.	33				
My teachers are willing to give extra help if I need it.	34				
My teachers believe I can do well in school.	35				
My teachers care if I don't do my work.	36				
My teachers expect me memorize rather than think.	37				
My teachers expect me to do my best all the time.	38				
My teachers know me well.	39				
My teachers praise my efforts when I work hard.	40				
My teachers really listen to what I have to say.	41				
My teachers require me think hard about the subjects we are learning.	42				
Students get along well with teachers in my school.	43				
The teaching in my school is good.					

What I'm learning in my classes will help me in the real world.	**44**				

Directions: When answering each response think about how you act or feel on an average day in school.

Please place an ⊠ in the box that most accurately describes *your middle school*:

		STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
My teachers know how students learn best.	45				
My teachers are preparing me to do well in high school.	46				
My teachers are good at teaching 8th grade students.	47				
My school is a caring community.	48				
My school is dedicated to improving the intelligence of all its students.	49				
Teachers and administrators support student leadership.	50				
My school is safe.	51				
My school helps me be a healthy person.	52				
My school wants me to be a good citizen.	53				
My school involves my parents.	54				
There is an adult in my school that I know cares about me.	55				
I am treated fairly by teachers.	56				
I am treated fairly by administrators.	57				
My friends are treated fairly by teachers and administrators.	58				

Directions: When answering each response think about how you act or feel on an average day in school.

Please place an ⊠ in the box

		NEVER	**ONCE OR TWICE**	**MORE THAN TWICE**
I have been sent to the office/quiet room because I was misbehaving.	59			
I have been sent to the office/quiet room because of problems with my school work.	60			
My parents have received a warning about my attendance.	61			
My parents have received a warning about my grades.	62			
My parents have received a warning about my behavior.	63			
I have gotten into a physical fight	64			

with another student.				

Indicate the degree to which each of the following are a problem in your school:

Please place an ⊠ in the box:

		MODERATE	**SERIOUS**
Student tardiness.	65		
Student absenteeism (absent students).	66		
Students cutting class.	67		
Physical conflicts among students.	68		
Robbery or theft.	69		
Vandalism of school property	70		
Student possession of weapons.	71		
Other students often disrupt class.	72		

73. Overall, about how many hours do you spend on homework **EACH WEEK**, both in and out school combined? MARK ONE ⊠

None	☐
Less than 1 hour each week	☐
1-3 hours	☐
4-6 hours	☐
7-9 hours	☐
10-12 hours	☐
13-15 hours	☐
16-18 hours	☐
19-21 hours	☐
Over 22 hours each week	☐

Have you participated in the following **school-sponsored** activities this school year (in 8th grade)?

		Participated as an office, leader, or captain	**Participated**	**Did NOT participate**
Intramural sports (competition between teams in your school).	74			
Interscholastic sports (competition with teams from other schools).	75			
Band, orchestra, choir.	76			
School play or musical.	77			
Student council/government.	78			
School yearbook	79			
Academic club (such as art, computer, teen reader, foreign language, etc…).	80			
Hobby club (snowriders, chess, etc…)	81			
Sports clubs or teams outside of school.	82			
Other clubs or youth groups outside of school.	83			

Appendix H

Demographics by Middle Schools

	Eastview Middle	Riverview Middle	Westview Middle
Total Student Enrollment	711	850	800
8th Grade Enrollment	240	286	253
8th Grade White Students	52%	70%	74%
8th Grade Black Students	36%	13%	11%
8th Grade Special Education Students	15%	13%	15%
8th Grade English Language Learners Students	5%	6%	8%
8th Grade Students on Free-Reduced Lunch	50%	27%	20%

Data retrieved from Bloomfield Public School website in December 2008

Appendix I

Factor Analysi

Factor	Survey Questions/Items	Eigen-value	Alpha
Behavioral Engagement	I am able to concentrate during class. I am able to do school as well as most other students. I do my homework. I do my schoolwork because I know it will help me in high school. I do my schoolwork because I want to get good grades. I do my schoolwork because I want to learn as much as I can.	7.280	.882
Emotional Engagement	I feel safe in my school I like coming to school I like when I have to think really hard about an academic problem. Most of my schoolwork is interesting. The topics we are studying in school are usually interesting.	1.781	.730
Disengagement	I feel as if I don't have a lot of control over my grades. I feel good about myself. I feel I do not have much to be proud of in school. In school, good luck is more important than hard work for success.	1.612	.590
Developmentally Responsive School	Discipline rules at my school are fair. My school is a caring community. Teachers and administrators support student leadership. My school is safe. My school helps me be a healthy person. My school wants me to be a good citizen. I am treated fairly by administrators. My friends are treated fairly by teachers and administrators.	1.522	.871
Teacher Support	My school honors academic achievement. My teachers are interested in me. My teachers are willing to give extra help if I need it. My teachers believe I can do well in my school. My teachers care if I don't do my work. My teachers know me well. My teachers praise my efforts when I work hard. My teachers really listen to what I have to say. There is an adult in my school that I know cares about me.	11.745	.879