EDUCATIONAL RISK FACTORS FOR STUDENTS IN SINGLE AND DUAL PARENT HOUSEHOLDS

A Thesis by

Tisha Whitehead

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The following faculty have examined the final copy of this thesis for form and content, and recommended 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

_____
Jodie Hertzog, Committee Member

_____
Carolyn Shaw, Committee Member

DEDICATION

To my parents, my love, my son, Ashton, and
all the single parents struggling to better the lives of their children

ACKNOWLEDGMENTS

I would like to thank those who sacrificed the most during this endeavor, my family. Without the support from my mother, Mickey, my education would not have been possible. I would like to take a moment to thank my son, Ashton, for sacrificing time spent with his mother because of the time required for this accomplishment. I would like say I appreciate the patience and understanding offered from my partner, Shadd, who made the struggle as easy for me as he could.

I would also like to thank the department of sociology for providing me all of the instruction and tools needed to excel in the masters program. Dr. Jodie Hertzog showed me a new road that had never been considered and stayed with me as both a mentor and friend through the entire journey. Dr. Twyla Hill always allowed me to come to her with questions no matter how small and set an example that has undoubtedly improved the quality of my writing and scholarship. Dr. David Wright put forth the effort and encouragement to get the job done and made time for his students when he had little available.

ABSTRACT

The demonization of single parents by media and government sources has been a persistent problem in our society. In order to examine the validity of the claims made against single parents, this study examines the relationship between household structure and composite reading and math test scores. Secondary data analysis was used from the Educational Longitudinal Survey of 2002 (ELS: 2002) of 10,945 10th grade students with a composite model consisting of: student role performance (SRP), schools, and families. Univariate, bivariate, and multivariate analysis are used to examine the independent effects on test scores. Mean composite test scores show a statistically significant difference in the test scores of students from single parent families (48.17) and dual parent families (51.88). The examination of the unique variance in test scores for each model segment shows student role performance factors explain more of the "unshared" variance in test scores than the other model segment. These results suggest that the blame of student outcomes on parent structure is explained by factors such as socioeconomic status within student role performance than the actual parental structure.

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INTRODUCTION

Consistently in today's society, the media and politicians demonize single parent families, especially in terms of child outcomes such as academic achievement. However such indictments are seldom based on data or account for other intervening factors such as socioeconomic status. Such an approach provides little useful information to single parent families outside of them getting married. Socioeconomic status seems likely to preserve marriage and encourage engagement behaviors within families in ways that are hard to control for statistically, therefore, household composition may not be as strong a predictor of academic achievement as thought before.

Research on the determinants of test scores has concentrated on student role performance, institutional settings, and family background. Student role performance is defined as the roles and expectations students are expected to follow established by the academic institutional agents and can be influenced by individual level factors such as sex, ethnicity, and homework skills. Based on the student role performance model, previous research has found that factors such as being a minority and/or having a disability tends to lower student test scores. School influence is the institutional setting in which student role performance is enacted. Factors such as school size, enrollment size, and the socioeconomic background of a school can all impact test scores. Finally, family contribution is the impact family life has on a student's ability to achieve academically, given family environments are the primary socialization unit for children. Family contributions include household composition, socioeconomic status, and parental education. The family factors that influence test scores include family size, SES, and parental involvement. This study incorporates three of these areas into a more holistic model of test score determination testing the differences between single parent families and dual parent families.

2. LITERATURE REVIEW

2.1 STUDENT ROLE PERFORMANCE

Student role performance is defined as the roles and norms established by institutional academic agents that students are expected to follow and can be influenced by factors such as sex, ethnicity, and homework skills. It is important to look at the effect these factors have on the educational progress and success of our children to aid in the better development of policies structured to minimize risk factors. For instance, numerous researchers have shown that, due in part to sex-role socialization, boys do better on standardized achievement tests than girls in the more "masculine" fields of study such as math (Kenney-Benson, Pomerantz, Ryan, Patrick 2006, Duckworth & Seligman, 2006, Downey & Vogt Yuan, 2005). This discrepancy in test scores, however, could also be attributed to gender bias that may exist in standardized tests (such as the SAT and ACT) themselves (Willingham & Cole cited in Kenney-Benson et al., 2006). Furthermore, achievement test settings can be viewed as less established and familiar than student's classroom setting causing more stress in girls than in boys raising their anxiety and affecting their test performance (Kenney-Benson et al., 2006).

Despite the gendered findings of standardized test scores, the opposite seems to be true for classroom assigned grades. Duckworth and Seligman (2006) found that girls performed better than boys in every course subject including math; however, girls scored lower than boys by half a standard deviation on an IQ test. Some explanations for girls' higher achievement in course work include girls having more self discipline and starting homework earlier in addition to taking more time to complete it (Duckworth & Seligman, 2006). Kenney-Benson et al. (2006) found girls tend to be more focused, their parents exhibit heightened monitoring, and they refrained from causing classroom disturbances. Camp (1990) found girls also make better grades and

study more even when other background variables are taken into account. Consequently, boys tend to be evaluated differently by teachers in the classroom (Kenney-Benson, Pomerantz, Ryan, Patrick 2006) due to their being less attentive, putting forth less effort, and being more disruptive (Downey & Vogt Yuan, 2005). Girls, on the other hand, are more concerned with pleasing adults than boys are, enhancing their performance and desire to do well in school (Downey & Vogt Yuan, 2005).

Ethnicity is one of the best predictors of overall academic achievement (Patterson, Kupersmidt & Vaden, 1990). Although the gap for Hispanic students is smaller than for Black students, there are substantial gaps in test scores among Black and Hispanic students in diverse racial environments compared with White students (Bali & Alvarez, 2004). It has been shown that these gaps begin prior to secondary school (Bacharach, Baumeister, & Furr, 2003). After parental income, education, occupation, and wealth are controlled for, Black children still score lower than White children on standardized achievement tests (Orr, 2003). Interestingly, Catterall (1998) found that White children had an overall lower rate of resilience (which has been defined as overcoming predictions of failure stemming from group conceptions of risk) than some minority groups, suggesting that when other factors that influence test scores for both White and minority students are present, these factors have a stronger impact on White students. Likewise, Sirin (2005) found that SES can predict academic achievement better for White students than for minority students.

Negative stereotypes about Black students' intellectual ability have a negative impact on standardized test scores, causing them to have lower scores than White students (Steele, 1997). This phenomenon, termed "stereotype threat", can considerably decrease performance on difficult sections of exams (Steele, 1997). Despite their lower test scores, Blacks still score

higher on global self-esteem measures than Whites, suggesting Black students have become invulnerable to the effects of poor school performance (Steele, 1997).

Studies have also suggested that in order to be African American and succeed, one must give up their racial identification with the Black community (Fordham, 1988). Actions that lead to academic success can be perceived as "acting White" and qualities that lead to academic failure are termed "acting Black" (Peterson-Lewis & Bratton, 2004). This form of labeling one's actions leads to racialization of academic achievement resulting in the violator being termed a racial offender by their peers (Peterson-Lewis & Bratton, 2004). Contrary to what Fordham and Peterson-Lewis & Bratton found, others suggest that the more aware students are of discrimination and racism, the more academic success they experience (Sanders, 1997, Hovart & Lewis, 2003, Witherspoon, Speight, Thomas, 1997). Students with strong racial identity exerted more academic effort as a result of their positive racial socialization (Sanders, 1997). Positive support (Sanders, 1997) offered to students from their family, community, and peers resulted in a celebration and embracement of their academic abilities rather than ostracism (Hovart & Lewis, 2003). Positive support also allowed students to view academic excellence as an area of privilege and right for Black Americans whereas historically academic excellence was a White American accomplishment (Hovart & Lewis, 2003).

Human and financial capital has an important impact on the educational aspirations of White students, however this does not impact racial ethnic minority educational aspirations (Qian & Blair,1999). According to Ogbu's (1994) ecology explanation, this discrepancy could be a result of an opportunity gap between Whites and minorities (Qian & Blair, 1999). Because of the limitations for job opportunities as compared to Whites, minorities may not view educational attainment as important to achieving their career goals (Qian & Blair,1999).

The remainder of the variables chosen for this thesis are consistent with James Coleman's theory of social capital, which states that social capital is defined by the resources intrinsic in the structure of relationships (Dika & Singh, 2002). Coleman's theory is comprised of three forms including "(a) level of trust, as evidenced by obligations and expectations, (b) information channels, and (c) norms and sanctions that promote the common good over self interest" (Dika & Singh, 2002). Put more simplistically, Coleman's three forms of social capital involve the level of trust between parent to child and teacher to student relationships and the norms and sanctions that govern these relationships which impact the amount of social capital one obtains.

Under Coleman's social capital theory, high levels of family capital lead to students with internalized beliefs against delinquent involvement, actually reducing delinquency over time (Wright, Cullen & Miller, 2001). These students in turn are less likely to acquire friends that are delinquent (Wright, Cullen & Miller, 2001). Crosnoe, Erickson, & Dornbusch (2002) found that having deviant close friends was a risk factor for student deviance. Although family capital instills deviance reducing values in students, parental monitoring itself was found by Crosnoe, Erickson, & Dornbusch, (2002) to have no impact on the deviant behavior of students. Students with positive relationships with parents and teachers and strong commitment to achievement also exhibited lower levels of behavior problems (Crosnoe, Erickson, & Dornbusch, 2002). Thus, high academic achievement, aspirations and learning focused school settings all have a prevention effect on deviance (Kasen, Cohen, & Brook 1998). In addition to the prevention effect of academic achievement, Crosnoe, Erickson, and Dornbusch (2002) found that academic achievement offsets the negative effects of delinquency among students.

When considering the impact of learning disabilities on test scores, performance goals (which emphasize the acquiring of new knowledge, and developing and mastering the required

skills in a given field of study) are one factor that influences the achievement of learning disabled students. Contrary to previous literature stating that performance goals impact negatively on academic achievement, Bouffard and Couture (2003) found that when performance goals emphasize students' pursuits and achievement of high standards, they tend to foster academic achievement. Although performance goals can foster academic achievement, students with learning disabilities put forth the minimum amount of effort to pass courses, contributing their difficulties in coursework to lack of abilities (Bouffard and Couture, 2003). Sui-Chu & Willms (1996) found that parents of learning disabled children tend to participate less in school and have fewer discussions about school with their children. As will be discussed later, parental involvement has been shown to have a strong correlation with the academic achievement of students, suggesting that in addition to the problems students face concerning their disabilities, they are also disadvantaged due to the response of their parents concerning their disabilities.

The engagement behaviors include factors such as being on time to class and school, being prepared for and participating in class, and completing assignments. Little information is available on the direct impact coming to class unprepared and coming to class on time has on standardized test scores. However, Fine and Rock (1997) found that resilient students showed a significant relationship to engagement behaviors. It has been demonstrated in numerous studies that homework has a positive impact on academic achievement (Cooper, Robinson, & Patall 2006, Keith, 1982). Studies suggest homework is positively related to achievement among secondary students (Cooper, Robinson, & Patall 2006). Homework offers students practice and reinforcement for academic work, allowing them to adapt to strict academic practices and impacts student's tendencies to take on future academic work (Corno, 2000).

Keith, Diamond-Hallam, and Fine (2004) found that out-of-school homework strongly affects learning, students GPA, and significantly effects achievement test scores, whereas in-school-homework has little to no effect on learning. This finding was supported by Cooper, Lindsay, Nye, and Greathouse's, (1998) and Cooper, Robinson, and Patall's (2006) findings that time spent on homework and portion of homework completed are positively related to class grades, standardized test scores, and achievement, even after controlling for race, family background, ability, and the student's program of study (Keith, 1982). High achieving students are more parent-, teacher-, and self-motivated in doing their homework (Hong, 2001). High achieving students also organized their homework, completing it in a bright environment with little distractions, such as peers (Hong, 2001). Corno (2000) found that student attitudes toward school are impacted by the circumstances of homework. Traditional classroom instruction is less effective than structuring homework recommendations on learning-based criteria (Minotti, 2005). The amount of time a parent reports a student has spent on homework is positively related to academic achievement (Cooper et al., 1998), however, Cooper, Robinson, and Patall (2006) found that parents do not accurately report their children's homework behaviors. Regardless of parent report time, parents are as important as teachers concerning academic performance in the home study situation (Hong, 2001). Student achievement and effort is significantly affected by the performance standards set for them (Natriello & McDill, 1986).

Participation in structured student activities has a positive effect on achievement (Camp, 1990, Everson & Millsap, 2004, Gerber, 1996) and school engagement (Broh, 2002). Students are more engaged in their coursework and they make personal investments in their schooling while participating in extracurricular activities (Jordan & Nettles, 2000). Broh (2002) supported this concept when his results showed participating in school sports actually enhanced

achievement in the classroom and on standardized math scores. However, student participation in extracurricular activities has a stronger positive impact on grades than test scores (Broh, 2002). One reason for increased classroom achievement following school sports participation is the level of formed bonds between students, parents and schools due to school sports participation (Broh, 2002). These ties can result in a more comfortable learning environment for the student by increasing the amount of teacher/student interactions and encouraging the student to more closely follow rules and regulations set by the school (Broh, 2002). Supporting these findings, Stanley, Comello, Edwards, and Marquart (2008) found that participation in school and non-school activities were both positively related to school adjustment.

Contrary to most reviewed literature, Haensly, Lupkowski and Edlind (1985-1986) assert that causality between extracurricular activity and grades cannot be presumed. Haensly et al. (1985-1986) do not deny the correlation between grades and extracurricular activities stating extra curriculum adds enthusiasm to academic studies. However, Fine and Rock (1997) found that extracurricular activities of both academic and athletic nature were not related to resilience, academic achievement, or other engagement behaviors (Fine and Rock, 1997).

The student advantages to participation in extracurricular activity may be seen by disadvantaged students more than advantaged students (Broh, 2002, Everson & Millsap, 2004). Disadvantaged students experience lower levels of school attachment and parent participation in their academics, yet these levels tend to rise with their participation in extracurricular activities (Broh, 2002, Gerber 1996). Low levels of student attachment lead to increased levels of dropout, thus participation in extracurricular activities can prevent at-risk students from giving up in school and dropping out (Gerber 1996). Advantaged students are already at higher levels of

school attachment and parent participation so these factors only slightly increase for this group during participation in extracurricular activities (Broh, 2002).

Academic achievement and rate of school attendance are the strongest predictors of students who drop out of high school (Christle, Jolivette, & Nelson, 2007). Poverty is strongly related to school failure and students who experience academic difficulties are more prone to dropout (Christle et al 2007). Higher dropout rates are more likely in larger schools and poorer neighborhoods (Fetler, 1989). Deviance and bonding to antisocial peers increase the probability of a student dropping out (Battin-Pearson, Newcomb, Abbott, Hill, Catalano, & Hawkins, 2000, Vitaro, Larocque, Janosz & Tremblay, 2001). High IQ and SES decreases the risk of dropping out of school (Kasen, Cohen, & Brook 1998). High academically achieving males are less likely to drop out than high academically achieving females (Kasen, Cohen, & Brook 1998) and high schools with higher dropout rates had a lower percentage of White students (Christle et al 2007).

There is a strong correlation between dropout rates and academic achievement (Konstantopoulos, 2006, Battin-Pearson, Newcomb, Abbott, Hill, Catalano, & Hawkins, 2000, Vitaro, Larocque, Janosz & Tremblay, 2001 Fetler, 1989). South, Hayne, and Bose's (2005) findings suggest that increased mobility decreases student social capital resulting in poorer academic performance and increased dropout. South et al. (2005) found that students that recently changed both residence and schools, termed "mobile students", have lower levels of academic performance, poorer relationships with their schools, and are twice as likely to drop out of school as non-mobile student in a year's time. These mobile students also have a peer group with lower academic achievement and grade point averages increasing the likelihood that mobile students will drop out compared to non-mobile students (South, Haynie, & Bose, 2005). Not only do mobile students have poorer academic performance, student mobility affects the school

environment also. South et al. (2005) also found that even if student is not mobile, a student attending a school with high levels of mobile students experience a higher risk of dropping out.

2.2 SCHOOL INFLUENCE

As mentioned previously, school influence is the institutional setting in which student role performance is enacted. Factors such as school size, enrollment size, and socioeconomic background of the school can all impact test scores. School variables such as school region and school's SES have a significant impact on student academic achievement (Konstantopoulos, 2006). Students in high SES schools scored significantly higher on test scores (Sui-Chu & Willms, 1996). Students attending schools in southern regions and schools with low socioeconomic status have lower average achievement than students attending schools in other regions or high SES schools (Konstantopoulos, 2006). Low SES schools tend to have a higher concentration of single parent families and less economic resources than schools of a higher SES (Pong, 1998). Pong (1998) found that schools' economic status in conjuncture with social capital in the form of parental involvement completely explained the differences in achievement scores between schools with low and high single parent family concentration.

School climate is particularly important to the academic success of students (Stewart, 2008). Many studies have shown that students academically perform better in smaller high schools (Archibald 2006) because they experience less biased learning and achievement distribution within their high school (Lee & Smith 1997, Archibald 2006, Ready, Lee & Welner 2004). Despite these findings, schools with an enrollment size below 600 students are too small resulting in lower academic performance (Lee & Smith 1997). A high school with approximately 600-900 students is the ideal size for optimal achievement gains and learning advantages independent of the schools socioeconomic status and minority concentration (Lee & Smith

1997). Within this enrollment range, higher disadvantaged students are more directly and indirectly affected by school size than their less disadvantaged counterparts (Lee & Smith 1997, Ready, Lee & Welner 2004).

Along with enrollment size, small class size (15-17 pupils) is beneficial to students in the form of greater student performance and higher achievement in the subjects of reading and mathematics (Molnar, Smith, Zahorik, Palmer, Halbach & Ehrle 1999, Nye, Hedges & Konstantopoulos 1999, Arias & Walker 2004). The benefits and achievement gains resulting from being in a small class remain persistent through at least eighth grade (Nye et al. 1999). The more a student is exposed to small class sizes in elementary school, the longer they benefit from the experience of being in those classes (Nye, Hedges & Konstantopoulos 1999). African American students benefit more than White students from being in small classes (Molnar et al., 1999). Smaller class size promotes teacher involvement in the forms of knowing their students, spending less time managing their classroom, and having more time for individualized instruction (Molnar et al., 1999) in addition to students feeling more comfortable participating in class discussions (Arias & Walker, 2004). Student achievement and teacher performance are positively related resulting in an increase in academic performance for the students of high performing teachers (Archibald, 2006).

The economic resources spent in schools per pupil are positively related to student achievement (Archibald, 2006, Wenglinsky, 1997). The number of teachers hired per student is dependant upon the amount of spending within the school itself (Wenglinsky, 1997). More teachers available per student result in a more unified school environment (Wenglinsky, 1997). However, student background characteristics also affect the structure of the student body thus determining the socioeconomic status and racial composition of a school (Archibald, 2006). Both

minority race and socioeconomic status are correlated with academic performance and lower standardized test scores (Caldas & Bankston III, 1998). The variations in achievement between schools are primarily associated with race whereas variations in academic achievement within schools are primarily associated with SES background (Caldas & Bankston III, 1998, Kim, Zabel, Stiefel & Schwartz, 2006). The amount of poverty in a school affects the chance students have to learn (Archibald, 2006). Schools that do a proficient job educating non-poor students do not do as well educating their poor students (Kim et al., 2006).

2.3 FAMILY CONTRIBUTION

Family contribution is the impact family life has on a student's ability to achieve academically, given families are the primary socialization units for children. Family contributions include household composition, socioeconomic status, and parental education. Research has found that children who come from two-parent households are likely to experience less disengagement from school and are more likely to complete high school than those from single-parent households (Anguiano, 2004, Garasky, 1995) or stepparent households (Astone & McLanahan, 1991). In addition, both growing up in a stepparent family and growing up in a single-parent family have similar negative outcomes on academic achievement, such as a decline in parental involvement associated with changes in family structure (Astone & McLanahan, 1991), higher levels of behavioral problems, and lower test scores (Carlson & Corcoran, 2001). In contrast to children living with both biological parents, children living with stepparents or single parents receive less attention and encouragement from their parents towards educational activities (Astone & McLanahan, 1991). Children living with both biological parents receive more parental involvement in the areas of educational expectations, school work monitoring, and

supervision of social activities than children living in nonintact families (Astone & McLanahan, 1991).

Contrary to previous findings, Marsh (1990) found that for students in their last two years of high school, family configuration had little effect on student's growth and changes within a set of outcomes representing academic achievement, attitudes, and behavior. This finding held true for both boys and girls (Marsh 1990). Thus there may be a certain threshold for the impact that family composition has on academic achievement. Although the findings on the impact of household structure and family configuration are mixed, Pong (1997) found that single and step-parent families have a contextual effect on test scores above and beyond a student's membership in the family. Although living in a single or step-family household may have negative impacts on academic achievement, the contextual factors such as socioeconomic status and parental education of living in a single or step-family, actually have a larger impact than the family configuration itself.

In addition to parental household structure, increased numbers of siblings leads to lower educational performance via increased household dilution, i.e. providing fewer resources per child (Downey, 1995). Parcel and Dufur (2001) found that resource diffusion not only provides fewer resources per child but as a result it decreases reading test scores. Parents of children in large families have a lower expectation for their children to graduate from college and children benefit less from parental expectations (Downey, 1995).

Social capital and family income have positive effects on high school completion (Anguiano, 2004, Garasky, 1995), increased achievement, and reduced deviant behavior (McNeal, 1999). Students with parents that have less social capital are less likely to complete high school (Anguiano, 2004). Parents with higher socioeconomic status have higher, more

accurate knowledge of and involvement in their children's schooling (Baker & Stevenson, 1986). These parents also tend to be more supportive of their children resulting in higher self-esteem in the children (Felson, 1990). Poor and minority parents are less involved in school-based activities and less likely to initiate meetings with educators (McNeal, 1999). Thus, family income impacts how well students find their way through school processes (Astone & McLanahan, 1991). Although the impact of parent background on test scores is notable, Sui-Chu & Willms (1996) found that parental involvement actually had effects over and above that of parental background, including parental SES.

Family SES, however, is one of the strongest correlates of high academic performance on both the student and school level (Sirin 2005, Blair, Blair & Madamba 1999, Engerman & Baily 2006). Previous findings suggest that the SES of the parent has a strong impact on students academic achievement due to where the student is located in the SES structure (Sirin, 2005, Israel, Beaulieu, & Hartless 2001). Increased levels of social and family capital provide children with a nurturing environment and with guidance on behaviors that are deemed appropriate and inappropriate, thus aiding their educational progress and academic acheivement (Israel, Beaulieu, & Hartless 2001, Parcel & Dufur, 2001). In addition, low parent education and SES levels are both related to lower levels of school liking and student's perceived school performance (Stanley, Comello, Edwards, & Marquart, 2008). Parental education is also a highly influential factor in high school completion (Anguiano, 2004), more so than household structure or income (Garasky, 1995). Parents with more education offer more resources for their children to utilize while completing high school (Anguiano, 2004), and at the same time these parents are selecting college-preparatory classes for their children (Baker & Stevenson, 1986).

Despite previous research finding parents in two parent families and parents with high SES more involved in their children's education (Lareau, 1987, 1989; McLanahan, 1985; Milne et al., 1986 as cited in Sui-Chu & Willms, 1996), Sui-Chu & Willms (1996) found no support for this hypothesis. Sui-Chu & Willms (1996) found that parents from working class backgrounds place the same amount of importance on school. Similar to views of upper-class parents, working class parents believe education is not purely the responsibility of the school system.

A key factor in academic achievement is the amount of parental involvement in a child's academics that is taking place in the home. Clark (1983) found that family support is especially influential in academic achievement of at-risk students. Parent support behaviors such as checking on homework, discussing schoolwork with their children, providing an established place to study, and having books around the home, are suggested to be related to at-risk students' level of academic resilience (Catterall, 1998). Parental involvement has an effect on everything from completion of high school (Anguiano, 2004) to grades, attendance, attitudes, expectations, school retention, and degree completion (Astone & McLanahan, 1991). The lack of parental support and behavioral standards can disadvantage children academically (Glasgow, Dornbusch, Troyer, Steinberg, & Ritter, 1997). Improved academic performance is positively linked to parent involvement with their children's homework, although involvement dramatically declines when children enter middle school (Clark, 1993, Epstein & Connors, 1995). Involvement increases, however, when both the student and teachers encourage it (Balli, Wedman & Demo, 1997). Sui-Chu and Willms (1996) found that activities in the home such as helping children plan their programs and discussing school activities had the strongest relationship to academic achievement. In addition to parental involvement, parental acquaintances such as friends are important to the increase of academic achievement, especially for students attending schools

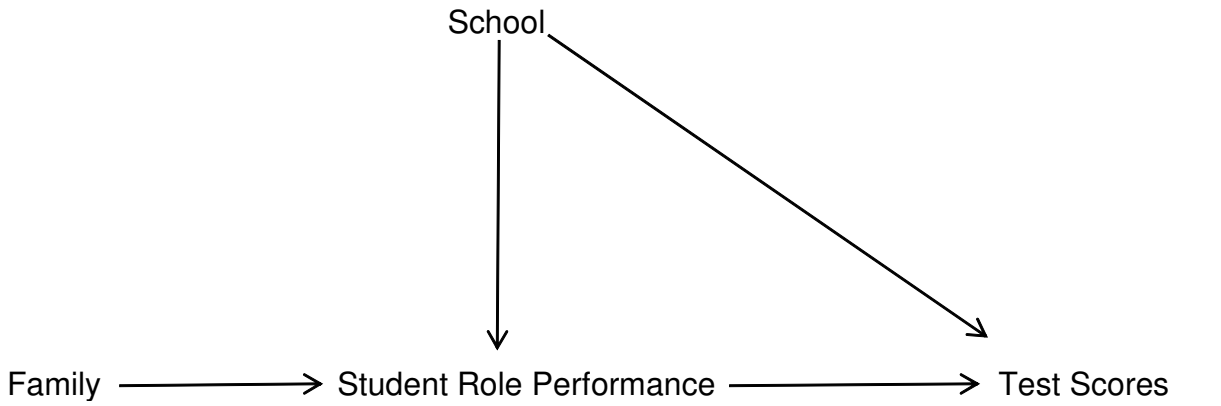
with high concentrations of single parent families (Pong, 1998). Parental acquaintances allow busy parents to gain information about school policies and personnel, parenting strategies, and who their children's peers are (Pong, 1998).

Parental involvement in the school also has an influential impact on academic achievement. A school level measure of parental participation has a positive effect on student's achievement, even when it is not the student's parent that is participating in the school (Pong, 1998). Woolley & Grogan-Kaylor (2006) in their study of protective family factors found that parental behaviors such as attending school events or meetings, checking on homework, talking with youth about their studies, or encouraging youth to do well in school were the most influential on academic performance. Contrary to the notion that parental involvement in the school effects academic achievement, McNeal (1999) found that the amount of interaction and contact between parents and teachers does not statistically improve achievement. Instead, supportive discussion of academics between parents and their children yield the most consistent relationship to adolescent achievement (McNeal, 1999).

Parenting style can also indirectly influence a child's academic success (Glasgow et al 1997). Children from authoritative households tend to view their academic success as a product of external factors, not a product of their own capabilities (Glasgow et al., 1997). Anglo-American parents tend to place more importance on cognitive skills such as problem-solving, creativity and verbal expression than they do on noncognitive factors such as motivation and social skills (Okagaki & Sternberg, 1993). This suggests Anglo-American parents have a different view of intelligence than minority groups that believe intelligence is a balance of both cognitive and noncognitive abilities (Okagaki & Sternberg, 1993). American schools center on cognitive abilities as a conception of intelligence (Okagaki & Sternberg, 1993).

High achieving peers are considered protective factors that help to develop academic achievement (Reis, Colbert & Hebert, 2005). Although, Engerman and Baily (2006) found no relationship between 12th grade academic achievement and affiliation with learning oriented peers. Hanushek et al. (2003) found that peer average achievement has a highly significant effect on learning as indicated by test scores. Students with peers that are non school-oriented are more likely to have views of school achievement that are not favorable (Vitaro, Larocque, Janosz & Tremblay, 2001). Positive peer associations result in students creating attachments to school and provide reference points for students helping them invest in educational outcomes and goals (Stewart, 2008).

2.4 COMPOSITE MODEL



(Adapted from Wright 2007)

The composite model for the prediction of test scores is comprised of three segments: Student Role Performance, Family Contribution, and School Influences. Student role performance is defined as the roles and expectations students are expected to follow established by the academic institutional agents and can be influenced by factors such as sex, ethnicity, and homework skills. For example, it is expected that as homework and extracurricular participation increases so will test scores. School influence is the institutional setting in which student role performance is enacted and includes factors such as school size, enrollment size, and

socioeconomic background of the school. For example, it is predicted that as enrollment increases test scores will drop. Family contribution is the impact family life has on a student's ability to achieve academically. Family contributions include household composition, socioeconomic status, and parental education. For example, it is expected that as socioeconomic status and parental income increases, so will student test scores.

3. METHODS

3.1 HYPOTHESIS

Student role performance hypothesis:

1. Minority students will have lower test scores than those of a White/Caucasian background net of other factors.
2. Students with a disability will have lower test scores net of other factors.
3. As frequency of deviant actions rise, test scores will decrease net of other factors.

School Factor Hypothesis:

4. Students attending schools offering free lunch programs will have lower test scores net of other factors.

Family Factor Hypothesis:

5. Students living in single parent families will have lower test scores net of other factors.
6. As family socio-economic status rises, test scores will rise net of other factors.
7. As family resources increase, so will students test scores net of other factors.
8. As student/parent communication increases, so will test scores net of other factors.
9. As parental involvement increases, test scores will increase net of other factors.

3.2 DATA and SAMPLING:

The Educational Longitudinal Study of 2002 (ELS 2002) is sponsored by the National Center for Education Statistics (NCES) of the Institute of Education Sciences, U.S. Department of Education. The aim of the ELS was to study the educational, vocational, and personal development of students at various stages in their educational careers, and the personal, familial, social, institutional, and cultural factors that may affect that development. The ELS 2002 also aims to help researchers and policymakers explore and better understand such issues as the importance of home background and parental aspirations for a child's success; the influence of different curriculum paths and special programs; the effectiveness of different high schools; and whether a school's effectiveness varies with its size, organization, climate or ethos, curriculum, academic press, or other characteristics.

The ELS 2002 is a longitudinal, integrated multilevel, nationally representative study consisting of 10th grade students, their parents, teachers, and administrators during the 2001/2002 school year from 752 participating schools. Of 17,591 eligible selected sophomores, 15,362 completed a base year questionnaire, as did 13,488 parents, 7,135 teachers, 743 principals, and 718 librarians. Oversampled populations included Asian students, Hispanic students, and private schools to ensure the sample was representative of the general population.

A number of sample restrictions were made, including the removal of student, staff, and parent surveys that were incomplete or not valid, selecting valid weights, and selecting only reading and math test scores, in order to remove cases that did not apply to the research population and to ensure the target population was being properly analyzed. Steps were taken to ensure that only valid student school and parent surveys were included in the analysis. Sample restrictions were made to ensure that only students with valid math and reading tests were

included in the analysis because test scores in these areas are the dependent variable. The final sample size is 10,945.

Weights compensate for oversampling, making the data generalizable to the target population. Weights create biased population parameters in some statistical packages increasing the odds of a type 1 error. The creation of a relative weight minimizes this bias by dividing the weight included in the data set by the mean of the weight, which replicates the sample size while maintaining the weighted data population distribution.

3.3 VARIABLES

The dependant variable for this study is an interval composite variable, administered by the NCES, of standardized math and reading test scores for tenth grade students. The minimum and maximum values range from 20.91 to 81.04 forming a near normal distribution. The test score variable was also recoded into centiles and quintiles for descriptive purposes, ranking the scores from 1 to 100 (high) and 1 to 5 (high).

Student role performance can be defined as the set of skills and behavioral attributes students possess that are evaluated by teachers in turn determining the implication of educational investment leading to social and economic independence. Student role performance is measured by 16 variables that measure whether the student is female, a minority, speaks English as native language, has been held back a grade, has participated in a remedial math and/or reading course, has at least one disability, comes to class prepared, how much time the student spends on homework, how much time the student spends on free time activities, how engaged the student is in math class, whether the student has been in a physical fight in school, how many times they participated in a deviant act in school, how many times the school has contacted a parent for

negative reasons, whether the student participates in extra-curricular activities, if the student is placed in a college preparation program, and whether the student is working.

Student Role performance includes a variable measuring race/ethnicity that was made into a nominal binary to distinguish minorities (1) from non-minorities (0). Non-minorities are considered white non-Hispanic individuals and all other race/ethnicity variables were placed in the minority category. Asian students often have higher test scores placing them in the same category as White/Caucasian students, however, discrimination theory suggests that Asian students still have very different experiences from that of White students so for the purpose of this study, Asian students will be coded as minority. It is expected that students of a minority background will have lower test scores than those of White/Caucasian ethnicity net of other factors.

A variable measuring sex of the student was recoded into a nominal binary to distinguish females (1) from males (0). It is expected that being female will decrease student test scores net of other factors. Variables measuring whether English is a student's native language, whether they were ever held back a grade and whether they were ever in a remedial math class, and whether they were ever in a remedial English class, were also recoded into binaries. The variable for remedial math class and the variable for remedial English class were then summed and recoded into a binary variable. It is expected that students that speak English as their native language will have higher test scores. It is expected that students who have been in remedial classes will have lower test scores. It is also expected that students that have been held back a grade will have lower test scores.

Eight disability variables measuring whether the 10th grader has learning disabilities, speech/language impairments, mental retardation, emotional disturbance, hearing impairments,

orthopedic impairments, visual impairments, or other disabilities were recoded into a binary and summed into an interval index. It is expected that students with a disability will have lower test scores net of other factors. Three variables measuring whether the 10th grader goes to class without pencil/paper, books, and their homework done were recoded into binaries and summed into an interval index of class unpreparedness. It is expected that students who do not come to class prepared will have lower test scores net of other factors.

Two variables measuring the hours a 10th grader has spent in and out of school doing homework were summed into an interval index of hours spent on homework. It is expected that students who spend less time doing homework will have lower test scores net of other factors. Four variables measuring hours a 10th grader spends either watching TV or playing video/computer games both during the week and on the weekend were recoded into binaries and summed into an interval index of free time. It is expected that students who spend more time on free time activities will have lower test scores net of other factors.

Ten variables consisting of how often student reviews work in math class, listens to math teacher lecture, copies math teachers notes from board, uses books besides math text books, does problem solving in math class, uses calculators in math class, uses graphing calculators in math class, uses computers in math class, explains work to math class orally, and participates in student math discussions were summed into an index and then recoded into a binary with 0 being unprepared and 1 being prepared. It is expected that student who come to math class prepared will have higher test scores net of other factors. A variable measuring whether the student got into a physical fight at school was recoded into a binary with 0 being no and 1 being yes. It is expected that students that have gotten into a physical fight in school will have lower test scores net of other factors.

Seven deviant behavior variables comprised of how many times late for school, how many times cut/skip classes, how many times absent from school, how many times got into trouble, how many times put on in-school suspension, how many time suspended/put on probation, and how many times transferred for disciplinary reasons were measured on a scale ranging from 1 being never to 5 being 10 or more times. They were then summed and put into an ordinal scale of deviance with a Chronbach Alpha of .780. It is expected that as frequency of deviant actions within the school rises, test scores will decrease net of other factors.

Three variables consisting of the number of times the school contacted parent about poor performance, poor attendance, and problem behavior were summed into and index and recoded into a binary with 0 being never and 1 being at least once. It is expected that students whose parents have been contacted by the school will have lower test scores net of other factors. The missing values for the hours per week pent on extracurricular activities variable were declared and assigned on a linear trend using the RMV procedure. It s expected that the more hours a student spends in extracurricular activities, the higher their test scores will be net of other factors.

A means test was performed to assign the missing to the participated in college prep variable. It is expected that students participating in college prep will have higher test scores net of other factors. Two variables including how many hours a student usually works per week and how many hours a student works on the weekend were summed into an index then made into a binary in which 0 is student does not work and 1 being student is working. It is expected that students working will have lower test scores net of other factors.

School influence is the institutional setting in which student role performance is enacted. School influence is measured by 4 variables that measure what percentage of students attend a school with a free lunch program, whether the student attends a school where their learning is

hindered by school conditions, a high level of learning disruptions, and a high level of security at school. A variable measuring the percentage of student attending a school with free lunch programs was assigned mid points in order to treat the variable as an interval level variable. It is expected that students attending schools with free lunch programs will have lower test scores net of other factors.

Eleven learning hindered by school conditions variables measuring whether the 10th grader attended a school where learning was hindered by poor condition of buildings, poor heating/air/light, poor science labs, poor fine arts facilities, lack of space, poor library, lack of texts/supplies, too few computers, lack of multi-media, lack of discipline/safety, and poor vocational/technical equipment/facilities were originally measured one a 1 to 4 scale with 1 being not at all and 4 being a lot. Because they were measured on the same scale, they were put into an ordinal scale of students learning being hindered, with a Chronbach Alpha of .903. It is expected that as students attend schools in which their learning is hindered, test scores will decrease net of other factors.

Three variables measuring whether the 10th grader attends a school in which other students often disrupt class, they do not feel safe at their school, and disruptions get in the way of learning were summed into an interval index of learning disruptions. It is expected that students attending schools with more learning disruptions will have lower test scores net of other factors. Nineteen variables measuring control access to buildings during school hours, control access to grounds during school hours, require students pass through a metal detector, random metal detector checks on students, close campus for students during lunch, random dog sniffs to check for drugs, random sweeps for contraband, require drug testing for any students, require students to wear uniforms, enforce strict dress code, require clear book bags/ban book bags, require

students to wear badges/picture ID, require faculty/staff to wear badges/picture ID, use security cameras to monitor school, use paid security at any time during school hours, use paid security as students arrive or leave, use paid security at school activities, use paid security outside of school hours/activities, and use paid security at other time were originally binary variables with 1 being yes and 0 being no. Because these variables used the same level of measurement, they were put into an ordinal scale of school security, with a Chronbach Alpha of .994. It is expected that as students attend schools with high levels of security, test scores will decrease net of other factors.

The family component is the primary socialization agent in addition to the resource base for student role performance. The family composition variable was recoded into a binary where 0 is dual parent household and 1 is single parent household. It is expected that students living in single parent households will have lower test scored net of other factors. The missing on the variable determining the number of siblings was assigned using a means test. It is expected that as number of siblings increase, test scores will decrease

A Oneway with Scheffe option procedure was performed on the variable describing the geographic region of the school to determine which categories of the variable were statistically different. The geographic region of school variable was then recoded into a binary with 0 being the Northeast and Midwest portions of the United States and 1 being the South and West portions of the United States. It is expected that student living in the South West portion of the United States will have lower test scores net of other factors.

Socioeconomic status is an NCES supplied interval composite variable consisting of parents' standardized occupation, income, and education. For descriptive purposes, the SES variable has been broken down into 4 quartiles; the lower 25%, the middle lower 25%, the

middle high 25%, and the higher 25%. It is expected with higher student socio-economic status, we will see higher test scores net of other factors.

Family resources are measured by twelve variables composed of whether the family has a daily newspaper, has regularly received magazines, has a computer, has internet access, has a DVD player, has an electric dishwasher, has a clothes dryer, has more than 50 books, the student has own room, has fax machine, has computer in the home that 10th grader may use, and if that computer has access to the internet. These variables were transformed into binaries and were then combined to create the summated interval index variable measuring family resources. It is expected that as family resources increase, so will students test scores net of other factors.

Nine family communication variables comprised of how often parents and students discussed school courses, school activities, things studied in class, grades, transferring, preparation for taking the ACT/SAT, going to college, current events, and troubling things with parents were tested to determine if they should be put into a scale or an index. Because these 9 variables were originally measured on a 1 to 3 scale with 1 being never and 3 being often, they were made into binaries then summed and put into an ordinal family communication scale with a Chronbach Alpha of .839. It is expected that as student/parent communication increases, so will test scores net of other factors.

Twelve parent participation and involvement variables comprised of how often families attended school activities with the 10th grader, worked on homework or school projects together, attended concert, plays, or movies together, attended sporting events outside of school, attended religious services, attended family social functions, took day trips or vacations, worked on a hobby/played sports with, went shopping, went to restaurants, spent time talking with, and did something else fun with 10th grader were originally measured on a 1 to 4 scale with 1 being

never and 4 being frequently. Because they were measured on the same scale, they were recoded into binaries, then summed and put into an ordinal scale of parent participation, with a Chronbach Alpha of .801. It is expected that as positive parental participation rises, so will test scores net of other factors.

A variable demonstrating how often a parent helps their student with homework was recoded into a 0, 1 binary with 0 being parent does not help and 1 being parent does help. It is expected that students whose parent help them with homework will have higher test scores net of other factors. A means test was done to assign the missing on the variable for the number of days per week parents eat at least on meal with 10th grader. It is expected that students who eat at least one meal per week with their parents will have higher test scores net of other factors.

Four variables consisting of how often parents check that homework is completed, how often parents discuss the students report card, how often parent know the whereabouts of their student, and how often parents make/enforce school night curfews were originally measured on a 1 to 4 scale with 1 being never and 4 being always, they were made into binaries then summed and put into an ordinal parent involvement scale with a Chronbach Alpha of .841. It is expected that as parent involvement increases, so will student test scores net of other factors. Six variables including how often parent checks homework, special privileges given for good grades, parent limit privileges due to poor grades, student required to work around the house, parents limit TV watching or video games, and parent limit time with friends were summed and put into an ordinal parent limits scale with a Chronbach Alpha of .974. It is expected that as parent limits increase, so will student test scores net of other factors.

4. RESULTS

4.1 TABLE 1A

Table 1A is the univariate and bivariate analysis of the variables of single and two-parent households in addition to the full sample. Students living in single parent households are more likely to have lower standardized test scores (48.17 vs. 51.88) which lends indirect support for hypothesis five stating that students living in single parent households will have lower test scores net of other factors. Within the Student Role Performance model, table 1A shows students living in single parent households are more likely to be a minority (49% vs. 31%), be held back a grade (18% vs. 11%), have at least one disability (14% vs. 11%), and come to class unprepared (88% vs. 83%). Students living in single parent households are more likely to spend less hours per week on homework(10.12 vs. 10.83), spend more hours per week watching T.V. or playing video games(10.28 vs. 9.75), and come unprepared to math class (86% vs. 88%). Single parent household students are more likely to get into a physical fight in school (16% vs. 13%), have a higher level of deviance (1.66 vs. 1.50), have the school contact their parent more frequently (0.45 vs. 0.35), spend less hours per week doing extracurricular activities (4.07 vs. 5.20) and are slightly more likely to participate in college preparatory classes (23% vs. 21%). Four variables in the Student Role Performance model were not significantly different between two parent and single parent families: whether the student was female, percentage living in an English speaking household, percentage in remedial classes, and whether the student works.

4.2 TABLE 1B

In the school model, table 1B demonstrates that students in single parent families are more likely to attend schools at which they receive free lunches (30% vs. 22%), have their

learning hindered by school conditions (1.77 vs. 1.69), experience more learning disruption (1.37 vs. 1.30), but have a higher level of security at school (.40 vs. .38).

In the Family factors model, table 1B shows that students living in a single parent household have more siblings (2.37 vs. 2.28), have a South or West geographic region of school (60% vs. 56%), lower socio economic status (39.86 vs. 53.85), less resources available to them (7.18 vs. 8.58), and have less family communication (1.98 vs. 2.02). Students in single parent households also have lower frequency of parent participation (3.01 vs. 3.12), receive less help from their parents with homework (56% vs. 61%), eat less meals together (4.98 vs. 5.38), experience less parent involvement (3.54 vs. 3.57), and have less parent limits (2.60 vs. 2.71).

4.3 TABLE 2

Table 2, the Ordinary Least Squares regression analysis regressing independent factors such as family household composition onto test scores, shows that the full model explains 54.2% of the total variance on test scores. As demonstrated in table two, family structure has an independent effect net of controls. Thus, table 2 supports the hypothesis that children living in single parent families will have lower test scores net of other factors (-0.46). Table 2 also supports hypothesis 1 that being a minority will lower test scores (-2.84). However, minority students in single parent families have a greater negative effect (-3.51) than students in two parent families (-2.64).

Supporting hypothesis 2, table 2 shows that students with at least one disability have lower test scores (-5.48). This holds true for both students in two parent households (-5.50) and students in single parent households (-5.41). Table 2 also supports hypothesis 3, demonstrating as deviance rises, test scores decrease (-0.76). This holds true for both students in two parent households (-0.92) and students in single parent households (-0.26).

Hypothesis 4, however, is not supported by table 2 due to the insignificance of the coefficient, demonstrating students whose learning is hindered by the school conditions do not experience a decrease in test scores. Hypothesis 6 is supported by table 2 showing that parent's socioeconomic status actually has the largest impact on the increase of test scores (3.43). This holds true for both students in two parent households (3.53) and students in single parent households (3.04).

Table 2 supports hypothesis 7 demonstrating as the number of family resources increase, so do test scores (0.21). This holds true for both students living in two parent households (0.22) and students living in single parent households (0.16). Hypothesis 8 is supported by table 2 demonstrating as the level of family communication increases so does test scores (1.35). This holds true for both students living in two parent households (1.32) and single parent households (1.50). Hypothesis 9 was not supported by table 2, showing a decrease in test scores as the frequency of parental involvement increased.

4.4 TABLE 3

Given the strong effect SES has on test scores (table 2), table 3 shows the socioeconomic status variable broken down into quintiles. As demonstrated by table three, there is a statistically significant and meaningful difference in test scores between single and two parent households (48.17 vs. 51.88). While statistically significant, when socioeconomic status is controlled (quintiles), there are not meaningful differences between single parent and two parent families as indicated by the effect size. This demonstrates that when controlling for class, differences in test scores between single and two parent families are minimized.

4.5 FIGURE 2

Figure two demonstrates the amount of unique variance explained by each of the model segments. Student role performance accounts for 55.6 % of the explained unique variance, the school model accounts for 6.1% of the explained variance, and the family model explains 38.3% of the explained unique variance. Within two-parent households, the student role performance model accounts for 53.9% of the unique variance, the family model explained 40.2% of the explained unique variance, and the school model accounts for 5.9% of the unique variance. Within single-parent households, the student role performance model accounts for 61.7% of the unique variance, the family model explained 31.0% of the explained unique variance, and the school model accounts for 7.3% of the unique variance.

5. CONCLUSION

5.1 DISCUSSION/HYPOTHESIS

As tables 1A, 1B, and 2 show, hypothesis 1 stating minority students will have lower test scores than those of a White/Caucasian background net of other factors was supported. This finding also supports Bali & Alvarez's (2004) findings that there are substantial gaps in test scores among Black and Hispanic students in diverse racial environments compared with White students.

Tables 1A, and 2 also support hypothesis 2 stating students with a disability will have lower test scores net of other factors. Hypothesis 3 was supported by tables 1A and 2 which states as frequency of deviant actions rise, test scores will decrease net of other factors. Hypothesis 4, stating students attending schools with free lunch programs will have lower test scores net of other factors, was supported by table 1B and 2. Because participating in a free lunch program is a direct reflection of the socioeconomic status of the school itself, the findings

from table 1B support Archibald's (2006) findings that the amount of poverty in a school affects the chance students have to learn.

Hypothesis 5 stating students living in single parent families will have lower test scores net of other factors was supported by tables 1A, 1B and 2. This could support Astone & McLanahan's (1991) findings that children raised in single parent households experience parental involvement declines in the areas of educational expectations, school work monitoring, and supervision of social activities. Thus, students in single parent households may receive less attention and encouragement from their parents towards educational activities.

Hypothesis 6 was supported by tables 1B and 2 by demonstrating that as family socio-economic status rises, test scores will rise net of other factors. Tables 1B and 2 supported hypothesis 7 stating as family resources increase, so will students test scores net of other factors. Table 1B and 2 also supported hypothesis 8 which stated as student/parent communication increases, so will test scores net of other factors.

Hypothesis 9, as parental involvement increases, test scores will increase net of other factors, was not supported by table 2. However table 1B demonstrates that students living in single parent households experience less parental involvement. This finding does not support either Clark (1993) or Epstein & Connors (1995) who find improved academic performance is positively linked to parent involvement with their children's homework.

As demonstrated by table three, when socioeconomic status is controlled there are not meaningful differences between single parent and two parent families. This indicates that when controlling for class, differences in test scores between single and two parent families are minimized. This study suggests that the media and politicians demonizing single parents for the status of their relationships should take a closer look at the reasons single parents are

economically disadvantaged and not place the blame for child outcomes on household composition.

5.2 LIMITATIONS

Coleman's social capital theory has been criticized by Dika and Singh (2002) for having two conceptual problems. They assert that the benefits and sources of social capital get confused, leading to circular reasoning. In addition, the separating of the possession of social capital from the actual activation of it becomes difficult (Dika & Singh, 2002). A student may have acquired the social capital necessary to succeed but whether it is the social capital itself that produces the desirable outcome or the ability to use that social capital with the school institution is difficult to distinguish (Dika & Singh, 2002). Another criticism of Social Capital theory is that it fails to take into account the possible negative outcomes of specific group membership within society, making the path between social capital and educational outcomes unclear (Dika & Singh, 2002). Being a member of a specific societal group can place additional restraints and obligations on a student that are not accounted for in Coleman's explanation of Social Capital theory. Thus, using the data from the ELS restricts and narrows the theoretical understanding of the link between social capital and educational outcomes by not providing adequate data to describe the directionality of the relationship.

Some of the limitations faced by this study include the fact that it uses cross-sectional data, prohibiting the measurement of time effects on control variables. Longitudinal data are needed to comprehend directionality between social capital or resources and educational outcomes. Another limitation involves the lack of knowledge surrounding work and family arrangements. Factors such as flex time and shifts could have a significant impact on the amount

of variance explained by the family model. The ELS data set also lacks information on the home supervision of children leaving a gap in obtainable knowledge of home factors.

Due to data limitations, this study was also unable to test the effect of community structures limiting student's access to institutional resources. Interpersonal ties within a residential community enhances academic performance (Sun, 1999). According to social capital theory, community structures block the formation of interpersonal ties hindering the capacity of a community to mobilize institutional resources to serve educational purposes (Sun, 1999). The concentration of non-traditional families can provide such structural barriers to community involvement (Sun, 1999).

Deleire & Kalil (2002) found that children of never-married single mothers living in multigenerational households actually have better outcomes than children living in married-parent households. They also find children of divorced single mothers in multigenerational households score similarly to children living in married-parent households. This data implies that future research identifying the links between test scores and family composition should also include more than just single and dual parent households to test the multiple household composition possibilities.

As for school level factors, this study was unable to test for factors such as instructional arrangements, teacher experience, and teacher-student ratio which have all been important differences between low and high SES schools in previous research (Sirin, 2005). Woolley & Grogan-Kaylor (2006) found that teacher support had the largest impact on school academic performance. In addition, Stanley, Comello, Edwards, & Marquart (2008) found that peer school adjustment and teacher caring were strongly related to school adjustment and liking.

Finally, qualitative measures were not available from the ELS dataset so testing for the impact of engagement and acceptance type variables within family and peer groups was not available. As stated earlier, the quality of a student's relationship with their peers can have a positive impact on student test scores. Walters & Bowen (1997) found that engagement in peer groups and peer group acceptance both increase academic performance by helping students avoid getting into trouble at school, suggesting the impact of peers could be a significant predictor or student test scores. As Woolley & Grogan-Kaylor (2006) stated, simply investigating school, family, and role performance factors with respect to test scores neglects to consider the role of family satisfaction, family integration, and family support, which can be best determined using qualitative measures.

5.3 FUTURE RESEARCH DIRECTIONS/POLICY IMPLICATIONS

The findings presented here suggest many directions for future research that could aid in improving upon existing programs. As demonstrated, students raised in single parent households have many more barriers between themselves and education than students raised in two parent households. Existing programs such as Social Rehabilitation Services and Women, Infant, and Children (WIC) could use suggested future research to improve their current programs and possibly extend their assistance. By demonstrating to the government that SES is the strongest factor influencing student test scores, more assistance could be provided to elevate the SES of families suffering from such factors. Many of the variables that significantly relate to a decline in test scores are related to a decline in the families' socioeconomic status which is typically accompanied by single parenthood. Additional research on risk and protective factors within non-traditional family forms could aid in developing programs better equipped to assist these increasing family forms. In addition, the U.S. government needs to expand the types of data

collected in order to strengthen available data for researchers to test more complete models. Most current tests of social capital theory come the High School and Beyond data, the NELS, and the ELS, which were not designed to measure social capital (Dika & Singh, 2002).

Finally, schools in the United States are financed by the SES of parents living in that specific school district, making family SES the most important deciding factor of school financing (National Research Council, 1999 as cited in Sirin, 2005). The additional funds compensated to low SES schools fails to create financial equity between the school districts (Sirin, 2005). Additional research needs to be done in this area to make strides in understanding what factors increase financial equality within the school districts thus offering equal opportunities for children regardless of their SES.

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APPENDICES

Table 1A
Values for full sample and by household composition

Variables	Full Sample	Two Parent [1] [2]	Single parent
Dependent Variable:			
Standardize Test Score (mean)	51.02	51.88 *** ^	48.17
Standardize Test Score (median)	51.36	52.34	47.90
(stddev)	(9.52)	(9.39)	(9.37)
Student Role Performance Factors:			
% Female (0,1)	51%	51%	52%
(stddev)	(0.50)	(0.50)	(0.50)
% Minority (0,1)	35%	31% *** ^	49%
(stddev)	(0.48)	(0.46)	(0.50)
% English Speaking household (0,1)	87%	87%	87%
(stddev)	(0.34)	(0.34)	(0.33)
% Of students Held Back a Grade	13%	11% *** ^	18%
(stddev)	(0.33)	(0.31)	(0.38)
% in Remedial Classes (0,1)	11%	10%	12%
(stddev)	(0.31)	(0.31)	(0.32)
% At Least One Disability (0,1)	12%	11% ***	14%
(stddev)	(0.32)	(0.32)	(0.35)
% Student Come To Class Unrepared (0,1)	84%	83% ***	88%
(stddev)	(0.36)	(0.37)	(0.33)
Hours student spends on homework per week	10.67	10.83 ***	10.12
(stddev)	(8.83)	(8.82)	(8.83)
Hours Student Spends on Free Time per week	9.87	9.75 ***	10.28
(stddev)	(5.20)	(5.14)	(5.37)
% Student is Prepared in Math Class (0,1)	88%	88% **	86%
(stddev)	(0.33)	(0.32)	(0.34)
% Student Got Into Physical Fight In School (0,1)	13%	13% ***	16%
(stddev)	(0.34)	(0.33)	(0.36)
Level of Deviance (1 to 5)	1.54	1.50 *** ^	1.66
(stddev)	(0.62)	(0.61)	(0.64)
Number of Times School Contacted Parent	0.37	0.35 ***	0.45
(stddev)	(0.48)	(0.48)	(0.50)
Hours per week spent on extra curricular activity	4.94	5.20 *** ^	4.07
(stddev)	(5.72)	(5.80)	(5.37)
% Participated in College Prep (0,1)	21%	21% *	23%
(stddev)	(0.41)	(0.41)	(0.42)
% students who work (0,1)	64%	64%	64%
(stddev)	(0.48)	(0.48)	(0.48)
Sample n (weighted):	10,945	8,384	2,561
	100%	76.6%	23.4%

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

[2] effect size greater =>.20

Table 1B
Values for full sample and by household composition

Variables	Full Sample	Two Parent [1] [2]	Single parent
Dependent Variable:			
Standardize Test Score (mean)	51.02	51.88 *** ^	48.17
Standardize Test Score (median)	51.36	52.34	47.90
(stddev)	(9.52)	(9.39)	(9.37)
School:			
% Free lunch program	24%	22% *** ^	30%
(stddev)	(22.29)	(21.05)	(25.12)
scale for learning hindered by school conditions (1 to 4)	1.71	1.69 ***	1.77
(stddev)	(0.63)	(0.62)	(0.63)
index of learning disruptions (1 to 12)	1.32	1.30 ***	1.37
(stddev)	(0.85)	(0.85)	(0.84)
scale of security at school (0 to 1)	0.39	0.38 ***	0.40
(stddev)	(0.14)	(0.14)	(0.15)
Family Factors:			
Number of Siblings	2.30	2.28 *	2.37
(stddev)	(1.55)	(1.53)	(1.61)
% of students in region of school- South, West	57%	56% ***	60%
(stddev)	(0.50)	(0.50)	(0.49)
SES centiles (1 to 100)	50.57	53.85 *** ^	39.86
(stddev)	(28.82)	(28.52)	(27.16)
Resources Available (0 to 12)	8.25	8.58 *** ^	7.18
(stddev)	(3.32)	(3.21)	(3.43)
Scale of family communication (1 to 3)	2.01	2.02 ***	1.98
(stddev)	(0.50)	(0.49)	(0.52)
Frequency of Parent Participation (1 to 4)	3.10	3.12 *** ^	3.01
(stddev)	(0.52)	(0.51)	(0.55)
How often parent helps with homework (0,1)	0.60	0.61 ***	0.56
(stddev)	(0.49)	(0.49)	(0.50)
days per week eat at least one meal together	5.29	5.38 *** ^	4.98
(stddev)	(1.86)	(1.80)	(2.03)
Scale of parent involvement (1 to 4)	3.56	3.57 **	3.54
(stddev)	(0.46)	(0.45)	(0.51)
Parent Limits (1 to 4)	2.68	2.71 ***	2.60
(stddev)	(0.68)	(0.67)	(0.70)
Sample n (weighted):	10,945	8,384	2,561
	100%	76.6%	23.4%

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

[2] effect size greater =>.20

TABLE 2
OLS Regression Analysis for Predicting Test Scores
(Dependent variable = standardized test scores)

	Full sample			Two parent				Single parent		
Variables:	unstd.	[1]	std.	unstd.	[1]	std.	[2]	unstd.	[1]	std.
Female (0,1)	-1.78	***	-0.093	-1.77	***	-0.094		-1.78	***	-0.095
Minority (0,1)	-2.84	***	-0.143	-2.64	***	-0.130	<>	-3.51	***	-0.187
English Speaking Household (0,1)	1.86	***	0.066	1.73	***	0.062		2.24	***	0.080
Student Held Back a Grade	-4.11	***	-0.143	-4.23	***	-0.140		-3.94	***	-0.162
Remedial Classes (0,1)	-2.34	***	-0.076	-2.38	***	-0.077		-2.14	***	-0.074
At Least One Disability (0,1)	-5.48	***	-0.186	-5.50	***	-0.185		-5.41	***	-0.201
Std Come To Class Unprepared (0,1)	0.78	***	0.030	0.79	***	0.031		0.86	*	0.030
Hrs std spends on homework per week	0.09	***	0.084	0.08	***	0.078		0.11	***	0.103
Hrs Std Spends on Free Time per week	-0.13	***	-0.073	-0.15	***	-0.079		-0.10	***	-0.055
Std is prepared in Math Class (0,1)	1.29	***	0.044	1.20	***	0.041		1.46	***	0.053
Std Got Into Physical Fight In School (0,1)	-1.90	***	-0.068	-1.84	***	-0.065		-2.07	***	-0.081
Level of Deviance (1 to 5)	-0.76	***	-0.049	-0.92	***	-0.060		-0.26		-0.018
Number of Times School Contacted Parent	-2.20	***	-0.112	-2.41	***	-0.122	<>	-1.59	***	-0.084
Hrs per week in extra curricular activity	0.07	***	0.041	0.06	***	0.039		0.09	**	0.049
Participated in College Prep (0,1)	0.36	*	0.015	0.31		0.014		0.60		0.027
Students who work (0,1)	-0.08		-0.004	-0.05		-0.003		-0.20		-0.010
School:										
% of students in free lunch program	-0.02	***	-0.053	-0.03	***	-0.056		-0.01	*	-0.038
learning hindered by sch conditions (1 to 4)	-0.12		-0.008	-0.02		-0.001		-0.43	*	-0.029
index of learning disruptions (1 to 12)	-1.14	***	-0.102	-1.08	***	-0.097		-1.35	***	-0.121
scale of security at school (0 to 1)	-1.42	**	-0.021	-1.47	**	-0.022		-1.35		-0.021
Family factors:										
Single parent (0,1)	-0.46	**	0.153	n/a				n/a		
Number of Siblings	-0.29	***	-0.047	-0.26	***	-0.043		-0.36	***	-0.061
Region of schooll- South, West (0,1)	-0.33	*	-0.017	-0.38	*	-0.020		-0.20		-0.010
Parents socio-economic status SES	3.43	***	0.263	3.53	***	0.273		3.04	***	0.217
Resources Available (0 to 12)	0.21	***	0.072	0.22	***	0.075		0.16	***	0.058
Scale of family communication (1 to 3)	1.35	***	0.071	1.32	***	0.069		1.50	***	0.082
Frequency of Parent Participation (1 to 4)	-0.94	***	-0.051	-0.94	***	-0.051		-0.94	***	-0.055
How often parent helps with homework (0,1)	-2.51	***	-0.129	-2.50	***	-0.130		-2.55	***	-0.135
days per week eat at least one meal together	0.15	***	0.029	0.16	***	0.030		0.13		0.028
Scale of parent involvement (1 to 4)	-1.04	***	-0.051	-1.18	***	-0.056		-0.61	*	-0.033
Parent Limits (1 to 4)	-0.21	*	-0.015	-0.07		-0.005		-0.58	**	-0.044
(Constant):	60.27			60.73				58.00		
Adjusted R-sq.	0.542	***		0.531	***			0.529	***	
n=	10,945			8,384				2,561		

[1] = *** p < 0.001; ** p < 0.01; * p < 0.05; ns non-significant

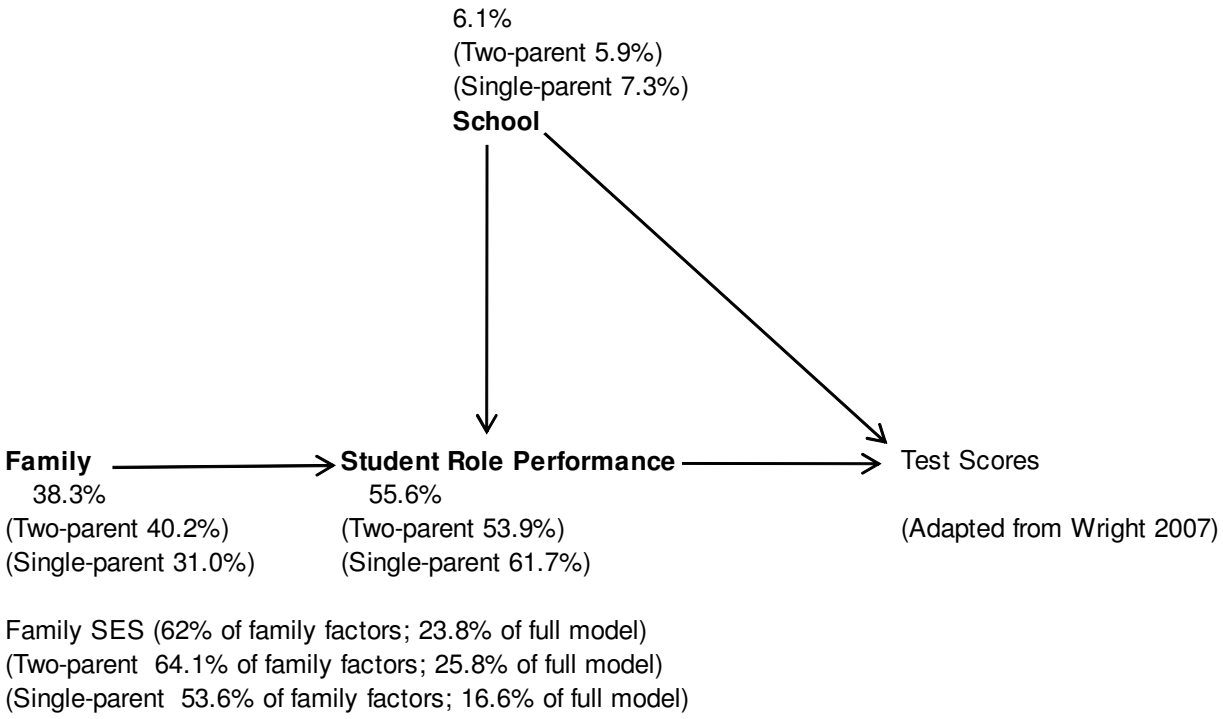
[2] signficant difference between single parent and two-parent at the .05 level or higher

Table 3
Values for full sample and by Socioeconomic Status

	Test score (mean)				
Variables	Full Sample	Two Parent	[1]	[2]	Single parent
full sample	51.02	51.88	***	^	48.17
Bottom 20%	44.26	44.57	*		43.73
Quintile 2	48.71	49.27	***		47.25
Quintile 3	50.84	51.38	***		49.02
Quintile 4	53.29	53.50	*		52.36
Top 20%	57.90	58.13	***		56.08
Sample n (weighted):	10,945	8,384			2,561

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

[2] effect size greater =>.20

Figure 2

Shares of explained unique variance by model segment