# SOCIO-ECONOMIC STATUS, STUDENT PERCEPTIONS AND COLLEGE READINESS

By

CATHERINE E. MATTHEWS

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To the Faculty of Washington State University:

The members of the Committee appointed to examine the dissertation of CATHERINE E. MATTHEWS find it satisfactory and recommend that it be accepted.

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SOCIO-ECONOMIC STATUS, STUDENT PERCEPTIONS

AND COLLEGE READINESS

Abstract

by Catherine E. Matthews, Ed.D.
Washington State University
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Chair: Paul Goldman

The purpose of this study was to examine the differences between low socio-economic students and their peers' attitudes about achievement, perceptions of their teachers' supportive behaviors, academic performance and college readiness and to analyze how these factors are related. Approximately 2100 students in grade 11 from two large school districts were surveyed using academic self-perception, motivation self-regulation, and concrete achievement attitude scales and the Teacher Support Scale Revised. This information was linked to demographic and academic performance data. Correlations and analysis of variance were conducted on the variables disaggregated by gender and ethnic grouping. Multiple regression was conducted on the demographic, academic performance, achievement attitude, and perception variables to determine the amount of variation in college readiness which could be accounted for by each variable. The results showed that, while socio-economic status is correlated with achievement attitudes, student perceptions, academic performance and college readiness, the relationship between these variables varies by gender and ethnic grouping. Further student perceptions were not as strongly related to academic performance or college readiness as achievement attitudes.

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## Dedication

This dissertation is dedicated to my family who gave me endless support and encouragement as I completed my work.

To my husband, Scott, for believing in me and supporting me through the last 25 years of academic pursuits.

To my daughter, Shannan, for being my constant cheerleader.

To my father, David Shea, for teaching me to love learning and to live my dreams.

To my mother, Margaret Shea, for teaching me that women can be and do anything.

To my sister and dearest friend, Patty Donaldson, for always knowing when I needed truth and grace.

# CHAPTER ONE

# INTRODUCTION

National attention is focused on public schools to reduce the achievement gap between low-socio-economic status students and their peers. The fact that there are now federal sanctions under the No Child Left Behind Act for schools that do not reduce this gap suggests a sense of urgency that has not existed in the past. Simply increasing the graduation rate of students though is not enough to substantively change the economic future of students. In order to truly change students' occupational and therefore economic opportunity, students must leave high school prepared for college and this requires that they take college preparatory courses. Administrators and teachers need more information about the factors which influence students' course selections in order to develop programs to increase the number of low-socio-economic status students enrolling and succeeding in college preparatory courses. The purpose of this study is to examine the relative influences and interactions of demographic and student perception variables on their course selection.

At Rockefeller High School during the 2004-05 school year, the graduation rate for low-income students, defined as those students enrolled in the Free and Reduced Lunch Program, was 22%. According to the Rockefeller High School Report Card (2006), this was the lowest graduation rate of any of the disaggregated groups at Rockefeller High School with the next two higher groups being Limited English Proficiency students at 34% and Special Education students at 46%. In addition, when compared with 17 other demographically similar high schools, Rockefeller High School ranked 18$^{th}$ in the graduation rate of students who qualified for the Free and Reduced

Lunch Program. Comparisons of these 18 schools' 10th grade WASL scores disaggregated by gender, ethnicity, and special program showed a similar trend with Rockefeller High School low-income students ranking 11th in math scores, 12th in reading scores and 13th in writing scores.

Rockefeller High School's data follow state and national trends for low achievement of low-income students. According to the 2005 National Assessment of Educational Progress data, 43% of low-income students in the eighth grade read at the below basic level while only 19% of students who are not low-income read at the below basic level (Haycock, 2006; US Department of Education: Institute of Education Sciences, 2006). This trend has persisted with the 2007 National Assessment of Education Progress data showing 42% of low-income eighth grade students scoring in the basic level and only 18% of eighth grade students who are not low-income scoring at the basic level in reading (Lee, Grigg, & Donahue, 2007). According to the Office of the Superintendent of Public Instruction's School Report Card for Washington State (2008), 80.8% of all tenth grade students in the state met standard on the Washington Assessment of Student Learning (WASL) in reading in the 2006-07 school year while only 68.2% of low-income students met standard. Similarly on the math portion of the WASL, 50.4% of all students met standard compared to only 30.5% of low-income students.

While achieving academic skills and graduating from high school are important, the type of courses a student takes is an important determinant in post-secondary opportunities. In the 2005-06 and 2006-07 school years, less than 20% of all student seats in classes at Rockefeller High School were taken by students enrolled in college gateway courses. The small percentage of all students enrolled in college gateway

courses seems to indicate that an even smaller percentage of low-income students are enrolled in these courses given their low achievement rates on the WASL and their low graduation rate. In fact, of those students enrolled in college gateway courses at Rockefeller High School, only 12.7% of student seats in 2005-06 and 11.4% of student seats in 2006-07 were taken by low-income students. Further, district-wide, low-income students accounted for only 7% of seats taken in honors level and Advanced Placement courses during the 2005-06 school year.

Enrollment in college gateway courses, such as advanced math and second year world languages, is essential to college admission. Thus low-income students as a group are less prepared to attend college. College admission is not the only benefit of enrollment in college gateway courses, though. Even students with the lowest reading skills benefit from more challenging courses. In their research, the Southern Regional Education Board (Cooney & Bottoms, 2002; Haycock, 2006) compared the performance of students of ninth grade students enrolled in college preparatory courses to those enrolled in lower level courses. They found that students in the first and second quartile in reading, who took college preparatory courses, earned C or higher grades at twice the rate of those students who took lower level courses in ninth grade. Additionally, according to a National Center for Education Statistics and US Department of Education study using data from the National Educational Longitudinal Study (Levesque et al., 2000), students in the lowest quartile for math who took college preparatory courses increased their achievement by 27.6% from 8$^{th}$ to 12$^{th}$ grade while students who took vocational track courses increased by only 19.3%.

Although post-secondary education is widely considered to be a key factor in improving students' economic potential and therefore social class, low college

attendance rates for low-income students is a persistent national trend. The Economic Policy Institute (2005), citing research from the Department of Education in 1988, indicated that the highest performing low-income students attend college at the same rate as the lowest performing high-income students at about 30%. More recently, the National Center for Education Statistics (2000) reported that 31% more high-income students enroll in college immediately following graduation than low-income students. In a longitudinal study following students from the class of 1988 from eighth-grade through age 26, researchers (Ingles et al., 2002) found that only 6.9% of students from low-income families graduated from college by the age of 26 while students from high income families did so at a rate of 51%. This has a tremendous impact on their future economic status.

Data from the 2000 United States Census states that the median income of adults aged 21 to 64 who do not finish high school is $21,332. This increases to $42,877 for those who earn a Bachelor degree (U. S. Census Bureau, 2000). The National Center for Children in Poverty (2006) reports that nationally, in 2004, 84% of children whose parents did not complete high school are living in poverty. This is in contrast to only 56% of children whose parents graduated from high school and only 24% of children whose parents have some college education. Washington State follows a similar trend with the percentages of students living in poverty being 78%, 53% and 25% respectively. In this study low- income was defined as when the "family income is less than twice the federal poverty threshold" (National Center for Children Living in Poverty, 2006, p. 4). For a family of four with two children this equates to an annual family income of less that $37,700. Clearly, earning a college education is foundational to an improved economic future and potentially social class.

Researchers have focused on a myriad of factors influencing students' academic achievement. These will be reviewed in more detail in the literature review. In short, they include student and family factors such as familial relationships and expectations (Allen, 1978; Crosnoe, 2004); the presence of extended family members in the home (Blair, Blair, & Madamba, 1999); socio-economic status (Bradley & Corwyn, 2002); race and social class (Blair et al., 1999); the types of social and cultural capital transmitted in families (Coleman, 1988; Dumais, 2002; Lareau, 2003); the occupational status of parents (Lueptow, 1975); student achievement attitudes (Mickelson, 1990); and students' sense of personal control (Ross & Broh, 2000). Researchers have also examined cultural factors such as how students reconcile their ethnic or cultural styles with school expectations (Carter, 2005) and community factors such as the existence of high status adults in a students' neighborhood (Ainsworth, 2002). Finally they have studied school factors such as academic track membership (Byrne, 1990); teacher expectations (Farkas, Sheehan, Grobe, & Shuan, 1990); the ethnic mix of students and teachers in schools (Goldsmith, 2004); teacher-student relationships and interactions (Howard, 2003); students' perceptions of teacher biases (Wayman, 2002); the differential quality of schools and teachers by school socio-economic status (Kozol, 2005; Sirin, 2005); and students' perceptions of differential teacher treatment (Wayman, 2002; Weinstein, Marshall, & Brattesani, 1982; Weinstein, Marshall, Sharp, & Boykin, 1987; Weinstein & Middlestadt, 1979).

Schools can and should work with students, parents and families to ensure that the diverse cultural and social capital which students bring to school is valued and utilized to increase academic achievement. Much of the students' family context and interactions, however, occurs outside of the school day and beyond the classroom. The

majority of interactions in schools occur between student and teacher or other school personnel. The purpose of this study then is to examine low-income students' achievement attitudes, their perceptions of teachers' attitudes about their academic ability, and their college readiness. My goal is to address the following questions:

1. How do low-socio-economic students differ from their non-low-socio-economic peers on their:
    a. academic performance?
    b. college readiness based on enrollment in college gateway courses and grade point average?
    c. attitudes toward achievement?
    d. perceptions of what teachers think about their academic ability and performance?
2. How are these factors related to one another?
3. Is there any difference in the pattern and relative influence of these factors for low-socio-economic and non-low-socio-economic students?

## Literature Review

### *Socio-Economic Status and Student Achievement*

The fact that students from poverty generally perform less well academically is a widely held belief among educators and is confirmed through generations of research across the globe. In a study of the results of the Winnipeg 12$^{th}$ grade exit exam (Fransoo, Ward, Wilson, Brownell, & Roos, 2005), researchers demonstrated that, while

low socio-economic students taking the exam passed at a rate of 75%, the pass rate was significantly inflated because it did not account for the number of students who were not tested either because they were retained or had dropped out. By applying the population approach used in the public health field to account for all students, the pass rate fell to a dismal 33%.

The relationship between academic achievement and socio-economic status has been the focus of many studies. In his comprehensive meta-analysis of a decade of research on the relationship between socio-economic status and academic achievement, Sirin (2005) found that a student's family socio-economic status is correlated very strongly with academic achievement. Sirin explains that poverty influences academic achievement in that low-income students generally live in poor neighborhoods with poor schools and they lack the social capital needed for school success. Similarly, in a longitudinal study using data from the National Education Longitudinal Study, researchers evaluated the relative influence of race and social class on academic achievement of teens (Blair et al., 1999). They found that, regardless of race, the elements of social class (family income, educational level of parents, and presence of learning materials in the home) are greater predictors of academic achievement than race. Bradley and Corwyn (2002), in their literature review entitled "Socioeconomic Status and Child Development", cite numerous research studies indicating an association between low socio-economic status and low academic achievement. Among the factors influencing future academic achievement identified by these researchers is the lack of exposure of low socio-economic children to engaging materials and experiences during early childhood development.

Although this relationship between socio-economic status and academic achievement is clear, it is the means by which this relationship is perpetuated which is of greater interest to researchers who seek to diminish its inevitability, however. To this aim, Ainsworth (2002) studied the mechanisms which mediate the relationship between neighborhood characteristics and academic achievement. In his study, he found that the presence of adults who are college graduates and who hold professional or management level jobs significantly impacts academic success by influencing youths' academic expectations and the quantity of homework which they do. Youth benefit academically in these relationships by their exposure to role models with positive work goals and values. In effect, these relationships act as a form of capital which, like financial capital, can be leveraged to benefit the student in the future.

*Social and Cultural Capital*

Ainsworth's research illustrates the concept of social capital. As with all people, youth exist within socially constructed organizations. Social capital, such as relationships with college educated, professional adults, becomes an asset which can be used to facilitate achievement which could not otherwise be realized (Coleman, 1988). While social capital is not tangible and direct such as financial capital, it can still be translated into human capital in the form of achievement. For example, community relationships with college educated, professional adults provide others with information they might not otherwise have. They also establish expectations about behavior which is more aligned with achievement.

In addition to possessing social capital, students also have various forms of cultural capital which differentially advantage students in school (Carter, 2005). Early research on cultural capital focused on the high status styles, tastes and experiences of

wealthy individuals who use their knowledge and relationships for financial and professional gain (DiMaggio, 1982). More recent research acknowledges that all people have cultural capital. Rather than viewing cultural capital from a deficit model in which low-income, working class, and culturally diverse people are seen as lacking the more valued dominant cultural capital, researchers now identify that there are different types of cultural capital which are beneficial in different cultural circles. For example, Carter (2005, p. 49), in *Keepin' It Real: School Success Beyond Black and White,* explains that low-income, African-American students do not use their cultural capital "for long-term capital gain, they use cultural capital to maintain group identity and distinctive cultural boundaries." Regardless of the type, social and cultural capital are passed down through familial, community and educational organizations and, in part, this serves to reproduce social class.

*Reproduction of Social Class*

A significant amount of research has been conducted on the reproduction of social class in schools. MacLoed (1995) explains that there are essentially two lines of logic behind this theory. Proponents of the deterministic model of reproduction theory assert that schools are designed to perpetuate social class by training low-income and working class students to be workers while educating the upper and middle class student to be employers. Proponents of this theory claim that parents, teachers and administrators have different expectations for students based on their social class. As a result, schools in low-income or working class areas are regimented, have low academic expectations and focus on vocational skills. Middle and upper class area schools, in contrast, are more open, encourage critical thinking and have higher academic expectations. Alternately, the cultural capital model of reproduction theory states that all

students gain cultural capital from their parents. The cultural capital which middle and upper class students gain, though, is more valued in schools. As a result these students have higher academic achievement than low-income or working class students. Furthermore students' aspirations and ambitions are formed in part through their "habitus" or the "attitudes, beliefs, and experiences of those inhabiting one's social world" (MacLeod, 1995, p. 15). As such, students from low-income and working class areas are influenced by adults who have poor or no employment or education. They are more likely then to lose interest in school and seek employment. Because of their lack of education, these students are likely to find low-paying jobs which perpetuates the cycle of social class reproduction.

Lareau (2003), in *Unequal Childhoods: Class, Race, and Family Life,* examined the transmission of cultural and social capital through childrearing practices. She found that childrearing practices differ greatly by social class which differentially advantages students in school. She found that, in middle class families, parents employ the cultivation of accomplishment logic using strategies which result in well-developed language, negotiation and critical thinking skills. Children raised under this logic participate rigorously in athletic, cultural and academic activities with the constant advocacy of their parents. They develop a sense of entitlement and act accordingly. They are, as a result, viewed as confident, articulate and talented. Their parents' intercession on their behalf results in opportunities in and out of school for which they may not be actually entitled. Low-income and working class parents in contrast raise their children under the logic of facilitation of natural growth. Children in this environment do not participate in many organized activities. Rather, they play without the direction of adults. Further, parents make clear the boundaries between child and

adult. Thus these students do not gain advocacy skills with authority figures in school and they appear less confident and less skilled. Because their parents view their role in school as one of following the directions of professionals, their children often do not have access to the opportunities they need to be successful.

Social and cultural capital can be transmitted through interactions with significant adults outside of the family as well. In his study, *Why Does It Take a Village? The Mediation of Neighborhood Effects on Educational Achievement,* Ainsworth (2002) identified the presence of professional or high status individuals in a community as a predictor of the amount of homework children did and the level of achievement students experienced in reading and math. Furthermore, these relationships may have additional benefits such as exposure to adults with occupational success. In his study of ability, cultural capital, socio-economic status and occupational aspirations, Dumais (2002) found that occupational aspirations had the most significant impact on academic achievement. In addition, familial social capital enhances academic achievement to a greater degree when combined with school based social capital. Crosnoe (2004) demonstrated that, for students who have high levels of social capital as a result of strong parent-student emotional bonds, academic achievement was increased by 21% when they attended schools with strong student-teacher bonds.

*Internal Achievement Factors*

Though much research has reinforced the theory of cultural reproduction of social class in schools, the fact remains that some students do achieve beyond what this theory predicts. In part, this is influenced by internal factors such as the student's sense of personal control or the student's internalized ability beliefs. While conventional wisdom says that a student's self-esteem is critical to academic achievement, Ross and

Broh (2000) hypothesized that students with high self-esteem may generally see themselves as worthwhile people but that this does not ensure achievement. Rather they proposed that in order to achieve academically a student must have a sense of personal control or a belief that they are capable of affecting outcomes through their efforts and talents. In their study of the relative impact of self-esteem and sense of personal control on academic achievement, Ross and Broh (2000) demonstrated that students' level of sense of personal control in 10$^{th}$ grade was significantly associated with their academic achievement in 12$^{th}$ grade.

Similarly researchers have looked at students' internal beliefs about ability as a factor in academic achievement. In their studies of the relationship between student ability theories, achievement goals, intrinsic motivation, perceived competence and actual performance, Cury et al. (2006) found a complex interaction of factors. Student achievement in math and performance on IQ tests were influenced by the students' conceptions of whether or not their ability was unchangeable or changeable over time, whether they espoused performance or mastery goals, and whether they tended toward avoidance or approach for these goals. These were further influenced by the students' perceived competence and in turn influenced their level of intrinsic motivation. A student who believes that ability is unchangeable, for example, selects performance goals but whether or not they display approach or avoidance behavior is impacted by their perceived level of competence. Low perceived competence predicted avoidance behavior and therefore decreased actual performance.

Another factor, which researchers have focused on, is the student's achievement orientation or achievement attitude. Researchers have found in several studies that students' achievement orientation is similar regardless of ethnicity, sex, or socio-

economic class. Allen (1978), for example, examined the relationship between the achievement orientation of black and white male students, defined by their "aspirations, self-conceptions, achievement values and sense of environmental control", and their parents' education, income, race and achievement expectations. He found that, although their family contexts differed significantly according to race, the achievement orientation of the students did not. He came to a similar conclusion in a larger study in which he evaluated the achievement orientation of students by race and gender (Allen, 1980).

MacLoed (1995) delineates between achievement aspirations and achievement expectations in his ethnography *Ain't No Makin' It: Aspirations and Attainment in a Low-Income Neighborhood.* The Hallway Hangers, a group of White low-income males in the study, do not put effort toward academic achievement because they do not expect this effort to translate into a better life. While one of the Hallway Hangers aspires to own a business, he does nothing to prepare for it because it is unlikely to happen. There is a wide divide between their aspirations and their expectations. Even the Brothers, a group of African-American low-income males, who adopt the dominant achievement ideology, do not demonstrate consistently behaviors which would make them successful in school.

MacLoed suggests a key problem with early conceptions of achievement orientation or achievement attitudes. They do not explain the difference between achievement attitude and actual achievement. Mickleson (1990) argues that students hold two types of attitudes simultaneously about academic achievement: abstract and concrete attitudes. She defines abstract attitudes as the dominant belief that through hard work and effort one can succeed in school and have an equal opportunity for

occupational success based on merits alone. This dominant ideology might be called the 'American Dream'. The abstract attitude is what early research measured. Concrete attitudes, conversely, represent the internalized belief about what one can actually achieve based on personal past experiences and the experiences of others. It reflects one's judgment about the true opportunity structure in America.

In her study, Mickelson (1990) analyzed students' abstract and concrete attitudes and their academic achievement using variables of race, gender, socio-economic status, parents' education, parents' occupation, and peer goals. She found that the gap between achievement attitude and actual achievement exists only when one considers abstract attitudes. When considering concrete attitudes, this gap virtually vanishes. Not surprisingly, she showed that regardless of race, gender or social class all students hold positive abstract achievement attitudes. In fact, the data indicated that African-American students' abstract attitudes were more positive toward schooling than White students. However, as she expected, students' concrete attitudes varied greatly among race, social class and gender. African-American students, regardless of social class or gender, showed significantly more negative concrete achievement attitudes. In addition, middle class students, regardless of race or gender, showed more positive concrete achievement attitudes than low-income or working class students.

Mickelson (1990) found interesting variations when looking at the differences between students' concrete and abstract achievement attitudes and between their achievement attitudes and actual achievement. The difference between abstract and concrete achievement attitudes was greater for African-American students than for White students. While the difference between abstract and concrete achievement attitudes remained essentially the same for African-American students regardless of

social class, this was not true for White students. Rather the difference varied significantly for White students by social class with a greater difference for working class students than middle class students. Finally abstract achievement attitudes had no effect on actual achievement while concrete achievement attitudes were positively correlated with actual achievement. Thus, if we look at concrete achievement attitudes and actual achievement, the difference between achievement attitude and actual achievement, suggested by early research, disappears. Students' actual achievement, in effect, reflects their assessment of whether or not their efforts to achieve will benefit them.

In early studies, researchers were confounded by students' assertions that they believed achieving in school would result in financial and occupational opportunities. Low-income and ethnically diverse students did not demonstrate positive behavior to support these beliefs. What these researchers failed to realize is that students' abstract achievement beliefs did not necessarily reflect an assessment of how academic achievement would benefit them personally. When these more personalized beliefs are considered, the lack of effort toward academic achievement makes sense. Their experiences show them that academic effort does not necessarily result in true opportunity.

*School Factors*

While home and community factors play a significant role in academic achievement and the development of achievement attitudes, there is little that school personnel can do to change these factors. Further, school factors can certainly impact student achievement. Schools in low-income areas have less experienced, less properly endorsed and less qualified teachers (Books, 2004; Kozol, 2005). In addition, students living in poverty in

general attend schools with lower funding, less curricular resources and substandard facilities (Books, 2004). A study sponsored by the Northwest Evaluation Association (McCall, Hauser, Cronin, Kingsbury, & Hauser, 2006) looked at the achievement gap between minority and non-minority students and students attending low-income and non-low-income schools. Rather than focusing simply on the differences in performance based on single test scores, they looked also at the difference in the amount of growth students achieved over time. Their results showed that, contrary to research indicating a reduction in the achievement gap, the difference between students' growth over time continues to increase particularly if they attend high poverty schools. This widening divide of achievement is cumulative. In effect, minority students and students attending high poverty schools enter school with fewer skills and gain fewer skills over each year. Sirin (2005), in his meta-analytical review of research, found similarly that school socio-economic status was a greater predictor of academic achievement than family socio-economic status for Black students.

The ethnic mix of students and staff in schools influences academic achievement as well. Goldsmith (2004), using the National Education Longitudinal Survey of 1988 for 8$^{th}$ grade students, found that Black and Latino students held higher achievement attitudes and aspirations than White students particularly when they attended ethnically balanced or primarily minority schools. Further he found that, for minority students attending primarily minority schools, the difference in these achievement beliefs is more effective in reducing the achievement gap than for minority students attending primarily White schools. In addition, he found that Black and Latino students held more positive achievement attitudes when they attended schools with a significant number of minority teachers.

The affects on student achievement of attending segregated or desegregated schools, though, is complex. In her study of the Charlotte-Mecklenburg School District, Mickelson (2005) found that the longer students attended segregated Black elementary schools, the lower their academic achievement and the lower their academic track placement in high school. Mickelson also evaluated students' high school track placements in comparison to their 6th grade California Achievement Test scores and found that, despite comparable achievement, Black students were placed in lower tracks than White students. She found that even in this district, nationally acclaimed for its desegregation plan, students in the desegregated high school were essentially segregated in classes by race with Black students taking the lower level courses. This resulted from the cumulative effects of the substandard education Black students received in the segregated feeder elementary schools.

The effect of prior academic performance on future academic achievement is documented in other research as well. In their study of the influence of self-esteem and sense of personal control on achievement, Ross and Broh (2000) analyzed the academic achievement of students from 8th through 12th grades and found that the greatest predictor of academic performance in 12th grade was earlier academic performance. Research on younger children shows a similar trend. Using data from six independent studies from the United States, Canada, and Great Britain, researchers analyzed the influence of the early literacy, numeracy, social – emotional and attention abilities of children prior to starting elementary school on their future academic achievement (Duncan et al., 2007). The strongest predictor of math skills, they found, was early numeracy. Likewise early literacy skills were, though less strongly, the significant predictor of school age literacy. Attention skills in contrast were only weakly

correlated with school age numeracy and literacy and social-emotional skills were not significantly correlated.

Student achievement is also influenced by the perceptions and practices of teachers. Teachers' perceptions of low-income students influence their assessment of students. In their study of the relationship between grades, coursework mastery, and student characteristics, Farkas et al. (1990) found that teachers assigned grades based in part on their perceptions of student work habits. They found that teachers perceived low-income students to have poorer work habits than students who were not low-income and assigned lower grades to low-income students based on this.

It stands to reason though that school structural, contextual, and teacher bias factors are not the only school elements which influence academic achievement. Internalized school experiences certainly play a significant role. While teacher's perceptions are important, it is how students perceive that teachers differentially treat students which is of greater importance. Because while teacher perceptions can influence how teachers assess students and treat students, students' perceptions influence their self-concept and behavior. In order for this to occur however, students must be aware of differential teacher treatment, interpret the behavior and incorporate it into their self-concepts (Brattesani, Weinstein, & Marshall, 1984; Weinstein et al., 1987). In Howard's study (2003) of the perceptions of African-American high school students, he points to the significant role of teacher's attitudes about a student's ability to achieve. This study included students who enrolled in college preparatory classes as well as lower level and vocational classes. At all levels of achievement, students indicated that teacher attitudes influenced their academic identity and achievement.

Weinstein et al. (1987) found this to be the case in their study of elementary students. In this study, students were asked to rate the likelihood of specific teacher behaviors toward hypothetical high and low achieving students. Students identified that high achievers got "less negative feedback and teacher direction, less work and rule orientation, and more high expectations, opportunity, and choice than low achievers" (Weinstein et al., 1987, p. 1085). Furthermore, when reflecting on treatment towards them, students for whom teachers had high expectations reported more positive treatment. Finally the perceptions and expectations of teachers and those of students were very similar suggesting that students were able to correctly interpret teachers' behavioral cues. Brattesani et al. (1984) further found that, in classrooms in which there was high differential teacher behavior based on teacher expectations of students, actual student achievement was predicted less by students' prior achievement than that in classrooms where there was low differential treatment by the teacher. In effect they found that teacher expectations do not merely perpetuate achievement differences rather they increase those differences.

*Summary*

A significant amount of research has been directed at evaluating the factors influencing academic achievement. This critical topic has been approached from the perspectives of familial, cultural, community, school and demographic factors. With the increasing economic divide between those who earn a college degree and those who do not, it has become imperative that educators develop a better understanding of the factors that influence whether or not students prepare for college while in high school. This information can guide educators in the development of programs to support students' success in college preparation. This study is aimed then at looking at the relative

influence and relationship between demographic, achievement, and student perceptions variables with a focus on the difference between low-socio-economic students and their non-low-socio-economic peers.

# CHAPTER TWO

# METHODOLOGY

## *Research Methods*

Quantitative methods were used in this study. The design was Ex Post Facto because data were collected after the interactions occurred (Shavelson, 1996). Several different types of data were collected for analysis. Students responded to survey items which quantified their attitudes and perceptions. In addition, students responded to survey items about their parents' levels of education and employment. Demographic and academic achievement data were collected from each school district as well. This study is a correlational study using several data analysis methods to address the research questions. Pearson's product-moment correlation was used to examine the relationship between demographic, academic performance and perception variables (Norusis, 2006; Shavelson, 1996). Analysis of variances (ANOVA) was used to was used to analyze the difference in means between and within socio-economic groups (Shavelson, 1996). Multiple regression analysis was used to develop models identifying the relative influence and direction of demographic, academic performance and perception variables on college readiness (Foster, Barkus, & Yavorsky, 2006).

The research methods devised for this study were based upon methods well-established in prior research. For example in *Race, Family Setting and Adolescent Achievement Orientation,* Allen (1978) analyzed the relationship between socio-economic status (SES), race, parent aspirations, and student achievement orientation. He used survey items to assess the levels of parent education and employment, parent expectations and student achievement orientations. Analysis of variance was used to compare the mean responses grouped by race. Pearson's product moment correlation

was used to examine the correlation between each of the student achievement indices and parent education, employment and expectation factors. Similarly in *Perceptions and Attitudes of Black Students Toward School, Achievement, and Other Educational Variables,* Ford and Harris (1996) examined Black students' attitudes and perceptions of academic achievement and education and analyzed the differences between the attitudes and perceptions of students served in the gifted, potentially gifted and regular education programs. These researchers used a Likert-style survey to collect perception and demographic data. Analysis of variance was used to compare the means for each the three achievement groups. Because students' membership in each of the groups (gifted, potentially gifted, and regular education) was known at the time of data collection, discriminant analysis with canonical correlation were used rather than multiple linear regression with Pearson's product moment correlation (Ford & Harris, 1996; Norusis, 2006). These procedures are analogous, however (Norusis, 2006).

*Sample*

*District demographics.* The South Bay and East Sound School Districts were selected for this study because the populations of the high schools in these districts represent the socio-economic and ethnic diversity needed to address the variables in the study. The South Bay School District is among the top five largest school districts in the state of Washington. It serves over 27,000 students over 72 square miles in 40 schools. The district serves urban, suburban and rural areas surrounding the central city of South Bay in south Valleyview County. Over 3200 people are employed by the district and over 1400 of those are teachers. District-wide ethnically diverse students comprise 43% of students with Asian, African-American and Hispanic students being the largest groups of minorities at 15%, 10.3% and 9.5% respectively. The South Bay

School District has four traditional high schools and four high school alternative programs. The total population in the class of 2009 in the South Bay School District is 2324. The district's tenth grade WASL scores have steadily increased over the last decade. Most recently scores have increased from 2004 to 2008 in reading from 66.5% to 79.1%, in math from 50.6% to 52.7% and in writing from 69.6% to 84.2%. Score for low income students have increased, though to a lesser degree, from 2004 to 2008 in reading from 54.1% to 64.7%, in math from 27.8% to 28.1% and in writing from 48.2% to 72.3%.

The East Sound Public School District is a large district serving just over 18,900 students in 27 schools. The district is located in central Timberline County and covers 25 square miles. East Sound Public Schools employ over 2000 people of which approximately 970 are classroom teachers. The district has three traditional high schools and one alternative high school. The total population in the class of 2009 in the East Sound School District is 1381. Table 1 shows the ethnic and socio-economic makeup of the East Sound and South Bay School Districts from data provided by each district. The district's tenth grade WASL scores have steadily increased over the last decade. Most recently scores have increased from 2004 to 2008 in reading from 70.8% to 85.9%, in math from 45.6% to 53.7% and in writing from 67.7% to 89.0%. Score for low income students have increased, though to a lesser degree, from 2004 to 2008 in reading from 60.2% to 71.1%, in math from 27.9% to 29.4% and in writing from 47.0% to 77.6%.

*Sampling methods.* While the method of sampling for this study was not random, it was purposefully designed to provide enough cases representing the ethnic and socio-economic diversity necessary to answer the research questions. Students in the class

of 2009 from the East Sound and South Bay School Districts were surveyed during this study in February of 2008. The survey was administered in all of the traditional high schools in both districts and one of the alternative high school programs in the South Bay School District. These students should have been in the eleventh grade. It should be noted that the East Sound School District, during the time in which the survey was administered, was in the process of changing their policy with regard to grade level placement at the high school level. Prior to this time, students were advanced according to the number of credits they accrued annually. During the year in which the survey was administered, this policy was changed such that all students were advanced chronologically until the end of their 11th grade year. For the purpose of this dissertation, students in the class of 2009 were surveyed during the 2008 - 2009 school year will be referred to as grade 11 students. Grade 11 students were selected because, by the grade 11, students largely have determined their academic course through their class selections. Because of the nature of the survey instrument, English Language Learners and Special Education students participated in the survey only if they were enrolled in the regular education course in which the survey was administered. All students were surveyed during the regular school day. In the East Sound School District, the survey was administered in Advisory at Central High School and United States History at Rockefeller High School. At Taft High School, all grade 11 students completed the survey together. In the South Bay School District, the survey was administered in grade 11 Advisory classes in the respective high schools.

In the final sample, 2184 student surveys were usable. Of those students, 1707 cases included complete survey, demographic, academic, and assessment information. The large number was necessary because the large number of variables included in the

study decreases the degrees of freedom in the statistical calculations (Shavelson, 1996). Student ethnicity and participation in the free and reduced lunch program of the research sample are found in Table 1. Students' responses to survey items about their parents' level of education and employment are found in Table 2. Student gender was nearly equally distributed with 45.3 % of students being male and 47.4% being female. Missing data on gender represented 7.4% of cases.

Table 1. *Student Demographics of Research Sample*

| Characteristics | | N | % |
|---|---|---|---|
| Ethnicity | Native American | 23 | 1.1 |
| | Asian | 326 | 14.9 |
| | African American | 136 | 6.2 |
| | Hispanic | 126 | 5.8 |
| | Multiracial | 59 | 2.7 |
| | Pacific Islander | 28 | 1.3 |
| | White | 1322 | 60.4 |
| | Missing | 170 | 7.8 |
| SES: Free/Reduced Lunch | No | 1561 | 71.3 |
| | Yes | 474 | 21.6 |
| | Missing | 155 | 7.1 |

N= 2184

Table 2. *Sample Demographics: Parent Education and Employment*

| Factor | | N | % |
|---|---|---|---|
| Father High School | No | 640 | 29.3 |
| | Yes | 1541 | 70.4 |
| Mother High School | No | 568 | 26.0 |
| | Yes | 1612 | 73.7 |
| Father College | No | 1249 | 57.1 |
| | Yes | 932 | 42.6 |
| Mother College | No | 1255 | 57.4 |
| | Yes | 926 | 42.3 |
| Father Advanced Degree | No | 1650 | 75.4 |
| | Yes | 531 | 24.3 |
| Mother Advanced Degree | No | 1720 | 78.6 |
| | Yes | 461 | 21.1 |
| Father Employed | No | 638 | 29.2 |
| | Yes | 1543 | 70.5 |
| Mother Employed | No | 792 | 36.2 |
| | Yes | 1389 | 63.5 |
| Father Management/Professional | No | 1042 | 47.6 |
| | Yes | 1139 | 52.1 |
| Mother Management/ Professional | No | 1250 | 57.1 |
| | Yes | 931 | 42.6 |

*Missing 7.3 %

*Access*

Both the South Bay and East Sound School Districts have processes for granting permission for research utilizing student information. In addition to securing permission through each of the school districts, parent permission was requested. Parents received a letter explaining the research and requesting permission for their students to participate. Parents had the opportunity to opt their students out of the study. In addition, students were able to decline to participate.

*Variables*

*Dependent variable.* For the multiple regression analysis, a scale variable, college ready index, was used. The dependent variable college ready index is an aggregate variable based upon the sum of each student's cumulative grade point average (GPA) and core courses cumulative rating. Individual transcripts data were downloaded from student files and evaluated using course enrollment history and grades in English, math, science and world language courses at the end of the first semester of grade 10 and grade 11. For each of these core courses, students were given a rating on a scale of 1 to 5 based upon the course taken. A rating of 5 indicates a course above grade level or at an honors, Advanced Placement or International Baccalaureate level. A rating of 4 indicates a course at grade level with a passing grade. A rating of 3 indicates a grade level appropriate course taken with a corresponding support level course in the same discipline and with a passing grade. A rating of 2 indicates a below grade level course or a grade level course with a failing grade. A rating of 1 indicates a special education or English Language Learner level course.

This rating scale was applied to courses in English, math and science for each of the two years independently. Grade level was defined in math as geometry in grade 10 and Algebra II/Trigonometry in grade 11. Grade level was defined in English as the grade level appropriate general education English course offered in grade 10 and grade 11 respectively. Grade level in science was defined as biology in grade 10 and a third year laboratory based science in grade 11. Because colleges require two years of world language in the same language, world language courses were rated only once using the information from both years. A rating of 1 indicates that the student had not taken a world language course by grade 11. A rating of 2 indicates that the student had taken one year of the world language course by grade 11 and earned a failing grade. A rating of 3 indicates that the student had taken the first year of a world language in grade 11 or had taken two different first year languages by grade 11. A rating of 4 indicated that the student had taken year two of a world language by grade 11. A rating of 5 indicated that the student had taken year two of a world language by grade 10 and was enrolled in year three of the same language in grade 11.

Core course ratings in these seven areas were added to create an aggregate rating, the core courses cumulative rating, in which a minimum of 28 indicates grade level course enrollment in each of the seven areas and a maximum of 35 indicates above grade level course enrollment in each of the seven areas.

Student cumulative grade point average and core courses cumulative ratings were analyzed to develop an index incorporating both the level of the course and the student's overall academic performance as measured by the cumulative grade point average. Multiplying the grade point average and core courses cumulative rating was considered but discarded. In this model, assuming a 3.0 grade point average and grade

level appropriate coursework as a minimum college requirement, a college ready student would have a minimum score of 84. However, this score could be achieved by a student who earned a 4.0 grade point average having taken only below grade level core courses. By adding the cumulative grade point average and the core courses cumulative rating, the number of students below standard in the minimum core courses cumulative rating was significantly diminished. There was one case in which a student earned a college ready index of 31 with a core courses cumulative rating of 27. This indicates that the student was below grade level or at grade level with a support class in one core area. This case amounts to .06% of the total cases. Similarly the small number of students with significantly higher core courses cumulative ratings but slightly lower grade point averages was diminished. A total of 117 students earned a college ready index of 31 with a cumulative grade point average less than 3.0. These cases amount to 6.85% of total cases. In addition, all of the students held grade point average above 2.0. Of these 117 cases, 65 students held grade point average in the 2.7-2.99 range which is equivalent to a B- average. Another 50 cases held grade point averages between 2.3 and 2.7 which is equivalent to a C+ average.

*Independent variables.* Demographic, academic performance, and assessment data were collected for analysis from student data files maintained by each district. In addition, students' perceptions of their teachers' assessment of their abilities, students' academic self-concept, and students' concrete achievement attitude data were collected using a survey instrument.

Demographic data collected included each student's gender, date of birth, and ethnicity. In addition, student's qualification for the federal Free and Reduced Lunch Program, Special Education program, English Language Learner program, and 504

programs were collected. In order to gain a more comprehensive view of students' socio-economic status, students were asked to respond to a number of questions on the survey instrument indicating their parents' level of education and employment. Academic performance data included students' cumulative grade point average, cumulative credits earned, and grade level. The course names, codes, and grades for English, math, science, and world language were collected for each student in the fall semester of grade 10 and grade 11. The same information was collected for any support classes in these core areas. Students' WASL scores were collected for grades 7 and 10 in reading, writing and math.

Several variables were recoded for the purpose of analysis. The student ethnicity variable was recoded into a series of dichotomous variables indicating the student's inclusion or exclusion in specific ethnic groups. In the original variable, students were identified as African-American, Hispanic, Asian, Pacific Islander, Native American, Multiracial, or White. This variable was then recoded into a collective variable which categorized students as non-Asian minority or Asian and White students collectively. Using the individual grades in the seven core areas, a variable was created which indicated the students' grade point average in the core classes. Using students' responses to survey questions about their parents' education and employment, an aggregate variable, parent SES, was created in which one point was allocated for an affirmative response to each question. There were a total of 10 questions which asked whether or not each parent graduated from high school, graduated from college, earned an advanced degree, was employed, and was employed in a professional or management level job. This variable is on a scale of 0 to 10. An additional variable was created, total SES, which combines students' responses to these questions with their

participation in the federal Free and Reduced Lunch Program. In this variable, one point was subtracted from the total for participation in the Free and Reduced Lunch Program. Thus, this variable is on a scale of -1 to 10. In this study, total SES is used in statistical analysis because it includes all three accepted dimensions of socio-economic status: parents' educational level, parent occupational status, and income (Hauser, 1994; Sirin, 2005). In addition to analyzing data by total SES of both parents, two variables were created to quantify the total SES of each parent independently.

*Instrument*

*Survey items.* A survey instrument, Appendix A, which combines the components of several researchers' work was used to assess students' perceptions of their teachers, academic self-perception, motivation and self-regulation, and concrete achievement attitudes. The Teacher Support Scale Revised (McWhirter, Rasheed, & Crothers, 2007) was used to quantify students' perceptions of teachers' assessments of their academic abilities. Survey items 1-25 encompass this scale. The Teacher Support Scale Revised (TSS-R) is a survey using a Likert scale for response items. Higher scores indicate greater levels of teacher support. The TSS-R was created based on a comprehensive review of the literature and evaluation of existing scales with the goal of developing a more universal scale than has existed in the past. Other scales are limited by their validity, by the limited number of teacher support behaviors measured and by the fact that they are smaller subscales embedded in larger measurement instruments (Metheny, McWhirter, & O'Neil, 2007; Metheny, McWhirter, & O'Neil, 2008). Student survey responses were analyzed using Principle Component Analysis. Five scales were identified through this process: accessible, feedback, invested, expectation, and positive regard. Student responses to the corresponding survey items for each

scale were averaged to determine a scale score. In addition, an aggregate score for the entire Teacher Support Scale Revised was determined by finding the mean score for all survey items included in the subscales.

Portions of a survey developed by McCoach (2003) were used to quantify students' academic self-perceptions, and motivation and self-regulation. Academic self-perception effects students' selection of academic activities and their level of effort and persistence in these activities (McCoach, 2002). Survey items 26-30 address academic self-perception. Motivation and self-regulation are related to goal-oriented activities. Students' level of motivation effects whether or not they will begin and continue in goal-oriented behaviors. Self-regulation refers to the manner in which students develop and maintain thought-processes, behaviors and emotions directed at achieving their goals (McCoach, 2002). Survey items 31-34 address motivation and self-regulation. These surveys also employed a Likert scale for student response. Student responses to the survey items corresponding to student academic self perception, and self-regulation and motivation were averaged to determine scores on each of these scales respectively.

Concrete achievement attitude was quantified by questions from a survey by Mickelson (1990). This survey also uses a Likert scale for student responses. The questions were designed to evaluate students' personalized beliefs about achievement. Student responses to the survey items 35 -40 corresponding to concrete achievement attitudes were averaged to determine a scale score. In this scale, a higher number indicates more positive concrete achievement attitudes or an increased belief that education will result in increased future opportunities for the individual.

Finally questions were added to assess students' socio-economic status based on their parents' education and parents' occupations. While enrollment in the Free and

Reduced lunch program identifies low-income students, research indicates that parents' income, education and occupation are key factors in establishing socio-economic status (Sirin, 2005).

*Determination of survey scales.* Principle component analysis was applied to the survey item responses to create a reduced number of scale variables representing related concepts (Shlens, 2005; StatSoft, 2008). Survey responses were analyzed using SPSS 14.0 ("SPSS for Windows," 2005). Varimax rotation with Kaiser normalization was applied to extract the principle components. The number of factors to be retained was determined by analysis of Eigenvalues. Eigenvalues were analyzed to determine the total variance which could be accounted for by each factor as shown in Appendix E. In addition, a Scree Plot, Appendix F, was made of the values (Norusis, 2005b; StatSoft, 2008). Finally, the data were shared with the original researcher to confirm the conclusions (P. Goldman, personal communication, June 23, 2008). While the Kaiser criterion suggests that factors with Eigenvalues less than one be excluded, analysis of the Scree Plot and consultation with the researcher who developed the survey instrument confirmed the validity of the fifth factor (Norusis, 2005b; Shlens, 2005). By analyzing factor loadings, it was determined that question 21 be deleted, question 23 be included in the feedback scale and question 20 be included in the invested scale as can be seen in Appendix G (Norusis, 2005b). Thus through this process five scales were determined: Accessible, feedback, positive regard, expectation and invested. Each scale refers to students' perceptions of their teachers. Each survey item began with the phrase "My teachers in my high school". The results of the principle component analysis are presented in Table 3. Pearson correlations were calculated for each of the scales (accessible, expectation, feedback, invested and positive regard) and for the Teacher

Support Scale Revised as a whole (see Table 4). Each of the scales was strongly correlated. The lowest correlation was between feedback and expectation at .56**. All of the others ranged from .61 to .74 and all correlations were significant. As expected, the Teacher Support Scale Revised was highly correlated with each of the other scales.

Table 3. *Principle Component Analysis by Scale*

| Scale | Survey Item: My teacher in my high school… | Loading |
|---|---|---|
| Positive Regard | enjoy interacting with me | .69 |
| | think I am a hard worker | .64 |
| | would tell other people good things about me | .62 |
| | care about me as a person | .62 |
| Accessible | try to answer my questions | .69 |
| | answer my questions about how to do better | .67 |
| | will listen if I want to talk about a problem | .62 |
| | take the time to help me get better grades | .62 |
| | are easy to talk to about school things | .55 |
| Invested | challenge me to think about my future goals | .69 |
| | are interested in my future | .62 |
| | are helpful when I have questions about career issues | .55 |
| | help me understand my strengths | .53 |
| | support my goals for the future | .52 |
| | push me to succeed | .38 |
| Expectation | expect me to study | .72 |
| | expect me to work hard in school | .69 |
| | think I should go to college | .57 |
| | believe I am capable of achieving | .46 |
| | want me to do well in school | .44 |

Table 3 (continued). *Principle Component Analysis by Scale*

| Scale | Survey Item: My teacher in my high school… | Loading |
|---|---|---|
| Feedback | let me know how to improve my grades | .67 |
| | tell me if I'm not working hard enough | .63 |
| | take time to get to know me | .49 |
| | evaluate my work carefully | .54 |
| | Extraction Method: Principal Component Analysis. | |
| | Rotation Method: Varimax with Kaiser Normalization. | |

Table 4. *Intercorrelation of Scales*

| | Accessible | Expectation | Feedback | Invested | Positive Regard | Teacher Support |
|---|---|---|---|---|---|---|
| Accessible | 1 (2178) | .66** (2178) | .63** (2166) | .74** (2178) | .64** (2171) | .87** (2178) |
| Expectation | | 1 (2178) | .56** (2166) | .66** (2178) | .61** (2171) | .82** (2178) |
| Feedback | | | 1 (2178) | .70** (2166) | .60** (2165 | .81** (2166) |
| Invested | | | | 1 (2178) | .72** (2171) | .91** (2178) |
| Positive Regard | | | | | 1 (2171) | .83** (2171) |
| Teacher Support | | | | | | 1 (2178) |

**. Correlation is significant at the .01 level (2-tailed).

*Descriptive statistics for analysis of variance.* Analysis of variances (ANOVA) was used to was used to analyze the difference in means between and within groups to determine whether or not difference in the means were significant or were a result of sampling errors (Shavelson, 1996). Using analysis of variance assumes that the data set satisfies three requirements: Independence, normality and equality of variance (Norusis, 2006). As each of the cases in this data set represent an independent individual students, independence is satisfied. The descriptive statistics for each of the variables is found in Table 5. In this data, normality was not satisfied as can be seen in Appendix I, Table I1. Normal distributions have a skewness of 0 and a kurtosis of 3 (*NIST/SEMATECH e-Handbook of Statistical Methods*). However, according to Norusis (2006), normality can be violated where the sample size is large. The assumption of variance was tested using Levene's statistic (see Appendix I, Table I2). With the exception of the expectation scale, college ready index, 7$^{th}$ grade WASL writing, and high school WASL reading and writing, the variables all meet the standard of homogeneity of variance.

Table 5. *Descriptive Statistics*

| Variable | N Valid | Mean | Median | Mode | Std. Dev. | Variance |
|---|---|---|---|---|---|---|
| Accessible | 2180 | 3.64 | 3.80 | 4.00 | .72 | .52 |
| Expectation | 2180 | 3.98 | 4.00 | 4.00 | .67 | .45 |
| Feedback | 2168 | 3.32 | 3.25 | 3.50 | .76 | .58 |
| Invested | 2180 | 3.35 | 3.33 | 3.33 | .75 | .56 |
| Positive Regard | 2173 | 3.41 | 3.50 | 3.25 | .74 | .55 |
| Teacher Support Scale | 2178 | 3.55 | 3.58 | 4.00 | .62 | .38 |
| Academic Self Perception | 2160 | 3.73 | 3.80 | 4.00 | .78 | .61 |
| Motivation Self Regulation | 2150 | 3.65 | 3.75 | 4.00 | .88 | .78 |
| Concrete Achieve. Attitude | 2140 | 2.69 | 2.67 | 3.00 | .76 | .57 |
| Non-Asian Minority | 2020 | .18 | .00 | .00 | .39 | .15 |
| Minority | 2020 | .35 | .00 | 0 | .48 | .23 |
| Total SES | 2032 | 4.86 | 5.00 | 6 | 3.11 | 9.65 |
| Father SES | 2033 | 2.40 | 3.00 | 3 | 1.91 | 3.65 |
| Mother SES | 2032 | 2.23 | 2.00 | 2 | 1.75 | 3.07 |
| College Ready Index | 1808 | 27.94 | 30.04 | 36.00 | 8.01 | 64.17 |
| $7^{th}$ WASL Reading | 1512 | 399.27 | 409.00 | 423 | 64.33 | 4137.91 |
| $7^{th}$ WASL Writing | 1506 | 9.18 | 10.00 | 10 | 1.92 | 3.69 |
| $7^{th}$ WASL Math | 1511 | 399.58 | 408.00 | 419 | 63.06 | 3975.98 |
| HS WASL Reading | 1850 | 430.10 | 431.00 | 427 | 38.64 | 1493.27 |
| HS WASL Writing | 1859 | 20.47 | 21.00 | 20 | 3.03 | 9.18 |
| HS WASL Math | 1852 | 402.35 | 409.00 | 434 | 57.86 | 3347.70 |

*Limitations*

As with all research there are limitations to this study. Multiple regression was used to identify the direction and relative influence of the variables identified for the study. There may be unidentified variables which influenced the research variables (Foster et al., 2006). In addition, this study is based on a relatively small sample in comparison to the total number of high school students in the United States. It was confined to two large urban school districts and to eleventh grade students. Therefore the results may not be generalizable to all students (Foster et al., 2006). The sample did not include all potential grade 11 students in each of the districts surveyed. Students omitted include students who dropped out prior to grade 11; students who transferred to an alternative high school prior to grade 11, with the exception of students attending one alternative high school; students who were served in English Language Learner or Transitional Bilingual programs and were not enrolled in the courses in which the survey was given; and students who are served in special education and were not enrolled in the courses in which the survey was given.

# CHAPTER THREE

# ANALYSIS

## *Introduction*

The purposes of this study are to examine the differences between high and low socio-economic students' academic performance, college readiness, achievement attitudes, and perceptions of their teachers' assessment of their academic ability and performance; to analyze the relationships between these variables; and to determine if there are differences in the pattern and relative influence of these factors. In this chapter, the results of the statistical analysis of the data are shared. The academic performance variables were analyzed by socio-economic status and ethnic grouping to determine if differences in the data exist based on these two characteristics or their interaction. These results were further disaggregated by mother and father SES to determine if there are different patterns of interaction based on either parent's SES. Finally the academic performance variables were analyzed by student gender, socio-economic status and ethnic grouping to examine the interplay of these three factors.

Student attitudes and perceptions were analyzed in much the same manner by disaggregating the results by socio-economic variables, ethnic grouping and students' gender. In addition, the subscales and Teacher Support Scale as a whole were correlated with the other three independent scales (academic self-perception, motivation self-regulation, and concrete achievement attitudes) to examine the relationship between students' perceptions of their teachers' behaviors and attitudes and students' perceptions of their own achievement characteristics. Finally the attitude and perceptions variables were correlated with the academic performance variables to examine the relationship between achievement characteristics and actual achievement.

College readiness was analyzed in much the same fashion. The relationship between college readiness and socio-economic status was examined and results were disaggregated by parent SES, ethnic grouping, and student gender. The relationships between college readiness and the academic performance variables and attitude and perception variables disaggregated by parent SES, ethnic grouping and student gender was examined as well. Finally all of the variables were included in multiple regression models to evaluate the different patterns of influence.

Several methods were used to analyze the data for these purposes. Pearson's product moment correlation was calculated for each of the attitude and perception scales, socio-economic status variables, gender, ethnic groupings, academic performance variables, and the college ready index to determine the relative strength and direction of the relationship between each of these variables (Norusis, 2006; Shavelson, 1996). Analysis of variance was used to compare the mean differences in outcome variables by socio-economic status, gender and ethnic grouping. Multiple regression was used to determine the relationship between the college ready index and each of the independent variables and to determine the amount of variation in the college ready index which can be predicted by the combination of independent variables (McClendon, 1994; Shavelson, 1996)

*Academic Performance*

*Socio-economic and minority status.* Academic performance data were collected through a number of variables. Students' WASL scores for 7th grade and high school were collected in reading, writing and math. Course level and performance information were collected for grade 9 and 10 in English, math, science and world language. In addition to the cumulative grade point average, a grade point average was calculated for

grade 9 core (English, math, science and world language) and grade 10 core courses. A collective grade point average was calculated for grade 9 and 10 core courses. Individual core courses were rated by their academic level and a core courses cumulative rating was determined. Each of the academic performance variables was correlated against the total SES, father SES, and mother SES variables. Correlations were calculated for all students and then for students disaggregated by the non-Asian minority variable grouping students as Asian and White students collectively and non-Asian minority students.

Regardless of the variable used to quantify socio-economic status (total SES, father SES, or mother SES), non-Asian minority students showed a stronger positive correlation with the majority of performance indicators than all students and Asian and White students collectively (see Tables 6-8 ). For the variables 7th grade WASL reading and math scores, high school WASL reading and writing scores, courses cumulative rating, 9th grade English rating, 10th grade English rating, and world language rating, the correlation with each of the socio-economic status variables (total SES, father SES, and mother SES) for non-Asian minority students showed a stronger correlation than that seen with all students and with Asian and White students collectively. All of these correlations are moderately strong and positive indicating that as socio-economic status increases so does performance on these variables. This suggests that socio-economic status may have a greater impact on these performance indicators for non-Asian minority students than for their White and Asian peers. Non-Asian minority students showed no significant correlation with 9th or $10^{th}$ grade core GPA or the combined core GPA. Though significant, they showed the lowest correlation with cumulative GPA of

each of the ethnic groups. In addition, this was the weakest correlation of all of the academic performance variables for non-Asian minority students.

Table 6. *Correlation of Total SES by Ethnic Grouping*

| | | All | White & Asian | Non-Asian Minority |
|---|---|---|---|---|
| 7th WASL Reading | r | .09** (1510) | .08** (1287) | .14** (217) |
| 7th WASL Writing | r | .26** (1504) | .24** (1282) | .33** (216) |
| 7th WASL Math | r | .23** (1509) | .20** (1284) | .34** (219) |
| HS WASL Reading | r | .24** (1847) | .20** (1520) | .30** (316) |
| HS WASL Writing | r | .26** (1856) | .22** (1531) | .31** (314) |
| HS WASL Math | r | .18** (1849) | .16** (1520) | .23** (317) |
| 9th Core GPA | r | .22** (1774) | .24** (1485) | .08 (275) |
| Grade10 Core GPA | r | .20** (1797) | .21** (1497) | .09 (286) |
| Core GPA | r | .22** (1805) | .24** (1504) | .09 (287) |
| Cumulative GPA | r | .24** (1818) | .25** (1512) | .15** (292) |
| Courses Cumulative Rating | r | .33** (1805) | .31** (1504) | .36** (287) |
| 9th Math Rating | r | .27** (1720) | .25** (1452) | .27** (258) |
| 9th English Rating | r | .27** (1737) | .24** (1464) | .35** (262) |
| 9th Science Rating | r | .24** (1688) | .23** (1419) | .24** (256) |
| 10th Math rating | r | .26** (1720) | .25** (1425) | .27** (282) |
| 10th English Rating | r | .28** (1782) | .26** (1489) | .38** (279) |
| 10th Science Rating | r | .18** (1429) | .18** (1216) | .17** (216) |
| World Language Rating | r | .17** (1433) | .15** (1216) | .25** (206) |

**. Correlation is significant at the .01 level (2-tailed).
*. Correlation is significant at the .05 level (2-tailed).

Table 7. *Correlation of Father SES by Ethnic Grouping*

| | | All | White & Asian | Non-Asian Minority |
|---|---|---|---|---|
| 7th WASL Reading | r | .08** (1511) | .06** (1288) | .15** (217) |
| 7th WASL Writing | r | .25** (1505) | .24** (1283) | .25** (216) |
| 7th WASL Math | r | .24** (1510) | .22** (1285) | .29** (219) |
| HS WASL Reading | r | .24** (1848) | .21** (1521) | .27** (316) |
| HS WASL Writing | r | .25** (1857) | .22** (1532) | .28** (314) |
| HS WASL Math | r | .20** (1850) | .18** (1521) | .20** (317) |
| 9th Core GPA | r | .23** (1775) | .25** (1486) | .10 (275) |
| Grade10 Core GPA | r | .21** (1798) | .22** (1498) | .11 (286) |
| Core GPA | r | .23** (1806) | .25** (1505) | .11 (287) |
| Cumulative GPA | r | .25** (1819) | .26** (1513) | .18** (292) |
| Courses Cumulative Rating | r | .34** (1806) | .32** (1505) | .38** (287) |
| 9th Math Rating | r | .27** (1721) | .26** (1453) | .27** (258) |
| 9th English Rating | r | .27** (1738) | .25** (1465) | .31** (262) |
| 9th Science Rating | r | .25** (1688) | .24** (1419) | .26** (256) |
| 10th Math rating | r | .27** (1720) | .25** (1425) | .27** (282) |
| 10th English Rating | r | .28** (1783) | .26** (1490) | .36** (279) |
| 10th Science Rating | r | .20** (1430) | .19** (1203) | .19** (216) |
| World Language Rating | r | .17** (1433) | .15** (1216) | .28** (206) |

**. Correlation is significant at the .01 level (2-tailed).
*. Correlation is significant at the .05 level (2-tailed).

Table 8. *Correlation of Mother SES by Ethnic Grouping*

| | | All | White & Asian | Non-Asian Minority |
|---|---|---|---|---|
| 7th WASL Reading | r | .10** (1510) | .09** (1287) | .14** (217) |
| 7th WASL Writing | r | .25** (1504) | .22** (1282) | .38** (216) |
| 7th WASL Math | r | .20** (1509) | .17** (1284) | .36** (219) |
| HS WASL Reading | r | .21** (1847) | .16** (1520) | .30** (316) |
| HS WASL Writing | r | .23** (1856) | .19** (1531) | .31** (314) |
| HS WASL Math | r | .16** (1849) | .12** (1520) | .25** (317) |
| 9th Core GPA | r | .18** (1774) | .19** (1485) | .08 (275) |
| Grade10 Core GPA | r | .15** (1797) | .16** (1497) | .07 (286) |
| Core GPA | r | .18** (1805) | .19** (1504) | .08 (287) |
| Cumulative GPA | r | .20** (1818) | .20** (1512) | .14** (292) |
| Courses Cumulative Rating | r | .28** (1805) | .26** (1504) | .33** (287) |
| 9th Math Rating | r | .23** (1720) | .21** (1452) | .26** (258) |
| 9th English Rating | r | .24** (1737) | .21** (1464) | .35** (262) |
| 9th Science Rating | r | .21** (1688) | .20** (1419) | .19** (256) |
| 10th Math rating | r | .23** (1720) | .21** (1425) | .27** (282) |
| 10th English Rating | r | .25** (1782) | .22** (1489) | .37** (279) |
| 10th Science Rating | r | .15** (1429) | .14** (1202) | .16** (216) |
| World Language Rating | r | .15** (1433) | .13** (1216) | .19** (206) |

**. Correlation is significant at the .01 level (2-tailed).
*. Correlation is significant at the .05 level (2-tailed).

*Mother and father SES.* For all cases collectively, the correlations between the socio-economic status of each parent and the academic performance variables was significant and positively correlated. In all cases except two, there was a stronger correlation between father SES and each of the academic performance variables than that of mother SES (see Table 9). For 7th grade WASL reading score, there was a stronger correlation with mother SES. For 7th grade WASL writing, the correlations were the same for both parents (r = .25**). The strongest correlation between the academic performance variables and socio-economic status was found with courses cumulative rating for each of the socio-economic variables. It was more highly correlated with father SES (r = .34**) than with total SES (r = .33**) or mother SES (r = .28**).The weakest correlation of an academic performance variable with socio-economic status was found with 7th grade WASL reading score (total SES: r = .09**, father SES: r = .08** and mother SES: r = .10**).

A similar pattern was found in the correlation with the academic performance indicators for White and Asian students (see Table 10). All of the correlations were significant and positively correlated. Father SES was more strongly correlated with all of the academic performance variables except 7$^{th}$ grade WASL reading score than was mother SES. The strongest correlation of the academic performance variables and SES was found between courses cumulative rating and father SES (r = .32**) and mother SES (r = .26**). As with all students, the weakest correlation for Asian and White students collectively was found between 7$^{th}$ grade WASL reading score and both father SES (r = .06** ) and mother SES (r = .09**).

Table 9. *Correlation of All Cases by SES Grouping*

| | | Total | Father | Mother |
|---|---|---|---|---|
| 7th WASL Reading (N=1510) | r | .09** | .08** | .10** |
| 7th WASL Writing (N=1504) | r | .26** | .25** | .25** |
| 7th WASL Math (N=1509) | r | .23** | .24** | .20** |
| HS WASL Reading (N= 1847) | r | .24** | .24** | .21** |
| HS WASL Writing (N= 1856) | r | .26** | .25** | .23** |
| HS WASL Math (N= 1849) | r | .18** | .20** | .16** |
| 9th Core GPA(N= 1774) | r | .22** | .23** | .18** |
| Grade10 Core GPA (N= 1797) | r | .20** | .21** | .15** |
| Core GPA (N= 1805) | r | .22** | .23** | .18** |
| Cumulative GPA (N= 1818) | r | .24** | .25** | .20** |
| Courses Cumulative Rating (N= 1805) | r | .33** | .34** | .28** |
| 9th Math Rating (N= 1720) | r | .27** | .27** | .23** |
| 9th English Rating (N= 1737) | r | .27** | .27** | .24** |
| 9th Science Rating (N= 1688) | r | .24** | .25** | .21** |
| 10th Math Rating (N= 1720) | r | .26** | .27** | .23** |
| 10th English Rating (N=1782) | r | .28** | .28** | .25** |
| 10th Science Rating (N= 1429) | r | .18** | .20** | .15** |
| World Language Rating (N= 1433) | r | .17** | .17** | .15** |

**. Correlation is significant at the .01 level (2-tailed).
*. Correlation is significant at the .05 level (2-tailed).

Table 10. *Correlation of Asian and White Cases Collectively by SES Grouping*

| | | Total | Father | Mother |
|---|---|---|---|---|
| 7th WASL Reading (N= 1287) | r | .08** | .06** | .09** |
| 7th WASL Writing (N= 1282) | r | .24** | .24** | .22** |
| 7th WASL Math (N= 1284) | r | .20** | .22** | .17** |
| HS WASL Reading (N= 1520) | r | .20** | .21** | .16** |
| HS WASL Writing (N= 1531 | r | .22** | .22** | .19** |
| HS WASL Math (N= 1520) | r | .16** | .18** | .12** |
| 9th Core GPA (N= 1485) | r | .24** | .25** | .19** |
| Grade10 Core GPA (N= 1497) | r | .21** | .22** | .16** |
| Core GPA (N= 1504) | r | .24** | .25** | .19** |
| Cum GPA (N= 1512) | r | .25** | .26** | .20** |
| Courses Cumulative Rating (N= 1504) | r | .31** | .32** | .26** |
| 9th Math Rating (N= 1452) | r | .25** | .26** | .21** |
| 9th English Rating (N= 1464) | r | .24** | .25** | .21** |
| 9th Science Rating (N= 1419) | r | .23** | .24** | .20** |
| 10th Math Rating (N= 1425) | r | .25** | .25** | .21** |
| 10th English Rating (N= 1489) | r | .26** | .26** | .22** |
| 10th Science Rating (N= 1202) | r | .18** | .19** | .14** |
| World Language Rating (N= 1216) | r | .15** | .15** | .13** |

**. Correlation is significant at the .01 level (2-tailed).
*. Correlation is significant at the .05 level (2-tailed).

A different pattern emerged from these correlations for non-Asian minority students (see Table 11). No significant correlations were found for either father or mother SES and 9th grade core GPA, 10th grade core GPA, or combined core GPA. While there is a weak relationship between core GPAs for White and Asian students collectively, there is no correlation for non-Asian minority students. Further, while the correlation is less than that seen for White and Asian students collectively, there is a weak correlation between socio-economic status and cumulative GPA for non-Asian minority students as well. As with Asian and White students collectively, this correlation is stronger with father SES (r = .18**) than with mother SES (r = .14**).

As with Asian and White students collectively, the highest correlation between father SES and any of the academic performance variables was found with courses cumulative rating (r = .38**). For mother SES, the strongest correlation was found with 7th grade WASL writing (r = .38**). The weakest correlations were found with 7th grade WASL reading scores for both father SES (r = .15**) and mother SES (r = .14**) as was the case with Asian and White students collectively.

Unlike the correlations found for all cases and for White and Asian students collectively, father SES was correlated more strongly with 7th grade WASL reading score (r = .15**) than mother SES (r = .14**). Furthermore, higher correlations were found for mother SES on half of the remaining academic performance variables: 7th grade WASL writing and math score; high school WASL, writing and math scores; and 9th grade and 10 English course ratings. This suggests that, for White and Asian students, father's socio-economic status has a greater influence than mother's socio-economic status on academic performance variables. Conversely, for non-Asian minority students, mother SES has some influence on academic performance variables.

Table 11. *Correlation of Non-Asian Minority Cases by SES Grouping*

| | | Total | Father | Mother |
|---|---|---|---|---|
| 7th WASL Reading (N= 217) | r | .14** | .15** | .14** |
| 7th WASL Writing (N= (216) | r | .33** | .25** | .38** |
| 7th WASL Math (N= 219) | r | .34** | .29** | .36** |
| HS WASL Reading (N= 316) | r | .30** | .27** | .30** |
| HS WASL Writing (N= 314) | r | .31** | .28** | .31** |
| HS WASL Math (N= 317) | r | .23** | .20** | .25** |
| 9th Core GPA (N= 275) | r | .08 | .10 | .08 |
| Grade10 Core GPA (N= 286) | r | .09 | .11 | .07 |
| Core GPA (N= 287) | r | .09 | .11 | .08 |
| Cum GPA (N= 292) | r | .15** | .18** | .14** |
| Courses Cumulative Rating (N= 287) | r | .36** | .38** | .33** |
| 9th Math Rating (N= 258) | r | .27** | .27** | .26** |
| 9th English Rating (N= 262) | r | .35** | .31** | .35** |
| 9th Science Rating (N= 256) | r | .24** | .26** | .19** |
| 10th Math Rating (N= 282) | r | .27** | .27** | .27** |
| 10th English Rating (N= 279) | r | .38** | .36** | .37** |
| 10th Science Rating (N= 216) | r | .17** | .19** | .16** |
| World Language Rating (N= 206) | r | .25** | .28** | .19** |

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

One-way ANOVA was calculated on each of the academic performance variables against total SES, mother SES and father SES and by ethnic grouping to determine whether or not the mean scores of these variables differed significantly by socio-economic status and to analyze the patterns by socio-economic status and ethnic grouping. Because total SES includes a total of 11 categories and each parent SES variable includes a total of 6 categories, post hoc comparisons were made using the Games-Howell test (Norusis, 2005a; Shavelson, 1996) to determine specifically which of the pairs of means were significantly different. The Games-Howell test was selected because of the lack of homogeneity in variance among the variables and because of the difference in samples sizes for each of the values of SES.

When comparing the means of each of the academic performance variables for all students by total SES, father SES, and mother SES, significant differences in means were found for all academic performance variables by total SES, father SES and mother SES except for 7th grade WASL reading scores by total SES and father SES (see Appendix J). While there were significant results, for most of the academic performance variables and SES groupings, the means failed to show a pattern of consistently increasing means that would be expected with increasing socio-economic status. For all students, none of the means of the academic performance variables by total SES showed a consistent increase with increasing SES.

For only two of the academic performance variables by father SES, 7th grade WASL writing score and 9$^{th}$ grade math course rating, a consistent increase in mean was found as SES increased. Consistently increasing means were, however, found by mother SES on a number of academic performance variables: 7th grade WASL reading, 7th grade WASL math, high school WASL math, 10$^{th}$ grade core GPA,

combined 9th and 10th grade core GPA, cumulative GPA, courses cumulative rating, 9th grade math, English and science course rating, and 10th grade math, English and science course rating.

Results for Asian and White students collectively showed very similar results. The patterns of significant findings were identical with the exception of father SES for 7th grade WASL reading scores which were significant for Asian and White students collectively. Furthermore, though the mean differences showed significant findings for total SES for each of the academic performance variables, the means failed to show a pattern of increasing with increasing socio-economic status as would be expected. By father SES for Asian and White students collectively, an identical pattern was seen as that found for all students with the only pattern of increasing means by increasing socio-economic status found in 7th grade WASL writing score and 9th grade math course rating. For Asian and White students collectively by mother SES, a similar pattern was seen as the results for all students with only a few exceptions. An increasing pattern of means by increasing socio-economic status was found for 7th grade WASL writing and 9th grade core GPA. This pattern of increasing mean by increasing socio-economic status was not found, however, for 7th grade reading WASL or 9th grade math course rating.

As was found with the correlation of academic performance variables and SES groupings for non-Asian minorities, a different pattern of significance was found in the ANOVA results than that found for that of all cases and Asian and White students collectively. Significant differences in the means were not found for 9th grade, 10th grade or combined 9th and 10th grade core GPA, or for 7th grade WASL reading scores for non-Asian minorities by total SES, father SES or mother SES. For the cumulative GPA, the

only significant difference in means was found for father SES. For world language course rating, significant differences were found for total SES and father SES but not mother SES. As with all students, the means for all of the academic performance variables for non-Asian minority students by total SES failed to show a pattern of consistent increase by increasing socio-economic status. By father SES, the only academic performance variable which showed an increasing mean with increasing socio-economic status was 7th grade WASL writing score. Unlike the results for all students by mother SES, a pattern of increasing mean with increasing socio-economic status was found only for high school WASL writing scores.

*Gender, ethnic grouping and socio-economic status.* When disaggregated by gender and ethnic grouping, the correlation between socio-economic variables and academic performance indicators shows much the same pattern as that seen when disaggregated by ethnic grouping alone. All of the correlations for male and female students by total SES, father SES and mother SES are significantly and positively correlated with each of the academic performance variables. For both all male students and all female students, father SES showed a higher correlation with all of the academic performance variables than did mother SES except in two cases (see Table 12). For both male and female students, 7th grade WASL reading score was more highly correlated with mother SES. For male students, 10th grade English course rating was more highly correlated with mother SES than father SES.

Interestingly, for all female students, only one variable, world language course rating, was more highly correlated with total SES than either parent SES. For all male students, several variables were more highly correlated with total SES than with either parent SES: 7th grade WASL writing score; high school WASL reading score; 9th grade core GPA; 9th and $10^{th}$ grade combined core GPA; 9th grade math, English and science course ratings; and 10th grade math and English course ratings. This would suggest that, while an increase in father's SES is related to an increase in almost every academic performance variable, increasing mother's SES contributes to an increase in at least some academic performance variables.

With only four exceptions, the correlations between socio-economic variables and academic variables for male students were higher than the corresponding correlations for female students. The correlation between father SES and high school WASL math score was higher for females (r = .21**) than males (r = .19**). The

correlation between 9th grade math rating and father SES was higher for females (r = .29**) than males (r = .26**). The correlation between father SES and 9th grade science rating was higher for females (r = .26**) than males (r = .23**). The correlation between mother SES and world language rating was higher for females (r = .17**) than males (r = .11**).

The strongest correlation between academic performance variables and socio-economic status for both genders was that of courses cumulative rating. For male students, the correlation between courses cumulative rating was r = .35** for father SES and r = .28** for mother SES. For female students, the correlation between courses cumulative rating was r = .33** for father SES and r = .27** for mother SES.

Table 12. *Correlation of All Cases by Gender and SES Grouping*

| | | Boys | | | Girls | | |
|---|---|---|---|---|---|---|---|
| | | Total | Father | Mother | Total | Father | Mother |
| 7th WASL Reading | r | .11** | .09** | .11** | .08** | .06 | .09** |
| | N | 764 | 765 | 764 | 739 | 739 | 739 |
| 7th WASL Writing | r | .27** | .27** | .25** | .23** | .24** | .23** |
| | N | 765 | 766 | 765 | 732 | 732 | 732 |
| 7th WASL Math | r | .24** | .25** | .21** | .21** | .22** | .19** |
| | N | 766 | 767 | 766 | 736 | 736 | 736 |
| HS WASL Reading | r | .27** | .26** | .24** | .20** | .22** | .17** |
| | N | 944 | 945 | 944 | 896 | 896 | 896 |
| HS WASL Writing | r | .27** | .27** | .23** | .23** | .23** | .22** |
| | N | 945 | 946 | 945 | 904 | 904 | 904 |
| HS WASL Math | r | .19** | .19** | .18** | .18** | .21** | .14** |
| | N | 947 | 948 | 947 | 895 | 895 | 895 |
| 9th Core GPA | r | .26** | .24** | .22** | .18** | .21** | .13** |
| | N | 919 | 920 | 919 | 848 | 848 | 848 |
| 10th Core GPA | r | .24** | .24** | .19** | .14** | .17** | .09** |
| | N | 932 | 933 | 932 | 858 | 858 | 858 |

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 12 (continued). *Correlation of All Cases by Gender and SES Grouping*

| | | Boys | | | Girls | | |
|---|---|---|---|---|---|---|---|
| | | Total | Father | Mother | Total | Father | Mother |
| Core GPA | r | .27** | .26** | .22** | .17** | .21** | .12** |
| | N | 936 | 937 | 936 | 862 | 862 | 862 |
| Cumulative GPA | r | .26** | .26** | .21** | .20** | .24** | .16** |
| | N | 942 | 943 | 942 | 869 | 869 | 869 |
| Course Cum Rating. | r | .35** | .35** | .28** | .31** | .33** | .27** |
| | N | 936 | 937 | 936 | 862 | 862 | 862 |
| 9th Math Rating | r | .26** | .26** | .23** | .27** | .29** | .23** |
| | N | 887 | 888 | 887 | 826 | 826 | 826 |
| 9th English Rating | r | .29** | .27** | .26** | .24** | .26** | .21** |
| | N | 899 | 900 | 899 | 831 | 831 | 831 |
| 9th Science Rating | r | .24** | .23** | .21** | .24** | .26** | .20** |
| | N | 875 | 875 | 875 | 807 | 807 | 807 |
| 10th Math rating | r | .30** | .28** | .27** | .23** | .26** | .19** |
| | N | 893 | 893 | 893 | 820 | 820 | 820 |
| 10th English Rating | r | .32** | .29** | .30** | .24** | .26** | .21** |
| | N | 918 | 919 | 918 | 857 | 857 | 857 |
| 10th Science Rating | r | .20** | .20** | .15** | .17** | .19** | .15** |
| | N | 747 | 748 | 747 | 678 | 678 | 678 |
| World Language rating | r | .15** | .17** | .11** | .18** | .17** | .17** |
| | N | 767 | 767 | 767 | 659 | 659 | 659 |

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

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

For White and Asian Students, not surprisingly this pattern is almost identical to that of all students with two exceptions. Mother SES is not more highly correlated with 10th grade English course rating for Asian and White male students as it was for all male students (see Table 13). Mother SES is, however, more highly correlated with world language course rating for female students. Unlike all students, for Asian and White students collectively, 7th grade WASL reading scores are not significantly correlated with father SES for either male or female students. For Asian and White male students, father SES is more highly correlated with all of the other academic performance variables than mother SES. For Asian and White female students, father SES is more highly correlated with all of the other academic performance variables except world language course rating which is more highly correlated with mother SES. For male Asian and White Students, as for all male students, courses cumulative rating showed the strongest correlation with father SES (r = .33*) of all of the academic performance variables. It was not the most strongly correlated with mother SES. For Asian and White male students, 10th grade English course rating was more strongly correlated with mother SES than the other academic performance variables (r = .26**). For Asian and White female students, as with all female students, courses cumulative rating was the most strongly correlated variable for both father SES (r = .32**) and mother SES (r = .25**).

Table 13. *Correlation by Gender and SES Grouping for White and Asian Students*

| | | Boys | | | Girls | | |
|---|---|---|---|---|---|---|---|
| | | Total | Father | Mother | Total | Father | Mother |
| 7th WASL Reading | r | .08** | .06 | .09** | .08** | .06 | .09** |
| | N | 653 | 654 | 653 | 627 | 627 | 627 |
| 7th WASL Writing | r | .25** | .26** | .23** | .20** | .22** | .18** |
| | N | 653 | 654 | 653 | 622 | 622 | 622 |
| 7th WASL Math | r | .22** | .25** | .19** | .18** | .20** | .15** |
| | N | 653 | 654 | 653 | 624 | 624 | 624 |
| HS WASL Reading | r | .23** | .23** | .18** | .17** | .20** | .13** |
| | N | 773 | 774 | 773 | 740 | 740 | 740 |
| HS WASL Writing | r | .23** | .24** | .19** | .19** | .20** | .17** |
| | N | 776 | 777 | 776 | 748 | 748 | 748 |
| HS WASL Math | r | .16** | .17** | .13** | .16** | .20** | .11** |
| | N | 778 | 779 | 778 | 735 | 735 | 735 |
| 9th Core GPA | r | .28** | .26** | .22** | .20** | .23** | .15** |
| | N | 766 | 767 | 766 | 712 | 712 | 712 |
| 10th Core GPA | r | .25** | .25** | .19** | .15** | .19** | .10** |
| | N | 771 | 772 | 771 | 719 | 719 | 719 |

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

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

Table 13 (continued). *Correlation by Gender and SES Grouping for White and Asian Students*

| | | Boys | | | Girls | | |
|---|---|---|---|---|---|---|---|
| | | Total | Father | Mother | Total | Father | Mother |
| Core GPA | r | .28** | .27** | .22** | .19** | .23** | .13** |
| | N | 775 | 776 | 775 | 722 | 722 | 722 |
| Cumulative GPA | r | .27** | .27** | .22** | .21** | .24** | .15** |
| | N | 777 | 778 | 777 | 728 | 728 | 728 |
| Course Cum Rating. | r | .32** | .33** | .25** | .29** | .32** | .25** |
| | N | 775 | 776 | 775 | 722 | 722 | 722 |
| 9th Math Rating | r | .25** | .25** | .21** | .25** | .27** | .21** |
| | N | 746 | 747 | 746 | 699 | 699 | 699 |
| 9th English Rating | r | .26** | .26** | .23** | .21** | .24** | .17** |
| | N | 754 | 755 | 754 | 703 | 703 | 703 |
| 9th Science Rating | r | .23** | .21** | .21** | .23** | .26** | .20** |
| | N | 735 | 735 | 735 | 678 | 678 | 678 |
| 10th Math rating | r | .28** | .25** | .25** | .22** | .24** | .17** |
| | N | 734 | 734 | 734 | 684 | 684 | 684 |
| 10th English Rating | r | .30** | .28** | .26** | .22** | .24** | .18** |
| | N | 762 | 763 | 762 | 720 | 720 | 720 |
| 10th Science Rating | r | .20** | .21** | .14** | .16** | .17** | .15** |
| | N | 628 | 629 | 628 | 570 | 570 | 570 |
| World Language | r | .12** | .14** | .09** | .17** | .16** | .17** |
| Rating | N | 654 | 654 | 654 | 555 | 555 | 555 |

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Again as was found in the correlations of both genders collectively of non-Asian minority students, a different pattern was seen in the correlations of non-Asian minority students disaggregated by gender than that of all students and of White and Asian students collectively. Mother's SES was more highly correlated than father's SES for about half of the variables (see Table 14). For both male and female non-Asian minority students, mother SES was more highly correlated with 7th grade WASL writing and math scores, high school reading, writing and math scores, and 9th grade English course rating. In addition, for male non-Asian minority students, mother SES was more highly correlated with 10th grade English course rating. For female non-Asian minority students, mother SES was also more highly correlated with 9th grade math course rating. As was true for male and female students collectively, there were no significant correlations between any of the SES variables and the 9th grade core GPA, 10th core GPA or the combined 9th and 10th grade core GPA. For male non-Asian minority students, there was not a significant correlation with cumulative GPA either. However, for female non-Asian minority students, there was a correlation with cumulative GPA and father SES but no significant correlation with mother SES.

Table 14. *Correlation by Gender and SES Grouping for Non-Asian Minority Students*

| | | Boys | | | Girls | | |
|---|---|---|---|---|---|---|---|
| | | Total | Father | Mother | Total | Father | Mother |
| 7th WASL Reading | r | .20** | .21** | .16 | .08 | .06 | .12 |
| | N | 110 | 110 | 110 | 107 | 107 | 107 |
| 7th WASL Writing | r | .30** | .22** | .33** | .37** | .30** | .45** |
| | N | 111 | 111 | 111 | 105 | 105 | 105 |
| 7th WASL Math | r | .34** | .28** | .35** | .34** | .30** | .37** |
| | N | 112 | 112 | 112 | 107 | 107 | 107 |
| HS WASL Reading | r | .33** | .29** | .31** | .29** | .26** | .30** |
| | N | 167 | 167 | 167 | 149 | 149 | 149 |
| HS WASL Writing | r | .29** | .27** | .28** | .33** | .29** | .34** |
| | N | 165 | 165 | 165 | 149 | 149 | 149 |
| HS WASL Math | r | .25** | .22** | .27** | .21** | .19** | .23** |
| | N | 164 | 164 | 164 | 153 | 153 | 153 |
| 9th Core GPA | r | .12 | .11 | .11 | .05 | .09 | .06 |
| | N | 148 | 148 | 148 | 127 | 127 | 127 |
| 10th Core GPA | r | .15 | .15 | .12 | .04 | .08 | .02 |
| | N | 156 | 156 | 156 | 130 | 130 | 130 |

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 14 (continued). *Correlation by Gender and SES Grouping for Non-Asian Minority Students*

| | | Boys | | | Girls | | |
|---|---|---|---|---|---|---|---|
| | | Total | Father | Mother | Total | Father | Mother |
| Core GPA | r | .15 | .15 | .14 | .03 | .08 | .02 |
| | N | 156 | 156 | 156 | 131 | 131 | 131 |
| Cumulative GPA | r | .14 | .15 | .12 | .17** | .23** | .16 |
| | N | 160 | 160 | 160 | 132 | 132 | 132 |
| Course Cum Rating | r | .35** | .36** | .30** | .38** | .41** | .36** |
| | N | 156 | 156 | 156 | 131 | 131 | 131 |
| 9th Math Rating | r | .23** | .24** | .20** | .32** | .31** | .34** |
| | N | 137 | 137 | 137 | 121 | 121 | 121 |
| 9th English Rating | r | .30** | .26** | .32** | .41** | .39** | .41** |
| | N | 140 | 140 | 140 | 122 | 122 | 122 |
| 9th Science Rating | r | .25** | .28** | .18** | .23** | .24** | .20** |
| | N | 136 | 136 | 136 | 120 | 120 | 120 |
| 10th Math Rating | r | .29** | .27** | .27** | .25** | .27** | .26** |
| | N | 154 | 154 | 154 | 128 | 128 | 128 |
| 10th English Rating | r | .36** | .30** | .37** | .41** | .44** | .36** |
| | N | 151 | 151 | 151 | 128 | 128 | 128 |
| 10th Science Rating | r | .13 | .11 | .14 | .21** | .27** | .18 |
| | N | 115 | 115 | 115 | 101 | 101 | 101 |
| World Language | r | .31** | .33** | .22** | .21** | .24** | .16 |
| Rating | N | 110 | 110 | 110 | 96 | 96 | 96 |

**. Correlation is significant at the .01 level (2-tailed).
*. Correlation is significant at the .05 level (2-tailed).

Analysis of variance was calculated for the academic performance variables by total SES, father SES, and mother SES and disaggregated by gender and ethnic grouping. As with the ANOVA calculated by ethnic grouping alone, all female students, Asian and White female students collectively and non-Asian Minority students failed to show evidence of a consistent pattern of increasing mean with increasing socio-economic status in all but 3 areas. For all female students by mother SES, a pattern of consistently increasing mean with socio-economic status was found in the courses cumulative rating and 10$^{th}$ grade math course rating variables (see Table 15). For Asian and White students, this pattern was seen only in the 10$^{th}$ grade English course rating variable by father SES. For non-Asian minority females, none of the variables showed this pattern.

Table 15. *Female Student Academic Performance Outcomes by SES*

| | All Female: Courses Cumulative Rating | | All Female: 10th Math Course Rating | | Asian/White Female: 10th English Course Rating | |
|---|---|---|---|---|---|---|
| SES | Mother SES | | Mother SES | | Father SES | |
| | N | Mean | N | Mean | N | Mean |
| -1 | 55 | 18.33 | 50 | 3.02 | 43 | 3.19 |
| 0 | 135 | 22.61 | 130 | 3.28 | 107 | 3.81 |
| 1 | 105 | 23.78 | 100 | 3.49 | 53 | 3.42 |
| 2 | 167 | 24.28 | 159 | 3.67 | 105 | 3.86 |
| 3 | 180 | 25.28 | 171 | 3.75 | 136 | 4.10 |
| 4 | 113 | 26.88 | 107 | 3.86 | 107 | 4.17 |
| 5 | 107 | 27.14 | 103 | 3.87 | 152 | 4.26 |
| | F=12.63 , Sig. = .00 | | F=5.61 , Sig. = .00 | | F=9.17 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

In contrast to female students, all male students and Asian and White male showed a pattern of consistently increasing mean with increasing socio-economic status on a number of variables. The ANOVA calculated for all male students by father SES showed this pattern for 7th grade WASL writing scores, high school WASL reading scores, 10th grade math course rating and 10th grade English course rating (see Table 16). In addition by mother SES, this pattern was observed in high school WASL math scores, 9th grade core GPA, 10th grade core GPA, combined 9th grade and 10 core GPA, cumulative GPA, courses cumulative rating, 9th grade math course rating, 9th grade science course rating, 9th grade math course rating and 10th grade English course rating (see Table 17).

Table 16. *Male Student Academic Performance Outcomes by Father SES*

| SES | | 7th WASL Writing | HS WASL Reading | 10th Math Rating | 10th English Rating |
|---|---|---|---|---|---|
| -1 | x | 8.53 | 393.77 | 2.90 | 3.06 |
| | N | 36 | 52 | 51 | 49 |
| 0 | x | 9.08 | 426.28 | 3.51 | 3.74 |
| | N | 106 | 138 | 130 | 134 |
| 1 | x | 9.35 | 428.04 | 3.51 | 3.75 |
| | N | 65 | 84 | 75 | 77 |
| 2 | x | 9.45 | 433.56 | 3.64 | 3.92 |
| | N | 110 | 138 | 134 | 138 |
| 3 | x | 9.66 | 436.85 | 3.79 | 4.10 |
| | N | 187 | 223 | 203 | 211 |
| 4 | x | 10.25 | 443.11 | 3.98 | 4.18 |
| | N | 114 | 137 | 133 | 142 |
| 5 | x | 10.26 | 444.51 | 4.29 | 4.50 |
| | N | 148 | 173 | 167 | 168 |
| Total | x | 9.67 | 433.98 | 3.77 | 4.02 |
| | N | 766 | 945 | 893 | 919 |
| | | F=10.18 | F=14.85 | F=13.56 | F=16.02 |
| | | Sig. = .00 | Sig. = .00 | Sig. = .00 | Sig. = .00 |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table 17. *Male Student Academic Performance Outcomes by Mother SES*

| SES | | Cum GPA | HS WASL Math | 9th Core GPA | 10th Core GPA | Core GPA |
|---|---|---|---|---|---|---|
| -1 | X | 2.67 | 369.54 | 2.33 | 2.12 | 2.26 |
| | N | 43 | 46 | 41 | 43 | 43 |
| 0 | | 2.70 | 391.98 | 2.45 | 2.28 | 2.35 |
| | N | 123 | 125 | 121 | 107 | 122 |
| 1 | X | 2.90 | 395.06 | 2.70 | 2.44 | 2.57 |
| | N | 108 | 108 | 104 | 107 | 107 |
| 2 | X | 2.91 | 401.74 | 2.79 | 2.53 | 2.65 |
| | N | 166 | 166 | 161 | 165 | 165 |
| 3 | X | 3.03 | 402.40 | 2.80 | 2.62 | 2.71 |
| | N | 239 | 240 | 236 | 236 | 237 |
| 4 | X | 3.13 | 413.53 | 3.01 | 2.73 | 2.85 |
| | N | 148 | 146 | 143 | 146 | 147 |
| 5 | X | 3.20 | 416.92 | 3.13 | 2.86 | 2.99 |
| | N | 115 | 116 | 113 | 114 | 115 |
| | | F=7.68 | F=5.70 | F=7.83 | F=5.88 | F=7.78 |
| | | Sig. = .00 | Sig. = .00 | Sig. = .00 | Sig. = .00 | Sig. = .00 |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table 17 (continued). *Male Student Academic Performance Outcomes by Mother SES*

| SES | | Courses Cum Rating | 9th Math Course Rating | 9th Science Course Rating | 10th English Course Rating | 10th Math Course Rating |
|---|---|---|---|---|---|---|
| -1 | X | 19.44 | 3.38 | 3.02 | 3.23 | 3.02 |
| | N | 43 | 37 | 45 | 40 | 43 |
| 0 | X | 23.04 | 3.75 | 3.32 | 3.53 | 3.32 |
| | N | 122 | 114 | 118 | 121 | 118 |
| 1 | X | 24.36 | 3.82 | 3.52 | 3.77 | 3.52 |
| | N | 107 | 102 | 103 | 106 | 103 |
| 2 | x | 25.56 | 3.92 | 3.76 | 3.95 | 3.76 |
| | N | 165 | 155 | 161 | 164 | 161 |
| 3 | X | 26.51 | 4.11 | 3.87 | 4.21 | 3.87 |
| | N | 237 | 227 | 224 | 233 | 224 |
| 4 | X | 27.63 | 4.25 | 4.08 | 4.34 | 4.08 |
| | N | 147 | 142 | 137 | 143 | 137 |
| 5 | X | 28.18 | 4.40 | 4.23 | 4.41 | 4.23 |
| | N | 115 | 110 | 107 | 111 | 107 |
| | | F=14.36 | F=8.12 | F=8.06 | F=15.22 | F=11.71 |
| | | Sig. = .00 | Sig. = .00 | Sig. = .00 | Sig. = .00 | Sig. = .00 |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

For Asian and White male students collectively, ANOVA by father SES showed this pattern for 7th grade WASL writing and 9th grade math course rating (see Table 18). By mother SES, this pattern was seen in 10th grade core GPA, combined 9th and 10th grade core GPA, cumulative GPA, courses cumulative rating, 9th grade math rating, 10th grade math rating, and 10th grade English rating (see Table 19). This pattern of increasing mean with increasing socio-economic status was not seen in any of the academic performance variables for non-Asian minority male students.

While the inconsistency in this pattern for all ANOVAs suggests that socio-economic status is perhaps not as critical as other factors on academic performance outcomes, the fact that the pattern emerges significantly more often in males than females and in White and Asian males but not in non-Asian minority males is of interest. Socio-economic status may play a greater role in the academic performance of White and Asian males than in the academic performance of non-Asian minority males or females of any ethnic grouping.

Table 18. *Male Asian and White Student Academic Performance Outcomes by Father SES*

| SES | | 7th WASL Writing | 9th Math Course Rating |
|---|---|---|---|
| -1 | X | 8.37 | 3.35 |
| | N | 27 | 31 |
| 0 | X | 9.11 | 3.87 |
| | N | 83 | 95 |
| 1 | X | 9.57 | 3.91 |
| | N | 53 | 58 |
| 2 | X | 9.60 | 3.92 |
| | N | 96 | 113 |
| 3 | X | 9.70 | 4.05 |
| | N | 160 | 178 |
| 4 | X | 10.20 | 4.22 |
| | N | 103 | 119 |
| 5 | X | 1.34 | 4.52 |
| | N | 132 | 153 |
| | | F=8.70 | F=9.36 |
| | | Sig. = .00 | Sig. = .00 |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table 19. *Male Asian and White Student Academic Performance Outcomes by Mother SES*

| SES | | Courses Cum Rating | 9th Math Rating | 10th English Rating | 10th Math Rating | Cum GPA | 10th Core GPA | Core GPA |
|---|---|---|---|---|---|---|---|---|
| -1 | X | 22.80 | 3.65 | 3.52 | 3.44 | 2.69 | 2.16 | 2.33 |
| | N | 25 | 23 | 25 | 25 | 25 | 25 | 25 |
| 0 | X | 23.75 | 3.84 | 3.66 | 3.46 | 2.76 | 2.35 | 2.39 |
| | N | 95 | 90 | 94 | 91 | 95 | 94 | 95 |
| 1 | X | 24.31 | 3.86 | 3.81 | 3.59 | 2.94 | 2.48 | 2.61 |
| | N | 85 | 81 | 84 | 81 | 86 | 85 | 85 |
| 2 | X | 26.22 | 3.95 | 4.00 | 3.8 | 2.97 | 2.51 | 2.66 |
| | N | 141 | 135 | 140 | 137 | 141 | 141 | 141 |
| 3 | X | 26.74 | 4.13 | 4.21 | 3.91 | 3.05 | 2.66 | 2.74 |
| | N | 206 | 200 | 203 | 194 | 207 | 205 | 206 |
| 4 | X | 28.28 | 4.33 | 4.40 | 4.24 | 3.21 | 2.80 | 2.93 |
| | N | 123 | 120 | 120 | 113 | 123 | 122 | 123 |
| 5 | X | 28.63 | 4.48 | 4.44 | 4.32 | 3.26 | 2.94 | 3.06 |
| | N | 100 | 97 | 96 | 93 | 100 | 99 | 100 |
| | | F=9.01 | F=6.20 | F=9.42 | F=8.18 | F=6.46 | F=5.05 | F=6.62 |
| | | Sig. = .00 | Sig. = .00 | Sig. = .00 | Sig. = .00 | Sig. = .00 | Sig. = .00 | Sig. = .00 |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

*Student Perceptions and Attitudes Toward Achievement*

*Perceptions and attitudes, socio-economic status and ethnic grouping.* Each of the student perception and attitude scales were correlated with total SES, father SES and mother SES by ethnic grouping (all students, Asian and White students collectively, and non-Asian minorities). When correlated against total SES for all students, significant correlations were found for expectation, feedback, positive regard, academic self-perception, motivation self-regulation and concrete achievement attitude (see Table 20). Interestingly, the feedback scale was negatively correlated with total SES such that as total SES increases the score for feedback decreases. As expected, the concrete achievement attitude scale was positively correlated with each group. Higher scores on this scale indicate an increasingly positive concrete achievement attitude. Thus as socio-economic status increases, concrete achievement attitude increases or becomes more positively oriented. Asian and White students collectively showed a similar pattern with the exception of two scales. They did not show a significant correlation with the feedback scale and they did show a correlation with the Teacher Support Scale Revised as a whole.

Non-Asian minorities showed a different pattern. They were the only group to show a correlation with the invested scale. Interestingly, this correlation was negative indicating a decrease in this scale with an increase in socio-economic status. The only other scales, which Non-Asian minorities showed a correlation with by socio-economic status, were the feedback and concrete achievement attitude scales. As expected, they showed a positive correlation with concrete achievement attitude indicating that as socio-economic status increases the concrete achievement attitude increases or becomes more positively oriented.

Table 20. *Correlation of Scales with Total SES by Ethnic Grouping*

| Scale | | All | Asian & White | Non-Asian Minorities |
|---|---|---|---|---|
| Accessible | r (N) | .00 (2029) | .02 (1642) | -.03 (372) |
| Expectation | r (N) | .09** (2029) | .11** (1642) | .06 (372) |
| Feedback | r (N) | -.07** (2019) | -.04 (1635) | -.12* (369) |
| Invested | r (N) | .00 (2029) | .04 (1642) | -.12* (372) |
| Positive Regard | r (N) | .07** (2023) | .10** (1638) | -.02 (370) |
| Teacher Support Scale | r (N) | .02 (2029) | .06** (1642) | -.06 (372) |
| Academic Self Perception | r (N) | .18** (2012) | .21** (1629) | .08 (368) |
| Motivation Self Regulation | r (N) | .13** (2003) | .16** (1622) | .02 (366) |
| Concrete Achievement Attitude | r (N) | .30** (1993) | .29** (1610) | .27** (368) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

When the scales are correlated against father SES, a nearly identical pattern is seen for all students and for Asian and White students collectively with only exception. The Teacher Support Scale Revised is not significantly correlated with father SES for Asian and White Students collectively as it was for total SES. Again non-Asian minorities show a significantly different pattern. For non-Asian minorities, the only significant correlation was that of concrete achievement attitude and father SES (see Table 21).

When correlated against mother SES, the pattern of correlations for all students is identical to that seen when correlating the scales with total SES or father SES. Significant correlations were found for expectation, feedback, positive regard, academic self-perception, motivation self-regulation, and concrete achievement attitudes. For Asian and White students collectively, the pattern follows that of father SES with significant correlations with expectation, positive regard, academic self-perception, motivation self-regulation, and concrete achievement attitudes (see Table 22). For non-Asian minorities the pattern follows that of the correlation with total SES with significant correlations with feedback, invested and concrete achievement attitudes. Again feedback and invested are negatively correlated for this group indicating that as socio-economic status increases the scores on these scales actually decrease.

Table 21. *Correlation of Scales with Father SES by Ethnic Grouping*

| Scale | All | Asian & White | Non-Asian Minorities |
|---|---|---|---|
| Accessible | .00 (2030) | .01 (1642) | .00 (372) |
| Expectation | .09** (2030) | .10** (1642) | .09 (372) |
| Feedback | -.06** (2020) | -.04 (1635) | -.08 (369) |
| Invested | .00 (2030) | .03 (1642) | -.08 (372) |
| Positive Regard | .06** (2024) | .08** (1638) | .02 (370) |
| Teacher Support Scale | .02 (2030) | .04 (1642) | -.02 (372) |
| Academic Self Perception | .17** (2013) | .20** (1629) | .07 (368) |
| Motivation Self Regulation | .12** (2004) | .15** (1622) | .05 (366) |
| Concrete Achievement Attitude | .29** (1994) | .29**(1610) | .25** (368) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Table 22. *Correlation of Scales with Mother SES by Ethnic Grouping*

| Scale | All | Asian & White | Non-Asian Minorities |
|---|---|---|---|
| Accessible | .00 (2029) | .03 (1642) | -.05 (372) |
| Expectation | .07** (2029) | .08** (1642) | .02 (372) |
| Feedback | -.07** (2019) | -.04 (1635) | -.14** (369) |
| Invested | -.01 (2029) | .03 (1642) | -.16** (372) |
| Positive Regard | .06* (2023) | .09** (1638) | -.06 (370) |
| Teacher Support Scale | .01 (2029) | .04 (1642) | -10 (372) |
| Academic Self Perception | .15** (2012) | .17** (1629) | .06 (368) |
| Motivation Self Regulation | .10** (2003) | .13** (1622) | -.01 (366) |
| Concrete Achievement Attitude | .26** (1993) | .25** (1610) | .25** (368) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Analysis of variance was calculated for each of the ethnic groupings by total SES, father SES and mother SES. The vast majority of these failed to show a consistent pattern of change with increasing socio-economic status. This pattern was only seen for Asian and White student collectively for motivation self-regulation by father SES and academic self-perception and motivation self-regulation by mother SES (see Table 23).

The ANOVAs for all students and Asian and White students collectively showed similar patterns of significant differences in means. When calculated against total SES for all students, significant differences in means were found for expectation, feedback, invested, academic self-perception, motivation self-regulation, and concrete achievement attitudes. For Asian and White students collectively, significant results were found for expectation, invested, positive regard, academic self-perception, motivation self-regulation, concrete achievement attitudes and Teacher Support Scale Revised. In contrast, for non-Asian minority students significant differences in means were found only for invested and concrete achievement attitudes.

When calculated against father SES for all students and Asian and White students collectively, significant results were found for expectation, positive regard, academic self-perception, motivation self-regulation and concrete achievement attitudes. In addition, for all students significant results were found for feedback. When calculated against mother SES for all students and Asian and White students collectively, significant results were found for expectation, academic self-perception, motivation self-regulation and concrete achievement attitudes. In addition, significant results were found for all students on feedback and for Asian and White students collectively for positive regard. For non-Asian minority students, significant results were found only for concrete achievement attitudes by father SES and mother SES.

Table 23. *Attitude and Perception Outcomes for Asian and White Students Collectively*

| | | Father SES | Mother SES | |
|---|---|---|---|---|
| | | Motivation Self | Motivation Self | Academic Self |
| SES | | Regulation | Regulation | Perception |
| -1 | X | 3.43 | 3.42 | 3.50 |
| | N | 98 | 77 | 78 |
| 0 | | 3.46 | 3.44 | 3.54 |
| | N | 226 | 222 | 225 |
| 1 | X | 3.55 | 3.59 | 3.61 |
| | N | 133 | 196 | 197 |
| 2 | X | 3.62 | 3.66 | 3.74 |
| | N | 244 | 306 | 307 |
| 3 | X | 3.64 | 3.68 | 3.77 |
| | N | 356 | 388 | 389 |
| 4 | X | 3.75 | 3.74 | 3.86 |
| | N | 248 | 232 | 232 |
| 5 | X | 3.84 | 3.82 | 3.97 |
| | N | 318 | 201 | 201 |
| | | F=6.19 | F=4.80 | F=8.34 |
| | | Sig. = .00 | Sig. = .00 | Sig. = .00 |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

*Perceptions and attitudes, gender, socio-economic status and ethnic grouping.* When disaggregated by gender and ethnic grouping, the pattern of significant correlations between the scales and each of the socio-economic variables is quite different. For male students in every ethnic group and by every socio-economic variable, there are a greater number of significant correlations with the scales than that found with females in these categories.

When correlated with total SES, the pattern of significant correlations follows the same pattern as that seen with all students. For all male students, significant correlations are seen with expectation, feedback, positive regard, academic self-perception, motivation self-regulation, and concrete achievement attitudes (see Table 24). For Asian and White male students collectively, significant correlations are found for expectation, invested, positive regard, Teacher Support Scale Revised, academic self-perception, motivation self-regulation and concrete achievement attitudes. For non-Asian minority male students significant correlations are found for feedback, invested, Teacher Support Scale Revised, and concrete achievement attitudes. All of the significant correlations for non-Asian minority male students are negative except for that of concrete achievement attitudes.

It is of interest that the correlation of total SES and Teacher Support Scale Revised for Asian and White male students collectively is positive while that for non-Asian minority male students is negative. This indicates that, for non-Asian minority male students, the score on the Teacher Support Scale Revised decreases as socio-economic status increases. The opposite is true for Asian and White students collectively. This same pattern is found when the scales are correlated against father

SES for male students by ethnic grouping with the exception of invested (see Table 25).

Table 24. *Correlation of Scales with Total SES by Ethnic Grouping for Male Students*

| Scales | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Accessible | r (N) | -.01 (1034) | .04 (836) | -.14 (193) |
| Expectation | r (N) | .12** (1034) | .17** (832) | -.02 (193) |
| Feedback | r (N) | -.06* (1028) | .00 (836) | -.24** (191) |
| Invested | r (N) | .01 (1034) | .08* (835) | -.22** (193) |
| Positive Regard | r (N) | .11** (1032) | .17** (836) | -.13 (192) |
| Teacher Support Scale | r (N) | .03 (1034) | .11** (836) | -.18* (193) |
| Academic Self Perception | r (N) | .21** (1023) | .27** (827) | .01 (191) |
| Motivation Self Regulation | r (N) | .17** (1018) | .23** (823) | -.01 (190) |
| Concrete Achievement Attitude | r (N) | .33** (1016) | .32** (819) | .29** (192) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Table 25. *Correlation of Scales with Father SES by Ethnic Grouping for Male Students*

| Scales | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Accessible | r (N) | -.03 (1035) | .01 (836) | -.11 (193) |
| Expectation | r (N) | .11** (1035) | .14** (832) | .03 (193) |
| Feedback | r (N) | -.07* (1029) | -.01 (836) | -.22** (191) |
| Invested | r (N) | .00 (1035) | .05 (835) | -.18** (193) |
| Positive Regard | r (N) | .09** (1033) | .15** (836) | -.08 (192) |
| Teacher Support Scale | r (N) | .02 (1035) | .08** (836) | -.14* (193) |
| Academic Self Perception | r (N) | .19** (1024) | .24** (827) | -.01 (191) |
| Motivation Self Regulation | r (N) | .15** (1019) | .20** (823) | .01 (190) |
| Concrete Achievement Attitude | r (N) | .32** (1017) | .32** (819) | .27** (192) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

When correlated against mother SES, the pattern is similar to that of the correlation with total SES and with father SES with three notable additions (see Table 26). For Asian and White male students collectively, a significant positive correlation is found with the invested scale. This was the case for Asian and White male students in the correlations with total SES but not the case in the correlations with father SES.

For non-Asian minority male students, significant negative correlations were found for feedback, invested, and Teacher Support Scale Revised, and a significant positive correlation was found for concrete achievement attitudes, as they were found for the correlations with total SES and father SES. In addition, significant negative correlations were found with the accessible scale and the positive regard scale when correlated with mother SES. Both of these indicate decreasing scores on these scales with increasing socio-economic status.

Table 26. *Correlation of Scales with Mother SES by Ethnic Grouping for Male Students*

| Scales | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Accessible | r (N) | .00 (1034) | .05 (836) | -.15** (193) |
| Expectation | r (N) | .09** (1034) | .14** (832) | -.06 (193) |
| Feedback | r (N) | -.06* (1028) | .00 (836) | -.22** (191) |
| Invested | r (N) | .00 (1034) | .07* (835) | -.24** (193) |
| Positive Regard | r (N) | .08** (1032) | .15** (836) | -.15* (192) |
| Teacher Support Scale | r (N) | .02 (1034) | .10** (836) | -.20** (193) |
| Academic Self Perception | r (N) | .17** (1023) | .21** (827) | .02 (191) |
| Motivation Self Regulation | r (N) | .13** (1018) | .18** (823) | -.03 (190) |
| Concrete Achievement Attitude | r (N) | .25** (1016) | .24** (819) | .24** (192) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

The correlations of the scales with the socio-economic variables are markedly different for female students. When correlated against total SES for all female students, the only significant correlations found were with academic self-perception, motivation self-regulation and concrete achievement attitudes (see Table 27). The same was true for Asian and White students collectively. For non-Asian minorities, the only significant correlation found was between total SES and concrete achievement attitudes.

When correlated against father SES for all female students and Asian and White female students collectively, the only additional significant correlations found were with expectation for all female students and academic self-perception, motivation self-regulation, and concrete achievement attitudes for all female students and Asian and White female students collectively. For non-Asian minority female students, significant correlations were found only for expectation, academic self-perception and concrete achievement attitudes (see Table 28). Unlike their male counterparts, non-Asian minority female students showed positive, rather than negative, correlations with expectation and academic self-perception. While the male students did not show a significant correlation with these variables, correlations for non-Asian minority male students showed only negative correlations with the exception of concrete achievement attitudes.

Unlike the male students, female students showed few significant correlations between the scales and mother SES (see Table 29). For all female students, significant correlations were found feedback, academic self-perception and concrete achievement attitudes. For Asian and White students, significant correlations were found for academic self-perception and concrete achievement attitudes. For non-Asian minority students, the only significant correlation was found for concrete achievement attitudes.

Table 27. *Correlation of Scales with Total SES by Ethnic Grouping for Female Students*

| Scales | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Accessible | r (N) | .02 (988) | .02 (799) | .08 (179) |
| Expectation | r (N) | .06 (988) | .05 (799) | .12 (179) |
| Feedback | r (N) | -.06 (984) | -.06 (796) | -.01 (178) |
| Invested | r (N) | -.01 (988) | .01 (799) | -.02 (179) |
| Positive Regard | r (N) | .03 (984) | .03 (796) | .07 (178) |
| Teacher Support Scale | r (N) | .01 (988) | .01 (799) | .05 (179) |
| Academic Self Perception | r (N) | .16** (982) | .16** (795) | .15 (177) |
| Motivation Self Regulation | r (N) | .07* (978) | .08** (792) | .06 (176) |
| Concrete Achievement Attitude | r (N) | .26** (970) | .26** (784) | .25** (176) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Table 28. *Correlation of Scales with Father SES by Ethnic Grouping for Female Students*

| Scales | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Accessible | r (N) | .02 (988) | .02 (799) | .10 (179) |
| Expectation | r (N) | .07* (988) | .07 (799) | .15* (179) |
| Feedback | r (N) | -.05 (984) | -.06 (796) | .05 (178) |
| Invested | r (N) | .01 (988) | .02 (799) | .02 (179) |
| Positive Regard | r (N) | .03 (984) | .02 (796) | .11 (178) |
| Teacher Support Scale | r (N) | .02 (988) | .01 (799) | .09 (179) |
| Academic Self Perception | r (N) | .16** (982) | .16** (795) | .17* (177) |
| Motivation Self Regulation | r (N) | .09** (978) | .09** (792) | .10 (176) |
| Concrete Achievement Attitude | r (N) | .26** (970) | .26** (784) | .24** (176) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Table 29. *Correlation of Scales with Mother SES by Ethnic Grouping for Female Students*

| Scales | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Accessible | r (N) | .01 (988) | .01 (799) | .07 (179) |
| Expectation | r (N) | .03 (988) | .02 (799) | .10 (179) |
| Feedback | r (N) | -.08* (984) | -.07 (796) | -.07 (178) |
| Invested | r (N) | .03 (988) | .00 (799) | -.07 (179) |
| Positive Regard | r (N) | .02 (984) | .02 (796) | .03 (178) |
| Teacher Support Scale | r (N) | -.01 (988) | .00 (799) | .01 (179) |
| Academic Self Perception | r (N) | .13** (982) | .13** (795) | .10 (177) |
| Motivation Self Regulation | r (N) | .04 (978) | .05 (792) | .00 (176) |
| Concrete Achievement Attitude | r (N) | .25** (970) | .24** (784) | .25** (176) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Analysis of variance was calculated for each of the ethnic groupings disaggregated by gender for each of the scales against total SES, father SES, and mother SES. Only two of these showed a consistent pattern of changing mean with increasing socio-economic status (see Table 30). For Asian and White males collectively by mother SES, motivation self-regulation showed a pattern of increasing mean with increasing socio-economic status. In addition, for non-Asian minority females by father SES, this pattern was seen for academic self-perception. It should be noted that this scale was not significant for non-Asian minority females, however.

For all students and for Asian and White students collectively, a similar pattern of significant findings was seen for male and female students by each of the socio-economic variables. In general, there were fewer significant results for every ethnic grouping and socio-economic variable for females than for males. For all male students and Asian and White male students collectively, identical patterns of significant results were found for total SES and father SES. Significant results were found by total SES for expectation, positive regard, motivation self-regulation, academic self-perception, and concrete achievement attitudes. In addition to these scales, positive regard and invested showed significant results when calculated against father SES. For these two groups, motivation self-regulation, academic self-perception and concrete achievement attitudes showed significant results when calculated against mother SES. In addition for Asian and White students collectively, expectation and positive regard showed significant results.

All female students and Asian and White female students collectively showed similar patterns of significant findings with only one exception. When calculated against total SES and father SES, significant results were found for expectation, academic self-

perception and concrete achievement attitudes. In addition, for Asian and White female students collectively, significant results were found for accessible. When calculated against mother SES, both groups showed significant results for academic self-perception and concrete achievement attitudes.

The ANOVAs for non-Asian minority students of both genders yielded the least number of significant findings. For male non-Asian minority students, the only significant results when calculated against total SES and father SES were for concrete achievement attitudes. When calculated against mother SES, the only significant results were found for concrete achievement attitudes and invested.

Table 30. *Attitude and Perception Outcomes by Gender and Ethnic Grouping*

| | | Non-Asian Female | Asian/White Male |
|---|---|---|---|
| | | Father SES | Mother SES |
| SES | | Academic Self Perception | Motivation Self Regulation |
| -1 | X | 3.56 | 3.41 |
| | N | 30 | 26 |
| 0 | | 3.58 | 3.59 |
| | N | 30 | 96 |
| 1 | X | 3.66 | 3.66 |
| | N | 20 | 97 |
| 2 | X | 3.68 | 3.74 |
| | N | 24 | 153 |
| 3 | X | 3.72 | 3.83 |
| | N | 24 | 217 |
| 4 | X | 3.83 | 3.99 |
| | N | 26 | 127 |
| 5 | X | 3.93 | 4.01 |
| | N | 23 | 107 |
| | | F=1.33 | F=4.87 |
| | | Sig. = .25 | Sig. = .00 |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

*Relationship between the Teacher Support Scale Revised and the academic self-perception, motivation self-regulation and concrete achievement attitudes scales.* Of interest is the relationship between students' perceptions of teacher support behaviors and attitudes and students' characteristics which contribute to academic success. The correlation between the Teacher Support Scale Revised and each of its subscales with academic self-perception, motivation self-regulation, and concrete achievement attitudes was analyzed for each of the ethnic groupings. When correlated against the Teacher Support Scale Revised and each of the subscales, academic self-perception was significantly correlated with every scale for all ethnic groupings (all students, Asian and White students collectively and non-Asian minority students). All of these correlations were positive indicating, as expected, that as academic self-perception increases so do the scores on the Teacher Support Scale Revised and each of the subscales. Non-Asian minority students showed a higher correlation between academic self-perception, accessible, feedback and the Teacher Support Scale Revised than did all students and Asian and White students collectively (see Table 31).

Table 31. *Correlation of Academic Self-Perception by Ethnic Grouping*

| | | Academic Self Perception Scale | | |
|---|---|---|---|---|
| | | ALL (N=2156) | Asian & White (N=1629) | Non-Asian Minority (N=368) |
| Accessible | r | .38** | .36** | .45** |
| Expectation | r | .46** | .46** | .46** |
| Feedback | r | .31** | .30** | .34** |
| Invested | r | .37** | .36** | .37** |
| Positive Regard | r | .46** | .46** | .44** |
| Teacher Support | r | .46** | .45** | .47** |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Similar results were found in the correlation of motivation self-regulation and the Teacher Support Scale Revised and each of the subscales (see Table 32). Positive and significant correlations were found for each of the scales against motivation self-regulation for each of the ethnic groupings. With the exception of invested, non-Asian minority students showed a higher correlation between motivation self-regulation and each of the other scales than that of all students and Asian and White students collectively.

Table 32. *Correlation of Motivation Self-Regulation by Ethnic Grouping*

| | | Motivation Self Regulation Scale | | |
|---|---|---|---|---|
| | | ALL (N=2147) | Asian & White (N=1622) | Non-Asian Minority (N=366) |
| Accessible | r | .32** | .31** | .34** |
| Expectation | r | .41** | .40** | .42** |
| Feedback | r | .26** | .24** | .32** |
| Invested | r | .34** | .33** | .34** |
| Positive Regard | r | .45** | .44** | .45** |
| Teacher Support | r | .41** | .40** | .43** |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Concrete achievement attitudes show a different pattern of significant findings. The correlations with concrete achievement attitudes are less strongly correlated with each of the other scales than was seen with academic self-perception and motivation self-regulation (see Table 33). For all students and Asian and White students collectively, concrete achievement attitudes are positively correlated with accessible, expectation and positive regard. Although not strongly correlated, it is logical that concrete achievement attitudes are positively correlated with accessible, expectation and positive regard. The survey items associated with concrete achievement attitudes include such statements as "people in my family haven't been treated fairly at work no matter how much education they have" and "although my parents tell me to get a good education in order to get a good job, they face barriers to job success." Interestingly the concrete achievement scale is negatively correlated with the feedback scale for all students. This may be a result of the interpretation of the survey items by students. The survey items include such statements as "my teachers in my school tell me if I am not working hard enough" and "let me know how to improve my grades." The survey items could be interpreted negatively by students as critical rather than supportive teacher behaviors.

For non-Asian minority students, accessible, expectation and positive regard are not significantly correlated with concrete achievement attitudes. Interestingly, there is a negative correlation with feedback, invested and Teacher Support Scale Revised. This indicates increasingly positive responses on the Teacher Support Scale Revised, feedback and invested scales with increasingly negative responses for concrete achievement attitude. This is the opposite of what is seen for Asian and White students collectively for whom concrete achievement attitudes are positively correlated with the

Teacher Support Scale Revised as a whole. Thus for Asian and White students collectively, as concrete achievement attitudes become more positively oriented, their scores on the Teacher Support Scale Revised increase.

Table 33. *Correlation of Concrete Achievement Attitudes by Ethnic Grouping*

| | | Concrete Achievement Attitude Scale | | |
|---|---|---|---|---|
| | | ALL (N=2137) | Asian & White (N=1610) | Non-Asian Minority (N=368) |
| Accessible | r | .06** | .09** | -.05 |
| Expectation | r | .10** | .13** | .01 |
| Feedback | r | -.05* | -.01 | -.18** |
| Invested | r | -.01 | .04 | -.17** |
| Positive Regard | r | .06** | .10** | -.05 |
| Teacher Support | r | .03 | .08** | -.11* |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

*Attitudes, perceptions and academic performance.* As is the case with the intercorrelation of attitude and perception scales, the correlation of these scales with the academic performance variables varies by ethnic grouping. The fewest number of significant correlations between the attitude and perception scales and the academic performance variables for all ethnic groupings are found in the correlation with the accessible scale. All of the significant correlations with this scale are relatively weak and positive. For all students and Asian and White students collectively, significant correlations were found between accessible and 9th grade science course rating, 10th grade math course rating, 9th grade core GPA, 10th grade core GPA, combined core GPA and cumulative GPA. In addition for Asian and White students collectively, a significant correlation was found between accessible and 10th grade science course rating. For non-Asian minority students, the only significant correlations were found with 9th grade core GPA, 10th grade core GPA and combined core GPA (see Table 34).

There was greater number of significant correlations found between the academic performance variables and the expectation scale. All of the significant correlations were relatively weak and positive. For all students, significant correlations were found for all academic performance variable except 7th grade WASL reading score and high school WASL reading scores. For Asian and White students collectively significant correlations were found between expectation and all of the academic performance variables except 7th grade WASL scores in reading and math. In contrast, for non-Asian minority students, significant correlations were found only between expectation and 7th grade WASL scores in writing and math, world language course rating, 9th grade core GPA, 10th grade core GPA, combined core GPA and cumulative GPA (see Table 35).

Table 34. *Correlation of Accessible Scale with Academic Performance Variables by Ethnic Grouping*

| Academic Performance Variable | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Course Cum Rating | r (N) | .01 (1805) | .04 (1504) | -.07 (287) |
| 7th WASL Reading | r (N) | -.05 (1508) | -.04 (1285) | -.09 (217) |
| 7th WASL Writing | r (N) | .02 (1502) | .03 (1280) | .02 (216) |
| 7th WASL Math | r (N) | .01 (1507) | .01 (1282) | .01 (219) |
| HS WASL Reading | r (N) | -.01 (1845) | .01 (1518) | -.05 (316) |
| HS WASL Writing | r (N) | -.03 (1854) | .00 (1529) | -.08 (314) |
| HS WASL Math | r (N) | .01 (1847) | .03 (1518) | -.04 (317) |
| 9th Math Rating | r (N) | .01 (1720) | .02 (1452) | .00 (258) |
| 9th English Rating | r (N) | .01 (1737) | .02 (1464) | -.03 (262) |
| 9th Science Rating | r (N) | .06** (1687) | .07* (1418) | .07 (256) |
| 10th Math rating | r (N) | .05* (1719) | .07** (1424) | -.02 (282) |
| 10th English Rating | r (N) | .03 (1782) | .05 (1489) | -.06 (279) |
| 10th Science Rating | r (N) | .05 (1430) | .07* (1203) | -.08 (216) |
| World Language Rating | r (N) | .00 (1432) | .00 (1215) | .03 (206) |
| 9th Core GPA | r (N) | .10** (1774) | .09* (1485) | .13* (275) |
| 10th Core GPA | r (N) | .14** (1797) | .15** (1497) | .15* (286) |
| Core GPA | r (N) | .12** (1805) | .12** (1504) | .15* (287) |
| Cum GPA | r (N) | .09** (1818) | .09** (1512) | .10 (292) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Table 35. *Correlation of Expectation Scale with Academic Performance Variables by Ethnic Grouping*

| Academic Performance Variable | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Course Cum Rating | r (N) | .11** (1805) | .13** (1504) | .04 (287) |
| 7th WASL Reading | r (N) | -.01 (1508) | -.01 (1285) | -.02 (217) |
| 7th WASL Writing | r (N) | .11** (1502) | .09** (1280) | .18** (216) |
| 7th WASL Math | r (N) | .06* (1507) | .05 (1282) | .13* (219) |
| HS WASL Reading | r (N) | .04 (1845) | .07** (1518) | -.03 (316) |
| HS WASL Writing | r (N) | .07** (1854) | .09** (1529) | .03 (314) |
| HS WASL Math | r (N) | .10** (1847) | .10** (1518) | .06 (317) |
| 9th Math Rating | r (N) | .09** (1720) | .09** (1452) | .10 (258) |
| 9th English Rating | r (N) | .08** (1737) | .09** (1464) | .07 (262) |
| 9th Science Rating | r (N) | .09** (1687) | .09** (1418) | .12 (256) |
| 10th Math rating | r (N) | .11** (1719) | .12** (1424) | .05 (282) |
| 10th English Rating | r (N) | .09** (1782) | .11** (1489) | -.02 (279) |
| 10th Science Rating | r (N) | .09** (1430) | .10** (1203) | .07 (216) |
| World Language Rating | r (N) | .09** (1432) | .07** (1215) | .14* (206) |
| 9th Core GPA | r (N) | .17** (1774) | .18** (1485) | .17** (275) |
| 10th Core GPA | r (N) | .18** (1797) | .19** (1497) | .14* (286) |
| Core GPA | r (N) | .19** (1805) | .19** (1504) | .17** (287) |
| Cum GPA | r (N) | .18** (1818) | .19** (1512) | .13* (292) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Like the correlation between the academic performance variables and accessible and expectation, the feedback scale is weakly correlated with the academic performance variables. However, all of the significant correlations found between feedback and the academic performance variables are negative (see Table 36). For all three ethnic groupings, feedback was significantly correlated with courses cumulative rating, 7th grade WASL writing scores, high school WASL scores in reading and writing, 9th grade English course rating, and 10th grade English course rating. In addition for all students and Asian and White students collectively, feedback is significantly correlated with 7th grade WASL math scores, and 9th grade math rating. For all students and non-Asian minority students, there are significant correlations for 10th grade math rating and cumulative GPA. World language course rating is only significantly correlated for all students and high school WASL math score is only significantly correlated for non-Asian minority students. Though all of the correlations are relatively weak, the strongest negative correlations were found for non-Asian minorities for each of the significantly correlated variables.

Table 36. *Correlation of Feedback Scale with Academic Performance Variables by Ethnic Grouping*

| Academic Performance Variable | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Course Cum Rating | r (N) | -.01** (1795) | -.07** (1497) | -.21** (284) |
| 7th WASL Reading | r (N) | -.04 (1500) | -.03 (1279) | -.12 (215) |
| 7th WASL Writing | r (N) | -.08** (1494) | -.07* (1274) | -.15* (214) |
| 7th WASL Math | r (N) | -.07** (1499) | -.07* (1276) | -.06 (217) |
| HS WASL Reading | r (N) | -.11** (1837) | -.08** (1512) | -.17** (314) |
| HS WASL Writing | r (N) | -.12** (1845) | -.08** (1522) | -.20** (312) |
| HS WASL Math | r (N) | -.04 (1838) | -.02 (1511) | -.16** (315) |
| 9th Math Rating | r (N) | -.08** (1711) | -.07** (1445) | -.10 (256) |
| 9th English Rating | r (N) | -.08** (1728) | -.06* (1457) | -.15* (260) |
| 9th Science Rating | r (N) | -.03 (1677) | -.02 (1411) | -.06 (253) |
| 10th Math rating | r (N) | -.07** (1711) | -.04 (1419) | -.16** (279) |
| 10th English Rating | r (N) | -.08** (1772) | -.06* (1482) | -.20** (276) |
| 10th Science Rating | r (N) | -.03 (1423) | -.02 (1199) | -.07 (213) |
| World Language Rating | r (N) | -.05* (1424) | -.05 (1209) | -.06 (204) |
| 9th Core GPA | r (N) | -.02 (1764) | -.01 (1478) | -.09 (272) |
| 10th Core GPA | r (N) | .01 (1787) | .03 (1490) | -.05 (283) |
| Core GPA | r (N) | -.01 (1795) | .00 (1497) | -.07 (284) |
| Cum GPA | r (N) | -.05* (1808) | -.03 (1505) | -.13* (289) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Correlations between the academic performance variables and the invested scale vary considerably. All significant correlations are relatively weak. The significant correlations between invested and each of the GPA variables is positive. The remaining significant correlations are negative. For all students and Asian and White students collectively, the invested scale is negatively correlated with 7th grade WASL reading and math scores, and high school WASL reading scores (see Table 37). Additionally, for all students, it is negatively correlated with 9th grade math course rating. However, it is positively correlated for both of these groups with 9th grade core GPA, 10th grade core GPA, and combined core GPA. Invested is positively correlated with cumulative GPA for Asian and White students collectively as well. For non-Asian minority students, all of the significant correlations are negative. For these students, invested is negatively correlated with courses cumulative rating, high school WASL scores in reading, math and writing, 9th grade math and English course ratings, and 10th grade math and English course ratings. Further there were no significant correlations for non-Asian minority students with any of the GPA variables as there were for all students and Asian and White students collectively. Though not significant, it is interesting that the correlation between invested and the GPA variables is negative for non-Asian minorities while it is both positive and significant for all students and Asian and White students collectively.

Table 37. *Correlation of Invested Scale with Academic Performance Variables by Ethnic Grouping*

| Academic Performance Variable | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Course Cum Rating | r (N) | -.04 (1805) | .01 (1504) | -.24** (287) |
| 7th WASL Reading | r (N) | -.07** (1508) | -.06* (1285) | -.13 (217) |
| 7th WASL Writing | r (N) | -.04 (1502) | -.02 (1280) | -.11 (216) |
| 7th WASL Math | r (N) | -.06* (1507) | -.06* (1282) | -.09 (219) |
| HS WASL Reading | r (N) | -.11** (1845) | -.06* (1518) | -.21** (316) |
| HS WASL Writing | r (N) | -.08** (1854) | -.02 (1529) | -.23** (314) |
| HS WASL Math | r (N) | -.04 (1847) | -.01 (1518) | -.17** (317) |
| 9th Math Rating | r (N) | -.05* (1720) | -.03 (1452) | -.12* (258) |
| 9th English Rating | r (N) | -.04 (1737) | .00 (1464) | -.20** 262) |
| 9th Science Rating | r (N) | .03 (1687) | .04 (1418) | -.04 (256) |
| 10th Math rating | r (N) | -.02 (1719) | .01 (1424) | -.18** (282) |
| 10th English Rating | r (N) | -.02 (1782) | .03 (1489) | -.21** (279) |
| 10th Science Rating | r (N) | .02 (1430) | .05 (1203) | -.10 (216) |
| World Language Rating | r (N) | .03 (1432) | .02 (1215) | .04 (206) |
| 9th Core GPA | r (N) | .05* (1774) | .07** (1485) | -.03 (275) |
| 10th Core GPA | r (N) | .08** (1797) | .10** (1497) | -.04 (286) |
| Core GPA | r (N) | .07** (1805) | .09** 1504) | -.04 (287) |
| Cum GPA | r (N) | .04 (1818) | .07** (1512) | -.09 (292) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

The correlations between the academic performance variables and positive regard are relatively weak as well. Most are positively correlated. However, for all students, the correlation between 7th grade WASL reading score and positive regard is negative. For non-Asian minority students, there is a negative correlation between positive regard and course cumulative rating, high school WASL writing score, and 10th grade English rating. The only significant positive correlation for non-Asian minority students was found between positive regard and 10th grade core GPA.

Significant positive correlations were found for all students and Asian and White students collectively for 7th grade WASL writing, 9th grade science course rating, 10th grade math, English and science course ratings, world language course rating, and each of the GPA variables (see Table 38). In addition, positive correlations were found for Asian and White students collectively for courses cumulative rating, high school WASL writing scores, and 9th grade English and math course ratings. The strongest correlations for all students and Asian and White students collectively were found between positive regard and each of the GPA variables.

Table 38. *Correlation of Positive Regard Scale with Academic Performance Variables by Ethnic Grouping*

| Academic Performance Variable | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Course Cum Rating | r (N) | .05 (1800) | .09** (1500) | -.13* (286) |
| 7th WASL Reading | r (N) | -.05* (1505) | -.04 (1282) | -.13 (217) |
| 7th WASL Writing | r (N) | .05* (1499) | .06* (1277) | .00 (216) |
| 7th WASL Math | r (N) | .01 (1504) | .02 (1279) | -.06 (219) |
| HS WASL Reading | r (N) | -.01 (1840) | .03 (1514) | -.10 (315) |
| HS WASL Writing | r (N) | .02 (1849) | .06* (1525) | -.12* (313) |
| HS WASL Math | r (N) | .03 (1842) | .04 (1514) | -.09 (316) |
| 9th Math Rating | r (N) | .04 (1719) | .06* (1448) | -.06 (258) |
| 9th English Rating | r (N) | .03 (1733) | .06* (1460) | -.06 (262) |
| 9th Science Rating | r (N) | .08** (1682) | .09** (1414) | .03 (255) |
| 10th Math rating | r (N) | .08** (1715) | .13** (1421) | -.12 (281) |
| 10th English Rating | r (N) | .07** (1777) | .11** (1485) | -.12* (278) |
| 10th Science Rating | r (N) | .10** (1426) | .13** (1200) | -.03 (215) |
| World Language Rating | r (N) | .09** (1428) | .09** (1211) | .09 (206) |
| 9th Core GPA | r (N) | .19** (1769) | .21** (1481) | .07 (274) |
| 10th Core GPA | r (N) | .22** (1792) | .24** (1493) | .13* (285) |
| Core GPA | r (N) | .22** (1800) | .24** (1500) | .11 (286) |
| Cum GPA | r (N) | .18** (1813) | .21** (1508) | .04 (291) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Similar to the positive regard scale, the Teacher Support Scale Revised shows both positive and negative significant correlations with academic performance variables. All of these correlations are relatively weak. For all students, the Teacher Support Scale revised is negatively correlated with 7th grade and high school WASL scores in reading. It is positively correlated with 9th and 10th grade science course ratings and each of the GPA variables. The strongest of these correlations is with the GPA variables.

For Asian and White students collectively, all of the significant correlations between the Teacher Support Scale and the academic performance variables are positive. For this group significant correlations were found for 9th grade science course rating, 10th grade math, English and science course ratings, and all of the GPA variables.

Non-Asian minority students show a different pattern of significant correlations. They are the only group to show a correlation between the Teacher Support Scale Revised and courses cumulative rating and high school WASL writing scores. Both of these were negative indicating that as the scores on the Teacher Support Scale Revised increase, scores on the academic performance variables decrease. Non-Asian minority students also showed a negative correlation with high school WASL reading scores and 10th grade English course rating (see Table 39). In contrast, the correlation between 10th grade English course rating and Teacher Support Scale Revised for Asian and White students collectively was positive.

Table 39. *Correlation of Teacher Support Scale Revised with Academic Performance Variables by Ethnic Grouping*

| Academic Performance Variable | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Course Cum Rating | r (N) | .00 (1805) | .04 (1504) | -.15** (287) |
| 7th WASL Reading | r (N) | -.05* (1508) | -.04 (1285) | -.11 (217) |
| 7th WASL Writing | r (N) | .01 (1502) | .02 (1280) | -.02 (216) |
| 7th WASL Math | r (N) | -.02 (1507) | -.02 (1282) | -.02 (219) |
| HS WASL Reading | r (N) | -.05* (1845) | -.01 (1518) | -.14** (316) |
| HS WASL Writing | r (N) | -.04 (1854) | .01 (1529) | -.15** (314) |
| HS WASL Math | r (N) | .01 (1847) | .03 (1518) | -.10 (317) |
| 9th Math Rating | r (N) | .00 (1720) | .01 (1452) | -.05 (258) |
| 9th English Rating | r (N) | .00 (1737) | .02 (1464) | -.10 (262) |
| 9th Science Rating | r (N) | .06* (1687) | .06* (1418) | .02 (256) |
| 10th Math rating | r (N) | .03 (1719) | .07* (1424) | -.10 (282) |
| 10th English Rating | r (N) | .02 (1782) | .06* (1489) | -.15* (279) |
| 10th Science Rating | r (N) | .05* (1430) | .07* (1203) | -.06 (216) |
| World Language Rating | r (N) | .03 (1432) | .03 (1215) | .06 (206) |
| 9th Core GPA | r (N) | .11** (1774) | .12** (1485) | .05 (275) |
| 10th Core GPA | r (N) | .15** (1797) | .06** (1497) | .07 (286) |
| Core GPA | r (N) | .13** (1805) | .15** (1504) | .06 (287) |
| Cum GPA | r (N) | .10** (1818) | .13** (1512) | .00 (292) |

**. Correlation is significant at the .01 level (2-tailed).
*. Correlation is significant at the .05 level (2-tailed).

In contrast to the Teacher Support Scale and each of the subscales, there are stronger correlations between academic self-perception and the academic performance variables. In addition, the correlations between academic self-perception and the academic performance variables showed significant results for nearly every variable and every ethnic grouping with a few notable exceptions (see Table 40). For non-Asian minority students, significant correlations were not found between academic self-perception and high school WASL reading score, 7th grade WASL reading score, or 10th grade science course rating. In addition, for all students and Asian and White students collectively, significant correlations were not found for between academic self-perception and 7th grade WASL reading score. While not significant, it is interesting that the correlations between 7th grade WASL reading score and academic self-perception were the only negative correlations found between academic self-perception and any of the academic performance variables. Other than these three exceptions, all other results were significant and positively correlated.

Non-Asian minority students showed a higher correlation between academic self-perception and 7th grade WASL writing score and between academic self-perception and world language course rating than did all students or Asian and White students collectively. Other than these two correlations, Asian and White students collectively had the highest correlation by ethnic grouping of any of the significantly correlated academic performance variables. Combined core GPA was more highly correlated with academic self-perception than any other academic performance variable for all students ($r = .43^{**}$), Asian and White students ($r = .45^{**}$) and non-Asian minority students ($r = .36^{**}$).

Table 40. *Correlation of Academic Self-Perception Scale with Academic Performance Variables by Ethnic Grouping*

| Academic Performance Variable | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Course Cum Rating | r (N) | .26** (1789) | .28** (1491) | .14* (284) |
| 7th WASL Reading | r (N) | -.01 (1494) | -.01 (1273) | -.04 (215) |
| 7th WASL Writing | r (N) | .21** (1488) | .21** (1268) | .22** (214) |
| 7th WASL Math | r (N) | .18** (1493) | .18** (1270) | .17* (217) |
| HS WASL Reading | r (N) | .16** (1830) | .21** (1506) | .04 (313) |
| HS WASL Writing | r (N) | .18** (1838) | .19** (1516) | .14* (311) |
| HS WASL Math | r (N) | .22** (1832) | .22** (1506) | .14* (314) |
| 9th Math Rating | r (N) | .24** (1705) | .26** (1439) | .16* (256) |
| 9th English Rating | r (N) | .22** (1722) | .24** (1451) | .16** (260) |
| 9th Science Rating | r (N) | .22** (1671) | .24** (1405) | .13* (253) |
| 10th Math rating | r (N) | .31** (1705) | .32** (1413) | .23** (279) |
| 10th English Rating | r (N) | .25** (1766) | .27** (1476) | .14* (276) |
| 10th Science Rating | r (N) | .24** (1417) | .26** (1193) | .12 (213) |
| World Language Rating | r (N) | .15** (1418) | .14** (1203) | .16* (204) |
| 9th Core GPA | r (N) | .39** (1758) | .41** (1472) | .33** (272) |
| 10th Core GPA | r (N) | .41** (1781) | .43** (1484) | .35** (283) |
| Core GPA | r (N) | .43** (1789) | .45** (1491) | .36** (284) |
| Cum GPA | r (N) | .40** (1802) | .43** (1499) | .28** (289) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

As with the correlations between academic self-perception and the academic performance variables, the significant correlations between motivation self-regulation and the academic performance variables are moderately positive. The correlations between motivation self-regulation and the academic performance variables for all students and Asian and White students collectively were identical to those found for academic self-perception (see Table 41). The only variable which failed to show significant results was 7th grade WASL reading score. Again, while not significant, this was the only negatively correlated variable.

Asian and White students showed the strongest correlations between the academic performance variables and motivation self-regulation for all but three variables. The correlation between 7th grade WASL math score and motivation self-regulation was stronger for all students. The correlations between motivation self-regulation and 7th grade WASL writing score and world language course rating were stronger for non-Asian minority students.

Non-Asian minority students, however, showed a different pattern than that seen with academic self-perception. The only significant correlations found for this group were 7th grade WASL writing score, 9th grade science course rating, world language course rating, and each of the GPA variables. All of these correlations were positive and most were moderately strong.

The strongest correlations between motivation self-regulation and each of the academic performance variables was found for the GPA variables. For all students (r = .44*) and Asian and White students (r = .46**), the strongest correlation was between combined core GPA and motivation self-regulation. For non-Asian minority students (r = .40**), the strongest correlation was with 10th grade core GPA.

Table 41. *Correlation of Motivation Self-Regulation Scale with Academic Performance Variables by Ethnic Grouping*

| Academic Performance Variable | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Course Cum Rating | r (N) | .20** (1781) | .24** (1485) | .05 (282) |
| 7th WASL Reading | r (N) | -.03 (1491) | -.03 (1270) | -.02 (215) |
| 7th WASL Writing | r (N) | .17** (1485) | .16** (1265) | .21** (214) |
| 7th WASL Math | r (N) | .07* (1490) | .06* (1267) | .13 (217) |
| HS WASL Reading | r (N) | .09** (1822) | .13** (1499) | .00 (312) |
| HS WASL Writing | r (N) | .13** (1830) | .15** (1509) | .10 (310) |
| HS WASL Math | r (N) | .11** (1824) | .12** (1499) | .03 (313) |
| 9th Math Rating | r (N) | .18** (1698) | .21** (1433) | .07 (255) |
| 9th English Rating | r (N) | .15** (1715) | .18** (1445) | .05 (259) |
| 9th Science Rating | r (N) | .17** (1664) | .18** (1399) | .12* (252) |
| 10th Math rating | r (N) | .23** (1697) | .26** (1407) | .11 (277) |
| 10th English Rating | r (N) | .22** (1758) | .26** (1470) | .04 (274) |
| 10th Science Rating | r (N) | .20** (1411) | .21** (1188) | .12 (212) |
| World Language Rating | r (N) | .16** (1412) | .14** (1199) | .22** (202) |
| 9th Core GPA | r (N) | .40** (1751) | .41** (1466) | .34** (271) |
| 10th Core GPA | r (N) | .43** (1773) | .45** (1478) | .40** (281) |
| Core GPA | r (N) | .44** (1781) | .46** (1485) | .39** (282) |
| Cum GPA | r (N) | .41** (1794) | .44** (1493) | .33** (287) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

All of the significant correlations between concrete achievement attitudes and the academic performance variables were positive for all groups as expected. Thus as concrete achievement attitude scores increase (or become more positively oriented), scores for academic performance variables improve (see Table 42). The only variable which did not show a consistently significant correlation was 7th grade WASL reading score. It was not significantly correlated for Asian and White students collectively or for non-Asian minority students. It was weakly correlated with concrete achievement attitudes for all students collectively. It was the weakest correlation of all of the significant correlations between academic performance variables and concrete achievement attitudes. The strongest correlation between an academic performance variable and concrete achievement attitudes for all students (r = .32**), Asian and White students (r = .29**) and non-Asian minority students (r = .38**) was with courses cumulative rating.

Of all of the correlations between academic performance variables and attitude and perception variables for non-Asian minority students, concrete achievement attitudes showed the greatest number of significant correlations. It is of interest that the correlations between concrete achievement attitudes and nearly all of the academic performance variables for non-Asian minority students showed a larger positive correlation than did all students and Asian and White students collectively. This means that as their performance on each of these variables increased, their concrete attitudes increased or became more positively oriented to a greater degree than did all students or Asian and White students collectively. Non-Asian minority students conversely showed a weaker correlation between concrete achievement attitudes and 9th grade

core GPA, 10th grade core GPA and combined core GPA than did all students and Asian and White students collectively.

Table 42. *Correlation of Concrete Achievement Attitude Scale with Academic Performance Variables by Ethnic Grouping*

| Academic Performance Variable | | All | Asian & White | Non-Asian Minority |
|---|---|---|---|---|
| Course Cum Rating | r (N) | .32** (1771) | .29** (1473) | .38** (284) |
| 7th WASL Reading | r (N) | .06* (1481) | .05 (1260) | .11 (215) |
| 7th WASL Writing | r (N) | .27** (1475) | .27** (1255) | .27** (214) |
| 7th WASL Math | r (N) | .25** (1480) | .24** (1257) | .26** (217) |
| HS WASL Reading | r (N) | .26** (1811) | .24** (1487) | .29** (313) |
| HS WASL Writing | r (N) | .26** (1819) | .23** (1497) | .30** (311) |
| HS WASL Math | r (N) | .21** (1813) | .19** (1487) | .23** (314) |
| 9th Math Rating | r (N) | .28** (1687) | .26** (1421) | .33** (256) |
| 9th English Rating | r (N) | .30** (1704) | .28** (1433) | .34** (260) |
| 9th Science Rating | r (N) | .22** (1655) | .21** (1388) | .23** (254) |
| 10th Math rating | r (N) | .30** (1687) | .27** (1395) | .35** (279) |
| 10th English Rating | r (N) | .27** (1748) | .25** (1458) | .33** (276) |
| 10th Science Rating | r (N) | .20** (1407) | .18** (1183) | .24** (213) |
| World Language Rating | r (N) | .16** (1404) | .14** (1190) | .24** (203) |
| 9th Core GPA | r (N) | .26** (1741) | .26** (1454) | .22** (273) |
| 10th Core GPA | r (N) | .24** (1763) | .24** (1466) | .22** (283) |
| Core GPA | r (N) | .27** (1771) | .26** (1473) | .24** (284) |
| Cum GPA | r (N) | .27** (1784) | .26** (1481) | .27** (289) |

**. Correlation is significant at the .01 level (2-tailed).
*. Correlation is significant at the .05 level (2-tailed).

*College Readiness*

*College readiness and socio-economic status.* College readiness was quantified as the variable college ready index. Students' cumulative grade point averages and core courses cumulative ratings were added together to create an index incorporating both the level of the core courses the student took and the student's overall academic performance as measured by the cumulative grade point average. When correlated against total SES, mother SES and father SES, the college ready index showed significant results for each ethnic grouping for both genders individually and collectively (see Table 43). For each ethnic grouping and gender, father SES was more highly correlated than either total SES or mother SES. The lowest correlations occurred with mother SES for every ethnic grouping and gender. The highest correlation between any of the socio-economic status variables and college ready index occurred for non-Asian minority females with father SES (r = .40**). The highest correlation for total SES and college ready index occurred also for non-Asian minority females (r = .37**). This was the case as well with mother SES. The highest correlation occurred with non-Asian minority females at r = .35**.

Analysis of variance was calculated for college ready index by total SES, father SES and mother SES for each of the ethnic groupings and each gender. While all of the ANOVAs run showed significant results, none of those run for total SES or father SES showed a pattern of consistently changing mean with increasing SES. However, this pattern was found in the ANOVAs run by mother SES for all students, all male students, all female students, all non-Asian minority students, male Asian and White students, and all Asian and White students (see table 44).

Table 43. *Correlation of College Ready Index with SES by Gender and Ethnic Grouping*

| | | Total | Father | Mother |
|---|---|---|---|---|
| All (N=1805) | r | .33** | .34** | .28** |
| All Male (N=936) | r | .33** | .36** | .28** |
| All Female (N=862) | r | .31** | .33** | .27** |
| Asian & White All (N= 1504) | r | .31** | .33** | .26** |
| Asian & White Male (N=775) | r | .33** | .34** | .26** |
| Asian & White Female (N=722) | r | .29** | .32** | .25** |
| Non-Asian Minority All (N=287) | r | .36** | .38** | .32** |
| Non-Asian Minority Male (N=156) | r | .35** | .36** | .29** |
| Non-Asian Minority female (N=131) | r | .37** | .40** | .35** |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

Table 44. *ANOVA of College Ready Index by Mother SES*

| SES | | All | All Male | All Female | Non-Asian Minority | Asian & White | Asian & White Male |
|---|---|---|---|---|---|---|---|
| -1 | x (N) | 21.23 (98) | 22.11 (43) | 20.55 (55) | 17.93 (33) | 22.91 (65) | 25.49 (25) |
| 0 | x (N) | 25.44 (258) | 25.75 (122) | 25.15 (135) | 23.46 (46) | 25.86 (209) | 26.50 (95) |
| 1 | x (N) | 26.88 (214) | 27.27 (107) | 26.46 (105) | 24.60 (35) | 27.44 (176) | 27.26 (85) |
| 2 | x (N) | 27.77 (333) | 28.48 (165) | 27.04 (167) | 25.34 (50) | 28.24 (279) | 29.19 (141) |
| 3 | x (N) | 28.89 (419) | 29.55 (237) | 28.02 (180) | 26.71 (54) | 29.23 (362) | 29.80 (206) |
| 4 | x (N) | 30.28 (261) | 30.77 (147) | 29.62 (113) | 27.55 (38) | 30.77 (222) | 31.49 (123) |
| 5 | x (N) | 30.72 (222) | 31.38 (115) | 30.00 (107) | 28.54 (31) | 31.07 (191) | 31.89 (100) |
| | | F=27.71 | F=14.45 | F=12.43 | F=6.38 | F=18.68 | F=9.28 |
| | | Sig.= .00 | Sig.= .00 | Sig.= .00 | Sig.= .00 | Sig.= .00 | Sig.= .00 |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

*College readiness and student achievement attitudes.* College ready index was correlated with achievement attitude variables as well: academic self-perception, motivation self-regulation, and concrete achievement attitudes (see Table 45). For every ethnic grouping and gender, the correlation with concrete achievement attitudes showed significant, positive results. College readiness, therefore, increases as concrete achievement attitudes increase or become more positively oriented. Most of the correlations between college ready index and the achievement attitude variables were moderately strong. Weak correlations were found in the correlations between motivation self-regulation and college ready index for all female students (r = .18**), and between academic self-perception and college ready index for all non-Asian minority students (r = .16**).

Concrete achievement attitudes were more strongly correlated with college ready index than academic self-perception or motivation self-regulation for all students (r = .32**), all male students (r = .37**), Asian and White male students (r = .35**), all non-Asian minority students (r = .39**), male non-Asian minority students (r = .41**) and female non-Asian minority students (r = .37**). A stronger correlation was found between college ready index and academic self-perception for the other three groups: all female students (r = .28**), all Asian and White students (r = .31**), and Asian and White female students (r = .30**). The strongest correlation between college ready index and concrete achievement attitudes was for non-Asian minority male students (r = .41**). The weakest correlation between concrete achievement attitudes and college ready index was for Asian and White females (r = .24).

Significant correlations were not found for all of the ethnic groupings and genders for academic self-perception. Academic self-perception was not significantly correlated

with college ready index for non-Asian minority males or females. The strongest correlation between academic self-perception and college ready index was for Asian and White male students (r = .32**). The weakest significant correlation was for all non-Asian minority students (r = .16**).

Motivation self-regulation and college ready index showed the fewest number of significant correlations. They were not significantly correlated for all non-Asian minority students, male non-Asian minority students or female non-Asian minority students. The strongest correlation between motivation self-regulation and college ready index was found for Asian and White male students (r = .32**). The weakest correlation was found for all female students (r = .18**).

Table 45. *Correlation of College Ready Index with Achievement Attitude Variables by Gender and Ethnic Grouping*

| | | Academic Self-Perception | Motivation Self-Regulation | Concrete Achievement Attitude |
|---|---|---|---|---|
| All | r (N) | .28** (1789) | .23** (1781) | .32** (1771) |
| All Male | r (N) | .28** (925) | .27** (920) | .37** (918) |
| All Female | r (N) | .28** (857) | .18** (854) | .27** (846) |
| Asian & White All | r (N) | .31** 1491) | .27** (1485) | .29** (1473) |
| Asian & White Male | r (N) | .32** (766) | .32** (762) | .35** (758) |
| Asian & White Female | r (N) | .30** (718) | .20** (716) | .24** (708) |
| Non-Asian Minority All | r (N) | .16** (284) | .08 (282) | .39** (284) |
| Non-Asian Minority Male | r (N) | .15 (154) | .09 (153) | .41** (155) |
| Non-Asian Minority Female | r (N) | .17 (130) | .05 (129) | .37** (129) |

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

*College readiness and student perceptions.* The Teacher Support Scale Revised and each of its subscales were correlated against college ready index for each ethnic grouping and gender (see Table 46). College ready index was only weakly correlated with these scales. The correlation of accessible and college ready index showed no significant correlations at all. It is notable that, although the correlations were not significant, accessible was negatively correlated for each of the non-Asian minority groups and positively correlated for all of the other groups.

The correlations of expectation and of invested with college ready index showed opposite patterns of significant correlations. Expectation was significantly correlated with college ready index for all students and Asian and White students collectively and for each gender of these groups. Expectation was not significantly correlated with college ready index for any of the non-Asian minority groups. Invested, alternately, was significantly correlated with college ready index for all of the non-Asian minority groups and none of the other groups. The strongest correlation between college ready index and expectation was for Asian and White male students (r = .15**). The weakest correlation was for all female students (r = .10**). The correlation between expectation and college ready index was the only significant correlation for all female students (r = .10**) and for Asian and White female students (r = .12**).

The only significant correlations between invested and college ready index were found for non-Asian minority students (r =-.23**), non-Asian minority male students (r = -.23**), and non-Asian minority female students (r = -.24**). All of these correlations were negative. The significant correlations between college ready index and invested

were the strongest of all of the correlations between the student perception scales and college ready index.

All of the significant correlations of feedback scale with college ready index were negative indicating that the college ready index decreases as score on the feedback scale increase. The strongest of these was for non-Asian minority students (r = -.21**) and male non-Asian minority students (-.26**). Significant correlation between feedback and college ready index were not found for any of the female groups.

The same was true for the correlations between college ready index and positive regard. None of the female groups showed a significant correlation between positive regard and college ready index. In addition, non-Asian minority male students did not show a significant correlation. Weak and positive significant correlations between positive regard and college ready index were found for all students (r = .06**) , all male students (r = .07*), all Asian and White students (r = .10**) and Asian and White male students (r = .13**). All non-Asian minority students also showed a significant correlation but it was a negative correlation (r = -.12**).

The Teacher Support Scale Revised showed only two significant correlations with college ready index. All Asian and White students showed a weakly significant positive correlation (r = .05*) and all non-Asian minority students showed a weakly significant negative correlation (r = -.14*).

For non-Asian minority students, all of the significant correlations between college ready index and each of the perception scales were negative. With the exception of the correlations between feedback and college ready index, all of the significant correlations for all students and Asian and White students were positive.

Table 46. *Correlation of College Ready Index with Student Perception Scales by Gender and Ethnic Grouping*

| | | Accessible | Expectation | Feedback | Invested | Positive Regard | Teacher Support Scale |
|---|---|---|---|---|---|---|---|
| All | r (N) | .02 (1805) | .12** (1805) | -.10** (1795) | -.04 (1805) | .06** (1800) | .01 (1805) |
| All Male | r (N) | .01 (936) | .13** (936) | -.13** (930) | -.05 (936) | .07* (934) | .00 (936) |
| All Female | r (N) | .03 (862) | .10** (862) | -.06 (858) | -.02 (862) | .04 (859) | .02 (862) |
| Asian & White All | r (N) | .04 (1504) | .14** (1504) | -.07** (1497) | .01 (1504) | .10** (1500) | .05* (1504) |
| Asian & White Male | r (N) | .04 (775) | .15** (775) | -.09* (771) | .00 (775) | .13** (774) | .05 (775) |
| Asian & White Female | r (N) | .05 (722) | .12** (722) | -.04 (719) | .02 (722) | .06 (719) | .05 (722) |
| Non-Asian Minority All | r (N) | -.06 (287) | .05 (287) | -.21** (284) | -.23** (287) | -.12* (286) | -.14* (287) |
| Non-Asian Minority Male | r (N) | -.08 (156) | .10 (156) | -.26** (154) | -.23** (156) | -.15 (155) | -.15 (156) |
| Non-Asian Minority Female | r (N) | -.03 (131) | -.02 (131) | -.15 (130) | -.24** (131) | -.09 (131) | -.13 (131) |

*College readiness and academic performance.* It is not surprising that all of the GPA variables and course rating variables are positively and significantly correlated with the college ready index. The college ready index is determined by adding the courses cumulative ratings score with the cumulative GPA. Since each of the individual core course ratings contribute to the cumulative rating and each of the core GPAs contribute to the cumulative GPA, it make sense that these would be highly correlated. Some interesting results, however, are worth noting.

When the college ready index is correlated against 9$^{th}$ grade core GPA, 10$^{th}$ grade core GPA, combined core GPA and cumulative GPA and then disaggregated by gender and ethnicity, the lowest three correlations for each GPA variable are found for all non-Asian minority students, male non-Asian minority students and female non-Asian minority students (see Table 47). The weakest of all of these correlations is found between college ready index and 10$^{th}$ grade core GPA for non-Asian minority male students (r = .37**). For the correlations between college ready index and each of the GPA variables, the correlations found for females is the same or higher than that of the corresponding males in each of the ethnic groupings in all but two cases. There is a stronger correlation for Asian and White male students between 10$^{th}$ grade core GPA and college ready index (r = .60**) and between combined core GPA and college ready index (r = .68**).

Table 47. *Correlation of College Ready Index with GPA Variables by Gender and Ethnic Grouping*

| | | 9th Core | 10th Core | Core | Cum |
|---|---|---|---|---|---|
| All | r (N) | .65** (1775) | .56** (1798) | .66** (1806) | .72** (1806) |
| All Male | r (N) | .64** (920) | .56** (933) | .65** (937) | .71** (937) |
| All Female | r (N) | .65** (848) | .56** (858) | .65** (862) | .73** (862) |
| Asian & White All | r (N) | .67** (1486) | .59** (1498) | .68** (1505) | .72** (1505) |
| Asian & White Male | r (N) | .67** (767) | .60** (772) | .68** (776) | .72** (776) |
| Asian & White Female | r (N) | .67** (712) | .57** (719) | .67** (722) | .73** (722) |
| Non-Asian Minority ALL | r (N) | .54** (275) | .41** (286) | .51** (287) | .65** (287) |
| Non-Asian Minority Male | r (N) | .51** (148) | .37** (156) | .49** (156) | .64** (156) |
| Non-Asian Minority Female | r (N) | .56** (127) | .46** (130) | .55** (131) | .69** (131) |

As with the GPA variables, all of the core course rating variables are positively and significantly correlated with college ready index (see Table 48). Again, this is expected because each of the core course ratings is included in the courses cumulative rating. The courses cumulative rating is in turn included in the calculation of the college ready index. When comparing the correlations of each of the core course rating variables with college ready index, for all but the non-Asian minority student groups the strongest correlation is between 10th grade math course rating and college ready index. For all non-Asian minority students and for female non-Asian minority students, the strongest correlation is between 9th grade math course rating and college ready index. For non-Asian minority male students, the strongest correlation is with 9th grade English course rating.

The weakest correlations were found between world language course rating and college ready index for all students (r = .58**), all female students (r = .59**), all Asian and White students (r = .57**), Asian and White female students (r = .57**), and non-Asian minority male students (r = .54**). The correlation between college ready index and 9th grade science was the weakest correlation for all male students (r = .56**), Asian and White male students (r = .55**), all non-Asian minority students (r = .61**), and non-Asian minority female students (r = .61**).

When comparing male and female students of the same ethnic grouping, female students showed a higher correlation than male students between each of the core course rating variables and college ready index except in five cases. Non-Asian minorities males showed a stronger correlation between 9th grade English course rating and college ready index (r = .84**) and between 9th grade math course rating and college ready index (r = .83**). For the correlation between 10th grade English course

rating and college ready index, all male students (r = .77**), Asian and White male students (r = .76**) and non-Asian minority male students (r = .77**) all showed stronger correlations than their female counterparts.

When comparing ethnic grouping of the same gender, in general non-Asian minority students showed a stronger correlation between 9th grade core courses and college ready index while all students and Asian and White students showed a stronger correlation with 10th grade core courses and college ready index. Non-Asian minority students showed a higher correlation between 9th grade English course rating, 9th grade math course rating and 9th grade science course rating and college ready index than did all students and all Asian and White students. The same was true when comparing the correlations of all male students, Asian and White male students and non-Asian minority male students. Non-Asian minority female students showed a stronger correlation between 9th grade math course rating and college ready index than did all female students or Asian and White female students. Asian and White students of each gender category (all, male, and female) showed a stronger correlation between college ready index and 10th grade science course rating than all students and non-Asian minority groups respectively. All Asian and White students and male Asian and White students showed a stronger correlation between college ready index and 10th grade math course rating than all students and non-Asian minority students of the same gender.

Table 48. *Correlation of College Ready Index with Course Rating Variables by Gender and Ethnic Grouping*

| | | 9th English | 9th Math | 9th Science | 10th English | 10th Math | 10th Science | World Language |
|---|---|---|---|---|---|---|---|---|
| All | r (N) | .77** (1738) | .78** (1721) | .59** (1688) | .76** (1783) | .81** (1720) | .69** (1430) | .58** (1433) |
| All Male | r (N) | .75** (900) | .79** (888) | .56** (875) | .77** (919) | .80** (893) | .64** (748) | .56** (767) |
| All Female | r (N) | .78** (831) | .80** (826) | .62** (807) | .74** (857) | .81** (820) | .73** (678) | .59** (659) |
| Asian & White All | r (N) | .76** (1465) | .79** (1453) | .59** (1419) | .76** (1490) | .81** (1425) | .70** (1203) | .57** (1216) |
| Asian & White Male | r (N) | .72** (755) | .77** (747) | .55** (735) | .76** (763) | .80** (734) | .66** (629) | .57** (654) |
| Asian & White Female | r (N) | .78** (703) | .80** (699) | .62** (678) | .74** (720) | .81** (684) | .74** (570) | .57** (555) |
| Non-Asian Minority All | r (N) | .80** (262) | .82** (258) | .61** (256) | .76** (279) | .79** (282) | .61** (216) | .62** (206) |
| Non-Asian Minority Male | r (N) | .84** (140) | .83** (137) | .60** (136) | .77** (151) | .78** (154) | .55** (115) | .54** (110) |
| Non-Asian Minority Female | r (N) | .75** (122) | .81** (121) | .61** (120) | .74** (128) | .80** (128) | .67** (101) | .68** (96) |

Of the academic performance variables analyzed, WASL scores are the only variables not included in the calculation of the college ready index. Predictably, the pattern of correlations between each of the WASL score variables and college ready index does not follow the pattern seen with the GPA and course rating variables. While most of the variables are positively correlated with college ready index for each of the ethnic and gender groupings, they are less strongly correlated than the GPA and course rating variables (see Table 49). The correlations of 7th grade reading WASL scores and college ready index show the weakest correlations of all of the WASL variables for every ethnic and gender grouping. Significant correlations for this variable range from r = .08** for all Asian and White students to r = .34** for non-Asian minority male students. No significant correlation was found between 7th grade WASL reading score and college ready index for either Asian and White male students or non-Asian minority female students.

The correlation between high school WASL writing scores and college ready index are the strongest correlations for all students (r = .61**), all male students (r = .59**), all female students (r = .63**), all Asian and White students (r = .59**), Asian and White male students (r = .55*), and Asian and White female students (r = .62**). The correlation between college ready index and high school math WASL score is the strongest of the correlations for all non-Asian minority students (r = .70**) and non-Asian minority male students (r = .77*). For non-Asian minority female students, the strongest correlation was found between college ready index and 7th grade WASL math score (r = .71**).

Table 49. *Correlation of College Ready Index with WASL Scores by Gender and Ethnic Grouping*

| | | 7th Reading | 7th Writing | 7th Math | HS Reading | HS Writing | HS Math |
|---|---|---|---|---|---|---|---|
| All | r (N) | .11** (1373) | .55** (1369) | .48** (1374) | .52** (1692) | .61** (1698) | .50** (1695) |
| All Male | r (N) | .10** (710) | .52** (711) | .44** (713) | .51** (883) | .59** (884) | .48** (885) |
| All Female | r (N) | .12** (656) | .57** (651) | .55** (654) | .53** (802) | .63** (8107) | .52** (803) |
| Asian & White All | r (N) | .08** (1192) | .54** (1188) | .47** (1191) | .53** (1426) | .59** (1436) | .47** (1427) |
| Asian & White Male | r (N) | .05 (615) | .49** (615) | .44** (616) | .53** (739) | .55** (742) | .44** (742) |
| Asian & White Female | r (N) | .12** (570) | .58** (566) | .53** (568) | .53** (680) | .62** (687) | .51** (678) |
| Non-Asian Minority All | r (N) | .24** (175) | .60** (175) | .53** (177) | .50** (255) | .68** (251) | .70** (256) |
| Non-Asian Minority Male | r (N) | .34** (94) | .66** (95) | .41** (96) | .51** (140) | .68** (138) | .77** (138) |
| Non-Asian Minority Female | r (N) | .10 (81) | .53** (80) | .71** (81) | .51** (115) | .69** (113) | .65** (118) |

*The interaction of academic performance, attitude, perception, and demographic variables on college readiness.* The relationship between academic performance, students' attitudes and perceptions, socio-economic status, gender, ethnic grouping, and college readiness is complex. To this point, these variables have been examined separately. To begin to understand the patterns of influence of these variables on college readiness, they must be examined together. Multiple regression was used to analyze the relationships between college ready index, and each of the academic performance, student perceptions and attitudes, socio-economic, gender and ethnic grouping variables to determine the relative contribution and direction of influence of these variables on the college ready index. (Foster et al., 2006; Shavelson, 1996). Because individual course ratings and the GPA variables are included in the calculation of college ready index, they are omitted from the model. They are predictably highly correlated with college ready index and as such skew the results.

Regression models were run with college ready index as the dependent variable. The independent variables included in each model were gender, non-Asian minority, 7$^{th}$ grade WASL scores in reading, writing and math, high school WASL scores in reading writing and math, the Teacher Support Scale Revised and each of its subscales, academic self-perception scale, motivation self-regulation scale, and concrete achievement attitude scale. In addition, the models were run independently with total SES, father SES and mother SES. For each of the models, studentized residuals were calculated and evaluated to identify outlier cases (Allison, 1999). Studentized residual scores greater than 2.5 or less than -2.5 were omitted. Influence statistics were calculated and evaluated to identify cases which might unduly influence the outcome of regression. None were identified in any of the models. Each of the models was run

again with the outlier cases omitted. Because each of the independent variables varied greatly in scale and were not normally distributed, variable raw scores were converted to standard scores before running the regressions (McClendon, 1994; Shavelson, 1996).

All three of the models showed identical patterns of significance. Teacher Support Scale Revised was excluded from each of the models. Six additional variables did not show significant results in any of the models: 7th grade WASL reading scores, accessible, feedback, invested, positive regard and non-Asian minority. It was not surprising that the student perception scales failed to show significance since they showed the weakest correlations with college ready index and with each of the other variables. It was surprising that the non-Asian minority variables failed to show significance since many of the correlations varied significantly by this variable.

Each of the models had an adjusted $R^2$ of .59 indicating that the models account for about 59% of the variation in college ready index (See Tables 50-52). The Beta coefficients for the significant variables in each of the models were also nearly identical with the corresponding variables by total SES, father SES and mother SES with only a few exceptions. For the model using total SES, the coefficient for 7th grade WASL math scores (β = . 12) was .01 higher than in the models using mother SES or father SES. The model using mother SES showed coefficients .01 larger than that seen in the models using father SES and total SES for the variables high school WASL math score (β = .15), motivation self-regulation (β = .10) and concrete achievement attitudes (β = .06). The coefficients for each of the socio-economic variables showed the greatest variation: total SES (β = .06), father SES (β = .07) and mother SES (β = .04). All of the remaining coefficients were the same for each of the models (see Tables 50-52). The largest coefficient was found for high school WASL writing score (β= .27). Gender (β =

-.04) and concrete achievement attitudes ($\beta$ = .05 for total SES and father SES and $\beta$ = .06 for mother SES) were the only variables with negative coefficients. In each of the models, WASL scores had the largest coefficients.

Multiple regressions were also run using the variables White / not White, Asian / not Asian, African American / not African American and Hispanic / not Hispanic. In all of these models, the only subscale of the Teacher Support Scale Revised which was significant was the expectation scale (see Appendix L). In addition, 7$^{th}$ grade WASL scores in reading were not significant in any of the models. Ethnicity was significant in the models using White / not White, with a beta coefficient of -.07 for the models with total SES and mother SES and -.08 for the model with father SES, and using Asian / not Asian, with a beta coefficient of .11 regardless of the SES variable used. The African American variable was not significant in any of the models. The Hispanic variable was only significant in the model using mother SES with a beta coefficient of -.04. The largest beta coefficient in every model was high school WASL writing scores which was .29 for the models using White and Asian for total SES, father SES and mother SES and for the models using African American and Hispanic for the total SES models only. The beta coefficient for high school WASL writing was .30 for both of the African American and Hispanic models using both father SES and mother SES.

Table 50. *Multiple Regression of College Ready Index by Total SES*

| Variable | Beta | t | Sig. t |
|---|---|---|---|
| (Constant) | .10 | 6.34 | .00 |
| Gender (Male = 1) | -.04 | -2.52 | .01 |
| 7th WASL Reading | .01 | .68 | .50 |
| 7th WASL Writing | .13 | 5.62 | .00 |
| 7th WASL Math | .12 | 5.99 | .00 |
| HS WASL Reading | .15 | 6.80 | .00 |
| HS WASL Writing | .27 | 11.36 | .00 |
| HS WASL Math | .14 | 7.50 | .00 |
| Accessible | -.02 | -8.40 | .40 |
| Expectation | .07 | 2.81 | .01 |
| Feedback | -.03 | -1.45 | .15 |
| Invested | -.04 | -1.31 | .19 |
| Positive Regard | .02 | .71 | .48 |
| Academic Self-Perception | .05 | 2.39 | .02 |
| Motivation Self-Regulation | .09 | 4.62 | .00 |
| Concrete Achievement Attitudes | .05 | 3.02 | .00 |
| Non-Asian Minority (yes = 1) | -.02 | -1.36 | .17 |
| SES | .06 | 3.62 | .00 |
| R | .77 | | |
| $R^2$ | .60 | | |
| Adjusted $R^2$ | .59 | | |
| F | 105.13 | | |
| Sig. F | .00 | | |
| N | 1262 | | |

Table 51. *Multiple Regression of College Ready Index by Father SES*

| Variable | Beta | t | Sig. t |
|---|---|---|---|
| (Constant) | .10 | 6.52 | .00 |
| Gender (Male = 1) | -.04 | -2.42 | .02 |
| 7th WASL Reading | .01 | .80 | .42 |
| 7th WASL Writing | .13 | 5.70 | .00 |
| 7th WASL Math | .11 | 5.52 | .00 |
| HS WASL Reading | .15 | 6.80 | .00 |
| HS WASL Writing | .28 | 11.73 | .00 |
| HS WASL Math | .14 | 7.56 | .00 |
| Accessible | -.02 | -.64 | .52 |
| Expectation | .07 | 2.86 | .00 |
| Feedback | -.04 | -1.53 | .13 |
| Invested | -.04 | -1.31 | .19 |
| Positive Regard | .01 | .42 | .67 |
| Academic Self-Perception | .05 | 2.47 | .01 |
| Motivation Self-Regulation | .09 | 4.49 | .00 |
| Concrete Achievement Attitudes | .05 | 2.78 | .01 |
| Non-Asian Minority (yes = 1) | -.02 | -1.09 | .28 |
| SES | .07 | 4.03 | .00 |
| R | .77 | | |
| $R^2$ | .60 | | |
| Adjusted $R^2$ | .59 | | |
| F | 105.95 | | |
| Sig. F | .00 | | |
| N | 1263 | | |

Table 52. *Multiple Regression of College Ready Index by Mother SES*

| Variable | Beta | t | Sig. t |
|---|---|---|---|
| (Constant) | .10 | 6.29 | .00 |
| Gender (Male = 1) | -.04 | -2.57 | .01 |
| 7th WASL Reading | .01 | .79 | .43 |
| 7th WASL Writing | .13 | 5.67 | .00 |
| 7th WASL Math | .11 | 5.61 | .00 |
| HS WASL Reading | .15 | 6.85 | .00 |
| HS WASL Writing | .27 | 11.51 | .00 |
| HS WASL Math | .15 | 7.64 | .00 |
| Accessible | -.02 | -.83 | .41 |
| Expectation | .07 | 2.79 | .01 |
| Feedback | -.04 | -1.66 | .10 |
| Invested | -.04 | -1.21 | .23 |
| Positive Regard | .02 | .62 | .53 |
| Academic Self-Perception | .05 | 2.60 | .01 |
| Motivation Self-Regulation | .10 | 4.79 | .00 |
| Concrete Achievement Attitudes | .06 | 3.69 | .00 |
| Non-Asian Minority (yes = 1) | -.03 | -1.42 | .16 |
| SES | .04 | 2.18 | .03 |
| R | .77 | | |
| $R^2$ | .59 | | |
| Adjusted $R^2$ | .59 | | |
| F | 103.73 | | |
| Sig. F | .00 | | |
| N | 1261 | | |

# CHAPTER FOUR

# SUMMARY AND DISCUSSION

In this chapter, the research problem and methods will be summarized. Major findings of the study will be reviewed and discussed, Finally implications for further research will be examined.

## Research Problem and Methodology

*Research problem.*

As described in Chapter One, national attention is focused on public schools to reduce the achievement gap between low-socio-economic students and their peers. The fact that there are now federal sanctions under the No Child Left Behind Act for schools that do not reduce this gap suggests a sense of urgency that has not existed in the past. Simply increasing the graduation rate of students though is not enough to substantively change the economic future of students. In order to truly change students' occupational and therefore economic opportunity, students must leave high school prepared for college and this requires that they take the college preparatory courses.

Although post-secondary education is widely considered to be a key factor in improving students' economic potential and therefore social class, low college attendance rates for low-income students is a persistent national trend. The Economic Policy Institute (2005), citing research from the Department of Education in 1988, indicated that the highest performing low-income students attend college at the same rate as the lowest performing high-income students at about 30%. More recently, the National Center for Education Statistics (2000) reported that 31% more high-income students enroll in college immediately following graduation than low-income students. In a longitudinal study following students from the class of 1988 from eighth-grade through

age 26, researchers (Ingles et al., 2002) found that only 6.9% of students from low-income families graduated from college by the age of 26 while students from high income families did so at a rate of 51%. This has a tremendous impact on their future economic status.

Data from the 2000 United States Census states that the median income of adults aged 21 to 64 who do not finish high school is $21,332. This increases to $42,877 for those who earn a Bachelor degree (U. S. Census Bureau, 2000). The National Center for Children in Poverty (2006) reports that nationally, in 2004, 84% of children whose parents did not complete high school are living in poverty. This is in contrast to only 56% of children whose parents graduated from high school and only 24% of children whose parents have some college education. Washington State follows a similar trend with the percentages of students living in poverty being 78%, 53% and 25% respectively. Clearly, earning a college education is foundational to an improved economic future and potentially social class.

Researchers have focused on a myriad of factors influencing students' academic achievement. In short, they include student and family factors such as familial relationships and expectations (Allen, 1978; Crosnoe, 2004); the presence of extended family members in the home (Blair et al., 1999); socio-economic status (Bradley & Corwyn, 2002); race and social class (Blair et al., 1999); the types of social and cultural capital transmitted in families (Coleman, 1988; Dumais, 2002; Lareau, 2003); the occupational status of parents (Lueptow, 1975); student achievement attitudes (Mickelson, 1990); and students' sense of personal control (Ross & Broh, 2000). Researchers have also examined cultural factors such as how students reconcile their ethnic or cultural styles with school expectations (Carter, 2005) and community factors

such as the existence of high status adults in a students' neighborhood (Ainsworth, 2002). Finally they have studied school factors such as academic track membership (Byrne, 1990); teacher expectations (Farkas, Sheehan, Grobe et al., 1990); the ethnic mix of students and teachers in schools (Goldsmith, 2004); teacher-student relationships and interactions (Howard, 2003); students' perceptions of teacher biases (Wayman, 2002); the differential quality of schools and teachers by school socio-economic status (Kozol, 2005; Sirin, 2005); and students' perceptions of differential teacher treatment (Wayman, 2002; Weinstein et al., 1982; Weinstein et al., 1987; Weinstein & Middlestadt, 1979).

Administrators and teachers need more information about the factors which influence students' course selections in order to develop programs to increase the number of low-socio-economic students enrolling and succeeding in college preparatory courses. The purpose of this study then is to examine low-income students' achievement attitudes, their perceptions of teachers' attitudes about their academic ability, and their college readiness. The goal of this study was to address the following questions:

1. How do low-socio-economic students differ from their non-low-socio-economic peers on their:
    a. academic performance?
    b. college readiness based on enrollment in college gateway courses and grade point average?
    c. attitudes toward achievement?

d. perceptions of what teachers think about their academic ability and performance?

2. How are these factors related to one another?

3. Is there any difference in the pattern and relative influence of these factors for low-socio-economic and non-low-socio-economic students?

*Methods.*

In this study, 11th grade students from two large school districts in Washington were surveyed about their concrete achievement attitudes, academic self-perception, motivation self-regulation, and perceptions of teacher support behaviors using survey items from McCoach (2003), Mickelson (1990), and McWhirter (2007). Students were also asked about their parents' level of education and employment. Demographic and academic performance data from the districts' student records data bases were downloaded and attached to the survey data. Demographic information included gender, ethnicity, Free and Reduced Lunch status, and special program status. Socio-economic status was evaluated by combining students' responses to survey items about their parents' level of employment and education with their Free and Reduced Lunch status.

Academic performance data included 7th grade and high school WASL scores, core course information, credits earned, and grade point averages. These variables were examined and recoded for study purposes. Courses were analyzed for their academic level and then rated as to whether or not they were below grade level, at grade level or advanced. In addition, core course grades were calculated into core

grade point averages. Finally a college ready index was established by adding the courses cumulative rating with the cumulative grade point average.

Student responses to survey items were averaged to determine scores on the concrete achievement attitudes, academic self-perception and motivation self-regulation scales. Survey items from the Teacher Support Scale Revised were evaluated using principal component analysis and five subscales were determined: accessible, feedback, invested, positive regard, and expectation. Student responses to survey items on each subscale and on the Teacher Support Scale as a whole were averaged to give a scale score.

The relationship between socio-economic status and the academic performance, achievement attitudes and student perceptions was evaluated by calculating correlations disaggregated by socio-economic status, gender and ethnic grouping. Analysis of variance was calculated to identify significant differences in mean scores by socio-economic status disaggregated by gender and ethnicity. Similar procedures were conducted to examine the relationship between academic performance variables and socio-economic status, the relationship between academic performance variables and attitude and perception variables, and the relationship between college readiness, academic performance variables and attitude and achievement variables. Multiple regressions was conducted with college ready index as the dependent variable, and gender, ethnic grouping, socio-economic status, academic performance, attitudes and perception variables as the independent variables.

## DISCUSSION

The results of this study indicate that the relationships between academic performance, student attitudes and perceptions, college readiness and socio-economic

status are complicated and somewhat unclear. As data analysis progressed, it became clear that the interplay of ethnicity, socio-economic status and parent gender are all important (see Appendix K).

*Academic Performance and Socio-economic Status*

Academic performance was quantified in this study by variables for 7th grade and high school WASL scores, 9th and 10th grade core course GPAs, cumulative GPA, and core course ratings. These scores were correlated against total socio-economic status as well as each individual parent's socio-economic status. In addition, analysis of variance was calculated for these variables by the SES variables.

For all students and for Asian and White students, significant differences in mean scores were found for all but 7th grade WASL reading scores. However, there was not a consistent pattern of increasing mean with increasing socio-economic status for most of the variables. Furthermore, post hoc analysis did not yield a clear pattern of significant differences in the means. It is of interest that the ANOVAs by mother SES for all students and Asian and White students more often showed this pattern of increasing mean than father SES or Total SES. For all students by mother SES, the pattern was seen for 3 out of the 6 WASL variables, 3 out of the 4 GPA variables and 6 out of the 8 course rating variables. By father SES, in contrast, this pattern was seen only with 7th grade writing WASL and 9th grade math course rating. A similar pattern was seen for Asian and White students collectively. The fact that this pattern was seen more often with ANOVAs run against mother SES is particularly interesting when one looks at the correlation results. For all students and Asian and White students, father SES was correlated more strongly with academic performance variables than mother SES.

As was seen in much of the data analysis, non-Asian minority students differed significantly from their peers. Analysis of variance for non-Asian minority students collectively and of both genders showed fewer significant results for the academic performance variables than all students and Asian and White students. While there was no overall pattern to this, of interest is the fact that only three of the twelve ANOVAs run for GPA variables were significant. These were 9$^{th}$ grade and combined core GPA for female non-Asian minority students by total SES and cumulative GPA for all non-Asian minority students by father SES. Futhermore, only two of the ANOVA showed consistently increasing scores with increasing socio-economic status: 7$^{th}$ and high school WASL writing scores. To some degree these results may be due to the fact that student survey responses were used to identify and quantify socio-economic status. Rather than using solely students' participation in the Free and Reduced Lunch program, socio-economic status included parents' levels of income and education (Sirin, 2005). It is possible that students may not fully understand their parents' educational and employment background which could have skewed the results such that clear differences by socio-economic status were not apparent.

These results are particularly interesting when compared with the correlations of the academic performance variables with SES variables. Non-Asian minority students showed a higher correlation between more of the academic performance variables when correlated by total SES, father SES and mother SES than did all students or Asian and White students. This was not the case, however, for the GPA variables. Non-Asian minority students showed no correlation between any of the SES variables and the GPA variables. While there seems to be a stronger relationship between increasing SES and increasing WASL scores or course ratings, this relationship does not exist for grades.

While Asian and White students showed stronger correlations between father SES and each of the academic performance variables, non-Asian minority students did not. For non-Asian minority students, mother SES showed a stronger correlation than father SES on about half of the variables. This may suggest that father SES plays a greater role in these variables for Asian and White students. For non-Asian minority students, mother SES may play a greater role in these academic performance variables than for Asian and White students.

When the data is disaggregated by student gender, a similar pattern is seen. Father SES is more highly correlated with the academic performance variables than mother SES for Asian and White students of both genders. For non-Asian minority students, mother SES is more highly correlated than father SES for both genders for about half of the variables. Regardless of gender, no significant correlation was found for non-Asian minority students between SES and the GPA variables.

The fact that the GPA variables were not significantly correlated with SES for non-Asian minority students may seem counterintuitive on the surface. However, GPAs are based on individual course grades assigned by individual teachers. Grades are not objective. In many cases, teachers grade not only on coursework mastery but on participation, behavior, effort, citizenship, and attendance. As Farkas et al. showed (1990), teachers grade on more than coursework mastery. They grade on students habits, style and language. These are interpreted through teachers' own socio-economic and cultural lens which certainly influence their behavior and assessment of students (Howard, 2003; Weinstein et al., 1982). Thus teachers may be interpreting cultural styles and behaviors as a lack of ability or lower achievement orientation of the student.

Although the same pattern of significant ANOVAs results was found as that found for both genders collectively for all and Asian and White students, there was a different pattern of changing means by gender. All female students and Asian and White female students showed this pattern for only three of the academic performance variables. However, this pattern was seen with all male students for four of the variables by father SES and ten of the variables by mother SES. For Asian and White male students, this pattern was seen for only two variables by father SES and seven variables by mother SES. This suggests that for male students, mother SES may play a role in academic performance for Asian and White students.

While the inconsistency in this pattern for all ANOVAs suggests that socio-economic status is perhaps not as critical as other variables in academic performance outcomes, the fact that this pattern emerges significantly more often in males than females and in Asian and White students than in non-Asian minority students is of interest. Socio-economic status may play a greater role in academic performance for White and Asian males than for non-Asian minority students or females of either ethnic grouping. It is also likely, since many of these indicators are influenced by teacher behaviors, that the misinterpretation of cultural styles of non-Asian minority students influences teachers grading and support to advance to college gateway courses (Brattesani et al., 1984; Farkas, Sheehan, & Grobe, 1990; Howard, 2003; Weinstein et al., 1982; Weinstein & Middlestadt, 1979).

*Student Perceptions and Attitudes and Socio-economic Status*

Much like academic performance, the relationship between students' attitudes and perceptions and their socio-economic status is complicated by ethnic grouping, gender and parents' socio-economic status. When the Teacher Support Scale Revised

and its subscales were correlated against total SES, father SES and mother SES, clear differences could be seen between Asian and White students and non-Asian minority students. Asian and White students, regardless of the SES variable used, showed a positive correlation with the expectation and positive regard scale indicating an increase in these scales with an increase in SES. The expectation scale included such items as: "My teachers in my school think I should go to college…expect me to work hard…believe I am capable of achieving." The positive regard scale includes such items as: "My teachers in my school think I am a hard worker… enjoy interacting with me…care about me as a person." Non-Asian minorities showed no significant correlation between socio-economic status and the expectation or positive regard scales. They did, however, show a negative correlation with the feedback and invested scales indicating a decrease in the scores on these scales with an increase in SES. These scales included such items as: "My teachers in my school challenge me to think about my future goals…. help me to understand my strengths… push me to succeed" and "My teachers in my school evaluate my work carefully….let me know how to improve my grades…tell me if I am not working hard enough." It is interesting that feedback was negatively correlated for all students as well.

When the perception scales are correlated against the SES variables and disaggregated by gender, there is an obvious difference between male and female students. All male students and Asian and White male students follow much the same pattern seen as with both genders collectively. Non-Asian minority males however show significant negative correlations with every scale except expectation. They show no correlation with expectation. Females show few significant correlations and the correlations for non-Asian females are positive rather than negative as seen with the

male students. All female students show a positive correlation with expectation by father SES and a negative correlation with feedback by mother SES. Non-Asian minority students show a positive correlation with expectation by father SES.

It is possible that the negative correlation with feedback by socio-economic status may be in the interpretation of the statements. It may also be that students do not see these behaviors as supportive or achievement oriented behaviors. The feedback scales includes items such as: "My teachers in my school let me know how to improve my grades…tell me if I am not working hard enough…take time to get to know me…evaluate my work carefully." As socio-economic status increases, the scores on this scale decrease.

The correlation between academic self-perception and socio-economic status was uniformly positively correlated for all of the SES variables for all students and Asian and White students of both genders collectively and separately. As socio-economic status increases, so does academic self-perception. Of interest is the fact that it is not significantly correlated by any of the SES variables for all non-Asian minority students or for male non-Asian minority students. It is only positively correlated for female non-Asian minority students by father SES. For Asian and White students, academic self-perception is in some way related to socio-economic status. This is not the case for non-Asian minority students.

Similarly for motivation self-regulation, there is a significant positive correlation with all of the SES variables for all students, all male students, all Asian and White students and all Asian and White male students. For all female students and Asian and White female students it is only significantly correlated with father SES and total SES. There are no significant correlations between motivation self-regulation and any of the

SES variables for non-Asian minority students of either gender. For non-Asian minority students, no significant correlations were found between motivation self-regulation and any of the SES variables. Like academic self-perception, motivation self-regulation is related to socio-economic status for Asian and White students but not for non-Asian minority students.

As with all of the other attitude and perception variables, concrete achievement attitudes showed a significant positive correlation with each of the SES variables for every ethnic grouping and gender. This indicates that as socio-economic status increases, concrete achievement attitudes increase or become more positively oriented. As with the academic performance variables, analysis of variance results showed some significant findings. However, only one of these (academic self-perception by father SES for non-Asian females) showed a pattern of increasing mean with increasing socio-economic status. Post hoc analysis failed to show a consistent pattern of significant differences in the means as well.

In analyzing the correlations between socio-economic status and each of the scales, the difference between the correlations for the Teacher Support Scale and each of its subscales and the correlations for academic self-perception, motivation self-regulation, and concrete achievement attitudes was distinctive. Students' interpretations of the survey items on the accessible, feedback, expectation, positive regard and invested scales may not have the same meaning as intended. This was especially clear on the feedback scale which was negatively correlated for both ethnic groupings. In addition, these correlations may point either to differences in cultural interpretations of teacher behaviors or to differential treatment by teachers. This was

evident in the differences in correlations between Asian and White students and non-Asian minority students.

The Teacher Support Scale and its subscales were correlated with the academic self-perception, motivation self-regulation and concrete achievement attitude scales, as well, to examine the relationship between students' perceptions of teacher support behaviors and their achievement attitudes. There was a strong positive correlation between student perception scales and both academic self-perception and motivation self-regulation for all ethnic groupings. This indicates that as academic self-perception and motivation self-regulation increase, so do students' perceptions of their teachers' behaviors as measured on the accessible, expectation, feedback, invested, positive regard and Teacher Support Scale revised. These scales were not uniformly correlated with the concrete achievement scale, however. It is of interest that the only two scales which were not significantly correlated for Asian and White students (feedback and invested) were significantly correlated for non-Asian minority students. The reverse was true as well. Asian and White students showed a significant correlation with accessible, expectation and positive regard but non-Asian minorities did not. Logically, for the Asian and White students, the correlations were positive indicating an increase in the accessible, expectation and positive regard scales with a increase (or more positive orientation) in concrete achievement attitudes. The reverse was found for non-Asian minority student. They showed a negative correlation with feedback and invested indicating an increase in these scales with a decrease in the concrete achievement attitude scale (or a more negative orientation).

The differences in correlations between concrete achievement attitudes and the Teacher Support Scale Revised subscales again point to both the difference between

interpretation and intention of the survey item and to differences in cultural interpretation. The feedback scale was negatively correlated with concrete achievement attitudes for non-Asian minority students and for all students. It was also negatively correlated for Asian and White students though not significantly so. This indicates that as students achievement attitudes become more positively oriented, their responses on the feedback scale become more negative. While the survey is intended to identify and quantify supportive teacher behaviors, they are being interpreted in another way by students. The fact that Asian and White students showed positive correlations and non-Asian minority students showed negative correlations with concrete achievement attitudes indicates that there may be a cultural mismatch between in the intended supportive teacher behavior and the interpretation of the behavior by the students.

*Attitudes, Perceptions and Academic Performance*

It is not surprising given the previous data that the academic performance variables are more strongly correlated with academic self-perception, motivation self-regulation and concrete achievement attitudes than with any of the student perception scales. Correlations between the student perceptions scales and academic performance variables were largely weak correlations. The only consistent pattern was the correlation of all but the feedback scale with the GPA variables for all students and Asian and White students collectively. All of the significant correlations between the academic performance variables and the feedback scale were negative. This indicates that as academic performance increases, scores on the feedback scale decrease. While all but one of the correlations with the positive regard scale were positive for all students and Asian and White students collectively, all of the correlations on this scale for non-Asian minority students were negative. For non-Asian minority students, this

indicates a decrease in the positive regard scale with an increase in academic performance.

Stronger positive correlations were found between the academic performance variables and academic self-perception and motivation self-regulation than were seen in the correlations with the student perception scales for all ethnic groupings. This suggests that student achievement characteristics may have a greater influence on actual performance than the influence of their perceptions on academic performance. It is of interest that there were fewer significant correlations between the academic performance variables and motivation self-regulation for non-Asian minorities than for Asian and White students. This indicates that the relationship between motivation self-regulation may be stronger for Asian and White students than for non-Asian minority. It may also suggest that for non-Asian minorities, academic self-perception is more strongly related to academic performance than motivation self-regulation.

Not surprisingly, concrete achievement attitudes had the greatest number of significant correlations with academic performance variables. All of these correlations were positive. This indicates that as academic performance increases, concrete achievement attitudes increase or become more positively oriented. Of all of the attitude and perception variables, this has had the greatest number of significant correlations throughout the study. For every variable except the GPA variables, non-Asian minority students showed a stronger positive correlation between concrete achievement attitudes than Asian and White students.

*College Readiness*

College readiness was quantified by an aggregate variable which combined the students' courses cumulative ratings with their cumulative GPAs. When college ready

index was correlated with each of the SES variables, it showed moderately positive significant results for all ethnic groupings and genders. For each of these categories, college ready index was more highly correlated with father SES than mother SES suggesting that father SES has a greater influence on the courses students take and on the grades they earn. The strongest correlation between SES and college ready index was found for non-Asian minority females against father SES while the weakest correlation was found for Asian and White female students against mother SES. Asian and White females also had the weakest correlation between father SES and college ready index. Though all of the ANOVAs run for college ready index and the SES variables for each gender and ethnic grouping showed significant results, only those run by mother SES showed a pattern of increasing mean with increasing socio-economic status.

College ready index showed much the same pattern of correlation with the attitude and perception variables as the correlations of these variables with the academic performance variables. Significant negative correlations were found for feedback for most of the ethnic and gender groupings. Invested was only significantly correlated with college ready for non-Asian minority students and it was negatively correlated. All of the significant correlations for non-Asian minorities were negative.

Student perception scales showed fewer significant results than the academic self-perception, motivation self-regulation and concrete achievement attitude scales. Academic self-perception was positively correlated with college ready index for all groups except non-Asian minority males and non-Asian minority females. This indicated that academic self-perception is not related to course selection or grades for these two groups. Likewise motivation self-regulation was significantly correlated for all

groups except all non-Asian minority students, non-Asian minority male students, and non-Asian minority female students. Again, indicating that there is no relationship between motivation self-regulation and course selection or grades for these groups.

Concrete achievement attitudes, not surprisingly, were positively correlated with college ready index for every gender and ethnic grouping. The strongest of these were for all non-Asian minority students, non-Asian minority male students, and non-Asian minority female students. For all students, as concrete achievement attitudes increase (or become more positively oriented), college ready index increases.

College ready index was also correlated against each of the academic performance variables for each gender and ethnic grouping. As grade point averages and course ratings are included in the calculation of college ready index, it is not surprising that they are all highly correlated and positively correlated. When college ready index was correlated with 7$^{th}$ grade and high school WASL scores, significant positive results were seen for every category except 7$^{th}$ grade WASL reading scores. They show the weakest correlations with college readiness and are not significantly correlated with college ready index for Asian and White males or non-Asian minority females. For all but non-Asian minority students, the strongest correlation is found with high school WASL writing scores. It is interesting that for all non-Asian minority students and for non-Asian minority male students, there is a stronger correlation with high school WASL math scores. For non-Asian minority females, the stronger correlation is with 7$^{th}$ grade math score.

Ultimately all of these variables interact and contribute to college readiness. To examine this, multiple regression of the variables was calculated. The data was analyzed to identify outliers and excessively influential cases which were excluded from

the regression. Because the variables are of different scales and lack normality, raw scores for each of the variables were transformed to standard scores for the regression. The regression was run with total SES, father SES, and mother SES. Each of the resulting equations was very similar. It was not surprising given early data analysis that 7th grade WASL scores, and the accessible, feedback, invested and positive regard scales failed to show significance. It was surprising that the variable non-Asian minority also failed to show significance. Given the earlier data analysis which showed many differences between Asian and White students and non-Asian minority students, the researcher expected this to be a significant variable. While all of the regression equations accounted for the same amount of variation in the college ready index, the coefficient for father SES is greater in that equation than mother SES or total SES are in the other two equations. This seems to add some credence to the earlier data analysis in which father SES showed stronger correlations than mother SES for many of the variables. In each of the equations, the largest coefficient was high school writing WASL score which has been shown to be more strongly correlated than the other WASL score variables with college ready index. The coefficient for gender was negative while the coefficient for concrete achievement attitudes was positive.

The college ready index variable captures key college admission factors: grade point average and appropriate course selection. The lack of significance of 7th grade WASL reading scores in the model, and throughout the study, may be attributed to the focus on reading at both the national and state level. Students in middle school and high school are passing the reading WASL at fairly high rates. The implementation of secondary reading programs has contributed to this. In contrast, high school WASL writing scores showed a large and significant contribution to college ready index in every

model. This may be the result of several factors. Writing is a foundational skill which is used in nearly every content area. The ability to write well is essential to success in honor level, Advanced Placement and International Baccalaureate courses. While writing is taught in English classrooms, it has not risen to the same level of attention that reading has.

From a practical standpoint, this study has implications for the educational community. While popular opinion points to the importance of developing caring supportive relationships between students and teachers, it is critical that teachers also gain training in cultural proficiency so that their behaviors are in fact interpreted as supportive behaviors. Regardless, stronger correlations were found between academic performance variables and academic self-perception, motivation self-regulation and concrete achievement attitudes. While concrete achievement attitudes are largely established at home, educators can have an impact on academic self-perception and motivation self-regulation to improve student achievement. Programs such as Advancement Via Individual Determination (AVID) and Academic Youth Development (AYD) promote these academically productive behaviors and skills. Finally, the lack of correlation between GPA variables and socio-economic status for non-Asian minority students is troubling because they lag their peers in this area. Attention must be placed on teacher grading practices particularly if those practices disadvantage one group by including student styles and habits which may be misinterpreted.

## Further Research

This study raises several questions for further research. Socio-economic status is linked with academic performance and achievement orientation through other research studies. While strongly correlated with many variables in this study, it is

surprising that these variables failed to show a pattern of increasing means with increasing socio-economic status with the majority of variables. This may have been the result of using student responses to survey items to identify parents' level of education and employment.

While achievement attitudes, motivation self-regulation and academic self-perception were strongly correlated with socio-economic status and with academic performance variables, student perception variables were not consistently or strongly correlated. It would be useful to explore students' understanding of these constructs. Further, the negative correlations with the feedback scale in particular suggest that students' interpretation of the feedback may not be that of supportive teacher behavior. Qualitative research into students' understanding of these variables may provide insight into their responses and the relationship between perception teacher support and academic performance.

The difference in the various correlations of socio-economic status, student perceptions, achievement attitudes and academic performance between Asian and White students and those of non-Asian minority students is of interest particularly as disaggregated by gender. These differences suggest that the interplay of these variables may be different based depending upon ethnicity and gender. Examining these relationships disaggregated by specific ethnic groups may yield insight into this phenomenon.

Finally, the data for this study was collected at the end of the first semester of grade 11. As a result, it did not include students who had dropped out prior to this time. It would be useful to know how their responses would have differed from students who remained in school and how these would have changed the results of the study.

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# APPENDIX

Appendix A

## Student Academic Achievement Survey

Washington State University

East Sound Public Schools District

South Bay School District

**Students:**

Attached is a survey which asks you to share your perceptions about your experiences and attitudes about school and about your personal academic characteristics. The voice of students is often missing in educational research. This is an important opportunity for you to share your perceptions. **You are not required to complete the survey.** If there are any questions that you feel uncomfortable responding to, you may skip those questions. There are no right or wrong answers. Please do not write on the survey itself but instead mark your responses on the separate answer sheet.

Please read each statement, beginning with "My teachers in my high school..." and think carefully about whether you agree or disagree. Please look on your separate answer sheet. Find the question number that matches the statement number on your survey sheet. Next to that number, fill in the circle on your answer sheet with the answer choice that best matches your answer. Note that the circle under A represents "Strongly Disagree," B matches "Disagree," and so forth. There are no right or wrong answers.

| MY TEACHERS IN MY HIGH SCHOOL: | Strongly Disagree | Disagree | Not Sure | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 1. expect me to work hard in school. | A | B | C | D | E |
| 2. try to answer my questions. | A | B | C | D | E |
| 3. are interested in my future. | A | B | C | D | E |
| 4. take the time to help me get better grades. | A | B | C | D | E |
| 5. will listen if I want to talk about a problem. | A | B | C | D | E |
| 6. are helpful when I have questions about career issues. | A | B | C | D | E |
| 7. answer my questions about how to do better. | A | B | C | D | E |
| 8. would tell other people good things about me. | A | B | C | D | E |
| 9. are easy to talk to about school things | A | B | C | D | E |
| 10. challenge me to think about my future goals. | A | B | C | D | E |
| 11. believe I am capable of achieving. | A | B | C | D | E |
| 12. help me understand my strengths. | A | B | C | D | E |
| 13. want me to do well in school. | A | B | C | D | E |
| 14. enjoy interacting with me. | A | B | C | D | E |
| 15. care about me as a person. | A | B | C | D | E |

Please read each statement, beginning with "My teachers in my high school..." and think carefully about whether you agree or disagree. Please look on your separate answer sheet. Find the question number that matches the statement number on your survey sheet. Next to that number, fill in the circle on your answer sheet with the answer choice that best matches your answer. Note that the circle under A represents "Strongly Disagree," B matches "Disagree," and so forth. There are no right or wrong answers.

| MY TEACHERS IN MY HIGH SCHOOL: | Strongly Disagree | Disagree | Not Sure | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 16. expect me to study. | A | B | C | D | E |
| 17. tell me if I'm not working hard enough. | A | B | C | D | E |
| 18. support my goals for the future. | A | B | C | D | E |
| 19. think I am a hard worker. | A | B | C | D | E |
| 20. push me to succeed. | A | B | C | D | E |
| 21. are easy to talk to about things besides school. | A | B | C | D | E |
| 22. let me know how to improve my grades. | A | B | C | D | E |
| 23. take time to get to know me. | A | B | C | D | E |
| 24. evaluate my work carefully. | A | B | C | D | E |
| 25. think I should go to college. | A | B | C | D | E |

Please read each statement and think carefully about whether you agree or disagree. Please look on your separate answer sheet. Find the question number that matches the statement number on your survey sheet. Next to that number, fill in the circle on your answer sheet with the answer choice that best matches your answer. Note that the circle under A represents "Strongly Disagree," B matches "Disagree," and so forth. There are no right or wrong answers.

| | Strongly Disagree | Disagree | Not Sure | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 26. I am confident in my scholastic abilities. | A | B | C | D | E |
| 27. I do well in school. | A | B | C | D | E |
| 28. I learn new concepts quickly. | A | B | C | D | E |
| 29. I am successful. | A | B | C | D | E |
| 30. I am confident in my ability to succeed in school. | A | B | C | D | E |
| 31. I work hard in school. | A | B | C | D | E |
| 32. I concentrate on my schoolwork. | A | B | C | D | E |
| 33. I am a responsible student. | A | B | C | D | E |
| 34. I complete my schoolwork regularly. | A | B | C | D | E |
| 35. Based on their experiences, my parents say people like us are not always paid or promoted according to our education. | A | B | C | D | E |
| 36. All I need to learn for my future is to read, write, and make change. | A | B | C | D | E |
| 37. Although my parents tell me to get a good education in order to get a good job, they face barriers to job success. | A | B | C | D | E |
| 38. When our teachers give us homework, my friends never think of doing it. | A | B | C | D | E |
| 39. People in my family haven't been treated fairly at work no matter how much education they have. | A | B | C | D | E |
| 40. Studying in school rarely pays off later with good jobs. | A | B | C | D | E |

Please read each statement below. Decide upon your answer. Then please look on your separate answer sheet. Find the question number that matches the statement number on your survey sheet. Next to that number, fill in the circle on your answer sheet with the answer choice that best matches your answer. Note that the circle under A represents "Yes," B matches "No," and C represents "Don't Know or Not Applicable." There are no right or wrong answers.

| | Yes | No | Don't Know or Not Applicable |
|---|---|---|---|
| 41. My father finished high school. | A | B | C |
| 42. My mother finished high school. | A | B | C |
| 43. My father finished college. | A | B | C |
| 44. My mother finished college. | A | B | C |
| 45. My father finished an advanced degree. | A | B | C |
| 46. My mother finished an advanced degree. | A | B | C |
| 47. My father is employed. | A | B | C |
| 48. My mother is employed. | A | B | C |
| 49. My father works in a management or professional job. | A | B | C |
| 50. My mother works in a management or professional job. | A | B | C |

Thank you for participating in this survey.

Appendix B

## SBSD-WSU Student Academic Achievement Survey

### DIRECTIONS FOR ADMINISTRATION

Survey Administration – Key Points

- The Student Academic Achievement Survey is to be administered to Grade 11 students.
- The survey is voluntary and students may to choose not to participate or not to respond to item(s).
- The survey requires linking student responses to individual student academic and demographic information. Therefore, accurate bubbling in of student IDs is essential.
- Students will use their SBSD ID – the 6-digit one they use for lunch.
- This multiple choice survey has 50 items and should be completed in one class period. Actual administration time is about 30 minutes.
- Students receive a 5-page survey item document and a separate Scantron form to record their responses.
- All survey materials are to be returned to SBSD's Assessment Office for tabulating.

### BACKGROUND AND SURVEY PURPOSE:

The Student Academic Achievement Survey will provide educators with valuable information about student attitudes toward learning and how those attitudes may be shaped by a student's background. It is being conducted jointly with East Sound Public Schools and Washington State University. This study has been reviewed and approved by the WSU Institutional Review Board for human subject participation.

*Survey Materials*

- 50-item Multiple Choice Survey (One per student)
- Multiple Choice Response Scantron sheet (One per student)

*Student Supplies*

- No. 2 pencil

*Accommodations*

The accommodations for students in your classroom are to be adhered to for this survey as well. Follow similar procedures.

*Directions*

**Scantron form information must be complete and accurate in order to assure scoring. Fill out response sheet in accordance with the following directions. Errors in a student ID will void the usefulness of the student's responses.**

1. Say to the students:

*"I will be distributing a survey and response form that asks your perceptions about your experiences and attitudes about school. This is an important opportunity for you to share your perceptions. This survey is voluntary and you may choose not to participate. You may skip any items you do not wish to respond to. As I distribute the survey, please read the cover statement addressed to students."*

2. Distribute survey items and response form.

(Continued on back)

3. Have students complete the following sections on the Scantron form:
    a. Student ID (be sure to start with four zeroes)
    b. Birth date
    c. Please do not enter names
4. After students have had the opportunity to read the statement to students please say to the students:

    *"Do you have any questions at this time? [pause to respond to questions] You may also ask questions of me during the survey. As these are your perceptions, please do not discuss items on the survey during the survey administration but feel free to discuss them in the future."*

    *"You may choose to skip any items you do not wish to respond to."*
5. Allow students to complete the survey. You may help to clarify items as appropriate.
6. Upon completion ask students to check for correct bubbling of their IDs (precede with 4 zeroes).
7. Upon completion please collect the surveys and survey response sheets.
8. Please thank the students (and a thank you to you also).

*Return of Survey Materials*

1. Check student response forms for completion of ID.
2. Check for accuracy of bubbling student ID (4 zeroes followed by the 6-digit ID)
3. Please put survey materials in the box in which they were received with:
    a. Response sheets oriented in the same direction
    b. Survey item sheets stacked separately
    c. Return the box to your school office for pick up.

Thank you.

*QUESTIONS?*

Please call or email Assessment @ 7225

APPENDIX C

## EPS-WSU Student Academic Achievement Survey

### DIRECTIONS FOR ADMINISTRATION

Survey Administration – Key Points

- The Student Academic Achievement Survey is to be administered to Class of 2009 students.
- The survey is voluntary and students may to choose not to participate or not to respond to item(s).
- The survey requires linking student responses to individual student academic and demographic information. Therefore, accurate bubbling in of student IDs is essential.
- Students will use their EPS ID – the 6-digit one they use for lunch.
- This multiple choice survey has 50 items and should be completed in one class period. Actual administration time is about 30 minutes.
- Students receive a 5-page survey item document and a separate Scantron form to record their responses.
- All survey materials are to be returned to EPS's Assessment Office for tabulating.

### BACKGROUND AND SURVEY PURPOSE:

The Student Academic Achievement Survey will provide educators with valuable information about student attitudes toward learning and how those attitudes may be shaped by a student's background. It is being conducted jointly with East Sound Public Schools and Washington State University. This study has been reviewed and approved by the WSU Institutional Review Board for human subject participation.

*Survey Materials*

- 50-item Multiple Choice Survey (One per student)
- Multiple Choice Response Scantron sheet (One per student)

*Student Supplies*

- No. 2 pencil

*Accommodations*

The accommodations for students in your classroom are to be adhered to for this survey as well. Follow similar procedures.

*Directions*

**Scantron form information must be complete and accurate in order to assure scoring. Fill out response sheet in accordance with the following directions. Errors in a student ID will void the usefulness of the student's responses.**

9. Say to the students:

*"I will be distributing a survey and response form that asks your perceptions about your experiences and attitudes about school. This is an important opportunity for you to share your perceptions. This survey is voluntary and you may choose not to participate. You may skip any items you do not wish to respond to. As I distribute the survey, please read the cover statement addressed to students."*

10. Distribute survey items and response form.
11. Have students complete the following sections on the Scantron form:
    a. Student ID (be sure to start with four zeroes)
    b. Birth date
    c. Please do not enter names
12. After students have had the opportunity to read the statement to students please say to the students:

    *"Do you have any questions at this time? [pause to respond to questions] You may also ask questions of me during the survey. As these are your perceptions, please do not discuss items on the survey during the survey administration but feel free to discuss them in the future."*

    *"You may choose to skip any items you do not wish to respond to."*
13. Allow students to complete the survey. You may help to clarify items as appropriate.
14. Upon completion ask students to check for correct bubbling of their IDs (precede with 4 zeroes).
15. Upon completion please collect the surveys and survey response sheets.
16. Please thank the students (and a thank you to you also).

*Return of Survey Materials*

4. Check student response forms for completion of ID.
5. Check for accuracy of bubbling student ID (4 zeroes followed by the 6-digit ID)
6. Please put survey materials in the box in which they were received with:
    a. Response sheets oriented in the same direction
    b. Survey item sheets stacked separately
    c. Return the box to your school office for pick up.

Thank you. Questions?
Please call or email Assessment X 4057

APPENDIX D

February 4, 2008

Dear Parents/Guardians of East Sound Public Schools Class of 2009 Students,

During the week of February the 11th, East Sound Public School students in the Class of 2009 will be participating in the Student Academic Achievement Survey which is sponsored by East Sound Public Schools and Washington State University. Results from this survey are important to making your child's school one that successfully prepares all students for their future.

While the Student Academic Achievement Survey is not anonymous in order to get course enrollment and high school academic history, the individual student names will be deleted once the information from the survey has been connected to course information. Students will not be asked questions about social issues such as religion, substance abuse, or sexual activity.

Students will complete the survey in class. In the survey, students are asked to provide their opinion about questions that focus on teacher expectation and support, academic self-concept, and motivation. There will also be some general questions about family economic status similar to those questions asked on the Scholastic Achievement Test (SAT).

This survey is voluntary and you or your student has the option not to participate in the survey. In addition, your child can choose to skip any question(s) they wish.

This study has been reviewed and approved by the WSU Institutional Review Board for human subject participation. If you have questions about the study please contact the researchers listed below. If you have questions about your rights as a participant please contact the WSU Institutional Review Board at 509-335-3668 or irb@wsu.edu. If you have questions about this survey please, you may also contact the district's Assessment Office at 425.385.4057.

Sincerely,

Catherine Matthews,
Assessment Specialist
East Sound Public Schools

Merri Rieger,
Washington State University

Merri Rieger,
Washington State University

APPENDIX E

Table E1. Total Variance Explained

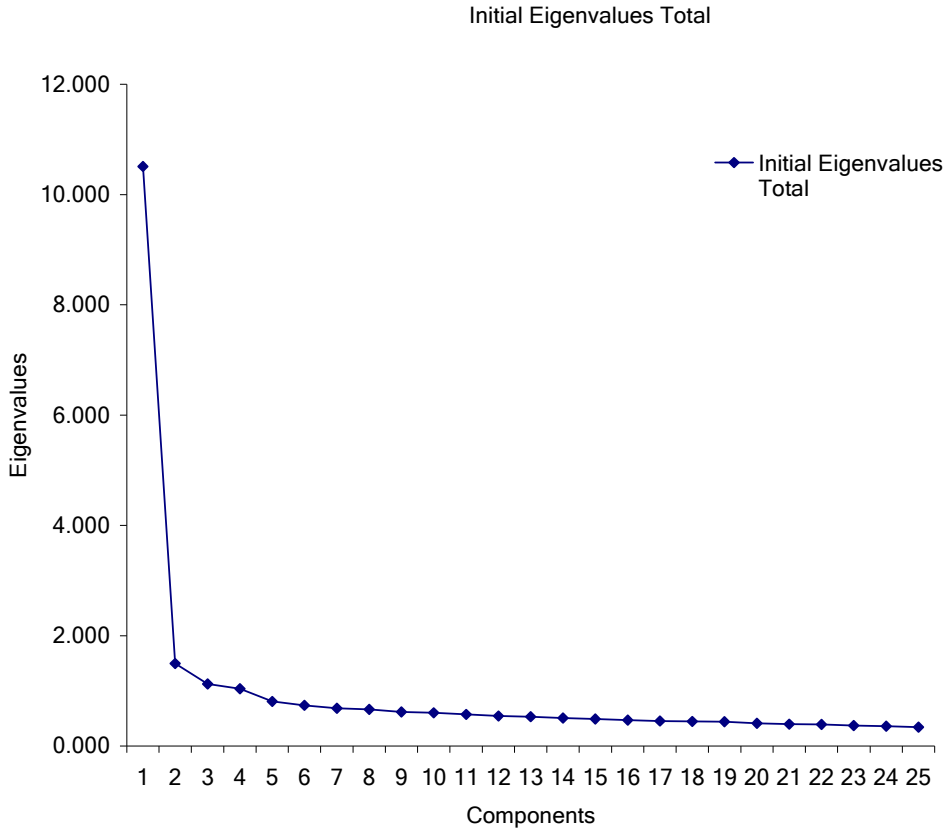
| | Initial Eigenvalues | | |
|---|---|---|---|
| Component | Total | % of Variance | Cumulative % |
| 1 | 10.51 | 42.04 | 42.04 |
| 2 | 1.50 | 5.99 | 48.03 |
| 3 | 1.13 | 4.50 | 52.53 |
| 4 | 1.04 | 4.15 | 56.69 |
| 5 | .81 | 3.22 | 59.91 |
| 6 | .74 | 2.96 | 62.86 |
| 7 | .68 | 2.74 | 65.60 |
| 8 | .66 | 2.66 | 68.26 |
| 9 | .62 | 2.48 | 70.73 |
| 10 | .60 | 2.41 | 73.14 |
| 11 | .57 | 2.29 | 75.43 |
| 12 | .55 | 2.18 | 77.61 |
| 13 | .53 | 2.12 | 79.74 |
| 14 | .51 | 2.03 | 81.77 |
| 15 | .49 | 1.95 | 83.72 |
| 16 | .47 | 1.87 | 85.60 |

Table E1 (continued). Total Variance Explained

| | Initial Eigenvalues | | |
|---|---|---|---|
| Component | Total | % of Variance | Cumulative % |
| 17 | .452 | 1.810 | 87.405 |
| 18 | .44 | 1.77 | 89.18 |
| 19 | .44 | 1.76 | 90.93 |
| 20 | .41 | 1.65 | 92.58 |
| 21 | .40 | 1.58 | 94.16 |
| 22 | .39 | 1.56 | 95.72 |
| 23 | .37 | 1.48 | 97.20 |
| 24 | .36 | 1.43 | 98.63 |
| 25 | .34 | 1.37 | 100.00 |

APPENDIX F

Scree Plot of Initial Eigenvalues



APPENDIX G

Table G.1. *Principle Component Analysis of Survey Items 1-25*

| Rotated Component Matrix(a) | | | | | |
|---|---|---|---|---|---|
| | Component | | | | |
| Survey Item | 1 | 2 | 3 | 4 | 5 |
| Q14: enjoy interacting with me | .69 | | | | |
| Q19: think I am a hard worker | .64 | | | .34 | |
| Q8: would tell other people good things about me | .62 | | | | |
| Q15: care about me as a person | .62 | | .33 | | |
| Q21: are easy to talk to about things besides school | .56 | | | | .36 |
| Q23: take time to get to know me | .53 | | | | .49 |
| Q20: push me to succeed | .44 | | .38 | .31 | .39 |
| Q2: try to answer my questions | | .69 | | .34 | |
| Q7: answer my questions about how to do better | | .67 | | | |
| Q5: will listen if I want to talk about a problem | | .62 | .31 | | |
| Q4: take the time to help me get better grades | | .61 | .33 | | |

Table G.1 (continued). *Principle Component Analysis of Survey Items 1-25*

| Rotated Component Matrix | | | | | |
|---|---|---|---|---|---|
| | Component | | | | |
| Survey Item | 1 | 2 | 3 | 4 | 5 |
| Q9: are easy to talk to about school things | .36 | .55 | | | |
| Q10: challenge me to think about my future goals | | | .69 | | |
| Q3: are interested in my future | | .40 | .62 | | |
| Q6: are helpful when I have questions about career issues | | .50 | .55 | | |
| Q12: help me understand my strengths | .37 | | .53 | | |
| Q18: support my goals for the future | .42 | | .52 | | .31 |
| Q16: expect me to study | | | | .72 | |
| Q1: Expect me to work hard in school. | | .30 | | .69 | |
| Q25: think I should go to college | .38 | | | .57 | |
| Q11: believe I am capable of achieving | .41 | .34 | | .46 | |
| Q13: want me to do well in school | | .43 | | .44 | |

Table G.1 (continued). *Principle Component Analysis of Survey Items 1-25*

| | Rotated Component Matrix | | | | |
|---|---|---|---|---|---|
| | Component | | | | |
| Survey Item | 1 | 2 | 3 | 4 | 5 |
| Q22: let me know how to improve my grades | | .44 | | | .67 |
| Q17: tell me if I'm not working hard enough | | | .31 | .32 | .63 |
| Q24: evaluate my work carefully | .32 | | | | .54 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.

APPENDIX H

Table H.1. *Component Score Coefficient Matrix*

| | Component | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Question 1 | -.12 | .03 | .07 | .35 | -.17 |
| Question 2 | -.05 | .39 | -.21 | .08 | -.12 |
| Question3 | -.06 | .04 | .40 | -.04 | -.22 |
| Question 4 | -.14 | .27 | .04 | -.11 | .07 |
| Question 5 | -.03 | .28 | .04 | -.13 | -.10 |
| Question 6 | -.17 | .15 | .32 | -.12 | -.05 |
| Question 7 | -.12 | .32 | -.06 | -.01 | .00 |
| Question 8 | .30 | -.04 | -.04 | .06 | -.23 |
| Question 9 | .06 | .23 | -.20 | .01 | -.01 |
| Question 10 | -.13 | -.16 | .51 | .03 | -.06 |
| Question 11 | .09 | .02 | -.02 | .17 | -.11 |
| Question 12 | -.01 | -.11 | .30 | -.05 | .04 |
| Question 13 | -.01 | .11 | -.12 | .15 | .03 |
| Question 14 | .33 | -.04 | -.10 | -.06 | -.07 |
| Question 15 | .24 | -.02 | .03 | -.07 | -.09 |
| Question 16 | -.13 | -.10 | -.07 | .40 | .15 |

Table H.1 (continued). *Component Score Coefficient Matrix*

| | Component | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Question 17 | -.22 | -.23 | .16 | .12 | .45 |
| Question 18 | .04 | -.17 | .27 | .00 | .04 |
| Question 19 | .35 | -.16 | -.15 | .14 | -.09 |
| Question 20 | .07 | -.17 | .10 | .07 | .13 |
| Question 21 | .22 | .04 | -.10 | -.25 | .14 |
| Question 22 | -.12 | .17 | -.25 | -.06 | .46 |
| Question 23 | .17 | -.03 | -.08 | -.19 | .25 |
| Question 24 | .03 | -.02 | -.17 | .01 | .33 |
| Question 25 | .15 | -.10 | -.15 | .28 | -.02 |

APPENDIX I

Table I.1. *Normality data*

| | Skewness | Kurtosis |
|---|---|---|
| Accessible | -.85 | 1.50 |
| Expectation | -1.26 | 3.13 |
| Feedback | -.34 | .40 |
| Invested | -.31 | .41 |
| Positive Regard | -.33 | .49 |
| Academic Self Perception | -.70 | .81 |
| Teacher Support Scale | -.61 | 1.70 |
| Motivation Self Regulation | -.64 | .17 |
| Concrete Achievement Attitude | .27 | .23 |
| Non-Asian Minority | 1.63 | .05 |
| Minority | .65 | -1.58 |
| Total SES | -.28 | -.87 |
| Father SES | -.24 | -1.12 |
| Mother SES | -.14 | -.95 |
| College Ready Index | -.82 | -.07 |
| 7th WASL Reading | -4.79 | 24.25 |
| 7th WASL Writing | -1.07 | 2.07 |
| 7th WASL Math | -3.20 | 16.24 |
| HS WASL Reading | -4.70 | 47.46 |
| HS WASL Writing | -1.51 | 4.30 |
| HS WASL Math | -3.76 | 21.73 |

Table I.2. *Test of Homogeneity of Variances*

| | Levene Statistic | df1 | df2 |
|---|---|---|---|
| Accessible | .59 | 11 | 2017 |
| Expectation | 1.81* | 11 | 2017 |
| Feedback | 1.21 | 11 | 2007 |
| Invested | .81 | 11 | 2017 |
| Positive Regard | .66 | 11 | 2011 |
| Academic Self Perception | 1.32 | 11 | 2000 |
| Teacher Support Scale | .91 | 11 | 2017 |
| Motivation Self Regulation | 1.54 | 11 | 1991 |
| Concrete Achievement Attitude | 1.38 | 11 | 1981 |
| College Ready Index | 8.21* | 11 | 1793 |
| 7th WASL Reading | 1.24 | 11 | 1498 |
| 7th WASL Writing | 3.66* | 11 | 1492 |
| 7th WASL Math | 1.69 | 11 | 1497 |
| HS WASL Reading | 9.97* | 11 | 1835 |
| HS WASL Writing | 6.32* | 11 | 1844 |
| HS WASL Math | 1.71 | 11 | 1837 |

APPENDIX J

Table J.1. ANOVA *of 7th grade WASL Reading Scores by SES Grouping*

| | Total | | Father Total | | Mother Total | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 54 | 376.46 | 88 | 380.06 | 75 | 381.59 |
| 0 | 153 | 393.63 | 229 | 396.44 | 222 | 393.89 |
| 1 | 52 | 399.77 | 123 | 390.48 | 175 | 397.80 |
| 2 | 67 | 392.97 | 215 | 400.19 | 271 | 394.41 |
| 3 | 105 | 399.89 | 334 | 404.01 | 352 | 398.34 |
| 4 | 130 | 392.86 | 230 | 396.93 | 227 | 411.36 |
| 5 | 182 | 398.03 | 292 | 406.68 | 188 | 408.28 |
| 6 | 230 | 398.16 | | | | |
| 7 | 168 | 400.57 | | | | |
| 8 | 183 | 405.96 | | | | |
| 9 | 77 | 411.81 | | | | |
| 10 | 109 | 411.64 | | | | |
| Total | 1510 | 399.28 | 1511 | 399.26 | 1510 | 399.28 |
| | F=1.74, Sig. = .06 | | F=2.79, Sig. = .01 | | F=3.47 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.2. *ANOVA of 7th grade WASL Writing Scores by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 54 | 7.91 | 88 | 8.02 | 75 | 7.85 |
| 0 | 152 | 8.66 | 228 | 8.59 | 221 | 8.59 |
| 1 | 52 | 8.13 | 120 | 8.79 | 174 | 8.84 |
| 2 | 66 | 8.47 | 216 | 9.10 | 271 | 9.06 |
| 3 | 104 | 8.68 | 332 | 9.34 | 349 | 9.55 |
| 4 | 131 | 8.98 | 229 | 9.50 | 226 | 9.54 |
| 5 | 181 | 9.19 | 292 | 9.78 | 188 | 9.80 |
| 6 | 228 | 9.40 | | | | |
| 7 | 167 | 9.63 | | | | |
| 8 | 183 | 9.63 | | | | |
| 9 | 77 | 9.83 | | | | |
| 10 | 109 | 9.83 | | | | |
| Total | 1504 | 9.18 | 1505 | 9.18 | 1504 | 9.18 |
| | F=10.84, Sig. =.00 | | F=17.12, Sig. = .00 | | F=18.47 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.3. *ANOVA of 7th grade WASL Math Scores by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 54 | 359.57 | 88 | 361.11 | 75 | 358.53 |
| 0 | 152 | 384.27 | 228 | 385.89 | 221 | 386.10 |
| 1 | 52 | 379.29 | 122 | 374.64 | 174 | 390.78 |
| 2 | 67 | 376.81 | 215 | 400.87 | 270 | 401.04 |
| 3 | 104 | 379.07 | 334 | 403.50 | 353 | 404.00 |
| 4 | 129 | 396.33 | 230 | 408.68 | 228 | 410.00 |
| 5 | 182 | 407.97 | 293 | 419.65 | 188 | 417.19 |
| 6 | 231 | 398.74 | | | | |
| 7 | 168 | 412.07 | | | | |
| 8 | 183 | 414.70 | | | | |
| 9 | 78 | 418.51 | | | | |
| 10 | 109 | 417.88 | | | | |
| Total | 1509 | 399.61 | 1510 | 399.59 | 1509 | 399.61 |
| | F=8.91, Sig. = .00 | | F=17.47, Sig. = .00 | | F=11.81, Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.4. *ANOVA of High School WASL Reading Scores by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 82 | 387.96 | 127 | 399.59 | 109 | 395.17 |
| 0 | 175 | 423.02 | 283 | 423.45 | 266 | 422.53 |
| 1 | 68 | 418.28 | 158 | 422.82 | 221 | 431.28 |
| 2 | 94 | 420.09 | 267 | 428.60 | 334 | 429.42 |
| 3 | 132 | 427.20 | 392 | 434.31 | 430 | 434.97 |
| 4 | 167 | 430.20 | 274 | 438.45 | 264 | 439.26 |
| 5 | 219 | 433.06 | 347 | 439.80 | 223 | 436.02 |
| 6 | 287 | 431.75 | | | | |
| 7 | 189 | 439.14 | | | | |
| 8 | 214 | 439.84 | | | | |
| 9 | 92 | 441.33 | | | | |
| 10 | 128 | 437.13 | | | | |
| Total | 1847 | 430.12 | 1848 | 430.10 | 1847 | 430.12 |
| | F=15.23, Sig. = .00 | | F=23.76, Sig. = .00 | | F=22.53 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.5. *ANOVA of High School WASL Writing Scores by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 83 | 18.13 | 129 | 18.30 | 110 | 18.32 |
| 0 | 180 | 19.78 | 287 | 19.91 | 271 | 19.72 |
| 1 | 68 | 19.00 | 158 | 19.44 | 219 | 19.90 |
| 2 | 95 | 18.95 | 265 | 20.46 | 339 | 20.45 |
| 3 | 130 | 20.13 | 392 | 20.89 | 430 | 21.11 |
| 4 | 168 | 20.35 | 276 | 21.01 | 264 | 21.05 |
| 5 | 218 | 20.61 | 350 | 21.34 | 223 | 21.17 |
| 6 | 285 | 20.88 | | | | |
| 7 | 192 | 21.10 | | | | |
| 8 | 216 | 21.44 | | | | |
| 9 | 93 | 21.38 | | | | |
| 10 | 128 | 21.07 | | | | |
| Total | 1856 | 20.48 | 1857 | 20.48 | 1856 | 20.48 |
| | F=14.81, Sig. =.00 | | F=34.95, Sig. = .00 | | F=21.47 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.6. *ANOVA of High School WASL Math Scores by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 83 | 374.37 | 131 | 371.95 | 109 | 374.40 |
| 0 | 178 | 395.97 | 280 | 393.94 | 272 | 393.38 |
| 1 | 68 | 382.26 | 158 | 384.40 | 218 | 399.56 |
| 2 | 95 | 386.78 | 267 | 403.77 | 338 | 401.36 |
| 3 | 127 | 384.13 | 390 | 405.95 | 427 | 404.93 |
| 4 | 171 | 403.07 | 278 | 409.60 | 263 | 412.27 |
| 5 | 219 | 404.03 | 346 | 417.84 | 222 | 414.72 |
| 6 | 282 | 404.72 | | | | |
| 7 | 191 | 411.23 | | | | |
| 8 | 214 | 413.55 | | | | |
| 9 | 94 | 415.31 | | | | |
| 10 | 127 | 419.43 | | | | |
| Total | 1849 | 402.36 | 1850 | 402.34 | 1849 | 402.36 |
| | F=7.37, Sig. = .00 | | F=15.36, Sig. = .00 | | F=8.75 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.7. *ANOVA of 9th Grade Core GPA by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 68 | 2.10 | 110 | 2.18 | 93 | 2.14 |
| 0 | 167 | 2.35 | 265 | 2.43 | 253 | 2.33 |
| 1 | 62 | 2.37 | 146 | 2.34 | 210 | 2.57 |
| 2 | 86 | 2.34 | 265 | 2.52 | 327 | 2.68 |
| 3 | 122 | 2.41 | 372 | 2.60 | 416 | 2.67 |
| 4 | 163 | 2.55 | 270 | 2.79 | 256 | 2.78 |
| 5 | 213 | 2.61 | 347 | 3.02 | 219 | 2.89 |
| 6 | 279 | 2.61 | | | | |
| 7 | 186 | 2.83 | | | | |
| 8 | 212 | 2.92 | | | | |
| 9 | 90 | 2.96 | | | | |
| 10 | 126 | 2.94 | | | | |
| Total | 1774 | 2.63 | 1775 | 2.63 | 1774 | 2.63 |
| | F=9.00, Sig. = .00 | | F=18.10, Sig. = .00 | | F=11.09 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.8. *ANOVA of 10th Grade Core GPA by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 72 | 1.91 | 114 | 2.03 | 98 | 2.00 |
| 0 | 168 | 2.24 | 271 | 2.21 | 255 | 2.19 |
| 1 | 67 | 2.01 | 149 | 2.12 | 214 | 2.35 |
| 2 | 87 | 2.12 | 270 | 2.35 | 332 | 2.44 |
| 3 | 121 | 2.21 | 374 | 2.42 | 417 | 2.49 |
| 4 | 166 | 2.43 | 273 | 2.57 | 260 | 2.53 |
| 5 | 217 | 2.42 | 347 | 2.76 | 221 | 2.62 |
| 6 | 280 | 2.35 | | | | |
| 7 | 188 | 2.65 | | | | |
| 8 | 214 | 2.66 | | | | |
| 9 | 91 | 2.73 | | | | |
| 10 | 126 | 2.68 | | | | |
| Total | 1797 | 2.42 | 1798 | 2.42 | 1797 | 2.42 |
| | F=8.08, Sig. = .00 | | F=14.83, Sig. = .00 | | F=7.56 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.9. *ANOVA of Core GPA by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 72 | 2.03 | 118 | 2.12 | 98 | 2.10 |
| 0 | 171 | 2.30 | 273 | 2.31 | 258 | 2.25 |
| 1 | 67 | 2.18 | 149 | 2.23 | 214 | 2.46 |
| 2 | 87 | 2.22 | 271 | 2.44 | 333 | 2.54 |
| 3 | 123 | 2.31 | 375 | 2.51 | 419 | 2.58 |
| 4 | 167 | 2.48 | 273 | 2.67 | 261 | 2.65 |
| 5 | 218 | 2.51 | 347 | 2.89 | 222 | 2.76 |
| 6 | 280 | 2.48 | | | | |
| 7 | 189 | 2.73 | | | | |
| 8 | 214 | 2.79 | | | | |
| 9 | 91 | 2.84 | | | | |
| 10 | 126 | 2.82 | | | | |
| Total | 1805 | 2.52 | 1806 | 2.52 | 1805 | 2.52 |
| | F=9.72, Sig. = .00 | | F=19.15, Sig. = .00 | | F=10.33 , Sig. = .00 | |

Table J.10. *ANOVA of Cumulative GPA by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 72 | 2.37 | 119 | 2.40 | 98 | 2.42 |
| 0 | 172 | 2.64 | 276 | 2.67 | 260 | 2.60 |
| 1 | 67 | 2.63 | 152 | 2.59 | 215 | 2.79 |
| 2 | 90 | 2.49 | 271 | 2.77 | 337 | 2.83 |
| 3 | 124 | 2.64 | 378 | 2.84 | 423 | 2.90 |
| 4 | 169 | 2.77 | 276 | 2.98 | 263 | 2.96 |
| 5 | 219 | 2.83 | 347 | 3.13 | 222 | 3.04 |
| 6 | 282 | 2.82 | | | | |
| 7 | 190 | 3.04 | | | | |
| 8 | 216 | 3.04 | | | | |
| 9 | 91 | 3.10 | | | | |
| 10 | 126 | 3.10 | | | | |
| Total | 1818 | 2.83 | 1819 | 2.83 | 1818 | 2.83 |
| | F=11.37, Sig. = .00 | | F=21.99, Sig. = .00 | | F=12.96 , Sig. = .00 | |

Table J.11. *ANOVA of Courses Cumulative Rating by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 72 | 18.01 | 118 | 17.92 | 98 | 18.82 |
| 0 | 171 | 23.11 | 273 | 23.55 | 258 | 22.83 |
| 1 | 67 | 21.48 | 149 | 21.89 | 214 | 24.09 |
| 2 | 87 | 21.71 | 271 | 24.26 | 333 | 24.92 |
| 3 | 123 | 23.15 | 375 | 25.96 | 419 | 25.98 |
| 4 | 167 | 23.72 | 273 | 26.99 | 261 | 27.31 |
| 5 | 218 | 25.35 | 347 | 28.45 | 222 | 27.68 |
| 6 | 280 | 25.32 | | | | |
| 7 | 189 | 27.41 | | | | |
| 8 | 214 | 27.75 | | | | |
| 9 | 91 | 28.97 | | | | |
| 10 | 126 | 28.48 | | | | |
| Total | 1805 | 25.12 | 1806 | 25.11 | 1805 | 25.12 |
| | F=22.74, Sig. = .00 | | F=46.87, Sig. = .00 | | F=27.72 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.12. *ANOVA of 9th Grade Math Course Rating by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 66 | 3.00 | 106 | 3.03 | 88 | 3.18 |
| 0 | 159 | 3.64 | 254 | 3.72 | 241 | 3.62 |
| 1 | 59 | 3.69 | 137 | 3.72 | 203 | 3.84 |
| 2 | 81 | 3.58 | 260 | 3.85 | 317 | 3.93 |
| 3 | 120 | 3.69 | 362 | 4.05 | 402 | 4.10 |
| 4 | 156 | 3.76 | 263 | 4.13 | 254 | 4.23 |
| 5 | 208 | 4.00 | 339 | 4.37 | 215 | 4.25 |
| 6 | 266 | 4.02 | | | | |
| 7 | 182 | 4.29 | | | | |
| 8 | 209 | 4.28 | | | | |
| 9 | 91 | 4.34 | | | | |
| 10 | 123 | 4.30 | | | | |
| Total | 1720 | 3.96 | 1721 | 3.96 | 1720 | 3.96 |
| | F=13.86, Sig. = .00 | | F=26.51, Sig. = .00 | | F=19.92 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.13. *ANOVA of 9th Grade English Course Rating by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 66 | 3.05 | 106 | 3.15 | 88 | 3.15 |
| 0 | 160 | 3.83 | 256 | 3.90 | 242 | 3.76 |
| 1 | 59 | 3.54 | 138 | 3.66 | 205 | 3.95 |
| 2 | 82 | 3.65 | 264 | 3.97 | 321 | 4.03 |
| 3 | 120 | 3.91 | 365 | 4.19 | 409 | 4.23 |
| 4 | 158 | 3.91 | 266 | 4.26 | 254 | 4.33 |
| 5 | 210 | 4.13 | 343 | 4.42 | 218 | 4.33 |
| 6 | 271 | 4.08 | | | | |
| 7 | 186 | 4.39 | | | | |
| 8 | 209 | 4.34 | | | | |
| 9 | 91 | 4.49 | | | | |
| 10 | 125 | 4.38 | | | | |
| Total | 1737 | 4.07 | 1738 | 4.06 | 1737 | 4.07 |
| | F=15.02, Sig. = .00 | | F=27.51, Sig. =.00 | | F=21.56 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.14. *ANOVA of 9th Science Course Rating by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 62 | 3.37 | 96 | 3.44 | 85 | 3.42 |
| 0 | 155 | 3.82 | 247 | 3.91 | 235 | 3.85 |
| 1 | 58 | 3.78 | 136 | 3.77 | 195 | 3.99 |
| 2 | 77 | 3.92 | 248 | 4.00 | 306 | 3.99 |
| 3 | 112 | 3.85 | 360 | 4.01 | 401 | 4.06 |
| 4 | 155 | 3.96 | 262 | 4.12 | 249 | 4.14 |
| 5 | 196 | 4.04 | 339 | 4.26 | 217 | 4.19 |
| 6 | 271 | 3.98 | | | | |
| 7 | 182 | 4.18 | | | | |
| 8 | 209 | 4.15 | | | | |
| 9 | 88 | 4.17 | | | | |
| 10 | 123 | 4.31 | | | | |
| Total | 1688 | 4.01 | 1688 | 4.01 | 1688 | 4.01 |
| | F=11.58, Sig. = .00 | | F=23.02, Sig. = .00 | | F=16.23 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.15. *ANOVA of 10th Grade Math Course Rating by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 67 | 2.94 | 111 | 2.88 | 93 | 3.02 |
| 0 | 165 | 3.36 | 263 | 3.43 | 249 | 3.30 |
| 1 | 65 | 3.09 | 140 | 3.31 | 205 | 3.52 |
| 2 | 83 | 3.19 | 258 | 3.64 | 321 | 3.72 |
| 3 | 119 | 3.44 | 359 | 3.75 | 397 | 3.82 |
| 4 | 159 | 3.58 | 254 | 3.93 | 245 | 3.99 |
| 5 | 211 | 3.74 | 335 | 4.16 | 210 | 4.06 |
| 6 | 264 | 3.70 | | | | |
| 7 | 178 | 4.08 | | | | |
| 8 | 198 | 4.02 | | | | |
| 9 | 87 | 4.21 | | | | |
| 10 | 124 | 4.11 | | | | |
| Total | 1720 | 3.70 | 1720 | 3.70 | 1720 | 3.70 |
| | F=13.41, Sig. = .00 | | F=23.98, Sig. = .00 | | F=16.92 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.16. *ANOVA of 10th Grade English Course Rating by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 69 | 2.86 | 113 | 2.90 | 93 | 3.02 |
| 0 | 169 | 3.62 | 270 | 3.67 | 256 | 3.52 |
| 1 | 66 | 3.41 | 147 | 3.57 | 212 | 3.76 |
| 2 | 85 | 3.35 | 270 | 3.76 | 332 | 3.78 |
| 3 | 122 | 3.61 | 371 | 3.97 | 415 | 4.04 |
| 4 | 166 | 3.78 | 271 | 4.09 | 256 | 4.21 |
| 5 | 217 | 3.83 | 341 | 4.31 | 218 | 4.21 |
| 6 | 279 | 3.94 | | | | |
| 7 | 185 | 4.14 | | | | |
| 8 | 210 | 4.30 | | | | |
| 9 | 90 | 4.37 | | | | |
| 10 | 124 | 4.27 | | | | |
| Total | 1782 | 3.88 | 1783 | 3.88 | 1782 | 3.88 |
| | F=16.24, Sig. = .00 | | F=29.12, Sig. = .00 | | F=22.51 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.17. *ANOVA of 10th Grade Science Course Rating by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 48 | 3.35 | 75 | 3.47 | 67 | 3.43 |
| 0 | 126 | 3.92 | 210 | 3.85 | 196 | 3.80 |
| 1 | 54 | 3.46 | 106 | 3.57 | 166 | 3.86 |
| 2 | 62 | 3.82 | 201 | 3.83 | 269 | 3.93 |
| 3 | 90 | 3.68 | 304 | 3.94 | 322 | 3.94 |
| 4 | 127 | 3.76 | 231 | 4.07 | 217 | 4.12 |
| 5 | 170 | 3.98 | 303 | 4.17 | 192 | 4.08 |
| 6 | 218 | 3.88 | | | | |
| 7 | 159 | 4.06 | | | | |
| 8 | 184 | 4.21 | | | | |
| 9 | 80 | 4.13 | | | | |
| 10 | 111 | 4.13 | | | | |
| Total | 1429 | 3.93 | 1430 | 3.93 | 1429 | 3.93 |
| | F=7.60, Sig. = .00 | | F=12.32, Sig. = .00 | | F=7.11 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

Table J.18. *ANOVA of 10th Grade World Language Course Rating by SES Grouping*

| | Total SES | | Father SES | | Mother SES | |
|---|---|---|---|---|---|---|
| SES | N | Mean | N | Mean | N | Mean |
| -1 | 37 | 3.62 | 60 | 3.68 | 56 | 3.64 |
| 0 | 128 | 3.96 | 205 | 3.99 | 187 | 3.94 |
| 1 | 47 | 3.83 | 98 | 3.74 | 154 | 4.08 |
| 2 | 53 | 3.98 | 201 | 4.03 | 258 | 4.00 |
| 3 | 83 | 3.90 | 316 | 4.04 | 350 | 4.05 |
| 4 | 121 | 3.88 | 245 | 4.19 | 232 | 4.20 |
| 5 | 180 | 4.09 | 308 | 4.23 | 196 | 4.22 |
| 6 | 227 | 4.04 | | | | |
| 7 | 166 | 4.13 | | | | |
| 8 | 190 | 4.19 | | | | |
| 9 | 88 | 4.27 | | | | |
| 10 | 113 | 4.28 | | | | |
| Total | 1433 | 4.06 | 1433 | 4.06 | 1433 | 4.06 |
| | F=5.08, Sig. = .00 | | F=9.93, Sig. = .00 | | F=7.00 , Sig. = .00 | |

*Note.* SES = -1 indicates no education, no employment and participation in Free/Reduced Lunch program.

APPENDIX K

Table K.1. *Summary of Correlations for Asian and White Students*

| | Total SES | Father SES | Mother SES | Accessible | Feedback | Invested | Expectation |
|---|---|---|---|---|---|---|---|
| Total SES | | | | | | | |
| Father SES | | | | | | | |
| Mother SES | | | | | | | |
| Accessible | | | | | | | |
| Feedback | | | | | | | |
| Invested | | | | | | | |
| Expectation | + | + | + | | | | |
| Positive Regard | + | + | + | | | | |
| TSSR | + | | | | | | |
| Academic Self-Perception | + | + | + | + | + | + | + |
| Motivation Self-Regulation | + | + | + | + | + | + | + |
| Concrete Ach. Attitudes | + | + | + | + | | | + |
| 9th GPA | + | + | + | + | | + | + |
| 10th GPA | + | + | + | + | | + | + |
| Combined GPA | + | + | + | + | | + | + |
| Cum GPA | + | + | + | + | | + | + |
| 7th WASL Reading | + | + | + | | | - | |
| 7th WASL Writing | + | + | + | | - | | + |
| 7th WASL Math | + | + | + | | - | - | |
| HS WASL Reading | + | + | + | | - | - | + |
| HS WASL Writing | + | + | + | | - | | + |
| HS WASL Math | + | + | + | | | | + |
| 9th English | + | + | + | | - | | + |
| 9th Math | + | + | + | | - | | + |
| 9th Science | + | + | + | + | | | + |
| 10th English | + | + | + | | - | | + |
| 10th Math | + | + | + | + | | | + |
| 10th Science | + | + | + | + | | | + |
| World Lang. | + | + | + | | | | + |
| Courses Cum | + | + | + | | - | | + |

Table K.1. (continued). *Summary of Correlations for Asian and White Students*

| | Positive Regard | TSSR | Academic Self-Perception | Motivation Self-Regulation | Concrete Ach. Attitudes | College Ready Index |
|---|---|---|---|---|---|---|
| Total SES | | | | | | + |
| Father SES | | | | | | + |
| Mother SES | | | | | | + |
| Accessible Feedback | | | | | | - |
| Invested Expectation | | | | | | + |
| Positive Regard | | | | | | + |
| TSSR | | | | | | + |
| Academic Self-Perception | + | + | | | | + |
| Motivation Self-Regulation | + | + | | | | + |
| Concrete Ach. Attitudes | + | + | | | | + |
| 9th GPA | + | + | + | + | + | + |
| 10th GPA | + | + | + | + | + | + |
| Combined GPA | + | + | + | + | + | + |
| Cum GPA | + | + | + | + | + | + |
| 7th WASL Reading | | | | | | + |
| 7th WASL Writing | + | | + | + | + | + |
| 7th WASL Math | | | + | + | + | + |
| HS WASL Reading | | | + | + | + | + |
| HS WASL Writing | + | | + | + | + | + |
| HS WASL Math | | | + | + | + | + |
| 9th English | + | | + | + | + | + |
| 9th Math | + | | + | + | + | + |
| 9th Science | + | + | + | + | + | + |
| 10th English | + | + | + | + | + | + |
| 10th Math | + | + | + | + | + | + |
| 10th Science | + | | + | + | + | + |
| World Lang. | + | | + | + | + | + |
| Courses Cum | + | | + | + | + | + |

Table K.2. *Summary of Correlations for Non-Asian Minority Students*

| | Total SES | Father SES | Mother SES | Accessible | Feedback | Invested | Expectation |
|---|---|---|---|---|---|---|---|
| Total SES | | | | | | | |
| Father SES | | | | | | | |
| Mother SES | | | | | | | |
| Accessible | | | | | | | |
| Feedback | - | | - | | | | |
| Invested | - | | - | | | | |
| Expectation | | | | | | | |
| Positive Regard | | | | | | | |
| TSSR | | | | | | | |
| Academic Self-Perception | | | | + | + | + | + |
| Motivation Self-Regulation | | | | + | + | + | + |
| Concrete Ach. Attitudes | + | + | + | | - | - | |
| 9th Core GPA | | | | + | | | + |
| 10th Core GPA | | | | + | | | + |
| Combined Core GPA | | | | + | | | + |
| Cumulative GPA | + | + | + | | - | | + |
| 7th WASL Reading | + | + | + | | | | |
| 7th WASL Writing | + | + | + | | - | | + |
| 7th WASL Math | + | + | + | | | | + |
| HS WASL Reading | + | + | + | | - | - | |
| HS WASL Writing | + | + | + | | - | - | |
| HS WASL Math | + | + | + | | - | - | |
| 9th English Rating | + | + | + | | - | - | |
| 9th Math Rating | + | + | + | | | - | |
| 9th Science Rating | + | + | + | | | | |
| 10th English Rating | + | + | + | | - | - | |
| 10th Math Rating | + | + | + | | - | - | |
| 10th Science Rating | + | + | + | | | | |
| World Language Rating | + | + | + | | | | + |
| Courses Cum Rating | + | + | + | | - | - | |

Table K.2. (continued) *Summary of Correlations for Non-Asian Minority Students*

| | Positive Regard | TSSR | Academic Self-Perception | Motivation Self-Regulation | Concrete Achievement Attitudes | College Ready Index |
|---|---|---|---|---|---|---|
| Total SES | | | | | | + |
| Father SES | | | | | | + |
| Mother SES | | | | | | + |
| Accessible | | | | | | |
| Feedback | | | | | | - |
| Invested | | | | | | - |
| Expectation | | | | | | |
| Positive Regard | | | | | | - |
| TSSR | | | | | | - |
| Academic Self-Perception | + | + | | | | + |
| Motivation Self-Regulation | + | + | | | | |
| Concrete Ach. Attitudes | | - | | | | + |
| 9th Core GPA | | | + | + | + | + |
| 10th Core GPA | + | | + | + | + | + |
| Combined Core GPA | | | + | + | + | + |
| Cumulative GPA | | | + | + | + | + |
| 7th WASL Reading | | | | | | + |
| 7th WASL Writing | | | + | + | + | + |
| 7th WASL Math | | | + | | + | + |
| HS WASL Reading | | - | | | + | + |
| HS WASL Writing | - | - | + | | + | + |
| HS WASL Math | | | + | | + | + |
| 9th English Rating | | | + | | + | + |
| 9th Math Rating | | | + | | + | + |
| 9th Science Rating | | | + | + | + | + |
| 10th English Rating | - | - | + | | + | + |
| 10th Math Rating | | | + | | + | + |
| 10th Science Rating | | | | | + | + |
| World Language Rating | | | + | + | + | + |
| Courses Cum Rating | - | - | + | | + | + |

Table K.3. *Summary of Correlations for Asian and White Male Students*

| | Total SES | Father SES | Mother SES | College Ready Index |
|---|---|---|---|---|
| Total SES | | | | + |
| Father SES | | | | + |
| Mother SES | | | | + |
| Accessible | | | | |
| Feedback | | | | - |
| Invested | + | | + | |
| Expectation | + | + | + | + |
| Positive Regard | + | + | + | + |
| TSSR | + | + | + | |
| Academic Self-Perception | + | + | + | + |
| Motivation Self-Regulation | + | + | + | + |
| Concrete Ach. Attitudes | + | + | + | + |
| 9th Core GPA | + | + | + | + |
| 10th Core GPA | + | + | + | + |
| Combined Core GPA | + | + | + | + |
| Cumulative GPA | + | + | + | + |
| 7th WASL Reading | + | | + | |
| 7th WASL Writing | + | + | + | + |
| 7th WASL Math | + | + | + | + |
| HS WASL Reading | + | + | + | + |
| HS WASL Writing | + | + | + | + |
| HS WASL Math | + | + | + | + |
| 9th English Rating | + | + | + | + |
| 9th Math Rating | + | + | + | + |
| 9th Science Rating | + | + | + | + |
| 10th English Rating | + | + | + | + |
| 10th Math Rating | + | + | + | + |
| 10th Science Rating | + | + | + | + |
| World Language Rating | + | + | + | + |
| Courses Cum Rating | + | + | + | + |

Table K.4. *Summary of Correlations for Asian and White Female Students*

| | Total SES | Father SES | Mother SES | College Ready Index |
|---|---|---|---|---|
| Total SES | | | | + |
| Father SES | | | | + |
| Mother SES | | | | + |
| Accessible | | | | |
| Feedback | | | | |
| Invested | | | | |
| Expectation | | | | + |
| Positive Regard | | | | |
| TSSR | | | | |
| Academic Self-Perception | + | + | + | + |
| Motivation Self-Regulation | + | + | | + |
| Concrete Ach. Attitudes | + | + | + | + |
| 9th Core GPA | + | + | + | + |
| 10th Core GPA | + | + | + | + |
| Combined Core GPA | + | + | + | + |
| Cumulative GPA | + | + | + | + |
| 7th WASL Reading | + | | + | + |
| 7th WASL Writing | + | + | + | + |
| 7th WASL Math | + | + | + | + |
| HS WASL Reading | + | + | + | + |
| HS WASL Writing | + | + | + | + |
| HS WASL Math | + | + | + | + |
| 9th English Rating | + | + | + | + |
| 9th Math Rating | + | + | + | + |
| 9th Science Rating | + | + | + | + |
| 10th English Rating | + | + | + | + |
| 10th Math Rating | + | + | + | + |
| 10th Science Rating | + | + | + | + |
| World Language Rating | + | + | + | + |
| Courses Cum Rating | + | + | + | + |

Table K.5. *Summary of Correlations for Non-Asian Minority Male Students*

| | Total SES | Father SES | Mother SES | College Ready Index |
|---|---|---|---|---|
| Total SES | | | | + |
| Father SES | | | | + |
| Mother SES | | | | + |
| Accessible | | | - | |
| Feedback | - | - | - | - |
| Invested | + | - | - | - |
| Expectation | | | | |
| Positive Regard | | | - | |
| TSSR | + | - | - | |
| Academic Self-Perception | | | | |
| Motivation Self-Regulation | | | | |
| Concrete Ach. Attitudes | + | + | + | + |
| 9th Core GPA | | | | + |
| 10th Core GPA | | | | + |
| Combined Core GPA | | | | + |
| Cumulative GPA | | | | + |
| 7th WASL Reading | + | + | | + |
| 7th WASL Writing | + | + | + | + |
| 7th WASL Math | + | + | + | + |
| HS WASL Reading | + | + | + | + |
| HS WASL Writing | + | + | + | + |
| HS WASL Math | + | + | + | + |
| 9th English Rating | + | + | + | + |
| 9th Math Rating | + | + | + | + |
| 9th Science Rating | + | + | + | + |
| 10th English Rating | + | + | + | + |
| 10th Math Rating | + | + | + | + |
| 10th Science Rating | | | | + |
| World Language Rating | + | + | + | + |
| Courses Cum Rating | + | + | + | + |

Table K.6. *Summary of Correlations for Non-Asian Minority Female Students*

| | Total SES | Father SES | Mother SES | College Ready Index |
|---|---|---|---|---|
| Total SES | | | | + |
| Father SES | | | | + |
| Mother SES | | | | + |
| Accessible | | | | |
| Feedback | | | | |
| Invested | | | | - |
| Expectation | | + | | |
| Positive Regard | | | | |
| TSSR | | | | |
| Academic Self-Perception | | + | | |
| Motivation Self-Regulation | | | | |
| Concrete Ach. Attitudes | + | + | + | + |
| 9th Core GPA | | | | + |
| 10th Core GPA | | | | + |
| Combined Core GPA | | | | + |
| Cumulative GPA | + | + | | + |
| 7th WASL Reading | | | | |
| 7th WASL Writing | + | + | + | + |
| 7th WASL Math | + | + | + | + |
| HS WASL Reading | + | + | + | + |
| HS WASL Writing | + | + | + | + |
| HS WASL Math | + | + | + | + |
| 9th English Rating | + | + | + | + |
| 9th Math Rating | + | + | + | + |
| 9th Science Rating | + | + | + | + |
| 10th English Rating | + | + | + | + |
| 10th Math Rating | + | + | + | + |
| 10th Science Rating | + | + | | + |
| World Language Rating | + | + | | + |
| Courses Cum Rating | + | + | + | + |

APPENDIX L

Table L.1. *Multiple Regression of College Ready Index by Total SES Using White Variable*

| | Total SES | | |
|---|---|---|---|
| Variable | Beta | t | Sig. t |
| (Constant) | -.61 | -3.70 | .00 |
| Gender (Male = 1) | -.04 | -2.14 | .03 |
| 7th WASL Reading | .00 | .42 | .68 |
| 7th WASL Writing | .12 | 4.74 | .00 |
| 7th WASL Math | .00 | 4.87 | .00 |
| HS WASL Reading | .15 | 6.20 | .00 |
| HS WASL Writing | .29 | 11.26 | .00 |
| HS WASL Math | .14 | 6.96 | .00 |
| Accessible | -.02 | -.70 | .48 |
| Expectation | .06 | 2.27 | .02 |
| Feedback | -.03 | -1.12 | .26 |
| Invested | -.03 | -.89 | .38 |
| Positive Regard | .00 | -.01 | .99 |
| Academic Self-Perception | .05 | 2.29 | .02 |
| Motivation Self-Regulation | .09 | 4.06 | .00 |
| Concrete Achievement Attitudes | .06 | 3.08 | .00 |
| White (yes = 1) | -.07 | -4.07 | .00 |
| SES | .08 | 4.03 | .00 |
| R | .74 | | |
| R2 | .54 | | |
| Adjusted R2 | .54 | | |
| F | 87.04 | | |
| Sig. F | .00 | | |
| N | 1262 | | |

Table L.2. *Multiple Regression of College Ready Index by Father SES Using White Variable*

| | Father SES | | |
|---|---|---|---|
| Variable | Beta | t | Sig. t |
| (Constant) | -.56 | -4.17 | .00 |
| Gender (Male = 1) | -.04 | -2.03 | .04 |
| 7th WASL Reading | .01 | .49 | .62 |
| 7th WASL Writing | .12 | 4.73 | .00 |
| 7th WASL Math | .00 | 4.79 | .00 |
| HS WASL Reading | .15 | 6.18 | .00 |
| HS WASL Writing | .29 | 11.41 | .00 |
| HS WASL Math | .14 | 6.94 | .00 |
| Accessible | -.02 | -.55 | .58 |
| Expectation | .06 | 2.13 | .03 |
| Feedback | -.03 | -1.07 | .29 |
| Invested | -.03 | -.92 | .36 |
| Positive Regard | .00 | -.12 | .91 |
| Academic Self-Perception | .05 | 2.24 | .03 |
| Motivation Self-Regulation | .09 | 4.07 | .00 |
| Concrete Achievement Attitudes | .05 | 2.84 | .01 |
| White (yes = 1) | -.08 | -4.29 | .00 |
| SES | .09 | 4.76 | .00 |
| R | .74 | | |
| R2 | .55 | | |
| Adjusted R2 | .54 | | |
| F | 88.13 | | |
| Sig. F | .00 | | |
| N | 1263 | | |

Table L.3. *Multiple Regression of College Ready Index by Mother SES Using White Variable*

| | Mother SES | | |
|---|---|---|---|
| Variable | Beta | t | Sig. t |
| (Constant) | -.58 | -4.29 | .00 |
| Gender (Male = 1) | -.04 | -2.22 | .03 |
| 7th WASL Reading | .01 | .48 | .63 |
| 7th WASL Writing | .12 | 4.73 | .00 |
| 7th WASL Math | .00 | 4.93 | .00 |
| HS WASL Reading | .15 | 6.25 | .00 |
| HS WASL Writing | .29 | 11.29 | .00 |
| HS WASL Math | .14 | 6.97 | .00 |
| Accessible | -.03 | -.91 | .36 |
| Expectation | .06 | 2.33 | .02 |
| Feedback | -.03 | -1.21 | .23 |
| Invested | -.03 | -.78 | .43 |
| Positive Regard | .00 | .09 | .93 |
| Academic Self-Perception | .06 | 2.46 | .01 |
| Motivation Self-Regulation | .09 | 4.13 | .00 |
| Concrete Achievement Attitudes | .07 | 3.56 | .00 |
| White (yes = 1) | -.07 | -3.98 | .00 |
| SES | .05 | 2.69 | .01 |
| R | .74 | | |
| R2 | .54 | | |
| Adjusted R2 | .53 | | |
| F | 85.90 | | |
| Sig. F | .00 | | |
| N | 1262 | | |

Table L.4. *Multiple Regression of College Ready Index by Total SES Using Asian Variable*

| | Total SES | | |
|---|---|---|---|
| Variable | Beta | t | Sig. t |
| (Constant) | -.62 | -3.79 | .00 |
| Gender (Male = 1) | -.04 | 4.87 | .04 |
| 7th WASL Reading | .00 | .53 | .60 |
| 7th WASL Writing | .12 | 4.79 | .00 |
| 7th WASL Math | .00 | 4.87 | .00 |
| HS WASL Reading | .15 | 6.07 | .00 |
| HS WASL Writing | .29 | 11.21 | .00 |
| HS WASL Math | .14 | 6.85 | .00 |
| Accessible | -.02 | -.57 | .57 |
| Expectation | .06 | 2.22 | .03 |
| Feedback | -.03 | -1.13 | .26 |
| Invested | -.03 | -1.05 | .30 |
| Positive Regard | .00 | .03 | .98 |
| Academic Self-Perception | .05 | 2.37 | .02 |
| Motivation Self-Regulation | .09 | 4.06 | .00 |
| Concrete Achievement Attitudes | .06 | 3.10 | .00 |
| Asian (yes = 1) | .11 | 6.55 | .00 |
| SES | .08 | 4.16 | .00 |
| R | .74 | | |
| R2 | .55 | | |
| Adjusted R2 | .55 | | |
| F | 90.40 | | |
| Sig. F | .00 | | |
| N | 1262 | | |

Table L.5. *Multiple Regression of College Ready Index by Father SES Using Asian Variable*

| | Father SES | | |
|---|---|---|---|
| Variable | Beta | t | Sig. t |
| (Constant) | -.56 | -4.20 | .00 |
| Gender (Male = 1) | -.04 | -1.94 | .05 |
| 7th WASL Reading | .01 | .61 | .55 |
| 7th WASL Writing | .11 | 4.78 | .00 |
| 7th WASL Math | .00 | 4.78 | .00 |
| HS WASL Reading | .14 | 6.04 | .00 |
| HS WASL Writing | .29 | 11.36 | .00 |
| HS WASL Math | .14 | 6.81 | .00 |
| Accessible | -.01 | -.42 | .68 |
| Expectation | .06 | 2.08 | .04 |
| Feedback | -.03 | -1.07 | .29 |
| Invested | -.04 | -1.08 | .28 |
| Positive Regard | .00 | -.08 | .93 |
| Academic Self-Perception | .05 | 2.33 | .02 |
| Motivation Self-Regulation | .09 | 4.08 | .00 |
| Concrete Achievement Attitudes | .06 | 2.85 | .00 |
| Asian (yes = 1) | .11 | 6.69 | .00 |
| SES | .09 | 4.87 | .00 |
| R | .75 | | |
| R2 | .56 | | |
| Adjusted R2 | .55 | | |
| F | 91.49 | | |
| Sig. F | .00 | | |
| N | 1263 | | |

Table L.6. *Multiple Regression of College Ready Index by Mother SES Using Asian Variable*

| | Mother SES | | |
|---|---|---|---|
| Variable | Beta | t | Sig. t |
| (Constant) | -.58 | -4.32 | .00 |
| Gender (Male = 1) | -.04 | -2.15 | .03 |
| 7th WASL Reading | .01 | .59 | .56 |
| 7th WASL Writing | .12 | 4.78 | .00 |
| 7th WASL Math | .00 | 4.93 | .00 |
| HS WASL Reading | .15 | 6.12 | .00 |
| HS WASL Writing | .29 | 11.23 | .00 |
| HS WASL Math | .14 | 6.86 | .00 |
| Accessible | -.02 | -.78 | .43 |
| Expectation | .06 | 2.29 | .02 |
| Feedback | -.03 | -1.22 | .23 |
| Invested | -.03 | -.94 | .35 |
| Positive Regard | .00 | .13 | .90 |
| Academic Self-Perception | .06 | 2.55 | .01 |
| Motivation Self-Regulation | .09 | 4.13 | .00 |
| Concrete Achievement Attitudes | .07 | 3.59 | .00 |
| Asian (yes = 1) | .11 | 6.51 | .00 |
| SES | .05 | 2.89 | .00 |
| R | .74 | | |
| R2 | .55 | | |
| Adjusted R2 | .54 | | |
| F | 89.24 | | |
| Sig. F | .00 | | |
| N | 1262 | | |

Table L.7. *Multiple Regression of College Ready Index by Total SES Using African American Variable*

| | Total SES | | |
|---|---|---|---|
| Variable | Beta | t | Sig. t |
| (Constant) | .07 | 4.10 | .00 |
| Gender (Male = 1) | -.04 | -2.15 | .03 |
| 7th WASL Reading | .00 | .21 | .83 |
| 7th WASL Writing | .11 | 4.67 | .00 |
| 7th WASL Math | .10 | 4.74 | .00 |
| HS WASL Reading | .15 | 6.15 | .00 |
| HS WASL Writing | .29 | 11.28 | .00 |
| HS WASL Math | .14 | 6.78 | .00 |
| Accessible | -.02 | -.68 | .49 |
| Expectation | .06 | 2.37 | .02 |
| Feedback | -.03 | -1.10 | .27 |
| Invested | -.03 | -1.00 | .32 |
| Positive Regard | .00 | -.08 | .94 |
| Academic Self-Perception | .05 | 2.16 | .03 |
| Motivation Self-Regulation | .10 | 4.36 | .00 |
| Concrete Achievement Attitudes | .05 | 2.86 | .00 |
| African American (yes = 1) | -.01 | -.36 | .72 |
| SES | .07 | 3.82 | .00 |
| R | .73 | | |
| R2 | .54 | | |
| Adjusted R2 | .53 | | |
| F | 84.96 | | |
| Sig. F | .00 | | |
| N | 1262 | | |

Table L.8. *Multiple Regression of College Ready Index by Father SES Using African American Variable*

| | Father SES | | |
|---|---|---|---|
| Variable | Beta | t | Sig. t |
| (Constant) | -.56 | -4.21 | .00 |
| Gender (Male = 1) | -.04 | -2.06 | .04 |
| 7th WASL Reading | .01 | .28 | .78 |
| 7th WASL Writing | .11 | 4.66 | .00 |
| 7th WASL Math | .00 | 4.66 | .00 |
| HS WASL Reading | .15 | 6.15 | .00 |
| HS WASL Writing | .30 | 11.43 | .00 |
| HS WASL Math | .14 | 6.75 | .00 |
| Accessible | -.02 | -.56 | .58 |
| Expectation | .06 | 2.25 | .03 |
| Feedback | -.03 | -1.05 | .30 |
| Invested | -.03 | -1.03 | .30 |
| Positive Regard | -.01 | -.19 | .85 |
| Academic Self-Perception | .05 | 2.12 | .04 |
| Motivation Self-Regulation | .10 | 4.39 | .00 |
| Concrete Achievement Attitudes | .05 | 2.64 | .01 |
| African American (yes = 1) | -.05 | -.26 | .80 |
| SES | .09 | 4.40 | .00 |
| R | .73 | | |
| R2 | .54 | | |
| Adjusted R2 | .53 | | |
| F | 85.79 | | |
| Sig. F | .00 | | |
| N | 1263 | | |

Table L.9. *Multiple Regression of College Ready Index by Mother SES Using African American Variable*

| | Mother SES | | |
|---|---|---|---|
| Variable | Beta | t | Sig. t |
| (Constant) | -2.26 | -7.74 | .00 |
| Gender (Male = 1) | -.04 | -2.23 | .03 |
| 7th WASL Reading | .01 | .27 | .78 |
| 7th WASL Writing | .11 | 4.67 | .00 |
| 7th WASL Math | .00 | 4.80 | .00 |
| HS WASL Reading | .00 | 6.20 | .00 |
| HS WASL Writing | .30 | 11.31 | .00 |
| HS WASL Math | .14 | 6.78 | .00 |
| Accessible | -.03 | -.88 | .38 |
| Expectation | .07 | 2.42 | .02 |
| Feedback | -.03 | -1.19 | .24 |
| Invested | -.03 | -.90 | .37 |
| Positive Regard | .00 | .02 | .99 |
| Academic Self-Perception | .05 | 2.33 | .02 |
| Motivation Self-Regulation | .10 | 4.43 | .00 |
| Concrete Achievement Attitudes | .06 | 3.33 | .00 |
| African American (yes = 1) | -.01 | -.41 | .68 |
| SES | .05 | 2.52 | .01 |
| R | .73 | | |
| R2 | .53 | | |
| Adjusted R2 | .53 | | |
| F | 83.92 | | |
| Sig. F | .00 | | |
| N | 1262 | | |

Table L.10. *Multiple Regression of College Ready Index by Total SES Using Hispanic Variable*

| | Total SES | | |
|---|---|---|---|
| Variable | Beta | t | Sig. t |
| (Constant) | -.60 | -3.63 | .00 |
| Gender (Male = 1) | -.04 | -2.07 | .04 |
| 7th WASL Reading | .00 | .23 | .82 |
| 7th WASL Writing | .11 | 4.52 | .00 |
| 7th WASL Math | .00 | 4.83 | .00 |
| HS WASL Reading | .15 | 6.25 | .00 |
| HS WASL Writing | .29 | 11.34 | .00 |
| HS WASL Math | .14 | 6.78 | .00 |
| Accessible | -.02 | -.70 | .49 |
| Expectation | .06 | 2.34 | .02 |
| Feedback | -.03 | -1.03 | .30 |
| Invested | -.03 | -1.01 | .32 |
| Positive Regard | .00 | -.07 | .94 |
| Academic Self-Perception | .05 | 2.19 | .03 |
| Motivation Self-Regulation | .10 | 4.42 | .00 |
| Concrete Achievement Attitudes | .05 | .06 | .01 |
| Hispanic (yes = 1) | -.04 | -1.98 | .05 |
| SES | .07 | 3.62 | .00 |
| R | .73 | | |
| R2 | .54 | | |
| Adjusted R2 | .53 | | |
| F | 85.44 | | |
| Sig. F | .00 | | |
| N | 1262 | | |

Table L.11. *Multiple Regression of College Ready Index by Father SES Using Hispanic Variable*

| | Father SES | | |
|---|---|---|---|
| Variable | Beta | t | Sig. t |
| (Constant) | -.57 | -4.22 | .00 |
| Gender (Male = 1) | -.04 | -1.99 | .05 |
| 7th WASL Reading | .01 | .29 | .77 |
| 7th WASL Writing | .11 | 4.52 | .00 |
| 7th WASL Math | .00 | 4.75 | .00 |
| HS WASL Reading | .15 | 6.24 | .00 |
| HS WASL Writing | .30 | 11.48 | .00 |
| HS WASL Math | .14 | 6.75 | .00 |
| Accessible | -.02 | -.57 | .57 |
| Expectation | .06 | 2.22 | .03 |
| Feedback | -.03 | -.98 | .33 |
| Invested | -.03 | -1.04 | .30 |
| Positive Regard | -.01 | -.17 | .86 |
| Academic Self-Perception | .05 | 2.15 | .03 |
| Motivation Self-Regulation | .10 | 4.45 | .00 |
| Concrete Achievement Attitudes | .05 | 2.63 | .01 |
| Hispanic (yes = 1) | -.04 | -1.91 | .06 |
| SES | .08 | 4.20 | .00 |
| R | .74 | | |
| R2 | .54 | | |
| Adjusted R2 | .54 | | |
| F | 86.25 | | |
| Sig. F | .00 | | |
| N | 1263 | | |

Table L.12. *Multiple Regression of College Ready Index by Mother SES Using Hispanic Variable*

| | Mother SES | | |
|---|---|---|---|
| Variable | Beta | t | Sig. t |
| (Constant) | -.59 | -4.35 | .00 |
| Gender (Male = 1) | -.04 | 4.89 | .03 |
| 7th WASL Reading | .01 | -2.14 | .77 |
| 7th WASL Writing | .11 | .29 | .00 |
| 7th WASL Math | .00 | 4.89 | .00 |
| HS WASL Reading | .15 | 6.30 | .00 |
| HS WASL Writing | .30 | 11.38 | .00 |
| HS WASL Math | .14 | 6.79 | .00 |
| Accessible | -.03 | -.89 | .38 |
| Expectation | .06 | 2.39 | .02 |
| Feedback | -.03 | -1.11 | .27 |
| Invested | -.03 | -.91 | .37 |
| Positive Regard | .00 | .02 | .98 |
| Academic Self-Perception | .05 | 2.37 | .02 |
| Motivation Self-Regulation | .10 | 4.49 | .00 |
| Concrete Achievement Attitudes | .06 | 3.30 | .00 |
| Hispanic (yes = 1) | -.04 | -2.11 | .04 |
| SES | .04 | 2.31 | .02 |
| R | .73 | | |
| R2 | .54 | | |
| Adjusted R2 | .53 | | |
| F | 84.46 | | |
| Sig. F | .00 | | |
| N | 1262 | | |