

**NO "WHITE" CHILD LEFT BEHIND:
THE ACADEMIC ACHIEVEMENT GAP BETWEEN BLACKS AND WHITES**

A Thesis by

Rochelle Rowley

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I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirement for the degree of Master of Arts with a major in Sociology.

David W. Wright, Committee Chair

We have read this Thesis and recommend its acceptance.

Jodie Hertzog, Committee Member

Paul Cromwell, Committee Member

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ABSTRACT

The issue of racial inequality in education has consistently been addressed through government policy in an attempt to solve the problem of discrimination in the American school system. The latest government attempt is the No Child Left Behind Act of 2001 (NCLB). In order to examine the effectiveness of the NCLB, this study examines the relationship between race and composite reading and math test scores. Secondary data analysis was used from the Educational Longitudinal Study of 2002 (ELS:2002) of 8,215 10th grade students with a composite model consisting of: student role performance (SRP), schools, families, and peers. Univariate, bivariate, and multivariate analyses are used to examine the independent effects on test scores. Mean composite test scores show an 82.8% gap in test scores between black (44.42) and white (53.64) non-Hispanic 10th grade students. The examination of the unique variance in test scores for each model segment shows student role performance factors and family factors explain more of the “unshared” variance in test scores than other model segments. These results suggest that discrimination based on the ability of a student to perform the roles associated with their position within the school setting as well as family factors outside the school setting contribute to the academic achievement gap between blacks and whites.

TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	LITERATURE REVIEW	3
2.1.	Student Role Performance	3
2.2.	Schools	6
2.3.	Families	8
2.4.	Peers	11
2.5.	Composite Model	12
3.	DATA AND METHODOLOGY	13
3.1.	Data	13
3.2.	Variables	14
3.2.1.	Dependent	14
3.2.2.	Independent	14
3.3.	Methodology	19
4.	RESULTS	21
4.1.	Univariate and Bivariate Analysis	21
4.2.	Multivariate Analysis	22
5.	CONCLUSION	26
5.1.	Discussion	26
5.2.	Limitations	30
5.3.	Policy Implications	31
6.	REFERENCES	34
7.	APPENDECIES	40

INTRODUCTION

Over a half a century ago, the United States Supreme Court decision in *Brown vs. Board of Education of Topeka* (1954) paved the way for the desegregation of public schools. Three years later, the military forced Little Rock, Arkansas to admit blacks in public school and eight years after Little Rock, the United States passed the Civil Rights Act of 1964, which included a ban against discrimination in education based on race. The issue of racial inequality in education has consistently been addressed through government policy in an attempt to solve the problem of discrimination in the American school system. The latest government attempt was the “No Child Left Behind Act of 2001” (NCLB). Accountability is the focus of the current NCLB policy, which addresses the academic achievement of America’s youth and especially the achievement gap that exists between low-income and minority students and their white, middle-class counterparts.

The NCLB requires all schools to provide a quality education regardless of the child’s demographics or ability level and, if these schools fail to achieve adequate yearly progress, parents are allowed to remove their child from that school and place them in a “better” school (United States Department of Education, 2001). While the NCLB does not financially sanction schools directly for inadequate progress, most public school districts are state funded for direct instructional costs such as the number of teachers, counselors, textbooks, etc. based on the number of students attending. If students start leaving a floundering school, the amount of money available to that school to improve teacher quality, provide up-to-date textbooks, etc. will diminish. Also, while the NCLB Act gives parents more choices in regard to the school their child attends, other related issues which schools have no control over, such as living conditions and parental willingness to be involved in their child’s education, are not accounted for in the

Act. Since past experiences and cultural differences can influence potential academic achievement (Taubman, 1989), a child's racial minority status and racial identity may be directly related to their academic potential.

Previous research suggests that race can be detrimental to the academic achievement for minorities (Davis and Jordan, 1994; Fordham and Ogbu, 1986); however, when minorities behave in a manner that is socially acceptable for their roles as students (Davis and Jordan, 1994) and their parents and teachers have higher expectations (Davis and Jordan, 1994; Entwisle, Alexander, and Olson, 2005; Felson, 1990) minority students can achieve academic success. The amount of money a school is allocated also affects academic achievement due to the amount of available resources (Lubienski, 2002; Wenglinsky, 1997), class sizes (Davis and Jordan, 1994; Lubienski, 2002; Namboodiri, Corwin, and Dorsten, 1993; Wenglinsky, 1997), and the quality of teachers hired (Marks, 2005; Maynor and Katzenmeyer, 1974; Perl, 1973).

While school quality is important to academic achievement, the student's family is the primary agent of socialization and has a significant effect on the child's views about education (Baker and Stevenson, 1986; Stevenson and Baker, 1987; Entwisle, et al., 2005; Felson, 1990; Kim, 2004; Okagaki & Sternberg, 1993). Family structure (Astone and McLanahan, 1991; Desai, 1995; Downey, 1994; Downey, 1995) and income can either promote or impede academic success due to the types of resources available to the family (Downey, 1995; Kim, 2004), educational aspirations (South, Baumer, and Lutz, 2003), discipline styles (Glasgow, Dornbushcm., Troyer, Steinberg, and Ritter), and the degree of parental involvement (Astone and McLanahan, 1991). Almost as intensely as family effects, peers also affect a student's desire to achieve academically by valuing or devaluing education (South et al., 2003) or by ostracizing

students who choose to excel (DeRosier, Kupersmidt, and Patterson, 1994; Horvat and Lewis, 2003).

This study utilizes a composite model to measure the effect of race on academic achievement using the Educational Longitudinal Study of 2002 (ELS). The ELS is a longitudinal, multilevel study of a nationally representative cohort of students in 10th grade and continuing throughout their high school career into postsecondary school and/or the labor market with subsequent studies every two years. Students and their teachers, parents, administrators, and librarians provide information regarding the student's test achievements, attitudes, and experiences (United States Department of Education, 2004). With academic achievement as the dependent variable in the model, student role performance, school environment factors, family socialization, and peer influences are used to evaluate the affects each has on test scores.

2. LITERATURE REVIEW

2.1 Student Role Performance

Student role performance includes the behaviors centered on the roles they perform in their position as students and how well students meet the expectations and obligations based on their ascribed and achieved roles. Success and/or failure of these roles is determined by preconceived ideals of what is appropriate for each particular role, how the position of student is defined by those in a position of authority over the student, and the value society places on each of the roles for that position. Student's perform many roles in their position including race, sex, disabilities, homework completion, extracurricular activities, and their locus of control.

Fordham and Ogbu (1986) state that the role of race can be detrimental to the academic achievement of minorities. Black students believe they have a cultural responsibility to uphold, which influences their ability to achieve academically. Furthermore, academic achievement is

viewed as a “white” goal; therefore, black students may behave in a way so as not to be labeled as “acting white.” Black males, specifically, either have an inability or lack of motivation for performing their roles as students within traditionally “white” school settings (Davis and Jordan, 1994).

Boys are consistently associated with behavior problems (Davis and Jordan, 1994), which hinders academic achievement, while still being held to high academic standards due to traditional gender role expectations that place greater emphasis on male performance and success (Felson, 1990). In contradiction to the traditional view of socialization, the socialization that occurs within the school setting also encourages males to view schooling activities as feminine and, therefore, immaterial to their masculine development, which may explain the higher rate of occurrences of behavior problems for boys and subsequent lower academic achievement (Davis & Jordan, 1994).

In an effort to alleviate some behavior problems associated with low academic achievement, schools may track, or more recently called ability group, students into slower paced classes designed to assist the student in learning the material at the student’s pace of learning (Gamoran, 1992). Although this seems to increase the student’s ability to perform their roles successfully, it is actually a manner in which society can categorize students, especially Blacks and Latinos, into future low-paying jobs, which require less education (Braddock & Dawkins, 1993). Not only schools, but society in general, compartmentalizes individuals into groups based on ability and assigns them to roles specific to those levels (Natriello & McDill, 1986).

However, students who spend more time on homework and attend school regularly perform better academically (Davis and Jordan, 1994), which supports the noted Di Napoli (1937) study that found compulsory homework improves academic achievement, even black

males who are typically found to be low academic achievers,. Student effort is directly related to the time spent on homework (Garner, 1978) and homework has a positive effect on students' academic performance (Keith, 1982; Natriello and McDill, 1986). Students who perform academics outside the school setting become accustomed to academic rigor through the practice provided by homework. Furthermore, homework provides social communication among peers, which assists in the development of social networking skills (Corno, 2000). Conversely, the benefits of homework depend on the support and resources available in the home. If a student is already at-risk due to family factors, homework may be an added obstacle to academic achievement (Namboodiri, et al., 1993).

Students benefit from a combination of academic and athletic extracurricular activity in regard to academic achievement (Landers, Feltz, Obermeier, and Brouse, 1978). Students who are the most active in activities are the students who tend to have the highest grades. In contrast, students who do not participate in activities tend to have the lowest grades (Mehus, 1932).

While coaches and group leaders may encourage students to attend school, which may lead to higher grades, parent and teacher's performance standards can also spawn greater effort through their expectations of the student's role performances. Parents who have high expectations for their children encourage their children to have high expectations of themselves (Entwisle, et al., 2005). Social stratification based on race/ethnicity and sex influences the role expectations of students.

Just as parental aspirations and beliefs affect the role performances of students, teacher expectations highly influence a student as well. Teachers, as well as administrators, judge and assess students by the criteria set by the dominant culture; therefore, those students from high status backgrounds who are more proficient in the dominant culture tend to have higher levels of

academic success while students whose behavior, codes of speech, and subculture are atypical tend to be hindered academically (Marks, 2005). Students who display higher levels of intelligence and ability may be given more attention and care while students who are average or at-risk may fall through the cracks unnoticed (Gamoran, 1989). The nature of the classrooms and schools affect the way students interpret their own abilities and students accept the intellectual status defined for them and separate their academic ability from their control; therefore, a teacher or administrator's expectations become directly related to a student's educational expectations (Brantlinger, 1990).

2.2 Schools

The school environment provides and enhances instruction and the acquisition of skills. Issues such as school social environment, teacher selection, class size, student/teacher ratio, and school rules are all affected by school socioeconomic status (SES). The SES of a school is determined by the district in which it is located. The taxes collected from this district then are allocated to the schools within that district. Low income areas provide schools with less money, which then reduces the resources available for the school to use to improve academic achievement (Lubienski, 2002; Wenglinsky, 1997).

The social environment of the school not only teaches children academically but also steers them towards different occupations based on their characteristics. A student internalizes a self-concept based on the treatment received by others (Herr, Warner, and Swisher, 1970). One manner of measuring a school's social environment is to record the amount of harassment or bullying experienced by students. A poor social environment due to bullying creates obstacles to achieving academically since victims of bullies are more likely to have low achievement (Glew, Fan, Katon, Rivara, Frederick, Kernic, 2005).

Regardless of the school environment, teachers can have a positive effect on students. When a student perceives a teacher to be caring, fair, and feels the quality of instruction is good, the student is more likely to be a high achiever (Adams and Singh, 1998). The teacher's social location also has an impact on a student's ability to perform academically. A white teacher that teaches predominantly minority students without accounting for differences in culture and learning style can negatively affect the student's ability to learn (Delpit, 1992; Maynor and Katzenmeyer, 1974; Perl, 1973). Differences in social class between the teacher and the student can also affect the ability of the student to achieve academically. Teachers from a higher social class background may not relate to low income students in a manner that encourages academic achievement (Marks, 2005).

Apart from a teacher's social status and a student's perception of a teacher, a teacher can be limited when confronted with a large class. Class size is affected by the amount of money per pupil the school receives. Schools in low income areas are forced to increase class sizes due to decreased funds. Significant educational benefits are prevalent for children enrolled in smaller classes such as increased attention for students, friendlier classes, and fewer discipline problems (Achilles, 1996). The increase of class size decreases the ability of students to perform academically (Wenglinsky, 1997) because teachers are unable to provide instruction at a level that is appropriate for every student's learning ability (Lubienski, 2002). It is important for teachers to know and understand the children in their classrooms. This would be easier if there were fewer children in the class. The only way to increase class sizes and still have the ability to provide a quality education to the students is to add teachers to the classrooms. More teachers in the classroom allow the student to teacher ratio to be manageable and gives the teachers an opportunity to instruct on a more one on one basis (Davis and Jordan, 1994). Reduced class

sizes and/or reduced student to teacher ratio can improve academic achievement because it provides the teacher the opportunity to show the child that he/she cares about the education of the child (Namboodiri, et al., 1993). However, the effectiveness of reduced class sizes has been debated by other researchers who state that class size has little or no effect on student performance (Odden, 1990; Tomlinson/US Department of Education, 1988).

Differences between teachers and students as well as administration can also have an influence on the amount and type of school rules as well as the discipline incurred when rules are broken (Davis and Jordan, 1994; Marks, 2005). Schools with highly structured rules contribute to the learning process as well as enhance the ability of teachers to instruct and have students who perform better academically (Gaddy, 1984; Ma and Klinger, 2000). Associated with school rules is the implementation of a school uniform policy in an attempt to steer student's focus from fashion to academics. This policy also has the potential of eliminating favoritism by teachers toward students whose physical appearance portrays a higher social class (Alleyne, LaPoint, and Mitchell, 2003). However, very little research has been conducted to substantiate the effectiveness of school uniforms.

2.3 Family

The family institution is the primary agent of socialization. Families teach children the values and expectations of the society in which they live. The early socialization of children about the values of education begins with parental expectations and beliefs about what academic achievement necessitates (Entwisle et al., 2005). Hispanic and Asian parents view academic achievement as a combination of cognitive and social skills, as well as motivation, while Filipino and Vietnamese parents believe that motivation is the key to achievement (Okagaki & Sternberg,

1993). The abilities, intelligence, and learned independence of a child are foremost in white American parent's views of academic achievement (Okagaki & Sternberg, 1993).

Research suggests two-parent families may be able to provide more resources, more supervision, and greater stability than single-parent families (Kim, 2004). Some research indicates that a single-parent may have less opportunity to be involved in their child's education, tends to use an authoritarian style of parenting (Glasgow, et al., 1997), and provides less encouragement and attention to education than do parents in a two-parent family (Astone and McLanahan, 1991). Since single-parent families tend to have lower incomes and, because of financial instability, tend to change housing often (South, et al., 2003), the children of these families are more likely to perform poorly on tests and exhibit more behavior problems in school than children from two-parent families (Downey, 1994; Patterson, et al., 1990). Low income explains half of the incidences of lower academic achievement for children from single-parent families and lack of supervision and parental involvement explains much of the rest (Kim, 2004). Even a difference between single-parent families has been expressed. Never married female headed single-parent families have children who typically have more academic problems than children of mothers who are separated or divorced, which may be attributed more to a decreased family income due to lack of child support from the father rather than actual marital status (Kim, 2004). This finding is supported by Beller and Chung's (1992) study that controlled for income to compare the difference between male and female headed single-parent households. Also related to family structure is the size of the family. As family size increases, the parent's financial resources become diluted, which decreases the opportunity for parents to provide educational experiences, materials, and time dedicated to academic achievement (Desai, 1995; Downey, 1995). Cultural and material resources enhance a child's academic achievement (Kim,

2004); therefore, if the family's income is diluted by increased size, the children tend to have lower school performance (Desai, 1995).

Each of these factors relate to a family's socioeconomic status. SES is a predictor of attainment because higher family income can provide children with more out-of-school experiences that enhance academic achievement (Entwisle et al., 2005). The children of families with low incomes are more likely to experience difficulties in academics (Kim, 2004) and have lower aspirations concerning academic achievement (South et al., 2003). For instance, college graduation rates of children from low-income families are lower than those of other families (Steinbrickner and Stinebrickner, 2003). However, when race is factored in, SES has been shown to be a weak explanation for differences in academic achievement. Previous research finds whites at the lowest SES levels score equal to or higher than the highest SES black students.

In addition, neighborhood effects are the advantages and disadvantages associated with income and attitude portrayed by the members of a community. In economically disadvantaged neighborhoods, children are exposed to behaviors and ideals that hinder academic progress more so than in advantaged neighborhoods (South et al., 2003). Increased unemployment in disadvantaged neighborhoods also sends a message to students that opportunities for advancement are nonexistent so they disengage from the very institution that can give them opportunity, education (South et al., 2003).

Long before a child reaches high school a parent has established plans for the education of their children or ignored it all together (Entwisle et al., 2005). Parental expectations concerning the academic achievement of their children are greatly influenced by their own academic background. Parents who have succeeded academically have more leverage for

encouraging their children to stay in school and strive to succeed (Kim, 2004). Parents who have a college education are more likely to know about their child's school performance and take action to help their child succeed academically (Baker and Stevenson, 1986; Stevenson and Baker, 1987). Felson (1990) suggest that parents who have a college education are more likely to make negative comments about their child's academic achievement, which is detrimental to the child's future success in school. In contrast to this belief, parental expectations may have less of an impact on a child's academic achievement than does family structure (Astone and McLanahan, 1991).

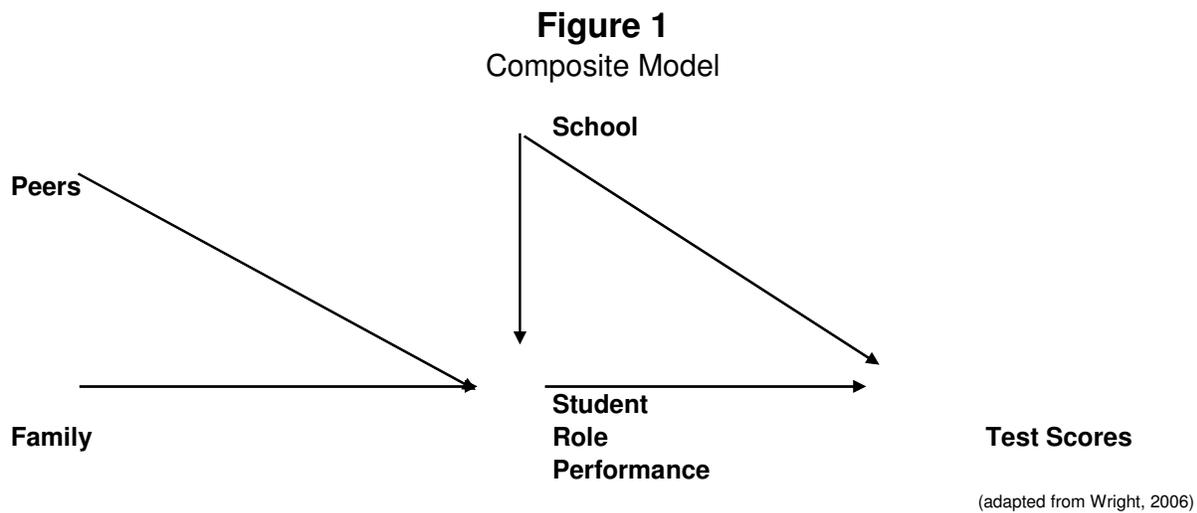
2.4 Peers

The social groups in which a student belongs includes people from the same community; therefore, a student's social group can reinforce a devaluation of education (South et al., 2003), which contributes to high dropout rates and lower academic achievement. Lower drop out rates contribute to higher levels of academic achievement (Fetler, 1989); therefore, if a student has several friends who drop out of high school, there is a higher probability the student will drop out as well. Students who do achieve academically, especially minority students, may be accused of "acting white" because of advanced classes and college attendance goals. This behavior can cause these successful students to hide their academic expertise in an attempt to fit in with their peers. Continued "downplaying" of academic success can have a detrimental effect on the student and actually increase the occurrences of inappropriate behavior by the student, subsequently hindering their academic achievements (Horvat and Lewis, 2003).

Since students tend to associate with other students with similar academic characteristics, it can be difficult to determine whether the peer group influences motivation and achievement goals (Ryan, 2000). Once peer selection factors are controlled for, however, motivation and

academic achievement is consistent with the peer group in which a student belongs. Therefore, a student involved with a high achieving group of peers will have less of a decline in academic achievement than a student involved in a low achieving group of peers (Ryan, 2000).

2.5. Composite Model



While most of the previous literature merely focuses on specific factors, such as homework completion, race, or family structure. This composite model examines the gap in test scores between whites and blacks from several perspectives. This model provides a more holistic perspective. The dependent variable for the composite model measures academic achievement through test scores. There are four segments to the model, which include student role performance, schools, family, and peers. Student role performance is the behavior students exhibit based on their obligations in the role of student according to their ascribed and achieved roles. These roles include sex, race/ethnicity, disabilities, homework completion, extra curricular activity involvement, ability tracking, and their locus of control. It is anticipated that if student role performance increases, then test scores will also increase.

The school environment provides and enhances instruction and the acquisition of skills. School social environment, class size, student/teacher ratio, curriculum, teacher selection, and

school rules are all aspects of schools that can affect test scores. Schools can affect test scores structurally and individually. Factors affecting all students, such as school and class size, school SES, and school rules are structural and those factors only negatively affecting certain students, such as remedial class placement and occurrences of bullying and harassment are individual factors. It is expected that as the school environment becomes more structured, test scores will increase.

As stated previously, the family institution is the primary agent of socialization. Families teach children the values and expectations of the society in which they live. Families can affect test scores through their parental expectations, family structure, SES, and neighborhood effects. It is expected that, as family influences increase, the family positively affects the student's role performance, which subsequently increases test scores.

Finally, peers are the social groups in which a student belongs. Peers can affect test scores through a devaluation of education, rejection, and racial discrimination. It is anticipated that an increase in negative peer influences decreases student role performance, which in turn decreases test scores.

3. DATA AND METHODOLOGY

3.1 Data

The purpose of this study is to examine the difference of test scores between black and white 10th graders. This study uses the Educational Longitudinal Study of 2002 (ELS:2002), a multilevel study of a nationally representative sample with two units of analysis, schools and 10th graders. The Research Triangle Institution International (RTI) conducted the study on behalf of the National Center for Education Statistics (NCES) of the Institute of Education Sciences, U.S. Department of Education. Of the 27,000 schools containing 10th grade students, 1,221 public,

Catholic, and other private schools were eligible of which 752 participated in the study. The population of students included those in the 10th grade in the 2001-02 school year during the spring term, excluding foreign exchange students. Students who did not have both a math and reading test submitted were selected out of the sample as well as those who did not have valid student, parent, and school questionnaires. Also, only black and white non-Hispanic students were included in this study. These sample restrictions resulted in a final sample size of 8,415 tenth-grade students.

The ELS:2002 provides a population weight that must be used in order to generalize to the larger population. Weights inflate the sample size, which creates bias in the population parameters. In order to bring the sample back to its original size, a relative weight was created by dividing the weight by its mean. This maintains the sample size while preserving the distribution of the weighted population.

3.2 Variables

3.2.1 *Dependent Variable*

The dependent variable for this study is a composite of math and reading standardized test scores measured at an interval level with a normal distribution ranging from 20.91 to 81.04. Quintile and centile variables were created from the original composite math and reading standardized test scores.

3.2.2 *Independent Variables*

3.2.2.1 *Student Role Performance*

The student role performance variables include race, sex, disabilities, hours spent on homework completion, extra curricular activity involvement, remedial class placement, deviance, and amount of effort applied to math work in class. A binary variable was created for

race with whites equaling 0 and blacks equaling 1. It is expected that test scores will be lower for blacks than whites. The sex variable was recoded so females equal 1 and it is expected female student's test scores will be higher than the test scores of male students.

An index that measured the number of disabilities included binary variables measuring learning disabilities, speech and language impairments, mental retardation, emotional disturbance, hearing impairments, orthopedic impairments, visual impairments, and any other disability. The composite index was then coded into a binary variable with 1 equaling at least one disability reported. It is expected that students with at least one disability will have lower test scores than students with no disabilities.

The number of hours spent on homework per week was measured with an index created to measure the total number of hours spent on all homework in and out of school ranging from zero to 21 or more hours. The expectation is that as the number of hours spent on homework increase test scores will increase. Extracurricular activities were separated into athletic and academic categories. The binary variables used to create an index measuring academic extracurricular activities included participation in science/math fair, school band or chorus, school play or musical, student government, academic honor society, school yearbook or newspaper, school service clubs, school academic clubs, school hobby clubs, and school vocational clubs. The binary variables used to create an index measuring athletic extracurricular activities included participation in the interscholastic sports of baseball, softball, basketball, football, soccer, other team sports, individual sports, and cheerleading/ drill team. The athletic and academic indexes were added together and transformed into a 0,1 binary with 1 equaling at least one extracurricular activity. It is expected that, regardless of the type of extracurricular activity, test scores will increase if the student is involved in any extracurricular activity.

Remedial education was measured by adding two variables that measured whether a student was ever placed in a remedial English class and ever placed in a remedial math class. This variable was transformed into a binary with 1 equaling at least one remedial course placement. It is expected that, if the student has been placed in at least on remedial course, test scores will be lower than students with no remedial class placements.

A deviance scale was created including variables measuring how many times the student was late for school, cut or skipped class, was absent from school, got in trouble, was put on in-school suspension, and suspended or put on probation, which resulted in a cronbach alpha of .705. The scale measured the level of deviance from 1 to 5. One equals a low level of deviance and five equals a high level of deviance. It is expected that as the level of deviance increases test scores will decrease.

An index measuring the number of days of effort put towards math work in class was created with variables measuring how often the student reviews work in math class, listens to the math teacher lecture, copies the math teacher's notes from the board, uses books besides the math textbooks, does problem-solving in math class, uses a graphing calculator in math class, uses computers in math class, explains work to the math class orally, and participates in student math discussions. The index was coded as to the number of days the student participated in such actions from 1 to 5 days. It is expected that as the number of days effort is applied to math work in class, math test scores will increase.

3.2.2.2 Schools

The school environment model included student/teacher ratio, school socioeconomic status, school rules, and occurrences of bullying and harrassment. The teacher/student ratio variable was created from the 10th grade enrollment and number of full-time teacher variables.

The full-time teacher variable was divided by the 10th grade enrollment variable to create the teacher/student ratio. It is expected that as teacher/student ratio decreases test scores will increase. The percentage of 10th grade students who receive free lunches was used to determine school socioeconomic status. It is expected that as the percentage of 10th grade students who receive free lunches increases test scores will decrease.

Rules consist of whether schools control access to buildings and grounds during school hours, require students to pass through a metal detector and submit to random metal detector checks, have a closed campus during lunch, perform random dog sniff checks for drugs and sweeps for contraband, require drug testing for any students, require students to wear uniforms, enforce a strict dress code, require clear book bags or ban book bags, require students and faculty/staff to wear badges or picture id's, and use security cameras to monitor the school. School rules were measured with an index ranging from 1 to 12 rules present at the school. It is expected that as the number of school rules increases test scores will increase.

A presence of bullying and harassment was measured with a scale created from variables about whether the student had something stolen at school, was offered drugs at school, was threatened to be hurt at school, was hit at school, was forced to give up money or other objects at school, had belongings damaged at school, and been bullied or picked on at school, which resulted in a cronbach alpha of .726. The scale measured the quality of the school social environment from 0 to 2 with high quality equaling zero. It is expected that as the occurrences of bullying and harassment decreases, test scores will increase.

3.2.2.3 *Families*

The family model included the family structure, number of siblings, availability of resources, parent involvement, and the family's academic expectations of the student. Family

structure is measured by recoding an existing variable so that students who lived with father only, mother only, female guardian only, male guardian only or lived with a parent for less than “half-time” equals one-parent families and students who lived with a mother and father, mother and male guardian, father and female guardian, or two guardians equals two-parent families. It is expected that two-parent families will have students that have higher test scores than students from one-parent families. The number of siblings was measured at an interval level with a range of 0 to 6. It is expected that as the number of siblings increase, test scores will decrease.

Family resources are measured by whether the family has a daily newspaper, regularly receives a magazine, has a computer, has access to the internet, has more than fifty books, and has their own room. It is expected that having more resources available will result in higher test scores.

Parent involvement is measured from variables assessing whether a parent has belonged to a parent-teacher organization, attended parent-teacher organization meetings, taken part in parent-teacher organization activities, acted as a volunteer at the school, and belonged to other organizations with parents from the school. Since the distribution of the index had a large range of values, a binary variable was created from this index with 1 equaling parental involvement. It is expected that if a parent is involved, test scores will increase. Parental expectations of their child to succeed academically was measured with a binary variable where 1 equals college expectations. It is expected that when parental educational expectations include college, test scores will also increase.

The National Education Center created a scale of standardized family socioeconomic status that is measured at an interval level from -1.69 to 1.98 with a composite variable that includes the standardized variables of parental education, occupation, and income. A quartile of

this socioeconomic variable was also available with 1 equaling the lowest socioeconomic status. It is expected that as socioeconomic status increases, test scores will also increase. A variable measuring total family income from all possible sources is measured at the interval level and ranges from zero income to \$200,001 or more. It is expected that as total family income increases, test scores will also increase.

3.2.2.4 *Peers*

The independent variables associated with peer effects include peer influence and occurrences of peers who dropout of school. A peer influence scale was created from variables that measured the importance friends placed on attending classes regularly, studying, getting good grades, finishing high school, and continuing their education past high school, which resulted in a cronbach alpha of .837. The peer influence scale measured the importance of peer's attitudes from 1 to 3 with 1 equaling not important and 3 equaling very important. It is expected that as peer influence increases, test scores will also increase. The number of peer dropouts is measured at an ordinal level from no peer dropouts up to all peer dropouts. It is expected that as more peers dropout of school, test scores will decrease.

3.3 Methodology

Student role performance, schools, families, and peers are the four model segments used to examine effects on test scores. The hypotheses for each model segment were as follows:

Student Role Performance:

- 1a. White students will have higher composite test scores than black students, net of other factors.

1b. As academic/athletic extracurricular activities increase, composite test scores will increase, net of other factors

Schools:

2a. Net of other factors, as schools rules increase, composite test scores will increase.

2b. As bullying/harassment increase composite test scores will decrease, net of other factors.

Family:

3a. As family socioeconomic status increases, composite test scores will increase.

3b. As families educational expectations increase, composite test scores will increase net of other factors.

Peers:

4. Net of other factors, as peers who drop out of school increase composite test scores will decrease.

Univariate and bivariate analysis were executed to obtain population parameters of the full sample as well as the subgroups of white and black students for each interval and binary variable. A group means test (t-test) was used to see if the two groups were statistically different across the dependent and independent factors. An effect size was measured to establish if the significance between means of the subgroups is a meaningful difference. Multivariate analysis was conducted by performing Ordinary Least Squares Regression. The dependent variable was regressed onto each of the independent variables included in the full-saturated model as well as each of the subgroups in order to compare across and within groups, net of other factors. A statistical difference test was used to determine if the coefficients are statistically different between the subgroups. In order to determine if one model segment has more of an effect, a partitioning of variance and partitioning shares of unique variance was performed.

4. RESULTS

4.1 Univariate and Bivariate

Table 1 displays univariate and bivariate results for the full sample as well as separately for blacks and whites. This study has a sample population of 8,315 tenth grade students with more white students (83.4%) than black students (16.6%). The dependent variable is a composite of reading and math scores with whites having a higher mean score than blacks (53.64 vs. 44.42). The mean scores represent an 82.8% gap between test scores of whites and blacks. The median test scores represent an 82% gap between test scores of whites and blacks with whites having a higher median score than blacks (54.26 vs. 44.49).

Among student role performance factors whites are more likely to spend additional hours on homework (5.10 vs. 4.12) and be involved in at least one extracurricular activity (77% vs. 70%) than blacks, while blacks are more likely to have a higher level of deviant behavior (1.83 vs. 1.72) on a 1-5 scale and spend more hours on math in class (2.27 vs. 2.20) than whites. No statistical difference between blacks and whites was found based on sex, disabilities, or placement in a remedial class.

School environment factors illustrate that white students are more likely to have a higher student/teacher ratio (23.97% vs. 19.84%) than black students while blacks are more likely to be enrolled in schools that have a high percentage of students receiving free lunches (39.4% vs. 18.83%) and be enrolled in schools with a higher number of rules (5.93 vs. 4.41) than are white students. The social environment of the schools for white and black students, however, was not statistically different.

The variables for the family model show that black students are more likely to live in single parent families (47% vs. 19%) and have more siblings (2.83 vs. 2.10) than are white

students, while whites are more likely to have more resources available (1 vs. .99), to have parents who are involved in the school (62% vs. 55%), and have a higher family socioeconomic status (51.42 vs. 39.68) than black students. This places whites in the 53rd percentile and blacks in the 36th percentile for socioeconomic status. Parental expectation of the student to attend college was not statistically different for blacks and whites. Among peer model factors, black students are more likely to report being affected by peer influence than white students (2.14 vs. 2.12) while the number of peers who dropout was not statistically different.

4.2 Multivariate

Table 2 provides results from the Ordinary Least Squares(OLS) Regression analysis regressing test scores across the independent predictors. The adjusted R-squared for the full model is .42 (significant at the .000 level), which implies that the composite model explains approximately 42% of the variance in test scores. The separate analysis by race reports R-squared values of .35 for whites and .25 for blacks. The full sample results show that, net of other factors, being black results in a 5.967 drop in test scores. This finding supports hypothesis 1a with white students having higher composite test scores than black students, net of other factors.

Among other student role performance model variables, being female decreases test scores by .98, net of other factors; however, this only holds up for white females who have a statistically significant decrease in test scores by 1.15. Having at least one disability decreases test scores by 7.998, net of other factors. Whites who have at least one disability have a higher decrease in test scores than do blacks (8.418 versus 5.637), net of other factors. For every hour spent on homework there is a .197 increase in test scores, net of other factors, which holds true for both whites and blacks. Blacks, however, receive a greater return on homework hours

invested, net of other factors, than whites (.301 versus .178). In support of hypothesis 1b, students who are involved in at least one extra curricular activity have an increase in test scores of 1.996, net of other factors. Whites benefit from extra curricular activity involvement more so than blacks, net of other factors, (2.221 versus 1.081). While enrollment in at least one remedial class decreases test scores by 2.618, net of other factors, and every increase in the level of deviance decreases test scores by 1.236, net of other factors, there is no statistical difference between whites and blacks on either of these variables.

All school model segment variables decrease test scores, net of other factors; .017 for student/teacher ratio, .029 for percentage of free lunch students, .154 for number of school rules, and 2.231 on the school environment scale. While all of these factors are statistically significant for whites, only student/teacher ratio and school social environment are statistically significant for blacks. There are no statistical differences between blacks and whites on any of the school factors. These results do not support hypotheses 2a, which stated schools with more school rules would have students with higher composite test scores; however, hypotheses 2b, which stated schools with a lower occurrence of bullying and harassment would have students with higher test scores, was supported.

The results for family model segment variables were divergent. For every one sibling a student has there is a .182 decrease in test scores, net of other factors; however, this statistically significant decrease only holds true for blacks at .491. For every one resource available to the student there is a .353 increase in test scores, net of other factors. This statistically significant increase in test scores only holds true for whites at .38. Table 2 shows that for every rise in socioeconomic status there is a 13.898 increase in test scores, net of other factors, which supports hypothesis 3a that students from families with higher socioeconomic status would have higher

test scores than students from families with lower socioeconomic status. Interestingly, whites benefit from rises in socioeconomic status more so than blacks (14.206 versus 11.221), net of other factors. Hypotheses 3b, which stated families with higher educational expectations would have students who have higher composite test scores than students from families with lower educational expectations, net of other factors, is supported by the results in table 2 that show students whose parents expect them to attend college have a 3.993 increase in test scores, net of other factors. This statistically significant increase only holds true for white students at 4.788.

The peer model segment shows that for every one peer who drops out of school, test scores decrease by .97, net of other factors, which holds true for both whites and blacks. Black students whose peers drop out of school; however, show more of a decrease in test scores than do whites (1.768 versus .724), which supports hypotheses 4 that, net of other factors, students whose peers drop out of school would have lower composite test scores than students whose peers do not drop out of high school.

Within the full sample, family socioeconomic status (.276), having at least one disability (-.265), and being black (-.232) were the best predictors of test scores. When the sample is segregated by race, the best predictors of test scores for blacks are family socioeconomic status (.246) and having at least one disability (-.217), net of other factors. White's test scores can be predicted nearly equally by having at least one disability (.295) and family socioeconomic status (.292), net of other factors.

Table 3 provides the results of partitioning of variance, which allows for an analysis of variance for each model segment by finding the change between the full sample adjusted R-squared and the adjusted R-square change from the full model when one model segment is removed from analysis. The adjusted R-squared for the full model (.420) explains 42% of the

variance in test scores. When the saturated model is segregated by race the variance in test scores is explained more so for whites .354 (35.4%) than for blacks .253 (25.3%).

The adjusted R-squared for the full model changes by 34.3% when the student role performance model segment is removed, which implies that 14.4% of the variation in test scores is explained by the student role performance model segment. The variation in test scores explained by student role performance factors is higher for whites than blacks (12.8 versus 7.7). When the school model segment is removed from analysis there is a 3.6% change in the adjusted R-squared for the full model with the model segment explaining 1.2% of the variance in test scores for whites and .9% for blacks.

A 21.5% change in the adjusted R-squared occurs when the family model segment is removed from analysis, which explains 8.8% of the variance in test scores. Whites have a 10.4% explanation in the variance of test scores while blacks have an 8.5% explanation in the variance from the family model segment. When the peer model segment is removed from analysis there is a .3% change in adjusted R-squared, which is a .1% explanation for the variation in test scores based on the peer model segment. Whites have a .1% explanation in the variance of test scores while blacks have a .8% explanation in the variance from the peer model segment. Based on these results, the student role performance is better at explaining the variation in test scores for the full model.

While the partitioning of variance allows for a comparison of model segments, this approach has limitations such that the number of predictors impacts the R-squared and this approach cannot isolate shared from unique variance. Figure 2 provides an illustration of the partitioning shares of unique variance squaring the semi-partial coefficients of unique variance by each factor and summing the factors for each model segment in order to determine the

percentage of unique variance in test scores by model segment. Student role performance and family factors explain the majority of the unique variance in test scores in the full sample, 64% and 31% respectively, as well as for whites, 56.4% and 37.6% respectively, and for blacks, 47.5% and 41.3% respectively, with student role performance explaining over half of the unique variance for the full sample and whites and nearly half of the unique variance for blacks. The unique variance in test scores is explained by school factors for the full sample is 4.3%, which is comparable to the unique variance in test scores explained by school factors for whites (5.5%) and blacks (6%). Less than 1% of the unique variance in test scores is explained by peer factors for the whole sample as well as for whites; however, the unique variance in test scores explained by peer factors for blacks is 5.2%. These results suggest that discrimination based on the ability of a student to perform the roles associated with their position within the school setting contributes to the academic achievement gap between blacks and whites.

5. CONCLUSION

5.1 Discussion

The most important finding from this study shows that family socioeconomic status is the best predictor of test scores, net of other factors (hypothesis 3a). Prior research states SES is a predictor of attainment because more family income provides children with more out-of-school experiences that enhance academic achievement (Entwisle et al., 2005). When examining the unique variance explained in Figure 2, family factors, including socioeconomic status, regardless of the interrelation among factors between the family and other model segment factors, explains 31% of the unique variance in test scores. This result supports earlier research, which advocates that family structure and income can either promote or impede academic success due to the types of resources available to the family, level of educational values, discipline styles, and the degree

of parental involvement (Astone and McLanahan, 1991; Beller and Chung, 1992; Downey, 1994; Downey, 1995).

Hypothesis 1a asserted white students would have higher composite test scores than black students, net of other factors, which was supported by this study's findings. An 82.8% gap exists between blacks and whites with test averages of 53.64 for whites and 44.42 for blacks. Test scores for whites, on average, are in the 55th percentile while black's test scores are in the 28th percentile. Table 2 confirms that being black decreases test scores by 5.967. These results corroborate the findings by Davis and Jordan (1994) and Fordham and Ogbu (1986) that race can be detrimental to the academic achievement of minorities. Since the No Child Left Behind Act of 2001 specifically focuses on reducing the academic achievement gap between whites and minorities and improving the achievement of the economically disadvantaged, the results of this study, in regards to hypothesis 1a and 3a, do not support the effectiveness of the NCLB policy.

Hypothesis 1b stated students who participate in academic/athletic extracurricular activities would have higher composite test scores than those who do not, net of other factors. This hypothesis was confirmed for the full model and across whites and blacks, as shown in Table 2. When a student is involved in at least one extracurricular activity there is an increase in test scores; however, whites benefit more from extracurricular involvement than blacks. This could be due to the large percentage of black students who participate in numerous athletic activities and do not focus on academic achievement as much as whites. This result supports prior research that both males and females benefit from a combination of academic and athletic extracurricular activity in regards to academic achievement (Landers et al., 1978). Unfortunately, the NCLB does not promote a school environment in which more students are encouraged and allowed to be involved in academic and/or athletic activities. While the focus of

the NCLB revolves around improving assessment scores, it does not propose an increase in outside-the-classroom student involvement unless a school has failed to meet adequate yearly progress. These results suggest that more opportunity for extracurricular activity involvement in academics and/or athletics may improve academic achievement.

Hypothesis 2a stated, net of other factors, schools with more rules would have students with higher composite test scores than schools with fewer rules. A statistically meaningful difference is present in the number of school rules for blacks and whites with blacks, on average, having more school rules present than whites. However, once other factors are controlled for, this statistical significance is only relevant for white students. This could be due to the types of rules examined in this study. Most of the rules were highly punitive, which indicates that severe problems existed before the inception of the rules. Therefore, issues concerning academic achievement could have been present before the inception of the rules. This finding is contrary to prior research by Ma and Klinger (2000), which found schools with highly structured rules that contribute to the learning process as well as enhance the ability of teachers to instruct had students that perform better academically.

While the results from Figure 2 show that overall the school factors used in this study are not the best predictors of academic achievement (hypotheses 2b). Schools with lower occurrences of bullying and harassment would have students with higher composite test scores than schools with higher occurrences of bullying and harassment, net of other factors, is supported by the full model and across race (Table 2). The social environment scale represents fewer incidences of negative experiences (high quality) at the zero level. Table 2 shows that as the social environment scale increases (moves towards a low quality experience), test scores decrease. This finding supports prior research by Glew et al.(2005), which found victims of

bullies were more likely to have low achievement. Therefore, according to this study's results, schools may contribute to an increase in academic achievement by limiting school rules while controlling bullying and harassment.

The second best model segment for predicting test scores was the family model segment (Figure 2). Hypothesis 3b stated families with higher educational expectations would have students who have higher composite test scores than students from families with lower educational expectations, net of other factors. This hypothesis is supported for the full sample; however, having increased parental expectations is not statistically different between whites and blacks in reference to test scores. Astone and McLanahan (1991) suggested parental expectations have less of an impact on a child's academic achievement than family structure; however, the current study found family structure to be insignificant when controlling for all other factors, which contradicts Astone and McLanahan (1991) as well as other previous research findings (Beller and Chung, 1992; Desai, 1995; Downey, 1994; Downey, 1995). These findings are outside the scope of the NCLB. Since the educational aspirations of children are many times a reflection of the educational aspirations and attainment of the parents (Downey, 1994; Downey, 1995), those children whose parents are uneducated do not understand how to "do school" and are at a disadvantage compared to those children whose parents are educated. When performing well in school is viewed as a "white goal" and in order to be a good black person one must perform the converse of "white," then achieving academically is a stigma against being black (Davis and Jordan, 1994).

Hypothesis 4, which stated, net of other factors, students whose peers drop out of school would have lower composite test scores than students whose peers do not drop out of high school, was supported by this study. Table 2 shows, as the number of peers who dropout

increase, test scores decrease for the full sample as well as across blacks and whites. The peer model segment explains less of the unique variance in test scores (Figure 3) than other model segments; however, among blacks it does explain more of the unique variance in test scores than among whites. This could be due to the high priority the black culture places on being “non-white.” If performing well in academia is considered to be a “white” goal, then how a student’s peers view the student will have a greater affect. This finding supports prior research that states lower drop out rates contribute to higher levels of academic achievement (Fetler, 1989).

5.2. Limitations

The most prohibitive limitation to this study is the inability to study longitudinal effects since only one year of the data set was used. For example, the student may have just recently become a member of a two-parent family, and subsequently have a higher family SES, and not reaped the benefits of an elevated socioeconomic status or increased opportunities for family resource availability. While the goal of this research was to use the most current and accurate data available, there are limitations to using the ELS:2002. The 2004 data, which would have been able to supply not only more up-to-date data but also allowed for three years change to occur since the inception of the NCLB, could not be used since none of the family information was included. The data did not contain enough information about actual schools such as class sizes, teacher selection, teacher experience, or curriculum. These variables would have allowed for a more inclusive look at the effect of such issues as teacher experience on test scores. The ELS was also prohibitive when looking at neighborhood effects since information concerning the taxes earmarked for education for each school was not included in the data set. The ELS, however, did allow for a respectable analysis of student role performance and family factors on test scores.

5.3. Policy Implications

Government policies aimed at closing the achievement gap between whites and blacks have thus far accomplished very little. The United States has the most decentralized education system in the world, which allows for discrimination to take place based on race and socioeconomic status. While the intended purpose of the “No Child Left Behind Act of 2001,” is to make public education equal for all students within each school, this study shows that black and low-income students are still being left behind.

Schools have no control over the socioeconomic status of their students. Therefore, the best way schools can possibly overcome socioeconomic status is to look at programs that encourage those students who are economically disadvantaged. Since race and socioeconomic status intersect, one manner in which government could provide a non-discriminatory education to all students, the cornerstone of the NCLB, would be to level the academic field among those students entering kindergarten by fully funding Head Start, Even Start, and other early childhood education programs. Head Start has already reduced the gap between races in preschool attendance. Furthermore, an increase in attendance by blacks and an increase in preschool quality care could close up to 20 percent of the black-white school readiness gap (Magnuson and Waldfogel, 2005). While these programs do improve student’s skills throughout elementary and middle school, the effects of Head Start type programs no longer have an effect on academic achievement by the 8th grade (Aughinbaugh, 2001). Some research has shown that whites benefit from Head Start programs with regard to the probability of attending college; however, this is not true for blacks (Garces, Thomas, and Currie, 2002). The effects of Head Start may diminish more rapidly for black students due to the likelihood that black Head Start students subsequently attend inferior schools (Currie and Thomas, 2000), which supports the need to

make equal the amount of school funding and quality of teachers provided to each school, regardless of the poverty level or racial mix of the school or district.

The fading of preschool effects on students around the 8th grade year further solidifies the need for continued assistance for low-income students during the high school years. One such program, AVID (Advancement Via Individual Determination), is a public school college-preparatory program designed to aid economically disadvantaged students. Most AVID students are underrepresented minorities, Latinos and African-Americans, who may lack a college-going tradition in their family and whose success is critical to closing the achievement gap (AVID Center, 2005). In addition to offering challenging coursework, the program strives to improve students' study skills and their ability to plan out their learning so they have more of an understanding of how to “do school.” The program also measures results by examining the percentage of students applying & being admitted to four-year colleges, high school graduation rates, and rates of 8th grade students taking and passing algebra courses. By all of these criteria, the program has been judged as successful (AVID Center, 2005). The dropout rate alone shows that, while other students may drop out, AVID students stay in school due to the support they receive, the commitment to success they feel, the inspirational teachers they encounter, and the self-determination they exercise (AVID Center, 2005).

Future research is needed to fully understand the academic achievement gap between whites and minorities. In order to examine the differences between a school that meets adequate yearly progress under the NCLB and a school that does not, a comparison case study of two high schools could be conducted. Both schools would need to have a population majority of economically disadvantaged students so that socioeconomic status would not be a factor in the analysis. This qualitative study could encompass administrators, teachers, students, and parents

and allow for an examination of how culture plays a part in a student's willingness to achieve their academic goals. A comparison study between the United State's decentralized education system and another country's centralized education system could aid in understanding how the students from the United States could accomplish higher academic achievement. Also, an examination of restructuring the process of promotion and continued employment of teachers within the public school system to a merit-based rather than tenure-based system could help to improve how we educate our future employers/employees.

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APPENDICES

TABLE 1
Values for Full Sample and by Race

Variables:	Full Sample	White ¹	Black ²
Dependent Variable:			
Test scores (mean):	52.11	53.64 *** ^	44.42 (score-gap)
Test scores (median):	52.58	54.26	44.49 (82.8%)
Test scores (centile)	50.7%	55.3%	28.0% (82.0%)
(stddev):	(9.58)	(9.10)	(8.09)
Independent Variables:			
Student Role Performance			
% Female (0,1)	51.0%	51.0%	51.0%
	(0.50)	(0.50)	(0.50)
% At least one disability (0,1)	11.0%	11.0%	11.0%
	(0.32)	(0.32)	(0.31)
Hours spent on homework (median)	4.94	5.10 *** ^	4.12
	4.00	4.00	3.00
	(4.17)	(4.20)	(3.95)
% At least one extracurricular activity (0,1)	76.0%	77.0% ***	70.0%
	(0.43)	(0.42)	(0.46)
% At least one remedial class (0,1)	7.0%	7.0%	6.0%
	(0.25)	(0.25)	(0.24)
Level of deviance (1 to 5)	1.74	1.72 ***	1.83
	(0.65)	(0.66)	(0.64)
Days spent on math work in class	2.21	2.20 *	2.27
	(0.89)	(0.87)	(1.00)
School			
Student/Teacher Ratio	23.29	23.97 *** ^	19.84
	(19.82)	(20.62)	(14.70)
% Free lunch students	22.2%	18.8% *** ^	39.4%
	(20.46)	(17.01)	(26.80)
Number of school rules (0 to 12)	4.66	4.41 *** ^	5.93
	(2.19)	(2.11)	(2.19)
Social Environment Scale (0 to 2)	0.24	0.24	0.23
	(0.30)	(0.30)	(0.27)
Family			
% Single-parent families (0,1)	23.0%	19.0% *** ^	47.0%
	(0.42)	(0.39)	(0.50)
Number of siblings	2.22	2.10 *** ^	2.83
	(1.47)	(1.37)	(1.77)
Resources available (0-6)	1.00	5.14 ***	4.44
	(0.06)	(1.05)	(1.42)
% Parent involvement (0,1)	61.0%	62.0% ***	55.0%
	(0.49)	(0.49)	(0.50)
Family SES centile	50.5%	53.3% ***	35.9%
	(28.86)	(28.32)	(27.10)
% Expected to attend college (0,1)	97.0%	97.0%	96.0%
	(0.18)	(0.17)	(0.20)
Peers			
Peer Influence (1to 3)	2.12	2.12 *	2.14
	(0.48)	(0.48)	(0.44)
Number of peers dropout	1.14	1.14	1.15
	(0.39)	(0.39)	(0.42)
Sample n (weighted):	8,315	6,936	1,379
	100%	83.4%	16.6%

¹ = *** p < 0.001; ** p < 0.01; * p < 0.05

² effect size greater = > .20

TABLE 2
OLS Regression Analysis for the Race Model
(Dependent variable=scores)

Variables:	Full Sample			White			Black			
Independent Variables:	unstd.	¹	std.	unstd.	¹	std.	²	unstd.	¹	std.
Student Role Performance										
Black (0,1)	-5.967	***	-0.232							
Female (0,1)	-0.980	***	-0.051	-1.150	***	-0.063		-0.190		-0.012
At least one disability (0,1)	-7.998	***	-0.265	-8.418	***	-0.295	<>	-5.637	***	-0.217
Hours spent on homework	0.197	***	0.086	0.178	***	0.082	<>	0.301	***	0.147
At least one extracurricular activity (0,1)	1.996	***	0.089	2.221	***	0.102	<>	1.081	*	0.061
At least one remedial class (0,1)	-2.618	***	-0.068	-2.575	***	-0.070		-2.850	***	-0.085
Level of deviance (1 to 5)	-1.236	***	-0.084	-1.421	***	-0.102		-0.140		-0.011
School										
Teacher/Student Ratio	-0.017	***	-0.034	-0.016	***	-0.035		-0.032	*	-0.059
% Free lunch students	-0.029	***	-0.061	-0.036	***	-0.067		-0.014		-0.045
Number of school rules (0 to 12)	-0.154	***	-0.035	-0.174	***	-0.040		-0.122		-0.033
Social Environment (0-2,0=high quality)	-2.231	***	-0.069	-2.217	***	-0.073		-2.064	**	-0.069
Family										
% Single parent	-0.199		-0.009	-0.213		-0.009		-0.490		-0.030
Number of siblings	-0.182	**	-0.028	-0.091		-0.014		-0.491	***	-0.107
Number of resources (0 to 6)	0.353	***	0.042	0.380	***	0.044		0.255		0.045
Family socioeconomic status	13.898	***	0.276	14.206	***	0.292	<>	11.221	***	0.246
Expected to attend college (0,1)	3.993	***	0.074	4.788	***	0.092		1.075		0.026
Peers										
Number of peers dropout	-0.970	***	-0.040	-0.724	**	-0.031	<>	-1.768	***	-0.094
(Constant)	45.6	***		44.7	***			43.0	***	
Adjusted R-squared	0.42	***		0.35	***			0.25	***	
n=	8315			6936				1379		

¹ = *** p < 0.001; ** p < 0.01; * p < 0.05

² = <> significant difference between blacks and whites at the .05 level

TABLE 3
Comparison of Model Segments
(Dependent variable=scores)

(standardized betas shown, all sig.at .001 unless noted ns)

Variables:	Full	w/o SRP model	w/o School model	w/o Family model	w/o Peers model
Independent Variables:					
<i>Student Role Performance</i>					
Female (0,1)	-.051	x	-.039	-.064	-.054
Black (0,1)	-.232	x	-.254	-.281	-.231
At least one disability (0,1)	-.265	x	-.270	-.287	-.266
Hours spent on homework	.086	x	.089	.106	.088
At least one extracurricular activity (0,1)	.089	x	.085	.136	.090
At least one remedial class (0,1)	-.068	x	-.069	-.082	-.068
Level of deviance (mean)	-.084	x	-.100	-.092	-.091
<i>School</i>					
Teacher/Student Ratio	-.034	ns	x	-.046	-.035
Free lunch students	-.061	-.121	x	-.136	-.061
Number of school rules	-.035	-.073	x	-.036	-.037
Social Environment	-.069	-.110	x	-.076	-.073
<i>Family</i>					
Family structure	ns	-.064	ns	x	ns
Number of siblings	-.028	-.060	-.028	x	-.029
Number of resources	.042	.091	.047	x	.043
Family socioeconomic status	.276	.316	.294	x	.279
Expected to attend college	.074	.098	.072	x	.076
<i>Peers</i>					
Number of peers dropout	-.040	-.068	-.048	-.066	x
Adjusted R-sq.*	.420	.276	.410	.332	.419
Rsq change from Full model (.421)		.144	.010	.088	.001
% change in Rsq.		34.3%	3.6%	21.5%	0.3%
<i>Whites Only:**</i>					
	.354	.226	.342	.250	.353
Rsq change from Full model (.355)		.128	.012	.104	.001
% change in Rsq.		36.2%	5.3%	30.4%	0.4%
<i>Blacks Only:**</i>					
	.253	.176	.244	.168	.245
Rsq change from Full model (.260)		.077	.009	.085	.008
% change in Rsq.		30.4%	5.1%	34.8%	4.8%

*(all Rsq. Changes sig. @ .000)

** standardized betas not shown for male or female equaltions.

Figure 2
 Partitioning Shares of Unique Variance in Test Scores by Model Segment

