ABSTRACT

Title of Dissertation: DREAMS DEFERRED?— EXPLORING THE RELATIONSHIP BETWEEN EARLY AND LATER POSTSECONDARY EDUCATIONAL ASPIRATIONS AMONG RACIAL/ETHNIC GROUPS

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This study uses data from the Educational Longitudinal Study of 2002 (ELS:2002/04) to test a conceptual model that integrates aspects of sociological and econometric frameworks into a traditional status attainment model for educational aspirations. Using descriptive and logistic analyses, this study advances understanding of the patterns and stability of aspirations; characteristics of students who increase, decrease, and maintain aspirations; predictors of 12th grade aspirations; and variations in predictors of 12th grade aspirations by race/ethnicity.

This study's findings confirm previous research (Kao & Tienda, 1998; Qian & Blair, 1999) and generate at least four new conclusions. First, comparing findings from this study with data from the previous NCES cohort (i.e., NELS:88) shows that students' 10th grade aspirations have increased over the last decade. However, aspirations fluctuate between 10th and 12th grades, with a notable decline among Black men and Latino men and women.

Second, this study highlights characteristics of students according to the stability of their educational aspirations. The descriptive analyses illustrate the importance of background characteristics, academic measures, cultural and social capital, and economic constructs in illustrating whether students increase, decrease, or maintain aspirations between 10^{th} and 12^{th} grades.

Third, the study shows that the status attainment model continues to be an appropriate theoretical framework for the study of aspirations, but its explanatory power is enhanced by adding cultural and social capital and economic measures. Applying social and cultural capital theory to the examination of significant others (e.g., parents, teachers) provides more insight into the role and effect these individuals have on students' aspirations.

Fourth, the logistic regression analyses show that the predictors of aspirations vary by race/ethnicity, in particular for Latino/a and Multiracial students. Separate logistic regression analyses of Latino/a, Multiracial, and White students show that the predictability of the logistic regression model is lower for Latino/a students than for students of other groups.

The study's findings have implications for policy, practice, and research. Specifically, the findings reinforce the need for policies and practices geared toward enhancing existing high school reform efforts. The study also identifies five recommendations for future research.

DREAMS DEFERRED? —

EXPLORING THE RELATIONSHIP BETWEEN EARLY AND LATER

POSTSECONDARY EDUCATIONAL ASPIRATIONS AMONG RACIAL/ETHNIC GROUPS

by

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2006

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DEDICATION

To my family~

The Past
Johnnie Lee Crosby
John & Florence Cooper, Sr.
Lucy Crosby Green & Isaiah Green

The Present
Chester & Yvonne Cooper, Sr.
Chester & Andrea Cooper, Jr.

The Future
Justin Michael Cooper
Alden Ashley Cooper

A wellspring of love, support, and strength~

ACKNOWLEDGEMENTS

This completed dissertation is the culmination of educational pursuits that began years prior. Many individuals helped me arrive at this point, and I would like to acknowledge them. First, I give thanks to God. While I do not know what the future holds, I do believe that this project is aligned with God's preordained plan for my life.

I must also thank my family—the Cooper's, the Crosby's, the Green's, and the Young's. In particular, special thanks are extended to my parents, Chester and Yvonne Cooper, who provide unconditional love and have inspired my "love of learning." For my father, the completion of this dissertation marks the fulfillment of his own dream, and I am honored to have accomplished that goal for him. My mother has been a tremendous support through all of my educational pursuits, but during this dissertation process, she has been priceless. She has listened to my ideas, provided good advice, and been available at times of crisis, which typically occur in the middle of the night. My brother, Chester, Jr. (Chickie) has also been an unwavering source of support and encouragement. Because he is a repository of knowledge, he is able to challenge and push my thinking on any issue; and I certainly appreciate that. Other relatives including my sister-in-law (Andrea), nephew and niece (Justin and Alden), aunts, uncles, godchildren, cousins, and other relatives and friends (Parrish Brown & Family, Linda Gadson & Family, Nevada Heyward, Georgetta Robinson & Family, Sarah Spann & Family) have also been great cheerleaders through the years.

Other positive influences include friends and mentors that originate from my native city of Charleston, SC. The names are too numerous to list, but they include administrators, teachers, and classmates from Wonderland Day Care, Mrs. Gaillard

Preschool, James Simons Elementary School, Courtenay Middle School, Burke High School, and the College of Charleston. I would also like to acknowledge the support provided by Telley Gadson, Kendra Kirkland, Arlecia Simmons, Tiffany Spann-Wilder, Monique Washington, sisters of Delta Sigma Theta Sorority, Inc, and members of Shiloh A.M.E. Church. I must also thank Bill Totten and Mi-Tech, Inc., the benefactor of my undergraduate education at the College of Charleston.

Special thanks must also be extended to the colleagues and friends that I have met on this journey, including members of my Cornell University family and Wilkes-Barre/King's College family. Also, colleagues from the Association of American Colleges and Universities (AAC&U); Council of Independent Colleges (CIC), especially Michelle Gilliard; and the Advisory Committee on Student Financial Assistance (ACSFA) have provided enormous support. The wisdom and methodological expertise of Bill Goggin, executive director of ACSFA, certainly strengthened the quality of this dissertation.

Additionally, I would like to thank others who have been supportive, but more importantly, who have helped me to relax and unwind—members of Campbell AME Church (especially Tuesday night Bible Study) and the Sneed Family (Mark, Letta, Catherine, and Meredith). Also, many of my classmates from University of Maryland have been a tremendous help. Special thanks to my cohort—Kathleen Lis Dean, Michele Murray, and Heather Rowan. From the first day of class (August 28, 2001), they have each been an invaluable part of the doctoral experience. Cassandra Lewis has also been a supportive and wonderful friend to have during this UMD experience.

Several individuals have made invaluable contributions to this dissertation. First, my advisor, Laura Perna, has been fantastic. She provided thoughtful and timely feedback, which strengthened the final product. Other members of my dissertation committee include Sharon Fries-Britt, Cheryl Holcomb-McCoy, Jeff Milem, and Nancy Shapiro. Each of these individuals brought a unique perspective to the final product. Because of their insight, I believe this dissertation is methodologically and conceptually strong and offers a multi-dimensional discussion of the topic. Laura Perna and Jeff Milem have also provided me with research and other professional development opportunities that have enhanced my experience at UMD. In addition to my committee, I must thank Ayanna Anderson, Rona Frederick, and Heather Rowan for their editorial assistance. Their eye for detail has enhanced this document. I should add that they, among others, have been great friends to have around during this process.

While writing this dissertation, I also had to say goodbye to several people—Kim Carter McDonald, Thomasina Heyward (Net), Furman (my dog), and Johnny Crosby (Boot). At key intervals during this process, their memory was a source of encouragement.

As I said earlier, the process leading to the completion of this dissertation began years earlier. Many individuals have been integral to my development as a researcher and a scholar. Even though not all names can be listed, I am aware and forever grateful of their contributions.

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CHAPTER 1

INTRODUCTION

Introduction

Many Americans embrace a belief in the achievement ideology, which characterizes American society as fair, open, and meritocratic. From this perspective, success and failure are the products of individual differences in ability and motivation, and not societal or economic barriers. In many ways, the U.S. educational system reinforces this ideology and professes that high educational attainment can lead to increased social mobility, economic solvency, and greater self-sufficiency. While these attributes represent well-documented benefits from postsecondary education (Institute for Higher Education Policy, 2005; Pascarella & Terenzini, 2005), access to educational opportunity remains unequally attained. In fact, many students, particularly Black, Latino/a, and low-income students, face numerous challenges throughout their educational journey and subsequently do not have clear paths to and through college (Freeman, 1997; McDonough, 1997; National Center on Education Statistics, 1996).

Considering that racial/ethnic minorities and Multiracial students will comprise larger proportions of the high school graduates and college-aged population over the next decade (National Center for Education Statistics, 2003; Jones & Smith, 2001; Western Interstate Commission for Higher Education, 2004), ensuring that these students develop aspirations for college, and subsequently enroll, is of vital importance to the nation's civic, social, and economic future. In 2005, there were slightly more than 2.6 million high school graduates and current projections indicate that within the next five years

(2010-2011) the annual number of high school graduates will rise to 3.1 million (NCES, 2003a). Even with this surge of high school graduates, the number of students entering college over the next 15 years is projected to increase by just 13 percent, or 2.2 million new students, which is nine percentage points lower than the number of students who entered postsecondary education between 1985 and 2000.

While the percentage of minority students enrolling in postsecondary education has increased over the last three decades, their enrollment rates continue to lag behind White and Asian students. In fact, descriptive analyses of the National Educational Longitudinal Study of 1988 (NELS:88/2000) show that at three critical points along the educational pipeline—college aspirations, college enrollment, and college completion, the rates for Black and Latino/a students remain lower than Whites and Asians (NCES, 1996, 2002). For example, nearly 70 percent of Asian and White 8th graders stated aspirations for at least a bachelor's degree, while less than two-thirds of Black students and 55 percent of Latinos/as indicated similar plans (NCES, 1996). These gaps increase at the next critical point, college enrollment. NCES reports that approximately 30 percent of Black and Latino/a students do not enroll in postsecondary education immediately following high school, while over 70 percent of White students and over 80 percent of Asian students enroll in a two- or four-year institution immediately after high school (NCES, 1996). In addition, the data reveal that Asians are three times more likely than Blacks and Latino/as to have earned at least a bachelor's degree twelve years after high school graduation, and Whites are two times more likely than Blacks and Latinos/as to have earned at least a bachelor's degree during this time frame (NCES, 2002). Based

on these data, it is evident that substantial numbers of Black and Latino/a students are falling through the cracks at critical stages along the educational pipeline.

It is necessary to increase the educational aspirations and subsequent enrollment and attainment rates of all students, particularly Black and Latino/a students as projections show that 80 percent of the new students entering higher education will be racial/ethnic minorities, many of whom are from low- and moderate-income families (NCES, 1996; WICHE, 2004). Some speculate that if policymakers and practitioners do not galvanize efforts to help students and families from these racial/ethnic groups navigate the educational system, discrepant patterns in college aspirations, access, and attainment will persist for these students (Advisory Committee on Student Financial Assistance, 2002; Pathways to College Network, 2004). In the context of the projected demographic trends, the low level of participation and attainment among Black and Latino/a students will likely have adverse effects on students' personal lives as well as on the nation's competitiveness, as economic and manpower projections indicate that by 2020 the U.S. will encounter a shortage of 14 million college educated workers (Carnevale, 2002).

In response to concerns about educational opportunity and the nation's economic competitiveness, policymakers and researchers are engaged in efforts to increase the number of high school students who gain access to and persist through postsecondary education. Discrepant patterns in college aspirations, access, and attainment across racial/ethnic groups suggest the need for additional information regarding all students' college decision-making, in particular, more information is needed about the formation of college aspirations, as this represents the first stage of the decision-making process. Such

research may offer insights that improve our understanding of the barriers some students must overcome to progress through the K-16 pipeline.

The Link between Aspirations and College Access

The college-choice process involves a series of complex, sometimes overlapping, phases that begin when a student develops aspirations to pursue postsecondary education and ends when the student enrolls in a specific college or university (Hossler, Braxton, and Coopersmith, 1989; Hossler & Gallagher, 1987). Conceptual models of college-choice describe the transition from high school to college in stages (Hossler et al., 1989). The Hossler and Gallagher model, the most commonly used approach, divides the process into three stages: predisposition, search, and choice. At each stage, students need different types of information to guide their preparation for the next stage.

Predisposition is the stage in which students develop aspirations for college attendance (Hossler et al., 1989; Hossler & Gallagher, 1987). A student's aspirations for college are shaped by personal ambition as well as the larger social context (Freeman, 1997; Horvat, 2001; McDonough, 1997; Smith-Maddox, 2000, 2001). In addition, aspirations may reflect the realities inherent in a student's immediate surroundings and within the opportunity structure of the larger society (Freeman, 1999; MacLeod, 1995). As such, MacLeod (1995) concludes that aspirations reveal "an individual's view of his or her own chances for getting ahead and are an internalization of objective probabilities" (p. 15). Indeed, the study of postsecondary educational aspirations is the first step toward a better understanding of the process of college access and eventual degree attainment, as it represents students' desire and intention to pursue higher education.

This introductory chapter provides an overview of the research topic. It begins with a summary of existing research, followed by the study's statement of the purpose. Next, the chapter describes the conceptual model and methodological approach. The chapter concludes with the significance and limitations of the study.

Overview of Existing Research

For several decades, researchers have studied the development of postsecondary educational aspirations (Burke & Hoelter, 1988; Hamrick & Stage, 2004; Hossler, Schmit, and Vesper, 1999; Kao & Tienda, 1998; Qian & Blair, 1999; Sewell, Haller, and Ohlendorf, 1970; Sewell, Haller, and Portes, 1969; Sewell & Shah, 1967; Trusty, 2000). While the status attainment framework is the predominant model for the study of postsecondary educational aspirations, various enhancements have been made to the model to improve its explanatory power and to better illustrate predictors of high aspirations across groups (i.e., race/ethnicity and gender). Refinements to the status attainment framework include the incorporation of constructs reflecting social psychology, cultural capital, social capital, and, to a lesser extent, econometric theory. In spite of dozens of scholarly publications dedicated to examining postsecondary educational aspirations, gaps in aspirations research remain, especially with regard to racial/ethnic group differences in the predictors of high aspirations and the predictability of aspirations models. These and other knowledge gaps are likely one cause of the discrepant rates in college access and attainment across groups.

Most aspirations research has focused primarily on the predictors of educational aspirations (Bateman & Hossler, 1996; Qian & Blair, 1999; Smith-Maddox, 2000, 2001).

However, some studies investigate the development of educational aspirations overtime among groups (Kao & Tienda, 1998; Trusty, 2000). Descriptive studies confirm that the vast majority of students, from all racial/ethnic backgrounds, begin high school with aspirations to complete at least a bachelor's degree (Kao & Tienda, 1998; NCES, 1996, 2005).

Research examining postsecondary educational aspirations among racial/ethnic groups provides conflicting evidence. Some researchers show that the aspirations for Blacks and Latinos/as are more likely than other racial/ethnic groups to decrease during the high school years (Kao & Tienda, 1998), while others report that Latinos, Black males, and Asian students, with high aspirations and low achievement in the 8th grade, have comparatively stable aspirations two years after high school graduation (Trusty, 2000). Moreover, some studies reveal that, when controlling for socioeconomic status, Black students have higher postsecondary educational aspirations than their White peers (Brown, 1982; Morgan, 1996; Portes & Wilson, 1976; Trusty, 2000). Conversely, other studies report no differences in aspiration levels among racial/ethnic groups (Hossler & Stage, 1992; Pitre, 2002).

In addition to ambiguous conclusions about the educational aspirations of students across race/ethnicity, a review of prior research also shows that existing models have lower predictability for racial/ethnic minorities than Whites (Bateman & Hossler, 1996; Hamrick & Stage, 2004). With data from NELS:88, Hamrick and Stage (2004) test a causal model of postsecondary educational aspirations that incorporates measures common to the sociological frameworks. The model for White students explains 60% of the variance in college aspirations, whereas the model for Latinos, Latinas, and Blacks

explain 44%, 37%, and 20% of the variance, respectively. Models for Asian and Multiracial students generally have not been tested in previous research.

In addition, studies show that the predictability of educational aspirations models varies between men and women of the same racial/ethnic groups (Bateman & Hossler, 1996; Hamrick & Stage, 2004). Bateman and Hossler (1996) find that aspiration levels of White men and women are similar and the models have comparable predictability for these two groups. However, they find that Black women hold higher aspirations than Black men, and the models have stronger predictability for Black women than Black men.

A review of prior research suggests that additional analyses must further examine how social, cultural, and economic constructs influence the development postsecondary educational aspirations. Existing research reveals contradictory conclusions regarding the role of such measures as gender, family income, parents' education, and parental involvement (Bateman & Hossler, 1996; Hamrick & Stage, 2004; Hossler & Stage, 1992; Hossler et al., 1999; Kao & Tienda, 1998; Qian & Blair, 1999; Wimberly, 2000). Other studies acknowledge the importance of individuals, such as teachers and counselors to aspirations, but recognize that additional analyses are needed to understand the effects of school context, including the effects of interactions with school personnel on students' educational aspirations (Horvat, 2001; McDonough, 1997; Stanton-Salazar, 1997; Wimberly, 2000). Some researchers assume a relationship between aspirations and perceptions of college costs (Morgan, 1998; St. John, 2003), but researchers have not tested this assumption. This study builds on the strengths and limitations of prior research by using an integrated conceptual model, combining sociological and economic

indicators, to examine the development of postsecondary educational aspirations across racial/ethnic groups.

Purpose of the Study

This study extends prior research that has analyzed the stability and predictors of postsecondary educational aspirations during the high school years (Kao & Tienda, 1998). Using an integrated conceptual model that combines aspects of sociological and econometric frameworks, this study seeks to understand better how students' educational aspirations develop between 10th and 12th grades. The study also explores differences across racial/ethnic groups in the stability of educational aspirations. Data from the base-year and first follow-up survey of the Educational Longitudinal Study of 2002 (ELS:2002/04) are used to examine the following three research questions:

1. What are the characteristics of students who increase, decrease, and maintain educational aspirations between 10th and 12th grades? To what extent do male and female students of differing racial/ethnic groups maintain postsecondary educational aspirations between 10th and 12th grades?
2. Does a conceptual model that adds cultural and social capital and economic constructs to the modified status attainment model for postsecondary educational aspirations improve the explanatory power of the model?
3. How do 12th grade educational aspirations vary by race/ethnicity after controlling for other variables?

Descriptive statistics and logistic regression analyses are used to address the research questions. The dependent variable is: aspire in 12th grade to attain at least a

bachelor's degree (yes=1, no=0). The independent variables include measures from a traditional status attainment framework (e.g., socioeconomic status, academic achievement, significant others) as well as additional socio-cultural constructs (e.g., measures of cultural capital and social capital). The independent variables also include econometric measures (e.g., importance of cost and financial aid, tuition).

Theoretical and Conceptual Framework

The conceptual framework for this study is guided by relevant sociological and econometric theories. The theoretical and conceptual models that researchers have used to study postsecondary educational aspirations have evolved over the past several decades beyond the earlier status attainment frameworks (Sewell & Shah, 1967; Sewell et al., 1969, 1970) to include measures of social and cultural capital (Freeman, 1997; McDonough, 1997; Qian & Blair, 1999; Smith-Maddox, 2000, 2001). Researchers suggest that the next phase of aspirations research consider economic indicators, such as college costs and financial aid (Morgan, 1998; St. John, 2003). This study extends previous research by using a conceptual model that integrates key aspects of sociological and econometric frameworks. This integrative approach represents the next step in the evolution to the study of postsecondary educational aspirations.

Much of the existing research on postsecondary educational aspirations explores the extent to which sociological constructs (e.g., socioeconomic status, significant others) explain the development of students' aspirations (Burke & Hoelter, 1988; McDonough, 1997; Sewell & Shah, 1967; Sewell et al., 1969, 1970; Smith-Maddox, 2000, 2001). Status attainment frameworks attribute variation in educational aspirations to differences

in social class membership (Sewell & Shah, 1967; Sewell et al., 1969, 1970). In an attempt to better explain the influence on educational aspirations of academic achievement and significant others (e.g., parents, teachers, peers), researchers added social psychological constructs to the status attainment framework (Sewell et al., 1969, 1970). The earlier status attainment models used in aspirations research were tested only on White males (Sewell & Shah, 1967), but the enhanced model, incorporating social psychological variables, was applied to other groups of students, including White women and Black students (Burke & Hoelter, 1988; Kerckhoff & Campbell, 1977; Portes & Wilson, 1976; Sewell et al., 1969, 1970).

The conceptual framework for this study includes key constructs from the earlier status attainment models, such as family background characteristics (e.g., race/ethnicity, gender, socioeconomic status), academic preparation and achievement, and significant others (Burke & Hoelter, 1988; Kerckhoff & Campbell, 1977; Portes & Wilson, 1976; Sewell & Shah, 1967; Sewell et al., 1969, 1970). This study views the influence of socioeconomic status and significant others through the lens of cultural and social capital, as cultural and social capital theories illuminate how the values and networks that characterize a student's socioeconomic status and relations with others (e.g., parents, school personnel, peers) impact his/her educational aspirations. Incorporating aspects of cultural and social capital into a status attainment framework may be especially important for understanding racial/ethnic group differences in postsecondary educational aspirations (Freeman, 1997; Smith-Maddox, 2000, 2001).

Cultural capital refers to an individual's cultural resources, which may be related to their cultural background, worldview, and attitudes (Bourdieu, 1977; Bourdieu &

Passeron, 1977). In this study, the variables used to measure cultural capital may reflect a student's and his/her family's values regarding education (e.g., parent's aspirations for their child, educational materials in the home, participation in cultural activities).

Social capital refers to a student's access to resources and information through social relationships and networks that may influence aspirations for college (Bourdieu, 1986; Coleman, 1988; Lin, 2001). Researchers (Croninger & Lee, 2001; Freeman, 1997; McDonough, 1997; Smith-Maddox, 2001) suggest that students gain social capital through relationships with family members (e.g., strong ties) and school personnel (e.g., weak ties). Additionally, researchers show that the characteristics of the school (e.g., financial and human resources, teacher/student ratio, school counselor/student ratio, family income level, student body demographics) may influence the effect that school personnel and peers have on students' aspirations (Freeman, 1997; Horvat, 2003; McDonough, 1997; Stanton-Salazar, 1997). As such, characteristics and resources of the school environment can influence the type and quality of social capital a student receives (McDonough, 1997; Stanton-Salazar, 1997). To assess the impact of social capital, this study includes measures of parental involvement with student's education, parental involvement with the school, school's resources, school personnel aspirations, student-teacher relations, and peers' educational values.

Econometric frameworks have been used in aspirations research to a lesser extent. These models typically describe the final stage of the college decision-making process, college-choice (Kane, 1994; Manski & Wise, 1983; Paulsen & St. John, 2002). Econometric models view college-choice as an investment decision, in which students' weigh the costs versus benefits of postsecondary training or education relative to their

preferences (Becker, 1993). Financial factors (e.g., tuition, financial aid) are key components of econometric models. Since the college-choice literature reports that finances play a vital role in determining students' postsecondary choices (Kane, 1994; Manski & Wise, 1983; Paulsen & St. John, 2002), several researchers (Morgan, 1998; St. John, 2003) suggest incorporating financial measures into research on postsecondary aspirations. Because a student may make decisions about postsecondary aspirations based in part on his/her perception of the costs of attendance, this study incorporates financial indicators, including the importance of cost and financial aid and average four-year public tuition, into the conceptual framework.

In summary, sociological and econometric theoretical perspectives provide insight into students' educational opportunities. Hence, an integrated conceptual model, combining aspects of both approaches, may provide a more comprehensive understanding of the development of postsecondary educational aspirations. By integrating aspects of these theoretical frameworks, this study explores how measures of social capital, cultural capital, and economic constructs shape students' educational aspirations. Some researchers suggest that an integrated conceptual model may offer a more complete analysis of the factors that influence students' aspirations (Morgan, 1998; St. John, 2003). In addition, an integrated model may improve the explanatory power of aspirations models, particularly for racial/ethnic minorities. Although existing aspirations studies have not applied a model that incorporates aspects of both sociological and econometric approaches, Perna (2000) finds that such a model better predicts the decision to enroll in a four-year college for students from particular racial/ethnic backgrounds than an econometric approach alone.

Research Method

This study uses data from the Educational Longitudinal Study of 2002 (ELS:2002/04), supported by the National Center for Educational Statistics (NCES) of the U.S. Department of Education. NCES collected data when students were in 10th grade (2002) and again in 2004, when most students were seniors. The second follow-up is scheduled for 2007, two years after scheduled high school graduation for most respondents. NCES has not yet determined the schedule for additional follow-ups (NCES, n.d.).

The database contains data collected from students and their records (transcripts, test scores), as well as from their parents, teachers, and schools (the principal and the librarian, NCES, 2004). These multiple data sources provide insight into how students' home and school environments can influence educational outcomes. This study uses data from the base-year (2002) and first follow-up (2004) questionnaires to examine the development of students' postsecondary educational aspirations between 10th and 12th grades. The analytic sample for this study includes all students who were in 12th grade in 2004 and who responded to the base-year and first follow-up questionnaires.

ELS:2002/04 is an appropriate dataset for examining the research questions for several reasons. First, the dataset offers a large number of cases and has a high response rate (NCES, 2004). When the data are weighted, ELS:2002/04 data are representative of the national population of individuals who were in the 10th grade in 2002 and in the 12th grade in 2004. Second, although not perfect, the dataset includes variables that can be used to measure the complex constructs in the conceptual model. Additionally, the

dataset offers a longitudinal panel, which follows a cohort as it transitions from 10th to 12th grades.

Descriptive and logistic regression analyses are used to address the research questions. Specifically, for the first research question, descriptive techniques describe the characteristics of students in the 10th and 12th grades who do and do not aspire to attain at least a bachelor's degree. In addition, descriptive statistics are used to describe the characteristics of students who increase, decrease, or maintain aspirations between 10th and 12th grades. By using descriptive methods that are similar to those used by Kao and Tienda (1998) in their examination of NELS:88/94 data, this study also provides an updated illustration of the stability of students' educational aspirations between 10th and 12th grades by race/ethnicity and gender.

The study uses logistic regression to answer the second and third research questions. Logistic regression is a type of loglinear model that is used for dependent variables that are dichotomous (Cabrera, 1994; Pampel, 2000). In this study, the dependent variable is based on students' response to the question in the 12th grade survey that asks, "As things stand now, how far in school do you think you will get?" This questionnaire item offers nine response options, ranging from less than high school graduate to receipt of an advanced degree (e.g., Ph.D., M.D.). Similar to Kao and Tienda's (1998) study using NELS:88/94, this study's dependent variable collapses these responses into a dichotomous variable based on whether or not a student aspires to attain at least a bachelor's degree. Kao and Tienda find that, since 66% of 1988 8th graders express aspirations for at least a bachelor's degree, the dependent variable had to distinguish between "lower" educational aspirations and "higher" educational aspirations.

Descriptive analyses of ELS:2002/04 data reveal that 76% of 2002 10th graders aspired to a bachelor's degree or higher. Since the ELS:2002/04 figures are higher than NELS:88/94, I conclude, similar to Kao and Tienda (1998), that a dichotomous variable, measuring whether students aspire to attain at least a bachelor's degree or less than a bachelor's degree, is appropriate.

The logistic regression model estimates the log-odds of one outcome occurring (e.g., aspiring to attain at least a bachelor's degree) relative to the baseline category (Pampel, 2000). For this study, the baseline category is not aspiring to attain at least a bachelor's degree. Independent variables include measures of background characteristics, academic preparation and achievement, cultural capital, social capital, and economic indicators.

To address the second research question, variables are entered into the logistic regression model in four conceptually related blocks. The first block includes background characteristics, followed by the second block, which considers academic preparation and achievement. The third block adds measures of cultural and social capital as well as econometric measures. The final block analyzes students' educational aspirations in 10th grade. Entering the variables in these blocks assess whether additional measures of cultural and social capital as well as econometric variables improve the explanatory power of the model.

To address the third research question, logistic regression examines the relationship between students' 10th and 12th grade educational aspirations and variations in this relationship across racial/ethnic groups. Specifically, the model investigates the predictors of 12th grade educational aspirations after controlling for other variables, all of

which are measured in the 10th grade. To determine the predictors of educational aspirations for each racial/ethnic group, the logistic regression models test for interactions across each group.

Significance of the Study

Educational aspirations are critical to educational attainment because people cannot achieve what they do not dream. In today's society, where educational attainment is critical for participation and advancement, it is imperative that students' postsecondary educational potential be maximized. Ensuring that all students reach their educational goals requires collective effort on the part of the family, community, schools, and even policy-making sectors. For example, since federal educational policies can have direct effects on polices and practices implemented on the state and local levels as well as indirect effects on the lives of families and communities, the design and implementation of these policies must seek to achieve equitable educational outcomes. For several decades, federal higher education policy, such as the Civil Rights Act of 1964, has focused on ensuring that students who aspire to attend college can gain access, regardless of race/ethnicity. Also the Higher Education Act of 1965 introduced federal student aid programs and early intervention programs, such as Upward Bound and TRIO, which were designed to remove financial and academic barriers that may negatively influence the college-going behaviors (i.e. developing aspirations, preparing for college, applying for college, enrolling in college) of low-income and first-generation students. More recent legislation designed to increase educational opportunity, includes the *No Child Left Behind Act (NCLB)*.

While it is encouraging to see the federal government's professed commitment to the nation's youth, gaps in educational opportunity among racial/ethnic groups remain and do not appear to be changing for the nation's high school students, who are quickly approaching graduation. Hence, it is likely that racial/ethnic differences in college enrollment and choice will persist. Since scholars recognize that developing aspirations for college is the first step in the college decision-making process (Hossler & Gallagher, 1987; Hossler et al., 1989), continued research examining students' postsecondary educational aspirations may suggest policies and programs that will generate improvements in college access and persistence, which are of particular importance as larger numbers of students prepare to graduate from high school.

By using ELS:2002/04, this study updates and expands earlier findings (i.e., Kao & Tienda, 1998) regarding the development of postsecondary educational aspirations during the high school years in several ways. Unlike previous aspirations research, this study gives attention not only to "traditional" racial/ethnic groups (e.g., Asians, Blacks, Latinos/as, Whites), but also to Multiracial students. The study also uses an integrated conceptual model, which incorporates key aspects of sociological and econometric frameworks. Because of these elements of the research design, the results of this study will likely contribute to policy, practice, and research, as discussed in detail below.

Because this study uses the most current national data to analyze postsecondary educational aspirations, the findings will help determine whether existing college access policies and practices are appropriately tailored to the needs of existing students. Most studies of postsecondary educational aspirations that use national longitudinal data rely on NELS:88 data, which describe students who attended high school more than ten years

ago. Descriptive analyses of ELS:2002/04 data suggest that high percentages (76%) of high school sophomores aspire to attain at least a bachelor's degree, but students' aspirations vary based on race/ethnicity. By using the most recent data available, the results of the descriptive and multivariate analyses will provide a comprehensive and current assessment of the predictors of educational aspirations and variations in educational aspirations across racial/ethnic groups. These findings will likely suggest ways in which K-16 polices and practices can promote high educational aspirations for all students, as well as additional early intervention strategies that are specifically tailored for targeted groups.

Additionally, this study's findings will inform policies and practices that are designed to increase college enrollment rates, as researchers speculate that a correlation exists between educational aspirations and college enrollment (NCES, 1996, 2005), as aspirations may "reflect the student's reading of what is realistically possible to accomplish and what is in the student's rational self-interest to pursue" (NCES, 2005, p. 22). Descriptive analyses of NELS:92 show a relationship between educational aspirations and college enrollment. These data illustrate that a higher share of Asian high school seniors compared to seniors of other racial/ethnic groups both aspire to attain at least a bachelor's degree (74%) and actually enroll in college within two years of high school graduation (54%). A smaller share of Latino/a high school seniors compared to seniors of other racial/ethnic groups aspire to attain at least a bachelor's degree (53%) and enroll in college within two years of high school graduation (31%, NCES, 1996). Given the correlation between aspirations and college enrollment, the findings of this study will generate recommendations for policymakers and practitioners about strategies

that not only help to raise and sustain high aspirations of all students, but also consequently, increase the proportion of students who enroll in college.

The results of this study will also have implications for theory and future research. The findings will determine whether an integrated conceptual model is a more effective approach for the study of postsecondary educational aspirations than the earlier status attainment models. The frameworks used to study postsecondary aspirations have evolved over the past four decades. Status attainment models serve as the foundation for all aspirations research. Subsequent modifications to the status attainment model that incorporate measures of social psychological, cultural capital, and social capital constructs have increased the model's explanatory power and applicability to specific groups of students. Also, incorporating econometric measures to the model represents the next phase of aspirations research. Econometric measures include financial indicators such as college costs and financial aid, variables that are known to be important in the decision to enroll in college (Heller, 1997; Kane, 1994; Manski & Wise, 1983; Paulsen & St. John, 2002). This study tests the assumption that these variables also influence high school students' postsecondary educational aspirations.

Limitations of the Study

This study has several limitations. The first limitation involves the use of complex constructs, such as cultural capital and social capital. Because the database does not offer precise measures for these variables, I create proxies for cultural capital and social capital. Most proxies for social capital include measures that have been tested in previous aspirations research using NCES data (e.g., Kao & Tienda, 1998; Qian & Blair,

1999; Wimberly, 2000). Such measures include parental involvement with the student's education, parental involvement with the school, school personnel aspirations, student-teacher relations, and peers' educational values. This study also includes measures of cultural capital (e.g., involvement in cultural activities) and social capital (e.g., school resources) that have not been commonly analyzed in aspirations research, as some researchers suggest that inclusion of these variables may offer additional insight into the development of aspirations for students of differing groups (McDonough, 1997; Stanton-Salazar, 1997; Trusty, 2000; Wimberly, 2000).

Second, precise measures for some econometric measures are also unavailable in ELS:2002/04. Because economic measures are not commonly used in aspirations research, it is more difficult to determine suitable proxies. Since researchers suggest that students' aspirations are influenced by perceptions of college costs, availability of financial aid, and tuition (Freeman, 1997; Hauser & Anderson, 1991; Morgan, 1998; St. John, 2003), this study includes measures that address these areas. In addition, because ELS:2002/04 does not identify a suitable measurement of labor market earnings, this study does not examine how students' perceptions of future earnings influence aspirations.

The third limitation involves missing data. This study minimizes the adverse effects of missing data by adding dummy variables to indicate "missing" for categorical data and using mean substitution for continuous variables. Even though both of these methods are recommended strategies (Cohen & Cohen, 1983) they are not perfect. Therefore, in data analysis and interpretation, I will consider the effects of these techniques on the study's findings and implications.

A final limitation concerns the examination of racial/ethnic groups in this study. The racial/ethnic groups examined in the study are limited to Asian, Black, Latino/a, Multiracial, and White students. Native Americans/American Indians are excluded because they represent only 1% of the sample, which is too small a number for reliable analysis. In addition, Native Hawaiian/Other Pacific Islander students, who also represent less than 1% of the total sample, are not analyzed as a separate racial/ethnic group. Instead, this study counts these students as Asians, which NCES recognizes as an appropriate racial categorization (NCES, 2004). ELS:2002/04 also provides information on Asian and Latino/a subgroups, however this study does not disaggregate these racial/ethnic subgroups because of the small number of cases in each group. Therefore, the study's findings do not assess differences among racial/ethnic subgroups.

Despite these limitations, this study remains a worthy research project, as it explores the first stage of the process that can lead to college enrollment and eventual degree attainment. The research design, which expands on previous research, is well conceived and will generate results that address gaps in the existing aspirations literature. In particular, this study is responsive to the concerns of researchers seeking additional study of the influence of certain social, academic, cultural, and economic measures on aspirations across groups (Bateman & Hossler, 1996; Freeman, 1997; Hamrick & Stage, 2004; Kao & Tienda, 1998; Smith-Maddox, 2000, 2001; Smith-Maddox & Wheeler, 1995; Trusty, 2000; Wimberly, 2000). As a result, the findings from this research will be useful for K-16 policymakers as they assess and develop efforts to increase students' educational aspirations and access to college.

CHAPTER 2

LITERATURE REVIEW

Introduction

This literature review describes research examining the development of postsecondary educational aspirations among high school students. The four purposes of this literature review are to: 1) critically review the theoretical frameworks that researchers have used to examine students' educational aspirations; 2) summarize how an integrated conceptual model may offer additional insights into the development of educational aspirations; 3) identify what has been learned from prior research about students' educational aspirations; and 4) describe what needs to be learned about educational aspirations.

This review of aspirations research begins by describing the theoretical and conceptual models that researchers have used to study postsecondary educational aspirations. Most aspirations research employs sociological frameworks, including status attainment, cultural capital, and social capital. The status attainment model serves as the foundation of aspirations research (Sewell & Shah, 1967). Over the course of four decades, various refinements have been made to the original status attainment framework to incorporate social psychological, cultural capital, and social capital constructs. Studies show that these measures improve the model's explanatory power and are more illustrative of the predictors of educational aspirations across gender and racial/ethnic groups (Burke & Hoelter, 1988; Freeman, 1997; McDonough, 1997; Qian & Blair, 1999; Sewell, Haller, and Ohlendorf, 1970; Sewell, Haller, and Portes, 1969; Smith-Maddox,

2000, 2001). Some researchers contend that the next phase of aspirations research must integrate economic indicators (e.g., costs, financial aid, labor market opportunities) to the refined status attainment models (Morgan, 1998; St. John, 2003), as these measures may also influence students' educational aspirations.

Next, I explain how these theoretical and conceptual frameworks inform the conceptual model used for this study. The final section of the chapter describes existing aspirations research, focusing specifically on the constructs used in the theoretical and conceptual frameworks that guide this study. A review of the literature shows that existing studies have shed light on the predictors of high aspirations, however additional research is needed to examine how social, academic, cultural, and economic constructs influence the development of postsecondary educational aspirations during the high school years, particularly for students of differing racial/ethnic groups.

Theoretical Frameworks

Traditional aspirations research uses status attainment models to illustrate how socioeconomic status (SES) influences educational and occupational aspirations and attainment (Sewell & Shah, 1967). Researchers seeking to enhance the predictability of the earlier status attainment models for various groups of students (e.g., females, Black students) incorporate social psychological (Burke & Hoelter, 1988; Hanson, 1994; Sewell et al., 1969, 1970), cultural and social capital (Freeman, 1997; McDonough, 1997; Qian & Blair, 1999; Smith-Maddox, 2000, 2001), and econometric measures (Morgan, 1998) into the original framework. Social psychological models extend status attainment models by considering the importance of academic achievement and significant others

(e.g., parents, school personnel, friends). Cultural and social capital constructs illustrate how values, structures (e.g., high school characteristics), and resources (e.g., knowledge and social networks) influence postsecondary educational aspirations. This review categorizes these frameworks—status attainment, social psychological, cultural capital, and social capital—as sociological approaches.

Other researchers recognize that students' concerns about college costs and their perceptions about labor market incentives (e.g., earnings return on educational investment) may also affect aspirations (Freeman, 1997, 1999; Kao & Tienda, 1998; Morgan, 1998; St. John, 2003). As a result, several researchers speculate that an economic approach may also be appropriate (Morgan, 1998; St. John, 2003). Although fewer researchers have investigated the effects of financial measures on aspirations, an econometric approach suggests that perceived costs and benefits of postsecondary alternatives also influence students' aspirations.

The following section discusses how researchers have applied sociological and econometric approaches in aspirations research. After I describe the key aspects of these models, I summarize major findings of aspirations studies applying these sociological and economic concepts.

Sociological Approaches

Status attainment models have been the general research paradigm for the study of postsecondary educational aspirations for nearly four decades. Status attainment research focuses on how "individuals mobilize and invest resources for returns in socioeconomic standing" (Lin, 2001, p. 78). As such, early status attainment research focused

exclusively on the role of socioeconomic status (SES) in predicting a student's postsecondary educational aspirations and his/her subsequent educational and occupational attainment (Blau & Duncan, 1967; Sewell & Shah, 1967).

Blau and Duncan's (1967) seminal study began inquiry into the status attainment tradition with two goals: 1) to develop a prediction model to explain variation in status attainment, and 2) to explain the process of intergenerational mobility and transfer of social status. Analyzing the educational and occupational attainment of adult males, Blau and Duncan (1967) find that socioeconomic status has both indirect and direct positive effects on students' level of attainment. Although this study provides the basis for later status attainment research, critics (Sewell et al., 1969, 1970) argue that Blau and Duncan's research offers little theoretical justification for the selection of the variables and the relationships between variables. In an effort to enhance Blau and Duncan's model, Sewell and Shah (1967) hypothesize that parent's socioeconomic status is a determinant of a child's educational and occupational attainment. As such, their study develops and tests a linear causal model to assess the direct and indirect effects of socioeconomic status on educational attainment, as mediated by educational aspirations.

Using a socioeconomic index comprised of parents' income, father's education, mother's education, and father's occupation, Sewell and Shah (1967) find that the level of educational aspirations increases with socioeconomic status, for both male and female high school seniors in 1957 from Wisconsin. Descriptive analyses show that nearly 38% of male students, regardless of socioeconomic status, have college aspirations. However, less than 15% of males of low socioeconomic status aspire to college, in comparison to two-thirds of males from high socioeconomic status groups. Similarly, less than 10% of

females with low socioeconomic status have college aspirations, in contrast to 60% of females with high socioeconomic status. An unexpected finding of this study is that educational aspirations have strong, positive effects on educational attainment, independent of their relationship to socioeconomic status. Based on this conclusion, Sewell and colleagues (1969, 1970) use educational aspirations as a dependent variable in subsequent status attainment analyses.

Sewell and colleagues (1969, 1970) expand their conceptual framework to consider more than just the effects of socioeconomic status on aspirations, but also to show how social psychological variables influence aspirations of students from differing socioeconomic backgrounds. Sewell and colleagues' (1969) social psychological variables include measures of mental ability, academic achievement, and encouragement of significant others. These researchers argue that social psychological variables measure students' cognitive and motivational orientations better than variables used in the original status attainment models (e.g., socioeconomic status). In addition, they hypothesize that the addition of social psychological variables could increase the model's statistical power.

Sewell and colleagues' model (1969, 1970) is commonly known as the "Wisconsin Social Psychological Model of Status Attainment" or simply the "Wisconsin Model." Sewell and colleagues' (1969) study of 929 farm boys in Wisconsin reveals that social psychological variables add a great deal to the original model. First, these variables contribute to the model's explanatory power for educational attainment. While Blau and Duncan's (1967) status attainment model accounts for 26% of the variance in educational attainment, the refined model explains 50%. Second, the variable, significant

others, which measures the influence of adults (e.g., parents, teachers) who hold high aspirations for the student, emerges as a key indicator and has direct positive effects on mental ability, academic achievement, and aspirations. While mental ability and academic achievement also have direct and indirect positive effects on aspirations, significant others show the greatest positive direct effect net of other variables. In addition, the data show a moderately strong, positive correlation (.61) between aspirations and attainment.

Although status attainment models have advanced our understanding of how socioeconomic status, academic achievement, and significant others influence educational aspirations, these models have limited applicability to females and racial/ethnic minorities (Burke & Hoelter, 1988; Hanson, 1994; Kao & Tienda, 1998; Smith-Maddox, 2000). Sewell and Hauser's (1980) synthesis of research on the Wisconsin Model acknowledges these limitations, as the model's early research focuses exclusively on White male seniors in Wisconsin in 1957. Although Sewell and colleagues analyze women in some studies, the studies either do not incorporate social psychological variables or only examine educational and occupational attainment (Sewell, 1971; Sewell, Hauser, and Wolf, 1977; Sewell & Shah, 1967). In terms of race, Sewell and Hauser (1980) report that Blacks represented less than 2% of Wisconsin's population at the time of data collection. In addition, Wisconsin law prohibited inquires about race/ethnicity on school surveys.

Other researchers use the Wisconsin Model to explain differences in the postsecondary educational aspirations of Black and White students (Kerckhoff & Campbell, 1977; Portes and Wilson, 1976). Portes and Wilson (1976) and Kerckhoff and

Campbell (1977) replicate aspects of the Wisconsin Model's framework, although Kerckhoff and Campbell (1977) exclude the influence of significant others from their framework. Portes and Wilson (1976) use national data from the Institution of Social Research at the University of Michigan and Kerckhoff and Campbell (1977) use data from a sample that is limited to high school boys in Fort Wayne, Indiana. Despite differences in the sample, both studies reveal that socioeconomic status is a powerful positive indicator of aspirations for Blacks and Whites. Moreover, both studies show that the models predict more variance in educational aspirations for Whites than for Blacks.

In another attempt to address the shortcomings of these earlier studies, Burke and Hoelter (1988) use the Wisconsin Model to examine race and sex differences in educational aspirations, but add a variable to measure academic identity. They argue that students who have a positive self-concept, as measured by the variable "academic identity," will have higher educational aspirations than other students. Their analyses of slightly more than 700 high school seniors in Louisville, Kentucky find that academic identity is positively related to the educational aspirations of White males and females as well as those of Black females, but is unrelated for Black men after controlling for measured IQ, grade point average, and the influence of significant others (e.g., parents, teachers, peers).

Several researchers acknowledge that status attainment models, even in the revised form, offer a limited explanation of postsecondary aspirations, especially for racial/ethnic minorities. As Horvat (2001) indicates, earlier research models are "driven by a singular paradigmatic focus that locate[s] the roots of race- and class-based disparities at the individual level" (p. 195). In essence, such research designs fail to

consider how cultural, social, and structural constraints may shape aspirations (Freeman, 1997; Horvat, 2001; Smith-Maddox, 2000, 2001). In response to these critiques, recent studies of aspirations incorporate features of cultural and social capital theories into a status attainment framework. The following sections explore these two frameworks in more detail. However, an explanation of habitus precedes the discussion of cultural and social capital, as habitus provides a frame for understanding the ways in which cultural and social capital operate in the lives of individuals.

Habitus.

Habitus defines "a common set of subjective perceptions held by all members of the same group or class that shapes an individual's expectations, attitudes, and aspirations" (p. 6). These aspirations are both objective probabilities and subjective estimates of the chances for upward mobility. In other words, students consider their environment and the attitudes, beliefs, and experiences of its inhabitants when making determinations about their own potential and aspirations. These determinations are often based on unconscious internalizations of the rules that govern "the field of interaction," which can serve to generate or constrain action (Horvat, 2001). McDonough (1997) also illustrates the ways in which the organizational habitus, or the school context, may influence educational aspirations. "Organizational habitus is a way to understand schools' roles in reproducing social inequalities" (McDonough, 1997, p. 156). In sum, because habitus represents an individual's perception of boundaries and constraints (e.g., within the context of the home and school environment), it informs one's sense of

opportunity. As a result, aspirations may reflect reasonable choices that are influenced by habitus (Bourdieu & Wacquant, 1992; MacLeod, 1995; McDonough, 1997).

Habitus provides a lens to examine the influence of cultural and social capital on postsecondary educational aspirations. Horvat (2001) contends that habitus enables a person to activate his/her capital. Additionally, Horvat suggest that habitus may be useful for explaining how race and class interact to structure a student's aspirations and sense of opportunity. A school counselor from Lincoln High School, a high-minority, high-poverty school with low postsecondary educational aspirations, states: "I think most of our kids think college is a place for these kids who have a lot of money, different culture, etc. How many people have they seen in college? How many of their own? How many moms or dads do they have in college, or cousins or uncles? Anybody?" (Horvat, 2003, p. 17).

Horvat (2003) uses these comments to explain that the experiences and interactions within home and school environments cause low aspirations for Lincoln High School students. These students' limited exposure to college-educated role models in their family as well as attendance at a high school where college is deemphasized stifles their aspirations. In addition, these students perceive college as a place for people different from themselves (e.g., wealthy and White students).

MacLeod's (1995) ethnographic study of two groups of boys, the Brothers and Hallways Hangers, from the Clarendon Heights housing project uncovers a paradox in understanding how habitus influences students' aspirations. In this study, both groups of boys live in the same housing project and attend the same school, but have unequal aspirations. The Hallway Hangers, a group of mostly White boys, have negative

perceptions of opportunity and low aspirations. On the other hand, the Brothers, a group of predominantly Black boys, have positive perceptions of opportunity and high aspirations. Interestingly, the Brothers, who must overcome class and racial barriers, have higher aspirations.

MacLeod (1995) shows that the habitus of the family or home environment highlights the differences in aspirations between the Brothers and the Hallway Hangers. For the Brothers, high aspirations are an established norm in their household. The boys' parents, recognizing their own limitations in the workforce and society, want their sons to have a better quality of life. Because these parents view educational attainment as the key to upward mobility, they hold high aspirations for their sons, thereby exhibiting cultural capital that values education. In contrast, the parents of the Hallway Hangers do not encourage high aspirations for their sons. Instead, these parents believe that high aspirations are unrealistic and will only lead to later disappointment and frustration for their sons.

Cultural capital.

The concept of cultural capital, which refers to "high status cultural signals used in cultural and social selection," was developed by Pierre Bourdieu and Jean-Claude Passeron (Lamont & Lareau, 1988, p. 153). Specifically, cultural capital refers to an individual's set of cultural resources, which may be related to their cultural background, knowledge base, language patterns, worldview, and attitudes. Often linked to social class, cultural capital is typically derived from one's family, parents in particular (Bourdieu, 1977; Bourdieu & Passeron, 1977). The family serves as a child's primary

socializing agent and thereby transmits preferences in food, fine and performing arts, religion, communication, and manners.

All socioeconomic groups have their own set of cultural norms and practices. However, individuals from higher socioeconomic groups tend to dictate and define the more acceptable and legitimate cultural patterns and attributes (Bourdieu, 1977; Lamont & Lareau, 1988; Lin, 2001). Bourideu's (1977) theoretical framework suggests that high status individuals (e.g., members of the dominant group) determine acceptable cultural practices because they are relatively autonomous from the lower status groups (e.g., members of the dominated group). However, given the social hierarchy, lower status groups typically do not have the option of remaining autonomous from the higher status group.

Although an individual may be born into, or inherit, a particular status group, theorists believe that individuals who invest in certain culturally valued activities and behaviors (e.g., educational opportunities) can improve their status (Bourdieu, 1986; Lamont & Lareau, 1988). As Bourdieu (1986) notes, an individual can attain "higher" levels of cultural capital in three forms—the embodied state, the objectified state, or the institutionalized state. In the embodied state, cultural capital "takes the form of long-lasting dispositions of the mind and body," which tend to characterize an individual's state of mind or experiences (Bourdieu, 1986, p. 243). In the objectified state, an individual has access to esteemed cultural goods, such as computers, books, and cultural activities (e.g., art exhibits, theatrical performances, enrichment classes, travel). The institutionalized state of cultural capital confers the academic qualifications or credentials

that can improve one's occupational attainments, economic security, and symbolically bestow status.

Cultural capital is also important because it draws attention to the process through which social stratification systems are maintained, particularly through the educational system. As Bourdieu (1977) states:

> Schools are not socially neutral institutions but reflect the experiences of the 'dominant class.' Children from this class enter school with key social and cultural cues, while working class and lower class students must acquire the knowledge and skills to negotiate their educational experience after they enter school. Although they can acquire the social, linguistic, and cultural competencies that characterize the upper-middle and middle class, they can never achieve the natural familiarity of those born to these classes and are academically penalized on this basis (p. 178).

By emphasizing the value of education, helping children navigate the educational system, and conveying high expectations, families with higher socioeconomic levels tend to use their resources to ensure that their status and privilege are maintained. Teachers and administrators perpetuate the values and culture of the dominant class, and they reward those students who adhere to those patterns (Freeman, 1997; Lamont & Lareau, 1988).

Some researchers indicate that the school environment poses challenges to upward mobility for some groups (Freeman, 1997; Laureau & Horvat, 1999). Freeman (1997) concludes that Black students often experience "the negative side of the cultural capital concept" (p. 526). These students state that teachers and administrators in their elementary and secondary schools instill feelings of hopelessness and intimidation, which

often limits their aspirations. Freeman (1997) suggests that the schooling process strips these students of their personal and cultural values because they do not adhere to the established standards of the dominant class, standards that teachers and administrators reinforce through class instruction and school policies.

Building on the work of Weber, Bourdieu, and Passeron, Lamont and Lareau (1988) explain how individuals can be excluded from obtaining valued cultural capital. Based on this notion, they describe cultural capital as "institutionalized, i.e., widely shared, high status cultural signals (attitudes, preferences, formal knowledge, behaviors, goods, and credentials) used for social and cultural exclusion" (p. 156). To describe further the process of exclusion, they outline four patterns: self-elimination, overselection, relegation, and direct selection. Each of these forms of exclusion potentially limits students' postsecondary educational aspirations. In the case of self-elimination, for example, students adjust their aspirations based on their perceived chances of attainment. These perceptions are based on a student's comfort and familiarity within specific social settings (e.g., school) and the associated cultural norms. Overselection requires students with less-valued cultural resources to perform at the same level as the culturally privileged. In this sense, students with the less-valued cultural capital (e.g., racial/ethnic minorities, students of lower socioeconomic classes) must overcompensate for their cultural "inadequacy." In the case of relegation, students with less-valued cultural capital are relegated to less desirable positions (e.g., jobs that devalue educational credentials), and thereby do not reap the full benefits of their educational investment. While self-selection, overselection, and relegation are indirect routes of exclusion, direct exclusion occurs when students are locked out of an opportunity (e.g.,

college entry) because they do not have the cultural resources that are required to participate.

McDonough (1997) shows that high school seniors' educational aspirations are shaped by the cultural capital of the communities, families, and schools in which these students live. Her study reveals that seniors attending the high-resourced private school, with higher levels of socioeconomic status and cultural capital, tend to feel entitled to attend Ivy League postsecondary educational institutions, whereas students from the under-resourced, under-staffed public school have lower educational aspirations, often expecting to attend lower-quality and public two-year institutions. Students who possess less valued forms of cultural capital, as defined by the dominant group, may unconsciously under-invest in their education because of a lack of familiarity with the cultural norms of the educational system (Bourdieu & Passeron, 1993).

Social capital.

Social capital also shapes students' postsecondary educational aspirations. As Horvat (2001) notes, the concept is particularly useful in illuminating the power dynamics that support status arrangements within the educational arena. Several prominent social capital theorists (e.g., Bourdieu, 1986; Coleman, 1988; Lin, 2001) offer slightly varied perspectives on social capital. Nonetheless, all three perspectives seem to agree on the fundamental premise of social capital, which Lin (2001) summarizes as "resources embedded in social relations and social structure, which can be mobilized when an actor wishes to increase the likelihood of success in a purposive action" (p. 24).

Bourdieu's (1986) conceptualization focuses on the collective assets of social capital. He states that social capital "is the aggregate of the actual or potential resources which are linked to possession of a durable network of institutionalized relationships of mutual acquaintance and recognition—or in other words, to membership in a group" (1986, p. 51). Social capital is influenced by the size of the network connections and the volume of social capital possessed by individuals in the networks (Bourdieu, 1986). Although a particular individual may retain social capital, it is an asset that is collectively owned by all members of the group, as all members are linked through a network of social obligations and connections. In other words, for Bourdieu, an individual's accrued social capital is never independent of his/her group membership because of mutually acknowledged exchanges. Therefore, the profit an individual accrues from social capital has a multiplicative effect, benefiting the individual as well as others who share membership in the group.

Coleman (1988) analyzes how social capital is accessed through social structures, both inside and outside the family (e.g., schools, peer group, community). These structures facilitate social relationships that may present opportunities for the exchange of socially valued resources and information. Because the connections can help an individual achieve certain goals (e.g., college entry), they are especially important to high school students who often require additional guidance in completing developmental tasks (e.g., encouragement and assistance with preparing for college).

According to Coleman (1988), social capital within the family depends on the physical presence of adults who offer the child support and encouragement. In other words, children benefit from the social capital of their parents, when their parents invest

time and energy in their development. Research suggests that social capital in the form of parental involvement in school activities is a positive predictor of educational aspirations (Coleman, 1988; Qian & Blair, 1999; Wimberly, 2000). As Qian and Blair (1999) note, parents "become involved in their children's school programs, and they have higher aspirations for their children, ultimately resulting in higher educational aspirations by the children themselves" (p. 606). Theorists (Coleman, 1988) acknowledge that such closed networks or strong ties (e.g., parents, siblings, and extended family members) are accompanied by social advantages, in that they facilitate the acquisition and maintenance of essential information.

Some theorists (Granovetter, 1983; Lin, 1990) suggest that low-income and minority students often gain access to information and services through weak ties (e.g., school personnel), because necessary information and resources may not be readily available in relationships characterized by strong ties (i.e., family members). Weak ties characterize the relationships that students develop with socially distant individuals, such as teachers and school counselors. Croninger and Lee (2001) find that students' relationships with teachers (i.e., weak ties) are an important source of social capital for students. Using NELS:88/92 data, they analyze social capital of students with and without risk factors (e.g., low-income, language-minority, racial/ethnic minority, single-parent household, parent without a high school diploma). Their measure for social capital is based on: 1) students' perceptions of how much their 10th grade teachers supported their academic success (student-teacher relations) and 2) teachers' reports about whether individual 10th grade students discuss school and personal matters with them (informal interactions with teachers). The findings indicate that these forms of

social capital reduced the probability of dropping out of high school between the 10th and 12th grades. For students with no academic risk characteristics, student-teacher relations reduce the odds of dropping out. Among at-risk students, both measures of social capital—student-teacher relations and informal interactions with teachers—reduce the odds of dropping out.

Nonetheless, Stanton-Salazar (1997) argues that network analysts, such as Coleman, deemphasize the structural characteristics (e.g., school's limited financial and human resources, high teacher/student ratio, family income level, racial/ethnic profile) that may immobilize student/teacher relationships and consequently make the acquisition of social capital problematic for minority and low- and working-class children. Similar to Bourdieu (1977) and Bourdieu and Passeron (1977), Stanton-Salazar recognizes that structural advantages exist for students from the upper socioeconomic classes, in that school characteristics and structures reinforce students' social and cultural experiences. As a result, students from the upper socioeconomic backgrounds can readily accumulate and convert social capital into institutional support. Students from lower socioeconomic backgrounds, whose social and cultural experiences may lie in opposition to mainstream values, do not have equal access to these same social supports and resources. In response to these differential opportunities, Stanton-Salazar (1997) proposes a network-analytic model of minority student socialization and schooling. Central to this framework is the understanding that students' acquisition of social capital depends upon relationships with various agents within the schools. Therefore, Stanton-Salazar's (1997) model addresses how the structural constraints of schools may limit young people's access to resources and institutional privileges (e.g., information, support, and encouragement from teachers

and counselors), especially for racial/ethnic minorities and other disadvantaged groups of students.

Summary of Sociological Approaches

In summary, theoretical approaches to aspirations research have evolved over the past four decades. Status attainment research, the foundation to aspirations research, seeks to analyze how family background, particularly socioeconomic status influences aspirations (Sewell & Shah, 1967). As such, these studies consider a student's aspirations for college to be driven primarily by their socioeconomic class. Researchers then added social psychological constructs to status attainment models, in order to account for the influence on educational aspirations of significant others (e.g., parents, teachers, and peers) and students' academic preparation and achievement (Sewell et al., 1969, 1970).

As aspirations research progressed, studies began to incorporate social and cultural capital theory into the status attainment framework (Freeman, 1997; McDonough, 1997; Qian & Blair, 1999; Smith-Maddox, 2000, 2001). Researchers added social and cultural capital constructs to the original model to highlight how the socio-cultural characteristics of a student's home, school, and community affect aspirations. Research applying these frameworks offers illustrative comparisons the development of aspirations across groups (Freeman, 1997; McDonough, 1997; Qian & Blair, 1999; Smith-Maddox, 2000, 2001).

Despite the contribution of sociological models to the study of postsecondary educational aspirations, these models overlook the influence of measures that are

prominent in economic approaches. Such measures, which focus on the costs and benefits of college attendance, may shed additional light on the development of postsecondary educational aspirations. The following section describes an econometric approach and comments on how this framework may further enhance aspirations research.

Econometric Approach

Researchers use econometric models primarily to study the decision to enroll in college and the choice of institution (Kane, 1994; Manski & Wise, 1983; Paulsen & St. John, 2002). Some researchers suggest that that there is merit in analyzing educational aspirations from an econometric perspective (Morgan, 1998; St. John, 2003). Morgan (1998) states that, "educational expectations are driven both by the [future] earnings benefits of educational attainment and by the availability of resources to cover the costs of further education" (p. 132). He suggests that econometric measures are critical for examining students' postsecondary educational aspirations, as "high school students will not plan to attend postsecondary education unless they feel they can pay the direct costs of educational training" (p. 138).

Since the influence of financial indicators is a recent consideration to the study of aspirations, few scholars (e.g., Freeman, 1997, 1999; Morgan, 1998; St. John, 2003) have incorporated components of the econometric perspective into research on aspirations. Because of the limited body of research analyzing the effect of econometric measures on educational aspirations, this section focuses on the contribution of economic models of

human capital investment to the study of college enrollment. The results of the few aspirations studies that have used an economic approach are also discussed.

The economic model of human capital investment views college enrollment as an investment decision in which students weigh the costs versus benefits of postsecondary training or education. Human capital theory posits that an individual who makes substantial investments in his/her own human capital will recognize higher financial returns (Becker, 1993). Researchers have suggested that the most important investments in human capital are the result of education and training (Becker, 1993). As Coleman (1988) states, "the person who invests the time and resources in building this capital reaps its benefits in the form of a higher-paying job, more satisfying or higher-status work, or even the pleasure of greater understanding of the surrounding world" (p. 116).

Human capital theory indicates that human capital investment decisions are made through rational assessments of various options (Becker, 1993). Students determine their postsecondary options by comparing the costs, such as direct attendance costs (e.g., tuition, foregone earnings) versus expected future earnings and other benefits (Heller, 1997; Kane, 1994; Manski & Wise, 1983; Paulsen & St. John, 2002). Students also consider current labor market conditions to determine if accepting current wage earnings would be more lucrative than enrolling in college (Freeman, 1999; Manski & Wise, 1983). In addition to monetary benefits of educational attainment, human capital theory recognizes that individuals may also consider the non-monetary benefits of a college education, such as better health, longer life span, increased civic engagement, and overall quality of life (Institute for Higher Education Policy, 2005; Pascarella and Terenzini, 2005). In sum, the human capital investment model assumes that students enroll in

college because the benefits outweigh the associated costs and because enrollment maximizes individual utility (Becker, 1993).

Based on a reexamination of NCES data, St. John (2003) speculates that concerns about finances may cause students to reduce educational aspirations. He reports that most low-income college-qualified students (69%) and their parents (79%) are very concerned about college costs and financial aid. On the other hand, a smaller percentage of high-income college-qualified students (20%) and their parents (16%) share these concerns. St. John (2003) states that "[g]iven recent research on the impact of perceptions of finances…, there is reason to expect that parents' concerns about finances would influence students' plans and expectations in eighth and twelfth grades" (p. 162).

Some research suggests that students consider the expected earnings return to the educational investment in determining their aspirations for college. Morgan's (1998) analysis of the aspirations of Blacks and Whites over nearly two decades (1976-1992) uses an integrated model that incorporates measures common to status attainment research (e.g., family background, parental encouragement) along with a measure for earnings returns to education. He predicts that earnings returns would explain part of the observed differences in aspirations between Blacks and Whites as well as provide theoretical support for a rational choice model of educational aspirations. Multivariate analyses show that increases of one percentage point in the expected earnings return on education for all workers between the ages of 26 and 35 and the expected earnings return on education for all full-time, full-year workers (FTFY) of the same age group increases a student's educational aspirations by 15 and 17 percentage points, respectively.

Most economic models of human capital investment analyze college choice and focus on the effects of financial indicators, such as tuition, financial aid, and earnings, on enrollment. Studies reveal that financial measures (e.g., tuition, financial aid) influence enrollment, especially among low-income and minority students (Heller, 1994, 1997; Kane, 1994; Manski & Wise, 1983; McPherson & Schapiro, 1989; Paulsen & St. John, 2002; St. John, 1991; St. John & Noell, 1989). In an update to Leslie and Brinkman's review of college student demand studies, Heller (1997) finds that research consistently shows that the enrollment of lower-income students is more sensitive than the enrollment of higher income students to increases in college costs. Heller (1997) comments:

> Although the effects differ across studies, [the researchers] find that poorer students are more sensitive to increases in net cost, whether those increases take the effect of tuition increases or financial aid decreases….Tuition increases that are not offset by concomitant increases in financial aid appear to have the effect of reducing access to higher education for our country's poorest students (p. 642).

Studies have also found differences in price-responsiveness by race/ethnicity (Heller, 1994; Kane, 1994; St. John & Noell, 1989). St. John and Noell (1989) determine that Black students are the most responsive to financial aid offers, followed by Latino/a students then White students. Kane (1994) also finds that Black students, who are more likely to also be of lower income status, have heightened sensitivity to increases in tuition and/or decreases in financial aid, which often reduces their chances of college entry.

Although researchers suggest that an economic model of human capital investment may offer additional insight to the study of educational aspirations (Morgan, 1998; St. John, 2003), the model is subject to limitations. By focusing exclusively on

economic explanations of educational aspirations, this approach ignores the influence of social and cultural indicators (St. John, 2003). In addition, the exclusion of socio-cultural and academic measures limits the model's ability to assess sources of difference across income and racial/ethnic groups. Researchers analyzing college-choice suggest that students' assessment of the costs and benefits of a college education are attributable to differences in family characteristics, school and community environment, and access to educational and informational resources (Desjardins & Toutkoushian, 2005; Paulsen, 2001). In sum, the economic model of human capital investment does not account for differences in students' tastes, preferences, personal influences, or available informational resources. The absence of such measures limits the ability of a purely economic model to offer a complete assessment of the predictors of students' postsecondary educational aspirations.

Summary & Description of This Study's Conceptual Model

Over the course of four decades, theoretical models used to analyze postsecondary educational aspirations have progressed. Status attainment models are the foundation of aspirations research, as they seek to analyze how family background, particularly socioeconomic status, influences educational aspirations (Sewell & Shah, 1967). Social psychological constructs were added to the status attainment framework because researchers found the original status attainment model did not account for the influence of significant others (e.g., parents, teachers, peers) and academic achievement on educational aspirations (Sewell et al., 1969, 1970). More recent aspirations studies incorporate cultural and social capital theories into the status attainment framework.

These constructs were added to the earlier models with the hope that they would better explain how racial/ethnic minorities form high aspirations. Fewer researchers have examined aspirations from an economic perspective, although some argue the merits of such analyses (Morgan, 1996, 1998; St. John, 2003). In Morgan's (1998) study, which considers how earnings from work influence the aspirations of Black and White students, he states that aspirations "are driven by the earnings benefits of educational attainment and by the availability of resources to cover the costs of further education" (p. 132).

This study develops and tests an integrated conceptual model that incorporates aspects of the sociological and econometric approaches. By integrating aspects of these frameworks, this study explores how social, academic, cultural, and economic variables shape students' aspirations. Similar to early status attainment research, this study examines measures related to socioeconomic status and significant others (e.g., parents, school personnel, and peers). However, the theoretical lens of cultural capital and social capital are used to understand the influence of these constructs on students' educational aspirations. Cultural capital theory reflects the extent to which the student's and family's educational values and resources (e.g., books, computers, and cultural activities) influence educational aspirations. As a measure of social capital, the influence of significant others (as measured by interactions among students, parents, teachers/school counselors, and peers) reflects the transmission of resources that promote postsecondary educational aspirations. The model also recognizes the ways in which aspects of the school context can shape the flow of social capital and subsequently affect student's aspirations.

The model also incorporates economic indicators. Such measures have not been extensively studied in aspirations research. Analyzing economic measures along with sociological measures represents the next phase in the study of postsecondary educational aspirations. Such analyses may provide a more thorough analysis of the relationship between students' earlier aspirations (10^{th} grade) and later aspirations (12^{th} grade). Additionally, an integrated approach to the study of postsecondary educational aspirations may increase the model's predictability for all students, particularly racial/ethnic minorities.

The following section summarizes what has been learned about the key constructs in sociological and econometric frameworks from prior aspirations research and identifies limitations of these analyses. The findings are discussed in a manner consistent with the evolution of aspirations research. Therefore, this review begins with a critique of status attainment constructs: socioeconomic status, race/ethnicity, and gender. Then, research examining measures of academic, social, psychological, and cultural constructs is assessed. The final set of variables reviewed includes economic indicators, such as the importance of college costs and financial aid and tuition.

Key Findings of Aspirations Research

Socioeconomic Status (SES)

Socioeconomic status is one of the most examined variables in studies of postsecondary educational aspirations. Research consistently shows that high socioeconomic status has a positive effect on students' educational aspirations (Bateman & Hossler, 1996; Hossler, Schmit & Vesper, 1999; Kao & Tienda, 1998; McDonough,

1997; Qian & Blair, 1999; Sewell & Shah, 1967; Sewell et al., 1969, 1970). Studies that disaggregate the socioeconomic composite to consider separate effects of family income and parents' education on aspirations note differing effects of these variables across racial/ethnic groups (Bateman & Hossler, 1996; Kao & Tienda, 1998; Kerckhoff & Campbell, 1977; Hossler & Stage, 1992; Hossler et al., 1999).

Analyses from the original status attainment model (Sewell & Shah, 1967) note the importance of socioeconomic status on aspirations of men and women. Sewell and Shah's (1967) descriptive analyses show that upper-class males are four times more likely to aspire to college than lower-class males. Likewise, females with high socioeconomic status are six times more likely to aspire to college than female peers from lower socioeconomic backgrounds. Using a path analytic model that tests the independent influence of socioeconomic status on college aspirations, Sewell and Shah (1967) find that socioeconomic status has a direct positive effect on the aspirations of both men and women, accounting for 32% and 37% of the variance, respectively.

Several decades later, research continues to show the saliency of socioeconomic status in determining students' educational aspirations. Descriptive analyses of data from the National Educational Longitudinal Study of 1988 (NELS:88), a survey sponsored by the National Center for Education Statistics (NCES), illustrates that students in the lowest socioeconomic quartile are six times more likely than students in the highest socioeconomic quartile to aspire to at least a bachelor's degree (NCES, 1996).

Aspirations research that examine either racial/ethnic or gender differences demonstrate a consistent pattern—as socioeconomic status increases, so does the likelihood of having high educational aspirations (McDonough, 1997; NCES, 1996;

Smith-Maddox, 2000; Solorazano, 1992). Using descriptive data from NELS:88/94, researchers show that the aspirations of 8th, 10th, and 12th graders, regardless of race/ethnicity or gender, rise as their socioeconomic levels increase (NCES, 1996; Solorazano, 1992).

McDonough's study (1997) of White female students' college choices acknowledges the role socioeconomic status plays in shaping educational aspirations. While McDonough notes that a complex relationship between academic achievement, school context, and family resources determines these women's aspirations, she recognizes that socioeconomic status works as a sorting device. Students from low socioeconomic backgrounds tend to aspire to two-year or less selective public four-year institutions, while high socioeconomic status students have aspirations for more selective private and public four-year universities.

In an attempt to determine which socioeconomic characteristics most influence educational aspirations for students, particularly those of varying racial/ethnic groups, some recent studies disaggregate the socioeconomic composite and consider the separate effects of parents' education and parents' income (Kao & Tienda, 1998; Hossler & Stage, 1992; Hossler et al., 1999; Qian & Blair, 1999). Hossler, Schmit, and Vesper (1999) conducted a nine-year (1986-1994) longitudinal study of the postsecondary decision-making of high school students in Indiana. Their study finds that parental educational attainment has a positive impact on students' aspirations, and parental income has no impact on early aspirations (9th grade) but appears to influence students' post-high school actions (e.g., enrolling in college, entering workforce or military). Eighty-six percent of 9th grade students whose parents have at least a bachelor's degree aspire to college, but

only 60% of those students whose parents have less than a high school diploma aspire to college. Through analyses of interview data, Hossler and colleagues (1999) determine that college-educated parents are more familiar with the college system. As a result, they are better equipped to encourage and support their child's aspirations for college.

Other studies analyzing nationwide samples of students (e.g., NELS:88) draw similar conclusions about the importance of parents' educational attainment on educational aspirations (Kao & Tienda, 1998; Qian & Blair, 1999). Kao and Tienda's (1998) analysis of the formation educational aspirations among male and female students in all three grade cohorts—8th, 10th, and 12th grades—finds that parents' education is critical to the formation of college aspirations throughout the high school years. Qian and Blair's (1999) examination of aspirations among racial/ethnic groups in the 12th grade cohort notes differences in the effect of parents' education. These researchers find that, when parents' education is controlled, aspirations for Blacks and Latinos/as increase, but decrease for Asians.

Other studies find that mother's education influences the educational aspirations of Black students (Bateman & Hossler, 1996; Kerckhoff & Campbell, 1977). Using data from the Indiana College Placement and Assessment Center (ICPAC), Bateman and Hossler (1996) explain the development of postsecondary educational aspirations for Black and White males and females. After controlling for parents' aspirations, grade point average, and family income, these researchers determine that mother's education is a positive predictor of Black students' aspirations, but has no effect on White students' aspirations. Conversely, father's educational attainment is a positive predictor of educational aspirations for Whites but not for Blacks.

Kerckhoff and Campbell (1977) show that adding mother's education increases the explanatory power of aspirations models for Black students. In their analyses of 12th grade boys in the Fort Wayne, Indiana community school system, these researchers test two regression models, one using parents' education and the other using mother's education to measure socioeconomic status. When using parents' education, the explained variance in educational aspirations for Whites and Blacks is 46% and 30% respectively, a 16 percentage point difference. However, using mother's education, the model's explanatory power increases for Blacks and reduces the difference in explained variance in aspirations between Whites (44%) and Blacks (36%) by eight percentage points.

Research regarding the contribution of family income to aspirations is inconclusive, perhaps reflecting differences across studies in sample composition. While researchers using single-state data report no relationship between family income and educational aspirations (Hossler & Stage, 1992; Hossler et al., 1999), other researchers analyzing nationwide samples (e.g., NELS:88) note a positive relationship between these two variables (Kao & Tienda, 1998; Qian & Blair, 1999). Using NELS:88/92, Kao and Tienda (1998) reveal that, after controlling for race/ethnicity, family income exerts a strong, positive effect on the college aspirations of males and females and is vital to the maintenance of high aspirations from 8th through 12th grades. When Qian and Blair (1999) add family income to their ordered logistic regression analysis, the aspirations of 12th graders become higher for Blacks and Latinos/as, but do not change for Asians. To the contrary, Hossler and colleagues' (1999) analyses of Indiana data (e.g., ICPAC) find no significant relationship between family income and the college aspirations of 9th

graders. Instead, their findings indicate that family income plays a significant role in the realization of aspirations (i.e., college enrollment).

In sum, research suggests that a composite measure for socioeconomic status exerts a strong, positive influence on students' aspirations for college. When the components of socioeconomic status are disaggregated, patterns about the relationship of these variables to aspirations emerge, particularly across race/ethnicity (Bateman & Hossler, 1996; Hossler & Stage, 1992; Hossler et al., 1999; Kao & Tienda, 1998; Kerckhoff & Campbell, 1977; Qian & Blair, 1999). Researchers analyzing nationwide student samples find that when family income is added to the regression analyses, the aspirations of 12th graders increase for Blacks and Latinos/as, but do not change for Asians (Qian & Blair, 1999).

Parents' education has a strong positive impact on the maintenance of high aspirations throughout high school (Kao & Tienda, 1998). Researchers conclude that parents' education has a positive impact on the aspirations of all students (Hossler & Stage, 1992; Hossler et al., 1999), but the effect varies by racial/ethnic background (Qian & Blair, 1999). Additionally, some research suggests that mother's education may be a better predictor of educational aspirations than parents' education for Black students (Bateman & Hossler, 1996; Kerckhoff & Campbell, 1977). While both Bateman and Hossler (1996) and Kerckhoff and Campbell (1977) reveal that mother's education plays a role in the development of students' educational aspirations, it is important to note that both studies rely on single-state data and have small numbers of Black students in their samples.

Race/Ethnicity

The literature examining racial/ethnic differences in postsecondary educational aspirations provides conflicting findings, likely due to differences in methodological designs. Some descriptive research illustrates that Black and Latino/a students are less likely than Asians and Whites to maintain their high aspirations throughout high school (Kao & Tienda, 1998), while others note that Black and Latino/a students have comparatively stable aspirations throughout high school (Trusty, 2000). Some multivariate analyses show that, when controlling for socioeconomic status, Black students have higher postsecondary educational aspirations than White peers (Brown, 1982; Morgan, 1996; Portes & Wilson, 1976; Trusty, 2000). Still some researchers find no significant differences in aspirations across racial/ethnic groups (Hossler & Stage, 1992; Pitre, 2002). Other researchers report that the models used in aspirations research explain less variance for Black students than for Whites (Bateman & Hossler, 1996; Hamrick & Stage, 2004; Hossler et al., 1999).

Kao and Tienda (1998) and Trusty (2000) both use NELS:88 data to analyze the extent to which students maintain high aspirations throughout the high school years. Likely because these researchers use different subsets of the dataset and different longitudinal frames, their findings differ. Kao and Tienda's (1998) descriptive findings show that aspirations are less stable between 8th and 12th grades for Black and Latino/a students than for Asians and Whites. These descriptive analyses reveal that in 8th, 10th, and 12th grades, Black men and Latino men have lower and less predictable aspirations than Whites, Asians, and female peers. Between 8th and 12th grades, the decline in aspirations for Black men, however, is more dramatic than for any other group, with

more than half of these students abandoning their aspirations for a baccalaureate degree. Similarly, Black women and Latinas are more likely than Asian women and White women to decrease their aspirations for graduate degrees. While small percentages of Asian (4%) and White women (10%) lowered their 8th grade aspirations for graduate degrees to some college or less by the 10th grade, 25% of Black women and 29% of Latinas did so.

Although Trusty (2000) also uses NELS:88/94 data, he analyzes the stability of postsecondary educational aspirations among students with high aspirations and low achievement (i.e., low mathematics and readings test scores). Unlike Kao and Tienda (1998), Trusty (2000) focuses on low achievers with high aspirations and extends the longitudinal panel from 8th grade until two years after high school graduation. In this study, aspirations are considered stable if students continue to aspire to attain at least a bachelor's degree two years after high school graduation. Trusty's (2000) descriptive analysis shows that Asian males and females, Latinos, and Black males have comparatively stable aspirations over the six-year period. Compared to men and women of other racial/ethnic groups, aspirations for Latinas and White females are more likely to decline.

Several studies use multivariate analyses to show that Black students have higher aspirations than Whites when controlling for socioeconomic status (Brown, 1982; Portes & Wilson, 1976; Trusty, 2000). Similar to other researchers using national databases, Trusty (2000) finds that, when controlling for socioeconomic status, low-achieving White students who aspire to college in the 8th grade are more likely to have decreased aspirations within two years of high school graduation compared to all other racial/ethnic

groups. To the contrary, Black students as well as those of other non-White racial/ethnic groups in the sample maintain high aspirations over the six-year period (e.g., 8th grade until two years after high school), after controlling for socioeconomic status. Portes and Wilson's (1976) longitudinal study of high school boys, drawn from the Institution of Social Research at the University of Michigan, reports that after controlling for socioeconomic status, Black males' educational aspirations exceed those of their White peers. Brown (1982) compares the National Longitudinal Study of 1972 (NLS) and the High School & Beyond Survey of 1980 (HSB) and reports that Black students' educational aspirations increased at a rate higher than White peers over the decade.

Other studies note similarities among racial/ethnic groups' postsecondary educational aspiration levels (Hossler & Stage, 1992; Hossler et al., 1999; Pitre, 2002). Pitre (2002), using data from four suburban high schools in the Maryland Bridge Project to study the educational aspirations of 9th grade Black students, reports that the educational aspirations of Black and White students are similar, even after controlling for socioeconomic status and academic achievement. In a similar vein, Hossler and Stage's (1992) structural equation model, also using single-state data (e.g., ICPAC), finds no racial/ethnic differences in aspirations.

Researchers also report that current models do not sufficiently explain the aspirations for Black students (Bateman & Hossler, 1996; Hamrick & Stage, 2004; Hossler et al., 1999). Using NELS:88, Hamrick and Stage (2004) investigate the validity of a causal model of postsecondary educational aspirations that incorporates measures common to the sociological frameworks (e.g., parent's education, family income, gender, parent's expectation, grade, school activities, community activities, and educational

mentors). They test separate models, with equal numbers (*n*=300) of Whites, Blacks, Latinos, and Latinas attending low-income schools, as defined by the percentage of students receiving free or reduced lunch. The model for Black students explains only 20% of the total variance of college aspirations, whereas the explained variance for Whites, Latinos, and Latinas is 60%, 44%, and 37% respectively. Only two variables—parents' education and parents' expectations—have direct effects on Black students' aspirations. Family income, gender, grades, and community and school activities all have indirect effects on Black students' college aspirations.

In sum, research regarding the role of race/ethnicity in aspirations research is inconclusive. Some researchers report less stable aspirations among Blacks and Latinos/as (Kao & Tienda, 1998). Other researchers show that all Asians, Black males, and Latinos, with high aspirations and low-achievement in the 8th grade have stable aspirations, but the aspirations for Latinas and White women decline (Trusty, 2000). Research also shows that, when controlling for socioeconomic status, the aspirations for Blacks increase in comparison to Whites (Portes & Wilson, 1976; Trusty, 2000). Some researchers point out that the predictability of aspirations models vary across racial/ethnic groups (Bateman & Hossler, 1996; Hamrick & Stage, 2004; Hossler et al., 1999), while other studies show no differences in aspirations among racial/ethnic groups (Hossler & Stage, 1992; Pitre, 2002).

It is important to note that some of the discrepancy in findings regarding the influence of race/ethnicity on educational aspirations may be the result of methodological differences. Although Kao and Tienda (1998), Trusty (2000), and Hamrick and Stage (2004) use NELS:88 data to analyze students' aspirations, each study focuses on different

sample subsets and different longitudinal panels. Other researchers rely on single-state data (Bateman & Hossler, 1996; Hossler & Stage, 1992; Hossler et al., 1999; Pitre, 2002). As a result, their findings are not generalizable. Furthermore, several studies report low sample sizes for Black students, which may result in low statistical power to detect racial/ethnic group differences (Bateman & Hossler, 1996; Hossler & Stage, 1992; Pitre, 2002; Portes & Wilson, 1976).

Gender

Aspirations researchers also analyze the role of gender in the development of postsecondary educational aspirations. Some studies reveal that the ability to sustain high aspirations is conditional upon gender (Hanson, 1994; Kao & Tienda, 1998; Trusty, 2000). In addition, some researchers recognize that aspiration levels and the predictability of aspirations models vary between men and women of the same racial/ethnic groups (Bateman & Hossler, 1996; Hamrick & Stage, 2004; Kao & Tienda, 1998; Trusty, 2000).

Using NELS:88/92, Kao and Tienda's (1998) descriptive and logistic regression analyses show differences in the formation of educational aspirations among men and women. For example, descriptive findings reveal that the aspirations of Black and Latino males are lower and less stable than other students as they transition through high school. In fact, more than 50% of Black males decrease their aspirations for a four-year degree between 8th and 12th grades. Among females who aspire to attain graduate degrees, more Blacks (25%) and Latinas (29%) decrease aspirations than Asians (4%) and Whites (10%). This study's multivariate findings show that different variables explain the

stability of college aspirations for males and females. They find that parents' education, family income, and parent's immigrant status are positive predictors of stable aspirations from 8th to 12th grades for males. In contrast, being Black, parents' education, and outside classes (e.g., language, music, dance, and computer classes taken outside of the school curriculum) have positive effects on stable college aspirations for women.

Likewise, Trusty (2000) uses NELS:88/94 and analyzes separate logistic regression models for female and male low-achievers to assess the stability of high aspirations between 8th grade and two years after high school graduation. Similar to other researchers (Bateman & Hossler, 1996; Hanson, 1994; Kao & Tienda, 1998), he finds that the variables predicting the stability of high aspirations differ for men and women. Variables that have statistically significant effects on stable aspirations for both males and females include mathematics achievement, mother's aspirations, parental involvement in extracurricular activities, and self-efficacy (e.g., whether students are sure they can continue education past high school). The data reveal no additional significant variables on stable aspirations for females, but show that the availability of a home computer and interactions with school counselors are positively related to stable high aspirations for males.

Other analyses examining the effects of gender on aspirations consistently note differences in aspiration levels and model predictability among men and women of the same racial/ethnic groups (Bateman & Hossler, 1996; Hamrick & Stage, 2004; Kao & Tienda, 1998). Using stepwise regression on a subset of Black and White students in the ICPAC database, Bateman and Hossler (1996) find that the development of educational aspirations is similar for White men and White women, as the models account for 59%

and 54% of the variance respectively. However, they find that Black women have higher educational aspirations than Black men and the models explain 41% of the variance for women and 36% for men. Nonetheless, the low explained variance for Blacks relative to Whites may reflect differences in sample sizes (*n*=224 Blacks, *n*=2,706 Whites).

In sum, several studies show differences in the variables that predict high aspirations for men and women (Hamrick & Stage, 2004; Hanson, 1994; Kao & Tienda, 1998; Trusty, 2000). Researchers employ different variables in their analyses, which make it difficult to determine true differences between men and women. Nonetheless, several studies show that the relationship between gender and educational aspirations varies across racial/ethnic groups (Bateman & Hossler, 1996; Hamrick & Stage, 2004; Kao & Tienda, 1998).

Academic Preparation and Achievement

Studies confirm that academic preparation and achievement are positively correlated with a student's postsecondary educational aspirations (Hossler et al., 1999; Kao & Tienda, 1998; Smith-Maddox, 2000; Smith-Maddox & Wheelock, 1995; Trusty, 2000). Most preparation and achievement measures, whether operationalized as grade point average (GPA), class rank, course grades, or standardized test scores, are positively related to students' postsecondary educational aspirations.

Descriptive findings from Hossler and colleagues' (1999) longitudinal study of Indiana high school students show that students' self-reported grade point average is the second strongest positive predictor of aspirations for college, preceded only by parental encouragement. Further, Hossler and colleagues (1999) find that students who display

high academic achievement receive more support and encouragement from parents, teachers, and counselors. They speculate that encouragement from significant others (e.g., parents, teachers, and counselors) is positively related to students' achievement because these individuals are more likely to be supportive of a high-achieving than a low-achieving student's aspirations for college.

Some researchers suggest that a better understanding of the role of academic achievement on educational aspirations lies in untangling the aspirations-achievement paradox (Mickelson, 1990; Trusty, 2000). Specifically, the aspirations-achievement paradox recognizes that, in spite of their high educational aspirations, some students suffer from low academic achievement, which poses obstacles to fulfilling their aspirations. Using NELS:88/94, Trusty (2000) analyzes the stability of educational aspirations on a sample of students who have aspirations for at least a bachelor's degree as well as below average 8th grade reading or mathematics standardized test scores. He finds that a student's 8th grade mathematics test score is a positive predictor of stable aspirations across the six-year period (e.g., 8th grade through two years after high school graduation) for both males and females. Reading achievement is not a significant predictor. Based on these findings, Trusty (2000) suggests that mathematics achievement may be a better measure of achievement for aspirations studies, as a lack of mathematics skills may serve to limit a student's ability to maintain high aspirations.

Kao and Tienda (1998) report that students' early academic achievement, as measured by whether they repeated a grade, negatively influences aspirations for college. Their logistic regression analysis of NELS:88/92 shows that, after controlling for family background characteristics and educational resources (e.g., home educational materials,

outside classes), repeating a grade in elementary school (K-4th grade) is a associated with a decline in aspirations between 8th and 12th grades for males and 8th and 10th grades for females. Likewise, repeating a grade in middle or high school is associated with a decline in aspirations between 8th and 10th grades for males and 8th grade for females. The authors state that the impact of earlier academic achievement tends to adversely effect more Blacks and Latino/as because these students are disproportionately retained in school.

Tracking is a measure of academic preparation that has disproportionate adverse effects on Black and Latino/a students' aspirations (Smith-Maddox & Wheelock, 1995). In a study analyzing middle and high school students' postsecondary planning activities, Wimberly and Noeth (2005) note that, although most students have aspirations for college, 40% of them are not enrolled in a college preparatory curriculum. Smith-Maddox and Wheelock (1995) argue for the elimination of tracking in schools in part because they contend that students in lower tracks do not have access to the information and resources that lead to the development of high aspirations. They also argue that students in lower tracks (e.g., general, vocational) are less likely to receive encouragement and support for high aspirations from teachers and school counselors.

In summary, regardless of the measurement, academic achievement is positively related to the development of educational aspirations (Hossler et al., 1999; Kao & Tienda, 1998; Trusty, 2000). Researchers also recognize an aspirations-achievement paradox, where low-achieving students express high educational aspirations (Mickelson, 1990; Trusty, 2000). Trusty (2000) reports that for 8th graders with high aspirations and low achievement, mathematics achievement is a stronger predictor of stable aspirations than

reading achievement. Kao and Tienda (1998) also note that a student's early academic experiences (measured as repeating a grade) can negatively affect aspirations. Researchers speculate that placement in low academic tracks may have an adverse impact on college aspirations, particularly for Black and Latino/a students (Smith-Maddox & Wheelock, 1995; Wimberly & Noeth, 2005).

Significant Others—Parents

Aspirations studies consistently show that high levels of parental support, manifested through parents' aspirations, encouragement, and involvement are positively related to students' aspirations (Hossler & Stage, 1992; Hossler et al., 1999; MacLeod, 1995; Qian & Blair, 1999; Schneider & Stevenson, 1999; Sheppard, Schmit, and Pugh, 1992). Research confirms that a student's postsecondary educational aspirations are often based on what he/she perceives his/her parents value and expect (Hossler & Stage, 1992; Hossler et al., 1999; Schneider & Stevenson, 1999; Sheppard, Schmit, and Pugh, 1992).

Studies note the important role that parental encouragement has on students' educational aspirations (Hossler et al., 1999; MacLeod, 1995; Schneider & Stevenson, 1999; Sheppard et al., 1992; Trusty, 2000). Using data from the Youth and Parent Surveys of the 1999 National Household Education Program Surveys (NHES:99), NCES (2003) observes that approximately 95% of students and their parents have college aspirations, regardless of race/ethnicity or family income. In a similar vein, Schneider and Stevenson (1999) found that, among 10th and 12th grade students who report high

levels of support and encouragement from parents, more than 88% aspire to attain at least a bachelor's degree.

Other studies show that parents of minority and low-income students often encourage their children to aspire to college because they believe that a college education will improve their child's social and economic circumstances (Allen, Bonous-Hammarth, and Suh, 2002; MacLeod, 1995; Wimberly & Noeth, 2004). In focus group discussions with recipients of the Gates Millennium Scholarship, students from low socioeconomic backgrounds express that their parents want them to "overcome or rise above current economic circumstances" (Allen et al., 2002, p. 14). As one student stated: "I feel my parents just wanted me to have something more than they had…so they were pushing me, get in college" (Allen, et al., 2002, p. 14).

Some research (Hossler et al., 1999; Sheppard et al., 1992) shows that, as students progress toward their senior year, parental encouragement is not as important to students' college aspirations, particularly among students whose parents have low incomes and low educational attainment and among students with a low grade point average. Hossler and colleagues' (1999) quantitative analyses of ICPAC longitudinal data finds that parental encouragement has the greatest effect on 9th grade students' educational aspirations, followed by student achievement, parents' educational level, the influence of peers, and involvement in school activities. However, the magnitude of the positive influence of parents' on aspirations declines as students progress through high school.

To further analyze the decline in the influence of parents' encouragement between earlier and later aspirations, Sheppard, Schmit, and Pugh (1992) analyze the change in students' aspirations between 9th and 11th grade among a subset of students in the same

database (e.g., ICPAC) used by Hossler and colleagues (1999). They find that parents' aspirations for their child are the best predictor of a change in students' educational aspirations. If parents' aspirations change from positive to negative or vice versa between 9th and 11th grades, the students' aspirations follow the same pattern.

Several studies confirm that students receive different levels of support from their fathers and mothers (Bateman & Hossler, 1996; Qian & Blair, 1999; Wimberly & Noeth, 2004). In a survey of more than 2,900 students in 15 schools from six major districts (Chicago; Charleston, West Virginia; Denver; Los Angles; New Orleans; and Oklahoma City), Wimberly and Noeth (2004) ask students to rate the assistance given by both their father (or male guardian) and their mother (or female guardian). The descriptive findings show 67% of 8th and 9th grade students report that their mother (or female guardian) is very helpful with developing college aspirations, while 55% report that their father (or male guardians) is very helpful. Even higher shares of 10th graders (92%) indicate that mothers (or female guardians) are very helpful, whereas 79% cite fathers (or male guardians) as very helpful. In another study analyzing the educational aspirations of Black and Latino/a high school seniors residing in urban areas, Noeth and Wimberly (2002) find that 84% of 300 Black and Latino/a college-bound seniors said that their mother is somewhat or very helpful in developing college aspirations, while 62% reported that their fathers were at least somewhat helpful.

Multivariate analyses of the influence of mother's aspirations on students' educational aspirations reinforce the descriptive findings. Trusty (2000) finds that, when controlling for mother's aspirations, students' high aspirations are sustained throughout

the six-year period (e.g., 8th grade until two years after high school). Father's aspirations have no effect on students' aspirations net of other variables.

Recent studies show that educational resources (e.g., access to a home computer, magazines, daily newspapers, dictionary, calculator) are related to postsecondary educational aspirations, but that the relationship varies by gender (Kao & Tienda, 1998; Qian & Blair, 1999; Trusty, 2000). While researchers agree that these resources may reflect a family's investment in educational resources, the studies draw conflicting conclusions (Kao & Tienda, 1998; Qian & Blair, 1999; Trusty, 2000). Kao and Tienda's (1998) examination of NELS:88/92 finds that the prevalence of home resources has a positive effect on the college aspirations of 8th grade boys, but no effect on either their 10th or 12th grade aspirations. In contrast, home resources has a positive effect on college aspirations for girls in 8th and 10th grades, but has no effect in the 12th grade. Trusty's (2000) analysis of high aspiring, low-achievers in NELS:88/94 finds that the availability of a home computer is associated with stable high aspirations between 8th grade and two years after high school graduation among males, but is unrelated for females.

Home resources may also be particularly important to the educational aspirations of Blacks and Latinos/as. Using NELS:92, Qian and Blair (1999) determine that, when controlling for study resources (e.g., specific places to study, access to a home computer, magazines, encyclopedia, atlas, more than 50 books, calculator, and typewriter), educational aspirations of Blacks and Latinos/as increase. Qian and Blair (1999) conclude that this finding shows that students from these racial/ethnic groups have fewer educational resources than Whites.

Studies also cite parental involvement in school activities as an important predictor of high aspirations (Qian & Blair, 1999). Researchers recognize parental involvement in the school as a source of social capital, as it may reflect parents' relationships with school personnel (Qian & Blair, 1999). Qian and Blair's (1999) ordered-logit regression analysis of a nationwide sample of 12th graders (e.g., NELS:92) finds that parental involvement in school activities (e.g., parent-student interactions regarding school maters, current events, and troubling issues) has a significant positive effect on aspirations for all racial/ethnic groups except Asians, after controlling for such variables as background characteristics, academic achievement, religion, educational resources, family structure, parents' education, and family income.

In summary, parents play a central role in influencing their child's aspirations (Hossler et al., 1999; Kao & Tienda, 1998; MacLeod, 1995; Qian & Blair, 1999; Schneider & Stevenson, 1999; Sheppard et al., 1992; Trusty, 2000). Research suggests that parents' aspirations for their child often mirror students' educational aspirations (MacLeod, 1995; Hossler et al., 1999; Sheppard et al., 1992). For example, if a parent exhibits high educational aspirations for their child, the child's aspirations are also likely to be high. Similarly, if the parents' aspiration for the child is lowered, the child's aspirations will likely follow a similar pattern (Sheppard et al., 1992). In addition, research shows that the aspirations of the mother have a stronger impact on the maintenance of high-aspiring, low-achieving students than the aspirations of the father (Trusty, 2000). Educational resources in the home also influence the maintenance of high aspirations (Kao & Tienda, 1998; Trusty, 2000). However, the relationship between various types of home resources and aspirations may be different for boys than for girls

(Trusty, 2000). Parental involvement in school activities is a positive predictor of high aspirations for all racial/ethnic groups except Asians (Qian & Blair, 1999).

Significant Others—Teachers, School Counselors, and Peers

Research confirms that teachers, school counselors, and peers play a role in the development of postsecondary educational aspirations (Freeman, 1997; Horvat, 2003; Hossler et al., 1999; McDonough, 1997; Schneider & Stevenson, 1999). Additionally, researchers (Freeman, 1997; Horvat, 2003; McDonough, 1997, 2005) explain that the nature of the influence by both peers and school personnel is shaped by the characteristics of the school, including the teacher/student ratio, counselor/student ratio, average family income level, and racial/ethnic profile.

Hossler and colleagues' (1999) qualitative, longitudinal study of Indiana high school students shows that teachers and counselors make important contributions to students' college aspirations by offering knowledge and information about the college-going process. However, their findings show that teachers and counselors have a larger influence on aspirations in the later years (12^{th} grades) of high school than in the earlier years (9^{th} to 11^{th} grades). Some researchers (McDonough, 1997; Wimberly & Noeth, 2005) contend that school personnel should begin supporting students' college aspirations during the middle school and early high school years, as such support and encouragement may increase the likelihood that students complete all necessary college-related tasks (e.g., course planning, test-taking, saving).

Low-income and minority students are more likely than their high-income and White peers to depend on school counselors to provide information that may positively

influence the development of high aspirations. Some researchers suggest that, because the parents of many low-income and minority students lack knowledge and prior exposure to the college process, these students are more likely than other students to depend on school personnel (e.g., teachers and school counselors) to provide information that may positively influence the formation of high aspirations (Allen et al., 2002; McDonough, 1997).

In focus group discussions with Gates Millennium Scholarship recipients, all of whom are low-income, racial/ethnic minorities, students speak about interactions with school counselors (Allen et al., 2002). Several students indicate that school counselors and teachers were supportive of their aspirations for college. However, some students comment on negative interactions witnessed between students and school personnel at their school. In particular, Black and Latino/a students share how negative racial/ethnic stereotypes caused tension between students and teachers, especially among those teachers who perceived students to be low-achievers. Although these negative interactions did not have adverse effects on the educational aspirations of the Gates Scholars, as they are all high-achievers, the attitudes of teachers may have lowered the educational aspirations of their lower-achieving peers.

Some researchers suggest that schools pose structural constraints (e.g., high teacher/student ratio, family income level, racial/ethnic profile) that limit teachers' and counselors' ability to provide students with the information that can encourage their aspirations for college (Freeman, 1997; Horvat, 2003; McDonough, 1997, 2005; Stanton-Salazar, 1997). McDonough (1997) finds that school counselors play a role in developing students' aspirations, however, the extent to which counselors have a positive

impact varies according to the average socioeconomic level of the school. In high socioeconomic status schools, where counseling is more individualized and structured, students are more likely to have higher aspirations. The opposite relationship is noted at low socioeconomic status schools. McDonough (1997) shows that at Paloma School, an independent girl's school located in an affluent suburb, a school counselor is dedicated exclusively to helping students plan for college. Advising about the college process (e.g., required courses, test-taking, processing college applications) begins in 9th grade and continues through senior year. With the permission of the school counselor, Paloma students are allowed to miss four days of school throughout the junior and senior years to visit colleges and can skip classes to meet with college representatives. The focused attention of the school counselor, in part, helps students at Paloma form, and later fulfill, their college aspirations. School counselors at Paloma are not only accountable to the students but also to the parents, who are college-educated and very involved in the college preparation process.

McDonough (1997) shows that, at the other end of the spectrum, is Mission Cerrito High School (MCHS), an urban public school, where students' aspirations are often unstable. The student-to-counselor ratio at MCHS is 400 to 1. McDonough (1997) reports that about 60% of MCHS students enter their senior year with aspirations to attend a four-year college, but the percentage drops to 15% when students find out the course requirements for college entry. As McDonough notes, "This change from unrealistic to realistic expectations happens suddenly, 'When they see the applications and they start hearing about the requirements…that weeds them out'" (p. 84). Although MCHS employs a permanent counselor for each grade level, the message about

requirements for college is not conveyed early enough to ensure proper planning. Additionally, the 12th grade counselor notes that his primary responsibility is not helping students to prepare for college, but to make sure that as many students as possible graduate. This focus on high school graduation as opposed to college access is related to the school's relatively high dropout rate. Although the counselor distributes a senior guidebook and hosts a college fair, students at MCHS have their aspirations stifled by the structural constraints (e.g., high school counselor to student ratio, high dropout rate) that characterize the school. These constraints impose limits on the amount of support and encouragement the school counselor can provide to students.

McDonough's study (1997) also reveals how high socioeconomic status schools provide students with access to additional information about college through social networks and how the information conveyed through these networks can also positively influence college aspirations. As a student attending Paloma states, "There are people at Paloma who if they had been in a public school they wouldn't be going to college, there's just no way….You find out so much [college information] just sitting around the senior lounge during one period" (p. 137). In essence, this student recognizes that the peer group (e.g., weak ties) is an information resource, particularly for students attending a private school with high socioeconomic levels.

Researchers also cite peers as influential to the formation of high educational aspirations (Hossler et al., 1999; McDonough, 1997; Schneider & Stevenson, 1999; Wimberly, 2000). McDonough (1997) finds that many of the high socioeconomic status 12th grade girls aspire to college, not only because family and teachers expect college attendance, but also because their friends have actually enrolled. Some of the girls in her

sample comment that having boyfriends in college is an "incentive" for them to aspire to college.

Wimberly (2000) analyzes how the social capital of a student's peer group influences his/her educational aspirations. Using NELS:88/94, he finds that, among Black and White high school seniors, three measures of peer group social capital—peers' college plans, peers' educational values, and peers' expectations of the student—are all positive predictors of students' educational aspirations after controlling for background characteristics and school characteristics. In addition, Wimberly (2000) finds that for Black students, peers' educational values (e.g., importance of attending class regularly, studying, getting good grades, finishing high school, and attending college) is the strongest predictor of educational aspirations after family income.

Conversely, other studies report that peers have minimal impact on educational aspirations (Hossler et al., 1999; Schneider & Stevenson, 1999). In their quantitative analyses of ICPAC data, Hossler and colleagues find that 9th graders whose friends aspire to college are more likely to have similar aspirations, net of other variables. However, while peers remained statistically significant throughout the analyses, its effect was small in comparison to the effects of variables such as parental encouragement and support and academic achievement. Schneider and Stevenson (1999) suggest that because peer groups can be fluid, the effect of peers on educational aspirations may be minimal or, in some cases, nonexistent.

Kao and Tienda's (1998) analyses of focus group data show that Black students send each other mixed forms of encouragements, however the effect on aspirations is unclear. On the one hand, Black students with good grades and high aspirations are often

teased and accused of "acting White," which respondents agree means doing well in school. At the same time, these high-achieving students are admired and held in high esteem by their peers. Students who repeat a grade, however, are consistently teased more often than high-achieving students and are less likely than the high-achievers to aspire to college.

In summary, aspirations research confirms that school personnel and peers influence aspirations, although the nature of the influence may vary (Allen et al., 2002; Freeman, 1997; Horvat, 2003; Hossler et al., 1999; McDonough, 1997). Research suggests that the availability of support from teachers and school counselors varies according to the school context (Allen et al., 2002; Freeman, 1997; Horvat, 2003; McDonough, 1997). Students in high-resourced schools receive support and encouragement for their educational aspirations, whereas students in low-resourced schools are not provided with adequate information and encouragement through the high school years, so their aspirations decrease by high school graduation (McDonough, 1997). Likewise, interactions with peers can serve to enhance or diminish students' aspirations for college (Hossler et al., 1999; Kao & Tienda, 1998; Schneider & Stevenson, 1999; Wimberly, 2000). Researchers speculate that the extent to which peers have a positive influence may depend on the stability of the friendship (Schneider & Stevenson, 1999) or level of encouragement (Kao & Tienda, 1998; Wimberly, 2000).

College Costs

At present, no research explores the effects of tuition and financial aid on postsecondary educational aspirations. Both Hauser and Anderson (1991) and Morgan

(1998) speculate that the aspirations of Black students may be affected by college costs, although neither study includes financial aid measures in their analyses. Other scholars speculate that students' and parents' lack of information about college costs and financial may have an adverse impact on students' educational aspirations (Ikenberry & Hartle, 2000; NCES, 2003b; St. John, 2003; Wimberly & Noeth, 2005).

Students and families have inaccurate information about college costs. Nationwide, about 80% of 9th and 10th grade students and two-thirds of 11th and 12th grade students who plan to enroll in a postsecondary institution either overestimate or are unable to estimate the cost of attending college (NCES, 2003b). Likewise, more than two-thirds of 9th and 10th grade parents and over half of 11th and 12th grade parents either overestimate or do not have information to estimate college costs (NCES, 2003b). Most 11th and 12th grade students and their parents with aspirations for a bachelor's degree estimate yearly in-state, public college tuition to be between $5,000 and $6,000, which is at least 60% higher than the actual average yearly tuition rate at such institutions (based on 1997-1998 data, NCES, 2003b).

Some researchers suggest that, regardless of the accuracy, perceptions of college costs may influence students' aspirations (St. John, 2003). St. John (2003) argues that students' and families' concerns about college costs may cause a reduction in educational aspirations during the high school years. Based on a reanalysis of college-qualified students in NELS:88/92, St. John determines that the college aspirations of 8th and 12th graders are correlated with family income. At all income levels, students' postsecondary aspirations increase as family income levels rise. However, the descriptive data reveal a decrease in educational aspirations for 8th and 12th graders at all income levels, with the

greatest reduction for middle-income students, who experience a 13 percentage point reduction in aspirations to complete a four-year degree. Based on these data, St. John (2003) speculates that students from low- and moderate-income backgrounds develop and adjust their postsecondary educational aspirations based on concerns about financing their education, which are considered in the context of a family's financial resources.

Some researchers show how the lack of financial capital and concerns about financing college may negatively influence students' aspirations for college. Both Kao and Tienda (1998) and Freeman (1997) offer qualitative assessments of the effect of college costs on the educational aspirations of Black and Latino/a students. Through focus group discussions, Kao and Tienda (1998) find that money to finance postsecondary education is "a big problem" (p. 378). Some students mention that athletic scholarships would be their only means of paying for college. Likewise, Freeman (1997) shows that, across cities and school types, Black students do not aspire to college because of college costs. In other words, "They don't have money to go [to college]" (Freeman, 1997, p. 10). This research suggests that students' lack of financial capital and concerns about financing college may have an adverse impact on their aspirations for college (Freeman, 1997, 1999; Kao & Tienda, 1998).

In summary, studies confirm that students and parents, particularly Blacks, Latinos/as, and students from low- and moderate-income backgrounds, are concerned about college costs (Advisory Committee, 2002; Freeman, 1997, 1999; Kao & Tienda, 1998; NCES, 2003b; St. John, 2003). In addition, qualitative analyses examining the role of finances on the aspirations of Black (Freeman, 1997, 1999) and Latino/a (Kao & Tienda, 1998) students illustrate that concerns about paying for college may impede

students' aspirations for college. Although little empirical data exist to confirm the relationship between perceptions about college costs and postsecondary educational aspirations, these researchers suggest that students' and families' perceptions and concerns about college costs may have negative effects on college aspirations (Advisory Committee, 2002; Freeman, 1997, 1999; Kao & Tienda, 1998; St. John, 2003).

Summary

Although scholars have given considerable attention to the study of postsecondary educational aspirations, additional research is needed to understand how students' aspirations are developed during the high school years. Few studies analyze the relationship between earlier and later aspirations, and even then, the research findings are inconclusive about the predictors of high aspirations across groups (Kao & Tienda, 1998; Sheppard et al., 1992; Trusty, 2000). The lack of conclusive findings may reflect differences in the research design of each study. Sheppard and colleagues (1992) use a sample from a single state, whereas both Kao and Tienda (1998) and Trusty (2000) use nationwide samples. However, Kao and Tienda and Trusty use different subsets of the same database as well different variables, which may limit the congruence between the findings.

A review of existing research also suggests that additional analyses are required to understand how social, cultural, and economic constructs influence the formation of postsecondary educational aspirations, particularly among students of differing racial/ethnic groups. Research regarding the relationship between race/ethnicity and aspirations is inconclusive (Bateman & Hossler, 1996; Hamrick & Stage, 2004; Hossler

& Stage, 1992; Hossler et al., 1999; Kao & Tienda, 1998; Pitre, 2002; Trusty, 2000). Clarification is also needed regarding the effects on aspirations of gender, family income, mother's education, school context, and other constructs related to students' cultural and social capital (e.g., educational resources, parental involvement, relationships with school personnel and peers), within the context of race/ethnicity. Fewer studies have explored how financial indicators influence postsecondary educational aspirations. However, since the college-choice literature suggests that finances play a vital role in determining students' postsecondary choices (Kane, 1994; Manski & Wise, 1983; Paulsen & St. John, 2002), researchers speculate that students may base their educational aspirations, in part, on their perceptions of college costs and financial aid (Morgan, 1998; St. John, 2003).

To address gaps in previous research, this study uses an integrated conceptual model to examine the development of students' postsecondary educational aspirations between 10^{th} and 12^{th} grades. This model incorporates key elements of sociological and econometric frameworks. Researchers suggest that such an approach may provide a more critical analysis as well as better predict differences in educational aspirations across racial/ethnic groups (Freeman, 1997; Morgan, 1998; St. John, 2003). Perna (2000) finds that an integrated model, combining sociological, cultural, and economic factors, better explains the college enrollment decisions of students from varying racial/ethnic groups than a traditional economic model alone.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

Introduction

This study uses data from the Educational Longitudinal Study of 2002 (ELS:2002/04), the most recent national, longitudinal data available, to update earlier findings regarding the development of postsecondary educational aspirations during the high school years (Kao & Tienda, 1998). Descriptive analyses of data from ELS:2002 reveal that most 10th graders (76%) aspire to attain at least a bachelor's degree, 15% aspire to less postsecondary education, and 9% are undecided (e.g., do not know). By the time these students reach 12th grade, some students will maintain these aspirations, while others will increase or decrease their aspirations. To gain insight into the relationship between early (10th grade) and later aspirations (12th grade), this study uses a conceptual model that integrates aspects of a sociological theoretical framework with aspects of an economic theoretical framework. Traditionally, sociological approaches to aspirations research focus on how family background as well as the larger socio-cultural context shape aspirations. An economic approach considers how financial matters influence aspirations. An integrated approach, which incorporates key elements of sociological and economic models, may offer a more complete explanation of the development of postsecondary educational aspirations, particularly among racial/ethnic groups.

Using descriptive statistics and logistic regression analyses, this study examines the following three research questions:

1. What are the characteristics of students who increase, decrease, and maintain educational aspirations between 10th and 12th grades? To what extent do male and female students of differing racial/ethnic groups maintain postsecondary educational aspirations between 10th and 12th grades?
2. Does a conceptual model that adds cultural and social capital and economic constructs to a traditional status attainment model for postsecondary educational aspirations improve the explanatory power of the model?
3. How do 12th grade educational aspirations vary by race/ethnicity after controlling for other variables?

This chapter begins with a description of the ELS:2002/04 dataset, including the survey's development, sampling techniques, data collection methods, and the sample used in the analyses. The following section presents the conceptual model and defines the variables that measure the model's constructs. Next, the statistical procedures used to address the research questions are described. The concluding section summarizes the limitations of the study.

Data and Sample

This study uses data from ELS:2002/04, a dataset supported by the National Center for Educational Statistics (NCES) of the U.S. Department of Education. ELS:2002/04 is the fourth in a series of longitudinal studies instituted through NCES' National Educational Longitudinal Studies Program. The three previous studies were the National Longitudinal Study Class of 1972 (NLS-72), High School and Beyond (HS&B), and the National Educational Longitudinal Study of 1988 (NELS:88). NCES initiated the

National Educational Longitudinal Studies Program in response to requests by policymakers and researchers for nationally representative data on elementary and secondary school students (NCES, 2004). Together these four studies provide useful measures of educational attainment in the U.S. and describe the educational experiences of students across four decades—the 1970s, 1980s, 1990s, and 2000s.

NCES began data collection for ELS:2002 with the 10th grade class of 2002. ELS:2002 provides information on students' transitions through high school and into postsecondary education and/or the labor market (NCES, 2004). For the high school years, NCES collected data for ELS:2002 in 2002 from students and their records (transcripts, test scores) as well as from their parents, teachers, and school administrators (the principal and librarian, NCES, 2004). In 2004, they collected first follow-up data from students and their records and school administrators. These multiple data sources offer a comprehensive picture of how students' home and school environments can influence particular educational and occupational outcomes. The second follow-up is scheduled for 2007, two years after scheduled high school graduation for most respondents. NCES has not yet determined the schedule for additional follow-ups (NCES, 2006).

ELS:2002/04 is an appropriate dataset for examining the research questions for several reasons. First, the data are longitudinal, following a cohort of students from 10th to 12th grade, which allows for a comparative analysis of educational aspirations when students are high school sophomores and seniors. Second, this dataset provides information from several sources about a wide range of variables that are relevant to the conceptual model. ELS:2002/04 also gives insight into the aspirations and perceptions of

parents and high school administrators. The parents' data allow researchers to gain insight on the students' family characteristics, family involvement, family resources, and parental knowledge about the schooling process. Data from teachers and school administrators provide information on school characteristics and resource levels. Like other national databases, ELS:2002/04 has a high response rate, which suggests a robust sample (NCES, 2004). NCES (2005c) reports that approximately 87% and 91% of eligible participants in each category (i.e., students, parents, teachers, school administrators) completed the base-year questionnaire and first follow-up questionnaire, respectively.

The research design for ELS:2002/04 is similar to the designs used in the prior studies of the National Educational Longitudinal Studies Program (NCES, 2004). Like NELS:88, ELS:2002 oversamples private schools as well as Latino and Asian students. NCES used data from the Private School Survey (PSS) to determine the oversampling rates for private high schools and data from the Common Core of Data (CCD) to determine oversampling rates for Latinos and Asians. Also like NELS:88, ELS:2002 follows a cohort of students over time and "freshens" the sample at the first (2004) follow-up, thereby allowing multiple cohorts to be examined. Unlike prior surveys of the National Educational Longitudinal Studies Program, ELS:2002 adds a new race category, Native Hawaiian/Other Pacific Islander. In addition, ELS:2002 allows students to mark all racial/ethnic categories that apply, thereby generating a "Multiracial" category.

NCES used two-stage probability design to select the national sample of high schools and students for the base-year of ELS:2002. The primary sampling unit was the school. NCES first selected schools using a probability-proportional-to-size method,

which resulted in 1,221 eligible public, Catholic, and other private schools from a population of approximately 27,000 schools containing 10th grade students. Of the eligible schools, 752 participated in the study (NCES, 2004).

In the second stage of sample selection, NCES selected students from participating schools. All spring-term 10th graders, excluding foreign exchange students, were eligible to participate. NCES provided specific guidelines to schools to assist them in determining eligibility for students with limited English proficiency and mental and physical disabilities. Non-native English speakers and students with limited English proficiency were eligible if they received academic instruction primarily in English for three years or if school officials thought the student could respond effectively to the questionnaire. Mentally and physically disabled students who were unable to take standardized pencil-and-paper tests were not required to complete the ELS:2002 assessment battery. NCES requested that the school determine if the student's inability to take such tests also precluded him/her from completing the questionnaire. When necessary, schools gave special testing accommodations to these students.

Once participating schools determined student eligibility, they provided NCES with 10th grade enrollment lists. Each school had a fixed sampling rate that was proportional to the size of the student body. After receiving enrollment lists from schools, either in electronic or hardcopy format, NCES stratified them by race/ethnicity (Asian, Black, Latino/a, and Other race/ethnicity).

Because the ELS:2002 database is constructed using complex multi-stage sampling schemes, the data are weighted to correct for oversampling, sampling error, and non-response (NCES, 2004; Thomas & Heck, 2001). This study uses the normalized

2002-2004 panel weight (NCES, 2004). Using the normalized panel weight (i.e., NCES panel weight divided by the average weight for the sample) reduces the influence of large sample sizes on statistical tests (Thomas & Heck, 2001).

Data Collection Techniques: ELS:2002/2004

Instrument Development

In designing the ELS:2002 study, NCES remained cognizant of the need to include variables that serve as descriptors of current behavior and predictors of future behaviors and outcomes (NCES, 2004). To guide the creation of the study, NCES relied on previous studies, such as NLS-72, HS&B, NELS:88 and other NCES studies (e.g., National Assessment of Educational Progress [NAEP], Program for International Student Assessment [PISA]). To ensure the validity of the instruments, experts review the data collection procedures and instruments are pilot-tested one year before each survey administration. The results of the review panels and pilot-test inform planning for the study and guide improvements to the instrument (NCES, 2004).

Administering the Instruments: Students, Administrators, Teachers, and Parents

In order to be considered a survey participant, eligible students must have completed the ELS:2002 base-year questionnaire. NCES (2004) reports that 87% of eligible selected students (*n*=15,362) completed the questionnaire. In addition, 87% of their parents (*n*=13,488), 92% of their teachers (*n*=14,081), 99% of the school administrators (*n*=743), and 96% of school librarians (*n*=718) responded to the base-year questionnaire for their respective group. For the first follow-up, NCES (2005c) reports a

91% response rate for students (*n*=14,989) and a 95% response rate for school administrators (*n*=712).

NCES surveyed students in 2002 (base-year) and 2004 (first follow-up). Most students completed the surveys in their school classrooms. However, a few students completed a shortened version through a computer-assisted telephone interview (CATI), where they were asked to read along the hard copy format as the questions were read over the telephone. The student base-year questionnaire is divided into the following sections: 1) locating information, 2) high school experiences and extracurricular activities, 3) plans for the future, 4) non-English language use, 5) finances and work, 6) family, and 7) beliefs and perceptions about self. The first follow-up survey expands on the questions asked in the base-year and further probes students regarding three topics: 1) educational and recreational activities, 2) work-related behaviors and future plans, and 3) interactions with family, friends, and community. In addition to the questionnaire, base-year respondents completed the ELS:2002 mathematics and reading standardized tests in school.

In the base-year only, NCES asked a parent or guardian of each participating student to complete a self-administered survey. Only one parent/guardian completed the questionnaire, preferably the individual with the most knowledge about the sample participant's educational intentions, behaviors, and activities. Parents had the option of completing the questionnaire in either English or Spanish and of responding to the hardcopy or electronic version for computer-assisted telephone interviews (CATI). This survey collects information about family background, socioeconomic status characteristics, and the level of educational support received at home. Specifically, the

questionnaire addresses the following topics from the parent's perspective: 1) family background; 2) student's school life; 3) student's family life; 4) perceptions about their student's high school; and 5) aspirations for their student's future.

The English and mathematics teacher of each sampled student received requests to complete the teacher survey in the base-year. The teacher survey addressed the activities and behaviors of the sampled student and the effects of teaching on student outcomes. Selected teachers responded to self-administered questionnaire items on the following topic areas: 1) student effort and motivation, 2) academic performance, 3) absentee and tardiness patterns, 4) behavioral patterns, and 5) communication with the student and their parents. In addition, the teacher background section of the questionnaire inquired about the teacher's social and educational background, professional experience and training, and social networks.

The school administrator questionnaire gathered descriptive information about the high school context for students who were selected for participation in ELS:2002. School administrator surveys were offered during the base-year and first follow-up.
For each survey administration, the school principal or designated representative completed the self-administered questionnaire. The survey asked questions regarding the characteristics of the school, students, and teaching staff. In addition, principals responded to questions on school policies and programs, technology, school climate, and governance.

The analytic sample (n=12,530) for this study consists of members of the base-year cohort who were enrolled in 12th grade in 2004. This study does not include students who were dropouts, early graduates, home-schooled, failed either 10th or 11th

grade, or freshened in the 12th grade. These groups are excluded because they possess unique characteristics that differ from base-year respondents who were in the 12th grade during the first follow-up. Students in these excluded groups completed first follow-up surveys specific to their classification. Because freshened students did not participate in the base-year survey, they do not have data available for the independent variables measured in the base-year.

Conceptual Model and Variable Description

This study applies an integrated conceptual model to examine the formation of postsecondary educational aspirations (Figure 3.1). This framework incorporates relevant components of sociological and econometric models. Most research analyzes the extent to which sociological constructs (e.g., status attainment, cultural capital, social capital) explain the development of student's postsecondary educational aspirations (Burke & Hoelter, 1988; McDonough, 1997; Sewell, Haller, and Ohlendorf, 1970; Sewell, Haller, and Portes, 1969; Sewell & Shah, 1967; Smith-Maddox, 2000, 2001). Traditional status attainment frameworks attribute variation in educational aspirations to differences in social class membership and social psychological constructs, such as academic achievement and encouragement from significant others, including parents, school personnel, and peers (Sewell & Shah, 1967; Sewell et al., 1969, 1970).

In this study, the influence of socioeconomic status and significant others is further examined through the perspective of cultural and social capital theories, which are recent enhancements to the status attainment framework. Because cultural capital refers to an individual's cultural resources and values, often transmitted through the family

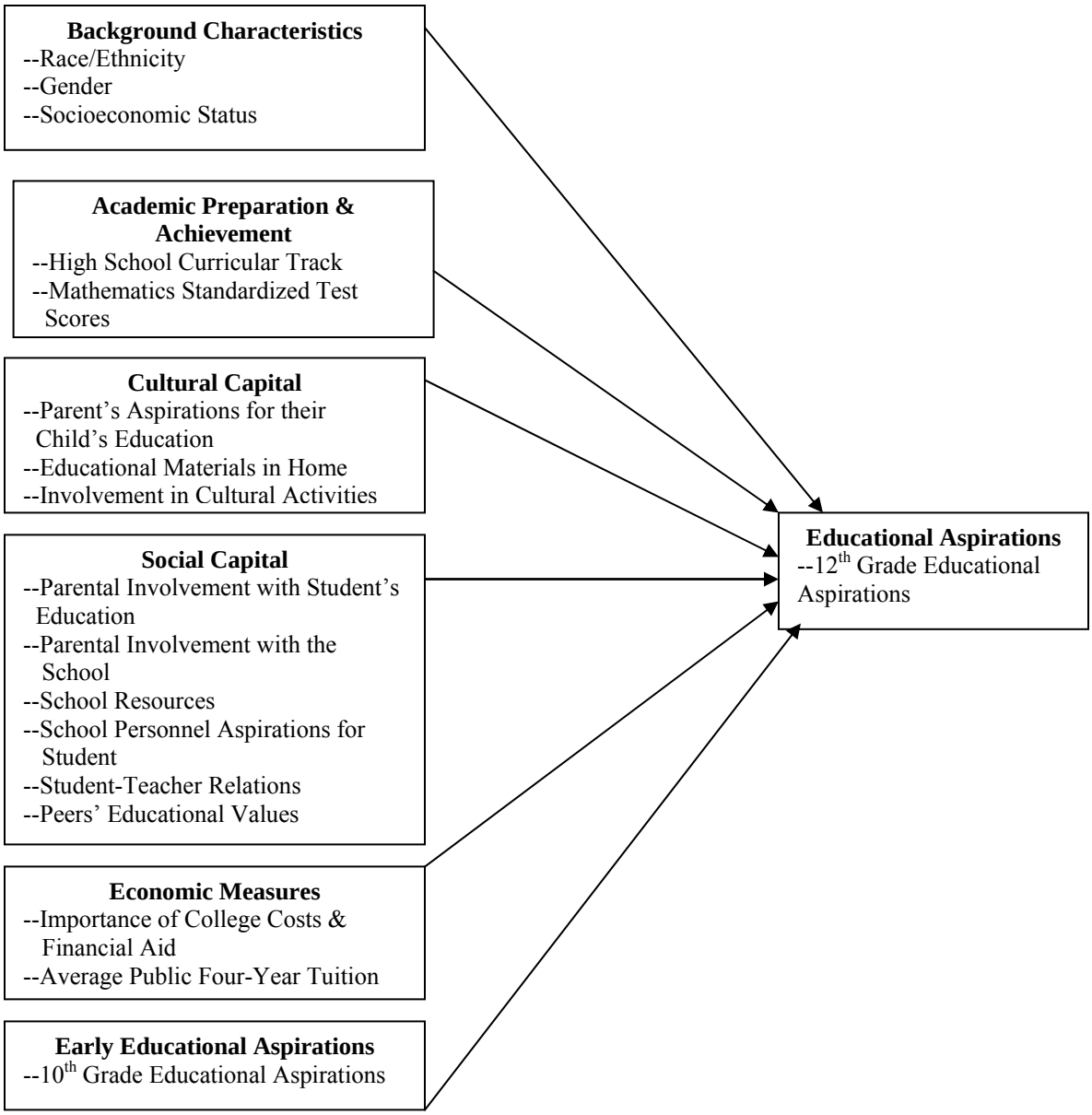

Figure 3.1. Conceptual Model for the Formation of Postsecondary Educational Aspirations

(Bourdieu, 1977; Bourdieu & Passeron, 1977), this perspective may explain the extent that a student's and his/her family's values regarding education influence postsecondary educational aspirations. Social capital highlights how social relationships and networks can affect a student's ability to access resources and information (Bourdieu, 1986; Coleman, 1988; Lin, 2001), which may, in turn, influence aspirations for college.

Economic approaches, which are primarily used to describe the college-choice process, have been used in aspirations research to a lesser extent. Since the college-choice literature reports that students weigh the costs versus benefits of postsecondary training or education relative to their preferences (Becker, 1993), researchers suggest incorporating financial measures into research on postsecondary aspirations, arguing that such measures also likely to influence aspirations (Morgan, 1998; St. John, 2003).

Dependent Variable— Educational Aspirations in the 12th Grade

Following the example of Kao and Tienda (1998), the dependent variable, educational aspirations in the 12th grade, is defined as: aspire to attain at least a bachelor's degree (yes=1, no=0). The dependent variable is derived from students' response to the question on the 12th grade survey that asks, "As things stand now, how far in school do you think you will get?" The survey item offers nine response options, ranging from less than high school graduate to receipt of an advanced degree (e.g., Ph.D., M.D.). Students who aspire to attain less than a high school diploma, a high school diploma or GED, complete a two-year or vocational school, or attend college but not earn a bachelor's degree are categorized as aspiring to less than a bachelor' degree (22.6%). Conversely, students who aspire to attain a bachelor's degree, a master's degree or

equivalent, or an advanced degree are identified as aspiring to at least a bachelor's degree (69.2%). Students responding to this survey item "do not know" (8.2%) are excluded from the regression analyses, but are included in the descriptive analyses. In the descriptive analyses, students who "do not know," (i.e., undecided) their postsecondary aspirations in the 10th or 12th grades are examined in order to determine the extent to which students' aspirations change or remain the same during the high school years and to analyze the characteristics of students who fall into this group.

Kao and Tienda (1998) show the appropriateness of categorizing the dependent variable as "less than a bachelor's degree and at least a bachelor's degree." In their study, they conduct preliminary analyses using alternative break points for the dependent variable, such as aspiring to at least some college. Kao and Tienda find that educational aspirations are generally high, with 66% of 8th graders in 1988 expressing aspirations for at least a bachelor's degree. As a result, they operationalize the dependent variable in a way that discriminates between lower and higher educational aspirations.

Background Characteristics

The central focus of status attainment models is to analyze the influence of background characteristics, primarily socioeconomic status, on students' aspirations (Sewell & Shah, 1967; Sewell et al., 1969, 1970). Although seminal studies did not include diverse samples, subsequent status attainment research includes race/ethnicity and gender as additional background characteristics (Burke & Hoelter, 1988; Hanson, 1994; Kao & Tienda, 1988; Kerckhoff & Campbell, 1977; Portes & Wilson, 1976; Smith-Maddox, 2000, 2001). This study uses several variables to measure students' background

characteristics: race/ethnicity, gender, and socioeconomic status. The following section describes each of these variables in greater detail.

Race/Ethnicity.

This study's analytic sample considers five categories for race/ethnicity: Asian (4.2%), Black (13.0%), Latino/a (14.0%), Multiracial (4.0%), and White (64.8%). These data reflect students' self-reported, base-year information. For each independent variable, the reference group represents the category with the largest percentage. Therefore, for the race/ethnicity measure, White students comprise the reference group because they are the largest group. Native Americans/American Indians are excluded from this study because they represent less than 1% of the total sample.

ELS:2002 adds two new race categories: Native Hawaiian/Other Pacific Islander and Multiracial. Because Native Hawaiian/Other Pacific Islander students represent less than 1% of the total sample, they are not analyzed as a separate racial/ethnic group. Instead, this study counts these students as Asian, which NCES recognizes as an appropriate racial categorization (NCES, 2004). ELS:2002 also allows students to mark all racial/ethnic categories that apply, which generates a "Multiracial" racial/ethnic category. Because data on these students were not available previously, they have not been studied in aspirations research. Although Multiracial families were not counted in census data prior to 2000, the Census Bureau speculates that the proportion of students living in Multiracial families has increased over the past two decades and that pattern will likely continue (Jones & Smith, 2001).

Unlike previous aspirations research, the study's sample includes a separate category for Multiracial students, in addition to other racial/ethnic groups (i.e., Asians, Blacks, Latinos/as, Whites). As a result, the examination of students from these backgrounds reflects the nation's racial/ethnic diversity and the increasing number of students from multiracial backgrounds in America's elementary and secondary schools (Jones & Smith, 2001). According to Renn (2004), within the next two decades, the number of students enrolling in postsecondary education who identify as multiracial will increase. As such, there will be an increasing need to understand better the experiences and identities of mixed race students, who will soon comprise an increasing proportion of the postsecondary student body.

Previous research examining the role of race/ethnicity in predicting students' educational aspirations provides varied and conflicting conclusions. Descriptive analyses from two studies (Kao & Tienda, 1998; Trusty, 2000), which both use NELS:88 data, arrive at different conclusions about the maintenance of high aspirations among students of differing racial/ethnic backgrounds. In addition, some researchers note that Black students have higher aspirations than their Whites peers after controlling for socioeconomic status (Morgan, 1996; Portes & Wilson, 1976; Trusty, 2000). Still others find no significant differences in educational aspirations across racial/ethnic groups (Hossler & Stage, 1992; Pitre, 2002). Researchers also conclude that current models used in aspirations research do not adequately explain the outcomes for Black students (Bateman & Hossler, 1996; Hamrick & Stage, 2004). To test these conclusions, this study examines not only whether 12th grade aspirations vary across racial/ethnic groups,

but also tests interactions to examine whether the predictors of aspirations vary by race/ethnicity.

Gender.

Gender is measured by a dichotomous variable, with females (50.5%) serving as the reference group. Males comprise 49.5% of the analytic sample. This variable is taken from the student base-year survey. Researchers note that the relationship between gender and aspirations varies by race/ethnicity (Bateman & Hossler, 1996; Hamrick & Stage, 2004; Kao & Tienda, 1998). In particular, aspirations models predict differing amounts of variance between men and women of the same racial/ethnic groups (Bateman & Hossler, 1996; Hamrick & Stage, 2004). Some researchers also report that different variables predict the maintenance of high aspirations for women and men (Hanson, 1994; Kao & Tienda, 1998; Trusty, 2000).

Socioeconomic status.

Socioeconomic status is the most commonly analyzed variable in aspirations studies. Since the 1960's, researchers have consistently shown a positive relationship between educational aspirations and socioeconomic status, regardless of race/ethnicity or gender (McDonough, 1997; Sewell & Shah, 1967; Smith-Maddox, 2000; Solorazano, 1992). However, researchers differ on the most appropriate approach to measure socioeconomic status. Some researchers recommend the use of a composite measure of socioeconomic status (Cabrera & LaNasa, 2001; Perna & Titus, 2004), while others propose the use of separate measures of family income and parental educational

attainment (Paulsen & St. John, 2002). Cabrera and LaNasa (2001) and Perna and Titus (2004) conclude that the NELS:88 composite measure, which considers family income, parental educational attainment, parental occupation, and items in the home (i.e., dishwasher, books), is more reliable than separate measures of family income and parent's education. To the contrary, other researchers argue that the composite measure undermines the ability to determine how different aspects of socioeconomic status (e.g., family income, parents' education, parent's occupation) influence the outcome variable (Paulsen & St. John, 2002).

When socioeconomic status is disaggregated, conclusions regarding two of its key components—parent's education and family income—are inconsistent. Multivariate analyses indicate that separate measures of socioeconomic status, such as family income and parent's education, have varying effects on the aspirations of students of different racial/ethnic groups (Bateman & Hossler, 1996; Kerckhoff & Campbell, 1977; Qian & Blair, 1999). To gain clarity on the effects of socioeconomic status across groups, this study, initially, considers two separate measures of socioeconomic status: mother's education and family income. Both variables are described below.

Mother's education.

The measure for mother's education is taken from the parent's questionnaire. This variable includes three categories: high school graduate or less, some college, at least a college graduate. Parents' education is a positive predictor of college aspirations among students overall (Hossler & Stage, 1992; Hossler et al., 1999), but the nature of the effect may vary based on a student's racial/ethnic background (Bateman & Hossler,

1996; Kerckhoff & Campbell, 1977; Qian & Blair, 1999). Findings from some aspirations studies indicate that the education of the mother, but not the father, is a positive predictor of high aspirations among Black students. Research also shows that using mother's education rather than father's education or parents' education as a measure of socioeconomic status increases the explanatory power of aspirations models for Black students (Bateman & Hossler, 1996; Kerckhoff & Campbell, 1977).

Family income.

Family income is derived from data obtained from the parent questionnaire and is measured by the following 12-point scale: less than $1,000; $1,001 to $5,000; $5,001 to $10,000; $10,001 to $15,000; $15,001 to $20,000; $20,001 to $25,000; $25,001 to $35,000; $35,001 to $50,000; $50,001 to $75,000; $75,001 to $100,000; $100,001 to $200,000; $200,001 or more.

Studies offer inconclusive evidence regarding the saliency of family income in determining students' educational aspirations. Hossler and colleagues' (1999) analysis of Indiana high school students finds that family income has no impact on aspirations of 9th grade students, but appears to positively influence students' post-high school activities. Conversely, when family income is added to Qian and Blair's (1999) study, the aspirations of 12th graders become higher for Blacks and Latinos/as, but do not change for Asians. Kao and Tienda (1998) conclude that family income has a positive effect on students' aspirations to attend college and is vital to the maintenance of high aspirations from 8th through 12th grades.

In an effort to determine the most appropriate measure of socioeconomic status for this analytic sample, I analyze the correlations between mother's education and family income to determine whether these two separate measures were more appropriate than the socioeconomic status composite. The analyses showed that mother's education and family income have a correlation of .433. Although this is a moderate correlation, I decided to use the socioeconomic status continuous variable to minimize any adverse effects associated with multicollinearity. This measure is a composite created by NCES based on the educational levels of the mother and the father, the occupational status of the mother and the father, and the family income in 2001 (NCES, 2005c). I am using the standardized measure of socioeconomic status.

Table 3.1 shows the relationship between the socioeconomic status composite measure and three of its components: mother's educational attainment, father's educational attainment, and family income in 2001. An obvious pattern emerges between the socioeconomic status quartile, education, and income. In the analytic sample, it appears that increases in mother's or father's education are associated with increases in socioeconomic status. Over 85% of individuals in the lowest socioeconomic status quartile have a mother or father with no more than a high school education, while more than 70% of those students in the highest socioeconomic status quartile have a mother or father with at least a bachelor's degree. Similarly, a relationship between family income and socioeconomic status is apparent. Approximately 92% of students from the lowest quartile and 67% of students from the second quartile had family incomes of less than $50,000, compared to 14% of students from the highest quartile. Nearly 64% of students from the highest quartile have family incomes over $75,000.

Table 3.1. Percentage of Socioeconomic Status Composite Components by Socioeconomic Status Quartile

	Socioeconomic Status				
Variable	Quartile 1 (Low)	Quartile 2	Quartile 3	Quartile 4 (High)	Total
Mother's Education***	100.0	100.0	100.0	100.0	100.0
Did not finish high school	39.5	7.2	1.4	0.3	10.8
High school graduate or GED	45.2	43.6	21.8	3.6	27.1
Attend 2-year, no degree	6.9	18.2	20.1	7.2	13.2
Graduated from a 2-year	4.6	14.0	18.5	8.5	11.6
Attended college, no degree	3.0	11.9	17.5	9.5	10.7
Graduated from a 4-year	0.7	4.9	18.2	42.9	18.0
Master's degree or equivalent	0.0	0.3	2.2	22.0	6.8
Ph.D., M.D., or equivalent	0.0	0.0	0.4	6.1	1.8
Father's Education***	100.0	100.0	100.0	100.0	100.0
Did not finish high school	40.1	8.9	2.8	0.1	11.7
High school graduate or GED	46.9	46.5	26.3	4.6	29.6
Attend 2-year, no degree	4.9	14.5	14.9	5.3	10.0
Graduated from a 2-year	2.9	11.7	12.8	5.3	8.3
Attended college, no degree	3.4	10.5	14.6	8.3	9.4
Graduated from a 4-year	1.3	6.6	22.5	37.0	18.1
Master's degree or equivalent	0.4	0.9	5.0	23.4	8.1
Ph.D., M.D., or equivalent	0.1	0.4	1.0	16.0	4.8
Total Family Income in 2001***	100.0	100.0	100.0	100.0	100.0
Less than $25,000	54.8	18.6	7.6	1.1	18.7
$25,001-$50,000	37.6	48.1	29.8	13.0	31.2
$50,001-$75,000	6.1	24.1	33.5	22.2	22.1
$75,001-$100,000	1.1	7.7	18.4	24.6	13.8
$100,000 or more	0.4	1.6	10.6	39.1	14.2

Source: Analyses of ELS:2002/04
***p<.001
Note: Data are weighted by normalized F1PNLWT panel weight

Academic Preparation and Achievement

Research confirms that academic preparation and achievement are positively correlated with a student's postsecondary educational aspirations (Hossler et al., 1999; Kao & Tienda, 1998; Smith-Maddox & Wheeler, 1995; Trusty, 2000). This study uses

two variables to measure academic preparation and achievement: high school curricular track and mathematics standardized test scores.

High school curricular track.

The student's high school curricular track is an indicator of academic preparation. Taken from the student base-year survey, this variable has three categories: college preparatory (54.1%), vocational (9.7%), and general (36.2%). The college preparatory track comprises the reference group. Although Adelman (2002) suggests that other measures, such as rigor of coursework, are more reliable measures of academic preparation than students' self-reported curricular program, ELS:2002/04 transcript data are not yet available. Researchers examining the impact of tracking on postsecondary educational aspirations suggest that students receive different levels of support and encouragement for aspirations based on their high school curricular track (Smith-Maddox & Wheelock, 1995).

Mathematics standardized test scores.

One variable is used to measure academic achievement: mathematics standardized IRT score in the 10^{th} grade. Several researchers using NELS:88 data include standardized test scores in their study of postsecondary educational aspirations. However, researchers analyze this variable in various ways. Qian and Blair (1999) use a composite measure of standardized test scores (i.e., reading and mathematics). They find that this composite measure has a stronger positive impact on the educational aspirations of Asians, Latinos/as, and Whites than on the aspirations of Black students. Analyzing

both achievement measures separately (e.g., reading standardized tests, mathematics standardized tests), Trusty (2000) finds that mathematics achievement is a positive predictor of stable aspirations between 8th grade and two years after high school graduation for both males and females, but reading achievement is not a significant predictor. In a differing opinion, Smith-Maddox (2000) suggests that the high correlation between the subjects (e.g., reading and mathematics) can cause problems related to multicollinearity. She recommends using only mathematics test scores, as this measure has a positive effect on Black students' educational aspirations, regardless of family income.

Cultural Capital

Cultural capital measures the value that the family places on education, directly by communicating educational aspirations, and indirectly through the investment in educational resources and activities (Bourdieu, 1986; Lamont & Lareau, 1988). This study uses three proxies for cultural capital: parent's aspirations for their child's education, educational materials in the home, and student's involvement in cultural activities. The following section describes these measures.

Parent's aspirations for student's education.

This study measures parent's aspirations, assuming that this variable reflects educational values that are transmitted by the parent to the student. This variable is taken from the parents' base-year questionnaire, of which mothers or female guardians represent over two-thirds of the survey respondents. This variable represents the

embodied state of cultural capital, which characterizes an individual's predisposition or state of mind (Bourdieu, 1986). The variable measures the highest level of education that the student perceives that his/her parents expect him/her to attain, as reported by the student in the base-year survey. This variable is coded into two categories: aspirations to attain at least a bachelor's degree (88.6%) and aspirations to attain less than a bachelor's degree (11.4%). Attain at least a bachelor's degree is the reference group.

Regardless of race/ethnicity or socioeconomic status, parents express high educational aspirations for their children (Allen, Bonous-Hammart, and Suh, 2002; NCES, 2003b; Wimberly & Noeth, 2004). Research confirms that a student's postsecondary aspirations are positively influenced by what he/she perceives his/her parents expect (Hossler & Stage, 1992; Hossler et al., 1999; Sheppard, Schmit, and Pugh, 1992). Students cite their mothers or female guardians as helpful in developing college aspirations more often than fathers or male guardians (Noeth & Wimberly, 2002; Wimberly & Noeth, 2004). Similarly, Trusty (2000) determines that, among 8th graders, mother's aspirations, but not father's aspirations, are associated with stable aspirations within two years after high school graduation.

Educational materials in home.

Educational materials in the home, a second proxy for cultural capital, represent the objectified state. According to Bourdieu (1986), the objectified state of cultural capital refers to an individual's access to esteemed cultural goods, such as computers, books, and cultural activities. Educational materials in the home is measured by a composite of three survey items, asked of students in the base-year. The three survey

items ask whether a student has each of the following in their homes: a daily newspaper, a computer, more than fifty books. The composite variable is created by summing students' responses to these three variables. The variable is then recoded into the following categories: having all three items (48.1%), having one or fewer of these items (11.3%), having any two of these items (28.6%), and missing data (12%). Having all three of these items is the reference group. Kao and Tienda (1998) find that a similar measure, labeled home resources (i.e., access to a home computer, magazines, daily newspapers, dictionary, calculator), has a positive effect on the 8th and 10th grade aspirations of men and women.

Involvement in cultural activities.

Involvement in cultural activities, a third proxy for cultural capital, also represents the objectified state. The variable reflects whether a student has taken music, art, or dance classes, as indicated in the base-year student survey. Response options are: 1) never, rarely, or less than one time per week; 2) one to two times a week; 3) almost every day. Because of the distribution, this variable was recoded into three categories: never or less than once a week (73.8%), at least once a week (19.9%), missing (6.3%). Students who participate in these activities never or less than once a week make up the reference group. Kao and Tienda (1998) assume that outside classes, along with home resources, depict how material resources are transferred into educational resources. Their analyses show that participation in outside classes is a positive predictor of educational aspirations for men and women in the 8th and 12th grades, but not during the 10th grade.

Social Capital

Research suggests that parents, teachers, school counselors, and peers play a crucial role in the development of students' educational aspirations (Coleman, 1988; Qian & Blair, 1999; Wimberly, 2000). Parents often demonstrate support of their child's educational aspirations by becoming involved in their child's education and school activities (Qian & Blair, 1999; Wimberly, 2000). The relationships that students form with school personnel (e.g., teachers, school counselors) are also a source of social capital (Croninger & Lee, 2001; McDonough, 1997; Stanton-Salazar, 1997). The nature of teacher and counselor support may be determined by characteristics of the high school environment (Freeman, 1997; Horvat, 2003; McDonough, 1997; Stanton-Salazar, 1997). In this study, six constructs are used to measure social capital: parental involvement with student's education, parental involvement with the student's school, school resources, school personnel aspirations for the student, student-teacher relations, and peers' educational values. The following section describes each measure.

Parental involvement with student's education.

Parental involvement in the student's education is one proxy for social capital (Coleman, 1988; Qian & Blair, 1999; Wimberly, 2000). Exploratory factor analysis, a technique used to identify the latent dimensions among a set of variables, is used to create this measure (Pedhazaur & Schmelkin, 1991). The factor analysis examines four items from the base-year parent survey. Specifically, the factor analysis considers the frequency that the student and parent discuss each of the following topics: school courses or programs, preparation for ACT/SAT, application to college, and jobs after high school.

Each of these items is measured on a 3-point Likert scale, with 1=never, 2=sometimes, 3=often. Table 3.2 shows that a factor composite of these variables created a reliable factor (α=.740). The alpha reliability coefficient could not be increased by deleting any of the items from the factor. There are approximately 17% missing data for this variable. Missing data are imputed using mean substitution for race and gender. Existing research finds that parental involvement in their child's education has a positive effect on the educational aspirations of all racial/ethnic groups except Asians (Qian & Blair, 1999).

Table 3.2. Components of the Factor Composite: Parent's Involvement in Student's Education

Factor Components	Loadings
Parent provides advice about applying for college/school after high school	.598
Parent provides advice about plans for college entrance exams	.597
Parent provides advice about jobs to apply to high school	.467
Parent provides advice about selecting courses or programs	.478
Alpha reliability coefficient	.740

Source: Analyses of ELS:2002/04
Note: Data are weighted by normalized F1PNLWT panel weight

Parental involvement with the student's school.

The involvement of parents with the student's school is a second proxy for social capital (McDonough, 1997; Wimberly, 2000). This measure assesses the frequency that parents report they engage with school personnel on the following activities: student's course selection and student's plans after high school. The metric for each of these survey items is measured on a 4-point Likert scale, ranging from one to four. For each of these two variables, the data are recoded into two categories: no contact, contacted at least once. Then, to create a composite measure, the two variables are summed, resulting in a range from zero to two. The variable is further recoded to create the following

categories—no contact (55.3%), contacted once (13.2%), contacted more than once (13.1%), and missing (18.4%).

Some researchers contend that parental involvement with the school measures cultural capital because it describes how parents, particularly those of middle- and upper-class families, activate their capital in order to participate in their child's education (Lareau & Horvat, 1999). Other researchers, however, suggest that parental involvement with the school illustrates the parents' level of contact with teachers, school counselors, and administrators (Wimberly, 2000). Based on the latter interpretation, this measure is assumed to describe the extent to which social capital that is derived from social networks between parents and school personnel influence students' educational aspirations.

School resources.

Characteristics and resources of the school environment can influence the type and quality of social capital that a student receives (McDonough, 1997; Stanton-Salazar, 1997). The percent of students receiving free and reduced price lunch is a proxy for the resources available at a student's school. This standardized measure is taken from the school administrator base-year survey.

Research has shown that schools serving larger shares of low-income students offer fewer resources than high-income schools (Hamrick & Stage, 1998; McDonough, 1997; Stanton-Salazar, 1997). McDonough (1997) finds that the extent to which students' relationships with their school counselor has a positive impact on aspirations varies according to the average socioeconomic level of the school. In high

socioeconomic status schools, which offer individualized and structured college counseling, students are more likely to have higher aspirations. The opposite effect is noted at low socioeconomic status schools, where counselors focus more on academic and behavioral issues in the school (McDonough, 1997).

School personnel aspirations for student.

School personnel, such as teachers and school counselors, play an important role in helping students to form high postsecondary educational aspirations (Freeman, 1997; Horvat, 2000; Hossler et al., 1999; McDonough, 1997; Wimberly, 2000). Two variables from the student base-year survey are used to describe the student's perceptions of a teacher and school counselor's aspirations for him/her immediately following high school. Both questions are similarly worded, however, one inquires about the school counselor and the other about the student's favorite teacher. Both survey items offer nine response options, which are recoded as follows: enroll in college, do not know, other activity. "Other" activity reflects the following responses: enroll in vocational program, get a full-time job, join the military, get married, and do what I want. A composite variable is created by summing aspirations of the student's school counselor and favorite teacher, resulting in a new range from zero to four. The composite variable is then recoded to reflect the following categories: both teacher and counselor wish the student to attend college (47.8%), either teacher or counselor wish for college (4.0%), neither teacher or counselor wish for college (27.8%), and missing (20.5%). Both teacher and counselor wish for college is the reference group. Using NELS:88/94, Wimberly (2000) finds that a similar measure of school personnel aspirations, which is a composite of

students' perceptions of their favorite coach, favorite teacher, and school counselor's aspirations, is a positive predictor of high aspirations for Black and White high school students after controlling for background characteristics.

Student-teacher relations.

Research also suggests that the relationships that students and teachers develop can have a positive effect on students' educational aspirations (Allen et al., 2000; Freeman, 1997; Horvat, 2003; Wimberly, 2000). Exploratory factor analysis is used to create a composite measure of student-teacher relations. The composite is comprised of five items from the base-year student survey. These items measure students' perceptions and feelings about their teachers: students' get along with teachers, teachers are interested in students, the teaching is good, teachers praise students' effort, and teachers put down students. All of the survey items, except teachers put down students, is measured on a 4-point Likert scale, with 1 labeled strongly agree and 4 labeled as strongly disagree. For one measure—teachers put down students—the scale is the inverse. This measure is recoded to align the scale with the other four variables. Table 3.3 shows a factor composite of these variables created a reliable factor (α=.633). The alpha reliability coefficient could not be increased by deleting any of the items from the factor. There are approximately eight percent missing data for this variable. Missing data are imputed using mean substitution for race and gender. Using NELS:88/94, Wimberly (2000) constructs a similar factor composite, labeled students' feelings toward teachers. He finds that, after controlling for student background characteristics and

school characteristics, students' feelings toward teachers is positively related to the educational aspirations of White students, but unrelated to Black students' aspirations.

Table 3.3. Components of the Factor Composite: Student-Teacher Relations

Factor Components	Loadings
Teachers are interested in students	.497
The teaching is good	.470
Teachers praise effort	.347
Student get along with teachers	.346
In class student often feels put down by teachers	.294
Alpha reliability coefficient	.633

Source: Analyses of ELS:2002/04
Note: Data are weighted by normalized F1PNLWT panel weight

Peers' educational values.

Researchers find that peers influence the development of postsecondary educational aspirations (Hossler et al., 1999; Kao & Tienda, 1998; McDonough, 1997; Wimberly, 2000) and may be an important source of social capital (McDonough, 1997; Wimberly, 2000). Exploratory factor analysis is used to create a composite measure of peers' educational values from five items on the student base-year survey. These five items ask students to report how important it is for their friends to: attend class regularly, study, get good grades, finish high school, and continue their education past high school. Table 3.5 shows that the alpha reliability coefficient for the variable is .828. The alpha reliability coefficient could not be increased by deleting any of the items from the factor. There are approximately 31% missing data for this variable. Missing data are imputed using mean substitution for race and gender. Using a measure similar to the composite derived for this study, Wimberly (2000) finds that peers' educational values is a positive predictor of high aspirations among Black and White students.

Table 3.4. Components of the Factor Composite: Peers' Educational Values

Factor Components	Loadings
Important to friends to get good grades	.673
Important to friends to attend class regularly	.618
Important to friends to continue education past high school	.646
Important to friends to study	.618
Important to friends to finish high school	.529
Alpha reliability coefficient	.828

Source: Analyses of ELS:2002/04
Note: Data are weighted by normalized F1PNLWT panel weight

Economic Measures

Although few studies explore the influence of economic variables on college aspirations, existing research shows that students and parents, particularly those from racial/ethnic minority and low-income backgrounds, are concerned about college costs (Heller, 1994, 1997; Kane, 1994; McPherson & Schapiro, 1989; Paulsen & St. John, 2002; St. John, 1991; St. John & Noell, 1989). The college-choice literature suggests that finances play a vital role in determining students' postsecondary choices (Kane, 1994; Manski &Wise, 1983; Paulsen & St. John, 2002). Hence, it is likely that students formulate their aspirations based on knowledge about college costs, financial aid, and labor market opportunities (Morgan, 1998; St John, 2003). This study's economic indicators are the importance of costs and financial aid and tuition. The measure of both constructs is described below.

Importance of costs and financial aid.

The importance of college costs and financial aid is measured by two variables that parent's report in the base-year questionnaire. This study considers parents' responses because they are measured in the base-year, whereas students' responses to this

question are taken from the first follow-up survey. Using independent variables that are measured at the same time as the dependent variable, which is taken from the first follow-up, may pose challenges related to causality. One question used for this study asks parents to rate the importance of low expenses in choosing a college and the other question asks parents about the importance of financial aid in choosing a college. Each variable is measured on a 3-point scale, ranging from not important to very important. After reviewing the data, these variables were found to be correlated (.524). Therefore, a composite of these two measures is created. The variables are summed, resulting in a new range from zero to four. The variable was then recoded to create the following categories: little importance (8.8%), somewhat important (16.5%), very important (55.7%), and missing (19.1%). Very important is the reference group.

Research confirms that students and families are concerned about college costs (Advisory Committee on Student Financial Assistance, 2002; Freeman, 1997, 1999; Kao & Tienda, 1998; NCES, 2003b; St. John, 2003). Even though few studies test the relationship between concerns about costs and financial aid and educational aspirations, several researchers suggest that these concerns may negatively influence aspirations (Advisory Committee, 2002; Freeman, 1997, 1999; Kao & Tienda, 1998; St. John, 2003).

Average four-year state public tuition.

A second economic measure is the average in-state, four-year public tuition at colleges and universities in the student's home state in 2002. Average four-year public tuition, rather than average two-year public tuition, is used because three-quarters of base-year respondents indicate that they aspire to graduate from a four-year institution

(NCES, 2005). Because tuition is not included in the dataset, these data are obtained from the 2002 *Digest of Education Statistics* and added to the ELS:2002/04 dataset.

Using this measure to assess how costs of attendance influence students' aspirations for college assumes that students and families have enough information about in-state four-year college costs to inform aspirations. Although research shows that students and families often have inaccurate knowledge about college costs (Ikenberry & Hartle, 2000; NCES, 2003b; St. John, 2003; Wimberly & Noeth, 2005), they become more knowledgeable about college costs as they progress through high school (NCES, 2003b). St. John (2003) argues that students' and families' perceptions about college costs, regardless of accuracy, may influence educational aspirations during the high school years.

Early Educational Aspirations

In the assessment of the development of educational aspirations during high school, this study also controls for early educational aspirations. Early educational aspirations are measured by students' response to the question in the base-year survey that asks, "As things stand now, how far in school do you think you will get?" Like the 12th grade counterpart, the questionnaire item offers nine response options, ranging from less than high school graduate to receipt of an advanced degree (e.g., Ph.D., M.D.). Similar to Kao and Tienda's (1998) analysis, the variable used in this study is recoded into three categories: college graduate (37.5%), more than college graduate (38.8%), less than college graduate (14.7%), do not know (9%). Aspirations to be a college graduate is used as the reference group. Students who respond "do not know" (9%) are included in

the descriptive analyses and regression analyses. Including students who are undecided about their postsecondary educational aspirations (i.e.., do not know) in the 10th grade shows the extent to which these student's aspirations changed to at least a bachelor's degree or less than a bachelor's degree by 12th grade. Including early educational aspirations as a control variable shows the extent that students' 10th grade aspirations increase, decrease, or stay the same by the time they reach 12th grade.

Statistical Analyses

Descriptive and logistic regression analyses address the research questions. Descriptive statistics, including chi-square tests and analysis of variance (ANOVA) address the first research question, which describes the characteristics of students who increase, decrease, and maintain educational aspirations between 10th and 12th grades. Descriptive analyses are also used to examine observed differences in patterns of educational aspirations among men and women of each racial/ethnic group. Chi-square tests describe differences in categorical independent variables, including race/ethnicity, gender, high school curricular track, parent's aspirations for student, educational materials in the home, involvement in cultural activities, school resources, school personnel aspirations for the student, importance of college costs and financial aid, and early educational aspirations. One-way ANOVA examines differences in aspirations on the continuous independent variables, including socioeconomic status, mathematics test scores, parental involvement in student's education, student-teacher relations, peers' educational values, and average four-year in-state public tuition. Orthogonal contrasts

further analyze differences in the continuous independent variables according to stability of aspirations (i.e., increase, decrease, maintain) in 10^{th} and 12^{th} grade.

Because the dependent variable is dichotomous, logistic regression is the appropriate multivariate technique to address the second and third research questions. Logistic regression isolates the effects of a given independent variable on the dichotomous dependent variable: aspire to attain at least a bachelor's degree (yes=1, no=0). Logistic regression coefficients show the change in the predicted logged odds of experiencing an event or having characteristics for a one-unit change in the independent variable (Cabrera, 1994; Pampel, 2000). In other words, this method estimates the log-odds of one outcome relative to the baseline category (i.e., do not aspire to attain at least a bachelor's degree). To facilitate the interpretation of the logistic regression coefficients, delta-*p* statistics assess the change in probability of aspiring to attain at least a bachelor's degree that is associated with a one-unit change in the dependent variable (Cabrera, 1994). As recommended by Thomas and Heck (2001), this study uses a more conservative critical alpha values (i.e., $p>.01$) to minimize the potential adverse effects on standard errors that are often associated with complex survey designs.

This study uses five indicators to assess the quality and fit of the statistical models: scaled deviance (i.e., G^2, -2 log likelihood), ratio of scaled deviance to degrees of freedom (G^2/df), block χ^2 statistic, pseudo R^2, and the percentage of cases correctly predicted (Cabrera, 1994). A decrease in the scaled deviance and a ratio of scaled deviance to degrees of freedom below 2.5 indicates an improved model. The percentage of cases correctly predicted reflects how well the model predicts the outcome for the individual cases. A high percentage indicates a more predictive model. Although not

equivalent to R^2 in linear regression, the pseudo R^2 provides an additional measure of goodness-of-fit of the model. The block χ^2 statistic determines whether the independent variables, as a group, are related to the dependent variable.

To address the second research question, the variables are entered into the analyses in four conceptually related models, as summarized in the conceptual model in Figure 3.1.

Model I	Background Characteristics
Model II	Academic Preparation and Achievement
Model III	Cultural Capital, Social Capital, and Economic Measures
Model IV	10^{th} Grade Aspirations (i.e., Early Aspirations)

By entering the variables in these blocks, the analyses illustrate how theoretical and conceptual enhancements to the original status attainment framework improve the model's predictability. The first block includes background characteristics, followed by the second block, which considers academic preparation and achievement. These blocks include variables that are considered in early status attainment research on postsecondary educational aspirations. Although the influence of significant others is a key variable in the traditional status attainment framework, this study examines the influence of significant others (e.g., parents, teachers, school counselors, peers) through the perspectives of cultural and social capital. As such, measures of significant others and other measures of cultural and social capital are entered in the third block. The third block also includes economic measures. The variables entered in the third block represent potential enhancements to the traditional status attainment aspirations models.

The final block analyzes students' aspirations in 10th grade. As a result, the final model illustrates the extent to which early aspirations (i.e., 10th grade) predict later aspirations (i.e., 12th grade).

The logistic regression models test for interactions by race/ethnicity and each independent variable to address the third question. After entering the variables in the fourth block of the model, I enter interactions for each racial/ethnic group and each independent variable into the model one-by-one. All statistically significant interactions are retained in the final block. To facilitate interpretation of logistic regression coefficients, separate logistic regression analyses are conducted for racial/ethnic groups with statistically significant interactions.

Limitations of the Study

This study has at least four limitations. The first limitation involves the use of complex constructs, such as cultural and social capital and econometric measures because precise measurements of these constructs are not available in the ELS:2002/04 dataset. This study uses proxies for social capital that have been tested in prior educational aspirations research using NCES databases (Kao & Tienda, 1998; Qian & Blair, 1999; Wimberly, 2000). However, this study also includes measures of cultural capital and social capital, including involvement in cultural activities and school resources that are not typically examined in aspirations research. I incorporate these measures because researchers who examine the aspirations of racial/ethnic minorities and low-income students suggest that these variables are suitable indicators of cultural capital and social capital for these groups (McDonough, 1997; Stanton-Salazar, 1997; Wimberly, 2000).

Second, ELS:2002 also does not provide precise measures for economic indicators. Since economic measures are not commonly used in aspirations research, it is more difficult to identify suitable proxies. The measures used in this study are based on recommendations of researchers who suggest that aspirations are influenced by perceptions of college costs and availability of financial aid as well as actual tuition (Freeman, 1997; Hauser & Anderson, 1991; Morgan, 1998; St. John, 2003). In addition, ELS:2002/04 does not identify a suitable measurement of labor market earnings, so I will not be able to examine the influence of perceptions of future earnings on educational aspirations.

A third limitation involves the techniques used to minimize the adverse effects of missing data. After conducting a missing data analysis, I determined that the data in the analytic sample were not missing at random and are missing in considerable amounts for some variables (see Appendix A for missing data analysis). I then considered strategies for handling missing data, such as listwise deletion, pairwise deletion, and imputation (Allison, 2002; Cohen & Cohen, 1983). Listwise deletion, which omits cases that do not have data on all variables, reduced the number of cases by 59.6%, resulting in an analytic sample of 5,058. Pairwise deletion, which only omits cases for the variable used in a particular calculation, is inappropriate because the data are not missing at random (Cohen & Cohen, 1983).

To minimize adverse effects of missing data and to retain the sample size, this study addresses missing data through two strategies—adding dummy variables to indicate "missing" for categorical variables and using mean substitution for continuous variables. As Table 3.5 shows, nine variables have missing data—educational materials in the home

(12%), involvement in cultural activities (6%), parental involvement with student's education (17.1%), parental involvement with student's school (18.4%), school resources (9.5%), school personnel aspirations (20.5%), student-teacher relations (8.3%), peers' educational values (31.1%), and importance of costs and aid (19.1%). For the seven categorical variables with missing data (i.e., educational materials in the home, involvement in cultural activities, involvement in student's school, school resources, school personnel aspirations, and importance of costs and aid), I add a dummy variable to indicate that data are missing (Cohen & Cohen, 1983).

Table 3.5. Number and Percentage of Cases that are Missing for Each of the Variables in the Analyses for 12th Grade Students

Variable	Number Complete	Number Missing	Percent Missing
Number of cases with all variables	5,058	7,472	59.6
Race	12,530	0	0
Gender	12,530	0	0
Socioeconomic Status Quartiles	12,530	0	0
High School Program	12,530	0	0
Mathematics Test Quartile Score	12,530	0	0
Parent's Aspirations	12,530	0	0
Educational Materials in the Home	11,023	1,507	12.0
Involvement in Cultural Activities	11,742	787	6.3
Parental Involvement with Student's Education	10,384	2,146	17.1
Parental Involvement with Student's School	10,221	2,309	18.4
School Resources	11,330	1,195	9.5
School Personnel Aspirations	9,961	2,569	20.5
Student-Teacher Relations	11,483	1,055	8.3
Peers' Educational Values	8,639	3,891	31.1
Importance of Costs and Aid	10,139	2,391	19.1
Average Public Four-Year Tuition	12530	0	0
10th Grade Aspirations	12,530	0	0
12th Grade Aspirations	12,530	0	0

Source: Analyses of ELS:2002/04
Note: Data are weighted by normalized F1PNLWT panel weight

For three continuous variables (i.e., parental involvement with student's education, peers' educational values, and student-teacher relations), I impute missing values. Imputation is based on the average value for students of the same race/ethnicity and gender. I was unable to impute on socioeconomic status because the low cell sizes (e.g., n=<75) in some categories were too small to produce reliable results.

While both of the methods used to address missing data maintain the sample size and are recommended by researchers (Cohen & Cohen, 1983), they are not perfect. For example, imputations may result in an underestimation of standard errors and, consequently, may cause the coefficients for imputed variables to produce false statistical significance (Cohen & Cohen, 1983). In data analysis and interpretation, I will remain cognizant of the techniques used to compensate for missing data and the implications to the study's findings.

A final limitation concerns the examination of racial/ethnic groups in this study. This study examines the aspirations of Asian, Black, Latino/a, Multiracial, and White students. Native Americans/American Indians are excluded because they represent only 1% of the sample, too small a number for reliable analyses. In addition, Native Hawaiian/Other Pacific Islander students, who also represent less than 1% of the total sample, are not analyzed as a separate racial/ethnic group. Instead, this study counts these students as Asians, which NCES recognizes as an appropriate racial categorization (NCES, 2004). ELS:2002/04 provides information on Asian and Latino/a subgroups, which potentially allow for within-group comparisons. However, this study does not disaggregate the race/ethnicity data into subgroups because of the small numbers. As a result, this study does not assess within-group differences.

Despite these limitations, this study is worth pursuing, as it builds on prior research in important ways. The research design is likely to illustrate the variables that influence the development of students' postsecondary educational aspirations between 10^{th} and 12^{th} grades. In addition, these findings address several gaps in the existing aspirations research. As a result, the study's conclusions will likely offer important implications for policy, practice, and research.

CHAPTER 4

RESULTS

Introduction

Descriptive and logistic regression analyses are used to address the research questions. Specifically, descriptive techniques address the first research question, which describes the characteristics of students who increase, decrease, and maintain postsecondary educational aspirations between 10^{th} and 12^{th} grades. Descriptive analyses are also used to examine observed differences in patterns of educational aspirations among men and women of each racial/ethnic group. By using descriptive methods that are similar to those used by Kao and Tienda (1998) in their examination of National Educational Longitudinal Study of 1988 (NELS:88) data, this study provides an updated examination of the stability of educational aspirations by race/ethnicity and gender.

Because the dependent variable is dichotomous, logistic regression is used to answer the second and third research questions. Logistic regression isolates the effects of each independent variable on the dichotomous dependent variable: aspire to attain at least a bachelor's degree (yes=1, no=0). To address the third research question, the logistic regression models test for interactions by race/ethnicity and each independent variable. After entering the variables in the fourth block of the model, I enter interactions for each racial/ethnic group and each independent variable into the model one-by-one. To facilitate the interpretation of logistic regression coefficients, separate logistic regression analyses are conducted for the racial/ethnic groups with statistically significant interactions. This chapter presents the research findings for each of the three research questions.

Research Question One: Characteristics of Students by Stability of Aspirations

The first research question analyzes the characteristics of students who increased, decreased, and maintained postsecondary educational aspirations between the 10th and 12th grades. Additionally, this research question explores the extent that male and female students of differing racial/ethnic groups increased, decreased, and maintained postsecondary educational aspirations. As Table 4.1 shows, three-quarters of 10th grade students aspired to attain at least a bachelor's degree, with 38% expecting to attain a bachelor's degree and 39% expecting to attain a graduate/professional degree. Smaller percentages of students aspired to less postsecondary education. Approximately 9% of 10th grade students expected to attain some postsecondary education and about 6% of students aspired to a high school diploma/equivalency or less. Tenth graders who were undecided (i.e., do not know) about their postsecondary educational aspirations account for 9% of the sample.

Stability of Postsecondary Educational Aspirations

Table 4.1 also reports the distribution of students by 12th grade postsecondary educational aspirations. While the percentage of students who aspired to attain at least a bachelor's degree in 12th grade decreased by seven percentage points between 10th and 12th grades (from 76% to 69%), higher percentages of students aspired to some college when enrolled in 12th grade (17.8%) compared to when enrolled in 10th grade (8.9%). The share of students who aspired to a high school diploma/equivalency or less decreased by one percentage point, from 5.8% to 4.8%, between 10th and 12th grades. Twelfth

graders who were undecided (i.e., do not know) about their postsecondary educational aspirations comprise 8.2% of the sample.

Table 4.1. Percent Distribution of 10th and 12th Grade Students by Postsecondary Educational Aspirations

Level of Aspirations	10th Grade Aspirations	12th Grade Aspirations
Total	100.0	100.0
Do not know	9.0	8.2
High school or less	5.8	4.8
Some college	8.9	17.8
Bachelor's degree	37.5	34.0
Graduate school	38.8	35.2

Source: Analyses of ELS:2002/04
Note: Data are weighted by normalized F1PNLWT panel weight

Table 4.2 shows the percentage distribution of students who increased, decreased, and maintained educational aspirations between 10th and 12th grades. Students who aspire to at least a bachelor's degree include those who expect to attain a bachelor's degree or graduate degree, whereas, students who aspire to less than a bachelor's degree include those who aspire to some college, a high school diploma, general equivalency diploma (GED), as well as those who do not plan to graduate from high school. Table 4.2 shows that, in 10th grade, slightly more than half (53.7%) of students who aspired to at least a bachelor's degree maintained these high aspirations by the time they reached 12th grade. One-third of students who aspired to at least a bachelor's degree in 10th grade decreased their postsecondary educational expectations and 12% of students increased their 10th grade aspirations. Students who increased 12th grade aspirations (12%) from at least a bachelor's degree represent students who aspired to a bachelor's degree in 10th grade, but aspire to a graduate degree in 12th grade. Approximately 38% of students who aspired to less than a bachelor's degree in the 10th grade maintained aspirations for less

than a bachelor's degree, while 43% increased and 20% decreased educational aspirations. Students who decreased aspirations from less than a bachelor's degree represent those who indicated in 10th grade aspirations for some college, but reported in the 12th grade that they expect to attain either a high school diploma/equivalency or less education. By the 12th grade, over three-quarters (77%) of students who were undecided in 10th grade developed postsecondary educational plans.

Table 4.2. Percent Distribution of Students who Increase, Decrease, or Maintain Educational Aspirations between 10th and 12th Grades

		10th grade Aspirations		
	Total	At Least a BA	Less than a BA	Undecided
Percent Distribution	100.0	76.3	14.7	9.0
		Change in Aspirations between 10th and 12th Grade		
Total		100.0	100.0	100.0
Decrease		34.1	19.6	
Maintain		53.7	37.9	22.7
Increase		12.2	42.5	77.3

Source: Analyses of ELS:2002/04
Note: Data are weighted by normalized F1PNLWT panel weight

Characteristics of Students According to Stability of Aspirations

Tables 4.3 through 4.5 analyze the characteristics of students who increased, decreased, and maintained postsecondary educational aspirations between the 10th and 12th grades. The two latter tables examine the characteristics of students according to the level of 10th grade educational aspirations—aspire to at least a bachelor's degree (Table 4.4) and aspire to less than a bachelor's degree (Table 4.5). Table 4.3 illustrates the characteristics of students by the stability of their educational aspirations, regardless of the 10th grade level. Table 4.3 shows significant differences in all student characteristics examined, except four-year college tuition, by stability of postsecondary educational

aspirations. For five variables (socioeconomic status, mathematics test score, parental involvement with the student's education, school resources, and student-teacher relations), average levels are comparable for students who decreased and increased their educational aspirations.

In terms of background characteristics, Table 4.3 shows that the stability of students' 10th grade aspirations varies based on race/ethnicity, gender, and socioeconomic status. In comparison to the other racial/ethnic groups, higher percentages of Asian students maintained (54.9%) aspirations. Higher percentages of Blacks (27.0%) and Latinos/as (26.2%), than other groups, increased their aspirations. Higher percentages of Multiracial students (38.6%) and Latino/a students (34.2%), than others, decreased aspirations between 10th and 12th grades. Smaller percentages of Latino/a students (39.6%) than of Asian (54.9%), Black (43.9%), Multiracial (45.4%), and White (51.3%) students maintained aspirations. Although the differences among groups (i.e., increase, decrease, maintain) were statistically significant for gender, the proportions of men and women in each group were not substantively different. Students who maintained postsecondary aspirations had higher socioeconomic status (0.174) than students who decreased (-0.201) and increased (-0.119) their educational aspirations.

Table 4.3 shows that higher percentages of students enrolled in vocational and general courses (35.3% and 31.3%, respectively) than of college preparatory courses enrollees (26.1%) decreased aspirations. Students who maintained educational aspirations averaged higher mathematics test scores (0.209) than students who decreased (-0.217) and increased (-0.172) their educational aspirations.

Table 4.3. Characteristics of Students who Increase, Decrease, and Maintain Educational Aspirations between 10th and 12th Grades (adjusted weighted *n*=12,530)

Student Characteristics	Decrease	Maintain	Increase	Total
Race***				
Asian	22.5	54.9	22.7	100.0
Black	29.1	43.9	27.0	100.0
Latino/a	34.2	39.6	26.2	100.0
Multiracial	38.6	45.4	16.1	100.0
White	27.5	51.3	21.1	100.0
Gender***	29.6	46.9	23.5	100.0
Male	28.2	50.3	21.4	100.0
Female				
Socioeconomic Status*** [a, c]				
Mean	-0.201	0.174	-0.119	0.000
Standard Deviation	0.923	1.019	0.988	1.000
High School Curricular Program***				
Vocational	35.3	39.4	25.3	100.0
General	31.3	42.4	26.3	100.0
College preparatory	26.1	54.4	19.4	100.0
Mathematics Test Score*** [a, c]				
Mean	-0.217	0.209	-0.172	0.000
Standard Deviation	0.967	0.970	1.013	1.000
Parent's Aspirations***				
Attain less than a 4-year degree	33.1	34.8	32.1	100.0
Attain at least a 4-year degree	28.4	50.4	21.2	100.0
Educational Materials in Home***				
One or fewer items	31.3	40.2	28.5	100.0
Any two items	30.0	48.2	21.9	100.0
All three items	26.8	52.5	20.7	100.0
Missing	32.5	41.9	25.5	100.0
Involvement in Cultural Activities***				
Never or less than once a week	29.3	47.9	22.8	100.0
At least once a week	26.5	52.6	21.0	100.0
Missing	32.5	44.5	23.0	100.0
Parent Involve w/Student's Ed.*** [a, c]				
Mean	-0.060	0.055	-0.043	0.000
Standard deviation	1.013	1.000	0.975	1.000
Parent Involve w/Student's School***				
No contact	29.4	49.1	21.5	100.0
Contacted once	27.4	49.9	22.6	100.0
Contacted more than once	26.1	51.6	22.4	100.0
Missing	30.6	44.2	25.2	100.0

Table 4.3. Characteristics of Students who Increase, Decrease, and Maintain Educational Aspirations between 10th and 12th Grades (adjusted weighted *n*=12,530) continued

Student Characteristics	Decrease	Maintain	Increase	Total
School Resources** [a]				
Mean	0.051	-0.022	-0.018	0.000
Standard Deviation	0.994	0.980	1.046	1.000
School Personnel Aspirations***				
Neither teacher/counselor wish for college	28.8	45.4	25.7	100.0
Either teacher/counselor wish for college	25.2	49.7	25.2	100.0
Teacher and counselor wish for college	27.7	52.8	19.6	100.0
Missing	32.7	43.1	24.2	100.0
Student-Teacher Relations*** [a, c]				
Mean	-0.029	0.069	-0.112	0.000
Standard deviation	0.996	0.979	1.039	1.000
Peers' Educational Values*** [a, b, c]				
Mean	-0.019	0.074	-0.137	0.000
Standard deviation	0.978	0.964	1.085	1.000
Importance of Costs and Aid***				
Little importance	20.9	59.0	20.1	100.0
Somewhat important	26.7	52.4	20.9	100.0
Very important	30.3	47.7	21.9	100.0
Missing	30.3	43.2	26.5	100.0
Average Four-Year Public Tuition				
Mean	0.004	-0.009	0.015	0.000
Standard deviation	1.009	-0.991	1.007	1.000

Source: Analyses of ELS:2002/04
Notes: For all categorical variables with missing data, a dummy variable, labeled "missing" is added to retain sample size.
***$p<.001$, **$p<.01$
[a] Denotes significance in comparison of Column 1 (Decrease) and Column 2 (Maintain), $p<.001$
[b] Denotes significance in comparison of Column 1 (Decrease) and Column 3 (Increase), $p<.001$
[c] Denotes significance in comparison of Column 2 (Maintain) and Column 3 (Increase), $p<.001$
Data are weighted by normalized F1PNLWT panel weight

With regard to cultural capital, there are statistically significant differences in the stability of educational aspirations on the following measures: parent's aspirations for student, educational materials in the home, and involvement in cultural activities. Table 4.3 shows that ½ of students whose parents expected them to attain at least a bachelor's degree maintained aspirations, compared with only one-third of students whose parents

expected them to attain less than a bachelor's degree. In terms of educational materials in the home, higher percentages of students with all three items (i.e., daily newspaper, computer, more than 50 books, 52.5%) than of students with one or fewer items (40%) maintained educational aspirations between 10th and 12th grades. Higher percentages of students who participated in cultural activities at least once a week maintained aspirations than of students who participated in these activities less than once a week (52.6% versus 47.9%).

Table 4.3 also reveals significant differences in the stability of educational aspirations for all measures of social capital— parental involvement with student's education, parental involvement with student's school, school resources, school personnel aspirations, student-teacher relations, and peers' educational values. Students who decreased (-0.060) or increased aspirations (-0.043) between 10th and 12th grades averaged lower levels of parental involvement than students who maintained (0.055) aspirations. In terms of parental involvement with the student's school, 52% of those whose parents had contact with the school more than once maintained aspirations between 10th and 12th grades, compared with 44% of those students with missing data. Table 4.3 also shows that, on average, students who maintained their aspirations attended schools with lower levels of free and reduced lunch than students who decreased their aspirations (-0.022 versus 0.051). The share of students who maintained aspirations was higher among students for whom both the teacher and school counselor expected college attendance (52.8%) than among students for whom neither expected college attendance (45%). Average student-teacher relations were higher for students who maintained aspirations (0.069) than for students who decreased (-0.029) and increased aspirations (-

0.112). In terms of peers' educational values, the standardized average is higher for students who maintained aspirations (0.074) than for students who decreased (-0.019) and increased aspirations (-0.137) between 10th and 12th grades.

With regard to economic indicators, Table 4.3 reveals that higher percentages of students whose parents indicated that college costs and financial aid were of little importance maintained aspirations (59.0%) compared to students in the other three categories—somewhat important (52.4%), very important (47.7%), and missing (43.2%). Thirty percent of students whose parents indicated that college costs and financial aid were very important or who had missing data on this variable decreased aspirations, compared to 21% of students whose parents indicated costs and aid were of little importance. The data show no statistically significant differences between groups on the four-year college tuition variable.

Students who aspire to at least a bachelor's degree in 10th grade.

Table 4.4 explores the characteristics of students who increased, decreased, and maintained aspirations for at least a bachelor's degree between 10th and 12th grades. Table 4.4 shows statistically significant differences in the stability of postsecondary educational aspirations between 10th and 12th grades for all characteristics examined, except four-year college tuition.

In terms of background characteristics, a comparison across racial/ethnic groups shows higher percentages of Asians (61.4%) than of others maintained aspirations for at least a bachelor's degree. Higher percentages of Blacks (16.1%) than others increased aspirations. Higher percentages of Latino/a and Multiracial students than others

decreased aspirations (43.7% and 43%, respectively). Although the differences among groups (i.e., increase, decrease, maintain) were statistically significant for gender, the proportions of men and women in each group were not substantively different. Average socioeconomic status is higher for students who maintained (0.297) and increased (0.227) aspirations than for students who decreased (-0.170) aspirations.

With regard to academic preparation, a higher percentage of students enrolled in vocational courses (50.6%) than in general (40.8%) and college preparatory (28.8%) courses decreased aspirations for at least a bachelor's degree between 10th and 12th grades. Table 4.4 also shows that students who maintained (0.363) and increased (0.221) aspirations averaged higher levels of mathematics achievement than students who decreased (-0.141) aspirations.

Table 4.4. Characteristics of Students who Aspired to at Least a Bachelor's Degree in 10th Grade who Increased, Decreased, and Maintained Educational Aspirations by 12th Grade (adjusted weighted *n*=9,564)

Student Characteristics	Decrease	Maintain	Increase	Total
Race***				
Asian	25.6	61.4	13.0	100.0
Black	34.8	49.1	16.1	100.0
Latino/a	43.7	44.9	11.4	100.0
Multiracial	43.0	46.3	10.7	100.0
White	32.1	56.3	11.6	100.0
Gender***	36.2	52.1	11.7	100.0
Male	32.3	55.1	12.6	100.0
Female				
Socioeconomic Status*** [a, b]				
Mean	-0.170	0.297	0.227	0.129
Standard Deviation	0.922	1.001	0.981	0.999
High School Curricular Program***				
Vocational	50.6	38.0	11.4	100.0
General	40.8	47.6	11.6	100.0
College preparatory	28.8	58.7	12.5	100.0
Mathematics Test Score*** [a, b, c]				
Mean	-0.141	0.363	0.220	0.174
Standard Deviation	0.941	0.903	0.902	0.944

Table 4.4. Characteristics of Students who Aspired to at Least a Bachelor's Degree in 10th Grade who Increased, Decreased, and Maintained Educational Aspirations by 12th Grade continued (adjusted weighted *n*=9,564)

Student Characteristics	Decrease	Maintain	Increase	Total
Parent's Aspirations***				
Attain less than a 4-year degree	61.5	30.3	8.2	100.0
Attain at least a 4-year degree	32.5	55.1	12.4	100.0
Educational Materials in Home***				
One or fewer items	44.3	42.2	13.6	100.0
Any two items	35.4	53.3	11.4	100.0
All three items	30.1	57.1	12.8	100.0
Missing	42.2	48.0	9.7	100.0
Involvement in Cultural Activities***				
Never or less than once a week	35.3	52.9	11.8	100.0
At least once a week	29.2	57.9	12.9	100.0
Missing	38.1	48.6	13.2	100.0
Parent Involve w/Student's Ed.*** [a, b]				
Mean	-0.033	0.104	0.105	0.057
Standard deviation	1.010	0.995	0.992	1.002
Parent Involve w/Student's School***				
No contact	34.7	53.8	11.4	100.0
Contacted once	31.2	55.2	13.7	100.0
Contacted more than once	29.8	56.9	13.3	100.0
Missing	38.0	49.7	12.4	100.0
School Resources*** [a, b]				
Mean	0.041	-0.048	-0.125	-0.027
Standard deviation	0.996	0.974	1.046	0.992
School Personnel Aspirations***				
Neither teacher/counselor wish for college	37.1	51.3	11.6	100.0
Either teacher/counselor wish for college	30.1	56.7	13.2	100.0
Teacher and counselor wish for college	30.4	56.9	12.7	100.0
Missing	42.0	46.8	11.2	100.0
Student-Teacher Relations*** [a]				
Mean	-0.014	0.123	0.074	0.070
Standard deviation	0.988	0.937	0.932	0.956
Peers' Educational Values*** [a, b]				
Mean	0.024	0.152	0.172	0.111
Standard deviation	0.960	0.925	0.927	0.939

Table 4.4. Characteristics of Students who Aspired to at Least a Bachelor's Degree in 10th Grade who Increased, Decreased, and Maintained Educational Aspirations by 12th Grade continued (adjusted weighted *n*=9,564)

Student Characteristics	Decrease	Maintain	Increase	Total
Importance of Costs and Aid***				
Little importance	22.3	64.7	13.0	100.0
Somewhat important	30.5	56.0	13.5	100.0
Very important	36.0	52.5	11.5	100.0
Missing	38.7	49.0	12.3	100.0
Average Four-Year College Public Tuition				
Mean	-0.001	-0.004	0.057	0.000
Standard deviation	1.005	0.998	1.034	1.000

Source: Analyses of ELS:2002/04
Notes: For all categorical variables with missing data, a dummy variable, labeled "missing" is added to retain sample size.
****p*<.001
[a] Denotes significance in comparison of Column 1 (Decrease) and Column 2 (Maintain, *p*<.001
[b] Denotes significance in comparison of Column 1 (Decrease) and Column 3 (Increase), *p*<.001
[c] Denotes significance in comparison of Column 2 (Maintain) and Column 3 (Increase), *p*<.001
Data are weighted by normalized F1PNLWT panel weight

Table 4.4 shows statistically significant differences among students who increased, decreased, and maintained postsecondary educational aspirations on all three measures of cultural capital—parent's aspirations for student, educational materials in the home, and involvement in cultural activities. Over ½ of students whose parents expected them to attain at least a bachelor's degree maintained aspirations, compared with only 30% of students whose parents expected them to attain less than a bachelor's degree. In terms of educational materials in the home, a higher proportion of students who had one or fewer items in their homes (44.3%) than of students who had all three items (30.1%) decreased aspirations. Table 4.4 also shows that a higher percentage of students with all three items than of students with one or fewer items maintained aspirations (57.1% versus 42.2%). Slightly more than one-third of students who rarely or never participated in

cultural activities, but only 29% of those who participated at least once a week, decreased aspirations.

Table 4.4 also reveals significant differences among measures of social capital by stability of postsecondary educational aspirations. Students who maintained and increased aspirations for at least a bachelor's degree between 10th and 12th grades had higher levels of parental involvement in student's education than students who decreased (0.104 and 0.105 versus -0.033) aspirations. Higher percentages of students whose parent had no contact with the school than of those whose parent contacted the school more than once decreased aspirations (34.7% versus 29.8%) for at least a bachelor's degree. In terms of school resources, students who decreased their aspirations attended schools with higher average levels of free and reduced lunch participation than students who maintained or increased their aspirations (0.412 versus -0.048 and -0.125, respectively). A higher percentage of students whose teacher and school counselor both expected them to attend college maintained aspirations than of students who had missing data on the school personnel variable (56.9% versus 46.8%). Forty-two percent of students with missing data for the school personnel aspirations measure decreased aspirations between 10th and 12th grades, compared with less than one-third of those students whose teacher and counselor both wanted college for them. Average student-teacher relations were higher for students who maintained (0.123) aspirations than for students who decreased (-0.014) and increased (0.074) aspirations between 10th and 12th grades. Average peers' educational values were higher for students who increased (0.172) and maintained (0.152) aspirations than for those who decreased (0.024) aspirations.

In terms of economic indicators, Table 4.4 reveals that a higher percentage of students whose parents indicated that college costs and financial aid were of little importance than of students who reported that college costs and aid were somewhat or very important maintained aspirations (64.7% versus 56% and 52.5%, respectively). Over one-third (36%) of students who indicated that college costs and financial aid were very important decreased their postsecondary educational aspirations compared with only 22% of those who indicated costs and aid were of little importance. No significant differences exist among students who increase, decrease, and maintain aspirations on the four-year college tuition variable.

Students who aspire to less than a bachelor's degree in 10th grade.

Table 4.5 compares the characteristics of students who aspired to less than a bachelor's degree in 10th grade according to the stability of aspirations by 12th grade (i.e., increased, decreased, or maintained). With regard to background characteristics, Table 4.5 shows significant differences in the stability of aspirations by race/ethnicity. When comparing across racial/ethnic groups, higher percentages of White (43%) and Multiracial (43.1%) students than of Asian, Black, and Latino/a students maintained aspirations (29.4%, 29.7%, and 27.8%, respectively) for less than a bachelor's degree. Higher percentages of Asian, Black, and Latino students than of Multiracial and White students increased aspirations beyond less than a bachelor's degree by 12th grade (55%, 52%, and 50% versus 28% and 38%, respectively). No significant differences exist in the stability of postsecondary educational aspirations by gender or socioeconomic status.

Regardless of whether students increased, decreased, or maintained aspirations, average socioeconomic status is below the average for all 2002 10th graders.

In terms of academic preparation, higher percentages of students enrolled in college preparatory courses than of students enrolled in vocational and general courses increased aspirations beyond less than a bachelor's degree by 12th grade (53.9% versus 32.2% and 41.1%, respectively). Table 4.5 also shows that, for students who aspired to less than a bachelor's degree in 10th grade, average mathematics achievement scores fall below the mean for all 10th graders. However, average mathematics achievement was lower for 10th graders who aspired to less than a bachelor's degree and decreased educational aspirations by 12th grade (-0.906) than for students who maintained (-0.659) or increased (-0.687) aspirations.

In terms of cultural capital variables, stability of postsecondary educational aspirations varies by parental aspirations. A higher percentage of students whose parents expected them to attain at least a bachelor's degree increased aspirations than of students whose parents expected them to attain less postsecondary education (47.0% versus 35%). No significant differences are observed between groups on the other two measures of cultural capital—educational materials in the home and involvement in cultural activities.

Table 4.5. Characteristics of Students who Aspired to Less Than a Bachelor's Degree in 10th Grade who Increased, Decreased, and Maintained Educational Aspirations by 12th Grade (adjusted weighted *n*=1,841)

Student Characteristics	Decrease	Maintain	Increase	Total
Race***				
Asian	15.7	29.4	54.9	100.0
Black	17.8	29.7	52.4	100.0
Latino/a	21.9	27.8	50.3	100.0
Multiracial	29.2	43.1	27.7	100.0
White	18.9	43.0	38.1	100.0
Gender				
Male	20.0	39.9	40.0	100.0
Female	18.8	34.8	46.4	100.0

Table 4.5. Characteristics of Students who Aspired to Less Than a Bachelor's Degree in 10th Grade who Increased, Decreased, and Maintained Educational Aspirations by 12th Grade continued (adjusted weighted *n*=1,841)

Student Characteristics	Decrease	Maintain	Increase	Total
Socioeconomic Status				
Mean	-0.474	-0.499	-0.472	-0.483
Standard Deviation	0.889	0.799	0.852	0.839
High School Curricular Program***				
Vocational	21.5	46.3	32.2	100.0
General	20.7	38.2	41.1	100.0
College preparatory	15.6	30.5	53.9	100.0
Mathematics Test Score*** [a, c]				
Mean	-0.906	-0.659	-0.687	-0.719
Standard Deviation	0.927	0.865	0.904	0.898
Parent's Aspirations***				
Attain less than a 4-year degree	22.1	43.2	34.6	100.0
Attain at least a 4-year degree	18.1	34.9	47.0	100.0
Educational Materials in Home				
One or fewer items	16.3	42.4	41.3	100.0
Any two items	19.2	36.2	44.6	100.0
All three items	20.5	40.7	38.8	100.0
Missing	21.9	31.7	46.4	100.0
Involvement in Cultural Activities				
Never or less than once a week	19.1	39.4	41.5	100.0
At least once a week	20.7	31.3	48.0	100.0
Missing	22.1	33.6	44.3	100.0
Parent Involve w/Student's Ed.*** [b, c]				
Mean	-0.302	-0.214	-0.080	0.000
Standard deviation	1.013	0.997	0.900	0.964
Parent Involve w/Student's School				
No contact	19.2	40.9	39.9	100.0
Contacted once	19.1	32.2	48.7	100.0
Contacted more than once	18.8	37.6	43.7	100.0
Missing	21.3	33.3	45.4	100.0
School Resources				
Mean	0.139	0.104	0.086	0.103
Standard deviation	0.978	1.014	1.084	1.037
School Personnel Aspirations				
Neither teacher/counselor wish for college	21.0	41.6	37.3	100.0
Either teacher/counselor wish for college	15.1	32.9	52.1	100.0
Teacher and counselor wish for college	18.6	34.0	47.4	100.0
Missing	19.1	37.9	43.0	100.0

Table 4.5. Characteristics of Students who Aspired to Less Than a Bachelor's Degree in 10th Grade who Increased, Decreased, and Maintained Educational Aspirations by 12th Grade continued (adjusted weighted *n*=1,841)

Student Characteristics	Decrease	Maintain	Increase	Total
Student-Teacher Relations				
Mean	-0.169	-0.216	-0.260	-0.226
Standard deviation	1.060	1.116	1.087	1.093
Peers' Educational Values				
Mean	-0.405	-0.361	-0.387	-0.381
Standard deviation	1.049	1.032	1.178	1.099
Importance of Costs and Aid				
Little importance	23.2	39.4	37.4	100.0
Somewhat important	15.3	46.4	38.3	100.0
Very important	18.4	37.6	44.0	100.0
Missing	22.7	35.0	42.3	100.0
Average Four-Year Public Tuition				
Mean	0.048	-0.071	-0.011	0.000
Standard deviation	1.044	0.918	0.993	1.000

Source: Analyses of ELS:2002/04
Note: For all categorical variables with missing data, a dummy variable, labeled "missing" is added to retain sample size.
****p*<.001
[a] Denotes significance in comparison of Column 1 (Decrease) and Column 2 (Maintain, *p*<.001
[b] Denotes significance in comparison of Column 1 (Decrease) and Column 3 (Increase), *p*<.001
[c] Denotes significance in comparison of Column 2 (Maintain) and Column 3 (Increase), *p*<.001
Data are weighted by normalized F1PNLWT panel weight

Table 4.5 shows that two of the variables measuring social capital—parental involvement with the student's education and school resources—vary by stability of postsecondary educational aspirations. Average parental involvement in the student's education is lower for students who decreased (-0.302) and maintained (-0.214) aspirations than for students who increased (-0.080) aspirations between 10th and 12th grades. No statistically significant differences exist for the other social capital and economic measures (i.e., parental involvement with student's school, school resources, school personnel aspirations, student-teacher relations, peers' educational values, importance of costs and aid, and public four-year college tuition).

Stability of aspirations by race/ethnicity and gender.

Table 4.6 shows the percentages of students who increased, decreased, and maintained aspirations between 10th and 12th grade vary by race/ethnicity and gender. The percentages in the table represent the percent distribution of students' later aspirations (12th grade) by students' earlier aspirations (10th grade). The table rows indicate students' 10th grade educational aspirations. The columns on these tables show students' 12th grade aspirations. The bolded diagonals of each 4 x 4 table represent the percentage of students who maintained their aspirations between 10th and 12th grades. The grey shaded areas to the right of the bolded numbers indicate the percentages of students who increased their postsecondary educational aspirations for each category between 10th and 12th grades. The white un-shaded areas to the left of the bolded numbers indicate the percentages of students who decreased their postsecondary educational aspirations between 10th and 12th grades.

Table 4.6 shows that higher percentages of Asians than of other racial/ethnic groups maintained aspirations for graduate degrees between 10th and 12th grades, regardless of gender. Nearly 65% of Asian men maintained aspirations for graduate degrees compared to about 58% of White men, 57% of Black men, 52% of Multiracial men, and 41% of Latino men. Similarly, a higher percentage of Asian women (73.9%) maintained aspirations for a graduate degree between 10th and 12th grades than of White women (64.3%), Latinas (61.0%), Black women (60.3%), and Multiracial women (41.2%).

Table 4.6. Percentage Distribution of Students who Increased, Decreased, and Maintained Postsecondary Educational Aspirations between 10th and 12th Grades by Race/Ethnicity and Gender

	12th Grade Aspirations				
10th grade aspirations	**Do not know**	**Less than BA**	**4-year Degree**	**Grad Degree**	**Total**
Asian men					
Do not know	**20.8**	33.3	25.0	20.8	100.0
Less than BA	12.9	**51.6**	16.1	19.4	100.0
4-year degree	5.1	13.3	**55.1**	26.5	100.0
Grad. Degree	4.3	8.6	22.4	**64.7**	100.0
Asian women					
Do not know	**15.0**	20.0	35.0	30.0	100.0
Less than BA	10.5	**42.1**	36.8	10.5	100.0
4-year degree	6.2	12.3	**45.7**	35.8	100.0
Grad. Degree	3.0	1.5	21.6	**73.9**	100.0
Black men					
Do not know	**22.7**	31.8	34.8	10.6	100.0
Less than BA	6.9	**53.5**	29.6	10.1	100.0
4-year degree	9.6	24.2	**41.1**	25.1	100.0
Grad. Degree	3.2	14.0	25.8	**57.0**	100.0
Black women					
Do not know	**26.9**	32.8	19.4	20.9	100.0
Less than BA	17.4	**43.1**	32.1	7.3	100.0
4-year degree	7.9	15.5	**39.3**	37.2	100.0
Grad. Degree	5.8	9.9	24.0	**60.3**	100.0
Latino men					
Do not know	**25.5**	41.8	17.3	15.5	100.0
Less than BA	18.3	**52.9**	20.4	8.4	100.0
4-year degree	12.3	30.5	**39.1**	18.2	100.0
Grad. Degree	12.3	18.5	28.0	**41.2**	100.0
Latino women					
Do not know	**31.7**	28.8	23.1	16.3	100.0
Less than BA	15.4	**46.2**	26.6	11.9	100.0
4-year degree	10.1	30.2	**36.4**	23.4	100.0
Grad. Degree	4.5	11.0	23.5	**61.0**	100.0
Multiracial men					
Do not know	**44.4**	16.7	11.1	27.8	100.0
Less than BA	14.6	**73.2**	7.3	4.9	100.0
4-year degree	4.3	26.1	**44.6**	25.0	100.0
Grad. Degree	3.1	8.2	36.7	**52.0**	100.0

Table 4.6. Percentage Distribution of Students who Increased, Decreased, and Maintained Postsecondary Educational Aspirations between 10th and 12th Grades by Race/Ethnicity and Gender (continued)

	12th Grade Aspirations				
	Do not know	**Less than BA**	**4-year Degree**	**Grad Degree**	**Total**
10th grade aspirations					
Multiracial women					
Do not know	**30.8**	53.8	0.0	15.4	100.0
Less than BA	32.0	**36.0**	24.0	8.0	100.0
4-year degree	10.6	20.2	**47.9**	21.3	100.0
Grad. Degree	11.0	6.8	40.7	**41.5**	100.0
White men					
Do not know	**21.1**	37.3	28.9	12.7	100.0
Less than BA	12.8	**66.7**	16.3	4.2	100.0
4-year degree	7.2	19.6	**52.7**	20.5	100.0
Grad. Degree	3.3	7.9	31.3	**57.5**	100.0
White women					
Do not know	**19.1**	33.1	28.0	19.8	100.0
Less than BA	12.1	**55.7**	21.5	10.6	100.0
4-year degree	4.8	18.9	**48.4**	28.0	100.0
Grad. Degree	2.7	6.1	26.9	**64.3**	100.0

Source: Analyses of ELS:2002/04

Notes: Bolded numbers indicate the percentage of students who maintained postsecondary educational aspirations between 10th and 12th grades. Numbers to the right of the bolded numbers (grey shading) indicate the percentage of students who increased postsecondary educational aspirations between 10th and 12th grades. Numbers to the left of the bolded numbers (not shaded) indicate the percentage of students who decreased postsecondary educational aspirations between 10th and 12th grades. Data are weighted by normalized F1PNLWT panel weight

In comparing the maintenance of aspirations for a bachelor's degree between 10th and 12th grades, higher percentages of Asian and White students maintained these aspirations than of students in the other racial/ethnic groups, except for Multiracial women. Asian and White men maintained aspirations for a bachelor's degree by 12th grade at a higher rate than Black, Latino, and Multiracial men (55.1% and 52.7% versus 39.1%, 41.1%, and 44.6%, respectively). Similarly, comparable percentages of Asian women (45.7%), White women (48.4%), and Multiracial women (47.9%) maintained aspirations for bachelor's degrees, and these shares were higher than for Black women

and Latinas (39.3% and 36.4%, respectively). Among those who aspired to a bachelor's degree in 10th grade, 43% of Latino men (12.3% + 30.5%) and over one-third of Black men (9.6% + 24.2%) compared to 30% of Multiracial men (4.3% + 26.1%), 27% of White men (7.2% + 19.6%), and 18% of Asian men (5.1% + 13.3%) decreased 10th grade aspirations for a bachelor's degree to undecided or less postsecondary education by the 12th grade.

The stability of postsecondary educational aspirations varies for women by racial/ethnic group. Slightly more than one-third of Asian (35.8%) and Black women (37.2%) increased 10th grade aspirations for a bachelor's degree to aspirations for a graduate degree by the 12th grade than of Latina (23.4%), Multiracial (21.3%), and White women (28.0%). Higher percentages of Latinas decreased 10th grade aspirations from a bachelor's degree compared to women from other racial/ethnic groups. Two-fifths of Latinas (10.1% + 30.2%) who indicated in 10th grade that they expected to attain a bachelor's degree decreased aspirations by the 12th grade. To the contrary, about 19% of Asian women (6.2% + 12.3%), 23% of Black women (7.9% + 15.5%), 24% of White women (4.8% + 18.9%), and 30% of Multiracial women (10.6 + 20.2%) decreased their 10th grade aspirations for a bachelor's degree to less postsecondary education or undecided by the 12th grade.

Comparing the stability of postsecondary educational aspirations between 10th and 12th grades for men and women in the same racial/ethnic groups shows some differences. Except for Multiracial students, women of all racial/ethnic groups maintained aspirations for graduate school at a higher level than men. Table 4.6 shows a 20 percentage point difference between the percentage of Latinas (61.0%) and Latinos (41.2%) who

maintained aspirations for graduate school between 10th and 12th grades. The percentage gap between men and women who maintained aspirations for graduate school for the other racial/ethnic groups was not as large. The percentage point gap was nine for Asian women over Asian men, three for Black women over Black men, and seven for White women over White men. In contrast, the share of Multiracial women who maintained aspirations for graduate degrees was 11 percentage points lower than for Multiracial men. Women of all racial/ethnic groups increased aspirations between the 10th grade and 12th grade from less than a bachelor's degree to a bachelor's degree at higher rate than men of comparable racial/ethnic groups. For example, 37% of Asian women increased aspirations at this level compared to 16% of Asian men.

In summary, descriptive data from the Educational Longitudinal Study of 2002 (ELS:2002/04) describe the stability of students' educational aspirations between 10th and 12th grades and show the characteristics of students according to the stability of aspirations. These data show that 76% of 10th graders in 2002 aspired to at least a bachelor's degree, while 15% aspired to less postsecondary education and 9% were undecided. Slightly more than ½ of students who aspired to at least a bachelor's degree in 10th grade maintained, one-third decreased, and 12% increased aspirations by 12th grade. With regard to those students who aspired to less than a bachelor's degree in 10th grade, 38% maintained, one-fifth decreased, and two-fifths increased aspirations by 12th grade. When data are disaggregated by race/ethnicity and gender, the instability in aspirations is more apparent.

This study also identifies the characteristics of students according to the stability of their aspirations. Several characteristics, including race, academic preparation and

achievement, parental aspirations, and parental involvement with student's education appear to be related to the stability of students' aspirations, regardless of whether 10th grade aspirations are for at least a bachelor's degree or for less postsecondary education. In terms of students who aspired to at least a bachelor's degree, all characteristics, except public four-year college tuition, vary according to the stability of aspirations.

Research Question Two: Improvement of Model's Explanatory Power and Predictors of 12th Grade Aspirations

The second research question examines whether adding measures of cultural and social capital and economic constructs to a traditional status attainment model for postsecondary educational aspirations improves the explanatory power of the model. To address this question, the variables are entered into the logistic regression model in four conceptually related blocks, as shown in the conceptual model (Figure 3.1). Model 1 examines the effect of background characteristics (i.e., race, gender, and socioeconomic status) on the outcome—aspiring to attain at least a bachelor's degree in the 12th grade. Model 2 includes measures of academic preparation and achievement. Model 3 includes measures of cultural and social capital and economic measures. Model 4 adds 10th grade aspirations.

Improvement in Model's Explanatory Power

Table 4.7 presents several indicators for assessing the model's goodness of fit and reports the delta-*p* statistics for each independent variable. Five indicators are used to assess the model's fit—scaled deviance (G^2, i.e., -2 log likelihood), ratio of the scaled

deviance to its degrees of freedom (G^2/df), pseudo R^2, the percentage of cases correctly classified, and the block χ^2 statistic. Each of these indicators shows that including cultural and social capital measures and economic constructs improves the model's explanatory power.

First, the scaled deviance (G^2) provides an overall indication of how well the estimates for the parameters in the model fit the data (Cabrera, 1994). In logistic regression, the best fitting model is the one that yields a smaller scaled deviance with an associated *p*-value of less than 0.001. Table 4.7 shows that the scaled deviance declines in each successive block. The largest decrease in the scaled deviance occurs between Model 1 and Model 2, from 11,541 to 10,114. The second largest decrease occurs between Model 2, which controls for academic preparation and achievement, and Model 3, which also controls for cultural and social capital and economic measures (from 10,114 to 9,595). A smaller decrease occurs in the scaled deviance between Model 3 and Model 4, which also controls for 10th grade aspirations (9,595 to 9,078).

The ratio of scaled deviance to its degrees of freedom (G^2/df) provides a second indicator of how well the model fits the data (Cabrera, 1994). Cabrera recommends accepting a model when the G^2/df is less than 2.5. As Table 4.7 shows, each of the four logistic regression models meets this criterion. The G^2/df in Model 1 begins at 1.0 and decreases to 0.9 in Model 2. Between Model 2 and 3, the G^2/df is reduced further to 0.8 and remains at that level for final logistic regression model.

The pseudo R^2 represents the proportion of error variance that an alternative block reduces in relation to the null model, and ranges from a minimum value of 0 to a maximum of 1 (Cabrera, 1994). The R^2 in ordinary least squares regression serves as an

indicator of how well a set of independent variables explains the observed variance of the dependent variable. This definition does not apply to logistic regression. Several formulas are used to estimate the pseudo R^2 in logistic regression, two of which are shown in Table 4.7—Cox & Snell and Nagelkerke. In Model 1 the two pseudo R^2 values are 0.106 (Cox & Snell) and 0.158 (Nagelkerke). As Table 4.7 shows, with each successive block, both pseudo R^2 values increase. For the Cox & Snell measure, the largest increase occurs between Model 1 and Model 2, with smaller increases between Models 2 and 3 and Models 3 and 4. The Nagelkerke R^2 has a large increase between Models 1 and 2 and also between Models 3 and 4, with a smaller increase between Model 2 and Model 3. The pseudo R^2 for the final model is 0.278 (Cox & Snell) and 0.414 (Nagelkerke).

The percentage of cases correctly classified by the logistic regression model provides another indicator of fit. This measure involves a comparison between the number of cases the model predicted as being either 0 (aspiring to less than a bachelor's degree) or 1 (aspiring to at least a bachelor's degree) for the total sample. The percentage of cases correctly predicted increases with each successive block for the overall model and for those students who aspired to less than a bachelor's degree. The percentage of cases correctly predicted for students who aspired to at least a bachelor's degree decreases between Model 1 and Model 2 from 96% to 93% and then maintains this share for the two remaining blocks. The final block correctly predicts the aspirations of 82% of all the students, 93% of students who aspired to attain at least a bachelor's degree, and 48% of students who aspired to attain less than a bachelor's degree.

Table 4.7. Change in the Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade Associated with a One Unit Change in Each Independent Variable (delta-*p* statistics)

Independent variable	Model 1: Background Characteristic	Model 2: Academic Prep. & Achievement	Model 3: Cultural & Social Cap. & Economic Measures	Model 4: 10th Grade Aspirations
Race/Ethnicity				
Asian	0.126***	0.122***	0.114***	0.105***
Black	0.056***	0.139***	0.117***	0.108***
Latino/a	0.019	0.087***	0.073***	0.062***
Multiracial	0.017	0.060**	0.061**	0.033
White (ref.)				
Gender				
Male	-0.135***	-0.159***	-0.110***	-0.084***
Female (ref.)				
Socioeconomic Status	0.121***	0.093***	0.076***	0.070***
High School Curricular Program				
Vocational		-0.220***	-0.162***	-0.124***
General		-0.171***	-0.125***	-0.093***
College Preparatory (ref.)				
Mathematics Test Score		0.126***	0.116***	0.100***
Parent's Aspirations				
Attain less than a BA			-0.263***	-0.180***
Attain at least a BA (ref.)				
Educational Materials in the Home				
Missing			-0.021	-0.002
One or fewer items			-0.057***	-0.028
Any two items			-0.023	-0.017
All three items (ref.)				
Involvement in Cultural Activities				
Missing			-0.009	-0.008
At least once a week			0.036**	0.030
Rarely or never (ref.)				
Parental Involvement with Student's Education			0.015**	0.013**

Table 4.7. Change in the Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade Associated with a One Unit Change in Each Independent Variable continued (delta-*p* statistics) continued

Independent variable	Model 1: Background Characteristic	Model 2: Academic Prep. & Achievement	Model 3: Cultural & Social Cap. & Economic Measures	Model 4: 10th Grade Aspirations
Parental Involvement with Student's School				
Missing			0.000	-0.001
Contacted more than once			0.031	0.036
Contacted once			0.006	0.006
No contact (ref.)				
School Resources			-0.004	-0.007
School Personnel Aspirations				
Missing			-0.085***	-0.067***
Neither teacher/counselor wish for college			-0.098***	-0.061***
Either teacher/counselor wish for college			-0.031	-0.016
Both teacher & counselor wish for college (ref.)				
Student-Teacher Relations			0.014**	0.011
Peers' Educational Values			0.032***	0.021***
Importance of Costs and Aid				
Missing			0.000	0.006
Little importance			0.026	0.032
Somewhat important			0.006	0.006
Very important (ref.)				
Average Public Four-Year Tuition			-0.003	-0.003
10th Grade Aspirations				
Do Not Know				-0.127***
Less than a BA				-0.242***
More than a BA				0.112***
Receive a BA				

Table 4.7. Change in the Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade Associated with a One Unit Change in Each Independent Variable continued (delta-*p* statistics) continued

Independent variable	Model 1: Background Characteristic	Model 2: Academic Prep. & Achievement	Model 3: Cultural & Social Cap. & Economic Measures	Model 4: 10th Grade Aspirations
Constant	0.177***	0.200***	0.209***	0.199***
Number of cases	11,496			
Model χ^2, *df*	1,289, 6***	2,716, 9***	3,235, 29***	3,753, 32***
Block χ^2, *df*	1,289, 6***	1,427, 3***	519, 20***	518, 3***
G^2	11,541	10,114	9,595	9,078
df	11,490	11,487	11,467	11,464
G^2/df	1.0	0.9	0.8	0.8
Cox & Snell Pseudo R^2	0.106	0.210	0.245	0.278
Nagelkerke Pseudo R^2	0.158	0.313	0.365	0.414
Percent correctly classified	76%	79%	81%	82%
Percent at least a BA correctly classified	96%	93%	93%	93%
Percent less than BA correctly classified	12%	38%	42%	48%
Baseline *p*	0.754			

Source: Analyses of ELS:2002/04

Notes: The delta-*p* statistic is used to represent the change in the probability of aspiring to attain at least a bachelor's degree associated with a one-unit change in each independent variable Cabrera (1994). According to the method recommended by Cabrera (1994), G^2 represents the scaled deviance (-2 log likelihood), and *df* represents degrees of freedom. Pseudo $R^2 = C^2/(N+C^2)$; Delta-*p* = $\exp(L_1)/[1 + \exp(L_1)] - P_0$ (Cabrera, 1994).
The reference group, noted by italics, represents the category with for each independent variable with the largest percentage.
For all categorical variables with missing data, a dummy variable, labeled "missing" is added to retain sample size.
***$p<.001$, **$p<.01$
Data are weighted by normalized F1PNLWT panel weight

Table 4.7 also shows the block χ^2 statistic, which tests whether the independent variables as a group have an effect on the dependent variable (Cabrera, 1994). The statistic illustrates the statistical significance of the baseline model in relation to alternative models. In logistic regression, the null model (i.e., background characteristics) serves as the baseline. The change in the block χ^2, *df* for each successive block shows the results of the stepwise inclusion of additional variables within the blocks. These statistics illustrate that academic preparation and achievement (Model 2) contributed the most to the model's fit, followed by background characteristics (Model 1), and then comparable effects for cultural and social capital and economic measures (Model 3) and 10th grade aspirations (Model 4). The block χ^2 for Model 2, which controls for academic preparation and achievement is 1,427, followed by 1,289 for Model 1, then 519 for Model 3 and 518 for Model 4.

Predictors of 12th Grade Aspirations

Using the blocked entry strategy suggested by the conceptual framework, Table 4.7 shows the change in the probability (i.e., delta-*p* statistics) of aspiring to at least a bachelor's degree in 12th grade associated with a one-unit change in each independent variable (see Appendices B1-B4 for odds-ratios, coefficients, and standard errors for each model). The full logistic regression model (Model 4) shows that, after controlling for other variables in the model, background characteristics such as race, gender, and socioeconomic status are significant predictors of aspiring to attain at least a bachelor's degree in 12th grade, as are measures of academic preparation and achievement. One characteristic of cultural capital (i.e., parent's aspirations) and three social capital

characteristics (i.e., parental involvement with student's education, school personnel aspirations, and peers' educational values) are significant predictors of aspirations for at least a bachelor's degree in the 12th grade, net of other variables. Likewise, students' 10th grade educational aspirations are a statistically significant predictor of 12th grade aspirations. The economic constructs—importance of costs and aid and four-year college tuition—are not significant predictors of students' aspirations when in the 12th grade, after controlling for measures of background characteristics, academic preparation and achievement, cultural and social capital, and 10th grade aspirations.

Table 4.7 shows the effect of race/ethnicity is consistent for Asians and Blacks in all four models, but varies for Latino/a and Multiracial students. In Model 1, Asians and Blacks are more likely than Whites to aspire to at least a bachelor's degree in 12th grade after controlling for gender and socioeconomic status. After adding measures of academic preparation and achievement (Model 2) and cultural and social capital and economic measures (Model 3), Asian, Black, Latino/a, and Multiracial students are more likely than Whites to aspire to at least a bachelor's degree. Adding 10th grade aspirations (Model 4) shows little change in the relationship between race/ethnicity and 12th grade aspirations, except Multiracial students are no longer statistically different than White students. In the full model, the probability of aspiring to at least a bachelor's degree in 12th grade is higher for Asians, Blacks, and Latinos/as compared to Whites by 11, 11, and six percentage points, respectively.

Gender is also statistically significant in each of the four blocks, with men less likely than women to aspire to at least a bachelor's degree in 12th grade, when controlling for each set of variables. The magnitude of the gender difference is greatest between men

and women in Model 2. Table 4.7 shows that, when controlling for background characteristics and academic preparation and achievement, the probability of aspiring to at least a bachelor's degree in 12th grade is 16 percentage points lower for men relative to women. With each subsequent step in the logistic regression model, the magnitude of difference between men and women decreases, but remains negatively associated for men. Model 4, which controls for background characteristics, academic preparation and achievement, cultural and social capital and economic measures, and 10th grade aspirations, shows that men are eight percentage points less likely than women to aspire to at least a bachelor's degree in 12th grade.

In terms of socioeconomic status, the logistic regression analyses show that, when controlling for background characteristics, an increase of one standard deviation in socioeconomic status is associated with a 12 percentage point increase in the probability of aspiring to at least a bachelor's degree. Adding measures of academic preparation and achievement, cultural and social capital, economic measures, and 10th grade aspirations decreases the magnitude of the relationship of socioeconomic status to 12th grade aspirations by five percentage points.

The variables measuring academic preparation and achievement are significant in each successive block. The logistic regression analyses show that, after controlling for background characteristics and academic preparation and achievement, students enrolled in vocational and general courses are less likely than students enrolled in college preparatory courses to aspire to at least a bachelor's degree in 12th grade. Although the magnitude of the delta-*p* statistic decreases with the addition of variables in Model 3 and Model 4, the negative relationship between enrollment in a vocational or general

curriculum, relative to enrollment in college preparatory courses, is consistent across all three models. After controlling for all other variables in the model, students enrolled in vocational and general courses are 12 and nine percentage points, respectively, less likely than those in college preparatory courses to aspire to at least a bachelor's degree. In terms of mathematics achievement, Model 2 shows that a one standard deviation increase in mathematics achievement is associated with a 13 percentage point increase in the probability of aspiring to at least a bachelor's degree. After also controlling for background characteristics, academic preparation and achievement, cultural and social capital, economic measures, and 10th grade aspirations, the probability of aspiring to at least a bachelor's degree in 12th grade is 10 percentage points higher for a student with mathematics achievement one standard deviation above the mean than for students with average mathematics achievement.

As shown in Table 4.7, cultural and social capital and economic measures are introduced in Model 3. When controlling for cultural and social capital and economic measures as well as background characteristics and academic achievement and preparation (Model 3), students who have zero or one educational items are six percentage points less likely to aspire to a bachelor's degree than students who have all three items. Students who participate in cultural activities at least once a week have a four percentage point higher probability of aspiring to a bachelor's degree or higher than students who rarely or never participate in such activities, after controlling for background characteristics, academic preparation and achievement, and cultural and social capital and economic measures. These two measures—educational materials in the home and involvement in cultural activities—are no longer statistically significant in

Model 4, after adding 10th grade aspirations to the model. Parental aspirations is statistically significant in both blocks (i.e., Model 3 and Model 4). As Table 4.7 shows, students whose parents expected them to attain less than a bachelor's degree are 26 percentage points less likely to aspire to a bachelor's degree in 12th grade than students whose parents expect them to attain at least a bachelor's degree. Also controlling for 10th grade aspirations reduces the magnitude of this relationship to 18 percentage points.

Four measures of social capital (i.e., parental involvement with student's education, school personnel aspirations, student-teacher relations, and peers' educational values) are statistically significant after controlling for background characteristics, academic preparation and achievement, and cultural and social capital and economic measures. All measures, except student-teacher relations, remain statistically significant after also controlling for 10th grade aspirations. In Table 4.7, the third model shows that a one standard deviation increase in parental involvement with student's education increases the likelihood of aspiring to at least a bachelor's degree by two percentage points. Also controlling for 10th grade aspirations does not substantively change the magnitude of this relationship. Students who do not have either a teacher or school counselor expecting them to attend college are 10% less likely than students who have both expecting them to attend college, after controlling for background characteristics, academic preparation and achievement, and cultural and social capital and economic measures. Also controlling for 10th grade aspirations decreases the magnitude of this relationship to six percentage points. A one standard deviation increase in peers' educational values is associated with a three percentage point increase in the probability of aspiring to at least a bachelor's degree in 12th grade when controlling for background

characteristics, academic preparation and achievement, and cultural and social capital and economic measures. Also adding 10th grade aspirations does not substantively change the magnitude of this relationship.

Model 4 in Table 4.7 shows the relationship between students' early postsecondary aspirations and 12th grade aspirations. For each of the three categories of the independent variable (i.e., do not know, less than a BA, more than a BA), there are statistically significant differences relative to students who expect to attain a bachelor's degree. Students who expect to attain less than a bachelor's degree in 10th grade are 24 percentage points less likely than students who expect to attain a bachelor's degree to aspire to at least a bachelor's degree in 12th grade. Students whose postsecondary educational plans were undecided (i.e., do not know) in 10th grade are 13 percentage points less likely than those who expect to attain a bachelor's degree to aspire to at least a bachelor's degree in 12th grade. Students who aspired to more than a bachelor's degree in 10th grade are 11 percentage points more likely than students who aspired to only a bachelor's degree to hold high postsecondary educational aspirations in 12th grade, after controlling for all other variables.

In summary, this study finds that adding cultural capital, social capital, and economic measures improves the model's explanatory power of the traditional status attainment model for the study of postsecondary aspirations. The block χ^2 statistic shows that academic preparation and achievement contributed the most to the model's fit followed by cultural capital, social capital, economic measures, and 10th grade aspirations. The study's findings show that background characteristics, (i.e., Asian, Black, Latino/a, gender, and socioeconomic status), academic preparation and

achievement, one measure of cultural capital (i.e., parental aspirations), three measures of social capital (i.e., parental involvement with the school, school personnel aspirations, peers' educational values), and 10th grade aspirations are significant predictors of 12th grade postsecondary educational aspirations.

Research Question Three: Variation in Educational Aspirations by Race/Ethnicity

To determine whether the relationship between particular independent variables and the probability of aspiring to at least a bachelor's degree in 12th grade varies by race/ethnicity, the logistic regression analyses were repeated by entering interactions for Asian, Black, Latino/a, and Multiracial students with each independent variable into the model one interaction at a time. The pattern of interactions varied for each racial/ethnic group (results of interaction tests not shown). For Asian and Black students, there were no statistically significant interactions at $p<.01$. Only one interaction was statistically significant for Multiracial students (e.g., school personnel aspirations). Five variables interacted with Latinos to significantly improve the fit of the model: socioeconomic status, mathematics test scores, parental aspirations, high school program, and 10th grade aspirations. To facilitate the interpretation of the interactions, separate logistic regressions were conducted for Latino/a, Multiracial, and White (the reference group) students. Table 4.8 shows the change in model fit associated with adding each block of variables for Latino/a, Multiracial, and White students. Table 4.9 summarizes the delta-*p* statistics for the final models (see Appendices C-H for delta-*p* tables, odds-ratios, coefficients, and standard errors).

Improvement in Model's Explanatory Power for Latinos/as, Multiracials and Whites

As Table 4.8 shows, adding proxies for cultural and social capital and economic measures significantly improves the fit of the model for Latinos/as, Multiracials, and Whites. Academic preparation and achievement contributes most to the fit for Latino/a students, however, 10th grade aspirations contribute more than cultural and social capital and economic measures. For Whites, academic preparation and achievement contributes most to model's explanatory power, followed by cultural and social capital and economic measures, then 10th grade aspirations. Cultural and social capital and economic measures contribute most to the fit for Multiracial students, as the contributions to model fit of academic preparation and achievement and 10th grade aspirations are smaller and comparable.

Table 4.8. Improvement in Fit Associated with Adding Additional Blocks of Variables to the Model of Postsecondary Educational Aspirations

Racial/ethnic group		Block 1: Background Characteristic	Block 2: Adding Academic Prep. & Achievement	Block 3: Adding Cultural & Social Cap. & Economic Measures	Block 4: Adding 10th Grade Aspirations
Total	Change in G^2		1,427	519	518
	Change in *df*		3	20	3
	p-value		$p < .001$	$p < .001$	$p < .001$
Latino/a	Change in G^2		139	50	67
	Change in *df*		3	20	3
	p-value		$p < .001$	$p < .001$	$p < .001$
Multiracial	Change in G^2		44	60	38
	Change in *df*		3	20	3
	p-value		$p < .001$	$p < .001$	$p < .001$
White	Change in G^2		1,089	407	349
	Change in *df*		3	20	3
	p-value		$p < .001$	$p < .001$	$p < .001$

Source: Analyses of ELS:2002/04

Notes: According to the method recommended by Cabrera (1994), G^2 represents the scaled deviance (-2 log likelihood), and *df* represents degrees of freedom. The first model (background characteristics) is the baseline model. Data are weighted by normalized F1PNLWT panel weight

Table 4.9 provides additional measures of model fit for these three racial/ethnic groups. Based on the pseudo R^2 measures (i.e., Cox & Snell and Nagelkerke), the model is less predictive for Latino/a students than for Multiracial and White students. The Cox & Snell R^2 and Nagelkerke R^2 for Latino students are 0.208 and 0.287, respectively. In contrast, the pseudo R^2's are 0.337 (Cox & Snell) and 0.502 (Nagelkerke) for Multiracial students and 0.314 (Cox & Snell) and 0.475 (Nagelkerke) for Whites students. Table 4.9 also shows that the percentage of cases correctly predicted for the final model is higher for Multiracials (86%) and Whites (84%) than for Latinos/as (72%).

Predictors of 12th Grade Aspirations for Latinos/as, Multiracials, and Whites

Only the five variables with significant interactions for Latino/a students (i.e., socioeconomic status, high school program, mathematics test scores, parental aspirations, and 10^{th} grade aspirations), are compared with the coefficient for Whites. Table 4.9 shows that, controlling for background characteristics, academic preparation and achievement, cultural and social capital and economic measures, and 10^{th} grade aspirations, a one standard deviation increase in socioeconomic status increases the probability of having high aspirations by eight percentage points for White students, but appears unrelated to Latinos/as.

In terms of academic preparation and achievement, the interactions suggest that for high school curricular program and mathematics achievement have varying effects on the 12^{th} grade aspirations of Latino/a and White students. After controlling for background characteristics, academic preparation and achievement, cultural and social capital and economic measures, and 10^{th} grade aspirations, being in a vocational

curricular program is negatively associated with high aspirations for White students, but has is unrelated to the aspirations of Latino/a students. Being in a general curricular program, rather than a college preparatory program reduces the likelihood of having high educational aspirations for Latino/a students (10 percentage points) and White students (eight percentage points) students, after controlling for all other variables. Contrary to expectations based on the statistically significant interactions, the positive relationship between mathematics test scores and aspiring to at least a bachelor's degree is comparable for both racial/ethnic groups (11 percentage points).

Table 4.9. Change in the Probability of Aspiring to Attain at Least a Bachelor's Degree in 12th Grade Associated with a One-Unit Change in Each Independent Variable Among Latino/a, Multiracial, and White Students

Independent Variable	Total	Latino/a	Multiracial	White
Race				
Asian	0.105***			
Black	0.108***			
Latino/a	0.062***			
Multiracial	0.033			
White (ref.)				
Gender				
Male	-0.084***	-0.114***	-0.015	-0.078***
Female (ref.)				
Socioeconomic Status [a]	0.070***	0.039	0.029	0.083***
High School Curricular Program [a]				
Vocational	-0.124***	-0.057	-0.298	-0.149***
General	-0.093***	-0.099**	-0.152	-0.075***
College preparatory (ref.)				
Mathematics Test Score [a]	0.100***	0.105***	0.125***	0.106***
Parent's Aspirations [a]				
Attain less than a BA	-0.180***	-0.136**	-0.188	-0.197***
Attain at least a BA (ref.)				

Table 4.9. Change in the Probability of Aspiring to Attain at Least a Bachelor's Degree in 12th Grade Associated with a One-Unit Change in Each Independent Variable Among Latino/a, Multiracial, and White Students (continued)

Independent Variable	Total	Latino/a	Multiracial	White
Educational Materials in Home				
Missing	-0.002	-0.021	-0.231	0.018
One or fewer items	-0.028	-0.055	-0.139	0.013
Any two items	-0.017	0.008	-0.247**	-0.020
All three items (ref.)				
Involvement in Cultural Activities				
Missing	-0.008	0.105	-0.022	-0.035
At least once a week	0.030	0.005	0.104	0.033
Never or less than once a week (ref.)				
Parent Involvement with Student's Education	0.013**	0.015	0.021	0.014
Parent Involve w/Student's School				
Missing	-0.001	0.007	0.063	0.006
Contacted more than once	-0.036	0.061	0.062	0.029
Contacted once	0.006	0.054	0.020	-0.008
No contact (ref.)				
School Resources	-0.007	-0.025	-0.040	-0.006
School Personnel Aspirations [b]				
Missing	-0.067***	-0.116**	0.179**	-0.069***
Neither teacher/counselor Wish for college	-0.061***	-0.008	0.043	-0.077***
Either teacher/counselor Wish for college	-0.016	-0.057	0.215	-0.019
Teacher and counselor wish for college (ref).				
Student-Teacher Relations	0.011	0.007	0.013	0.008
Peers' Educational Values	0.021***	0.003	0.053	0.023***
Importance of Costs and Aid				
Missing	0.006	0.060	0.046	-0.008
Little importance	0.032	0.093	-0.042	0.037
Somewhat important	0.006	0.061	-0.063	-0.004
Very important (ref.)				
Av. Four-Year Public Tuition	-0.003	0.021	-0.006	-0.007

Table 4.9. Change in the Probability of Aspiring to Attain at Least a Bachelor's Degree in 12th Grade Associated with a One-Unit Change in Each Independent Variable Among Latino/a, Multiracial, and White Students (continued)

Independent Variable	Total	Latino/a	Multiracial	White
10th Grade Aspirations [a]				
Do Not Know	-0.127***	-0.112	-0.149	-0.133***
Less than a BA	-0.242***	-0.167***	-0.307**	-0.268***
More than a BA	0.112***	0.149***	0.174***	0.114***
Receive a BA (ref.)				
Constant	0.199	0.255***	0.189***	0.191***
Number of cases	11,496	1,525	443	7,556
Model χ^2, *df*	3,753, 32***	355, 28***	182, 28***	2,849, 28***
Block χ^2, *df*	518, 3***	67, 3***	38, 3***	349, 3***
G^2	9,078	1,601	310	5,348
Df	11,464	1,497	415	7,528
G^2/df	0.8	1.1	0.7	0.7
Cox & Snell Pseudo R^2	0.278	0.208	0.337	0.314
Nagelkerke Pseudo R^2	0.414	0.287	0.502	0.475
Percent correctly classified	82%	72%	86%	84%
Percent at least a BA correctly classified	93%	86%	95%	94%
Percent less than BA correctly classified	48%	46%	59%	53%
Baseline *p*	0.754	0.659	0.756	0.767

Source: Analyses of ELS:2002/04

Notes: The delta-*p* statistic is used to represent the change in the probability of aspiring to attain at least a bachelor's degree associated with a one-unit change in each independent variable Cabrera (1994). According to the method recommended by Cabrera (1994), G^2 represents the scaled deviance (-2 log likelihood), and *df* represents degrees of freedom. Pseudo $R^2 = C^2/(N+C^2)$; Delta-$p = \exp(L_1)/[1 + \exp(L_1)] - P_0$ (Cabrera, 1994).

The reference group, noted by italics, represents the category with for each independent variable with the largest percentage.

For all categorical variables with missing data, a dummy variable, labeled "missing" is added to retain sample size.

***p<.001 , **p<.01

[a] Denotes interaction for Latino/a students.

[b] Denotes interaction for Multiracial students.

Data are weighted by normalized F1PNLWT panel weight

One cultural capital proxy—parent's aspirations—significantly interacted with Latinos/as. When controlling for all variables in the logistic regression model, Latino/a and White students whose parents expect them to attain less than a bachelor's degree are less likely to hold high aspirations when in the 12th grade. The magnitude of the

relationship is greater for White students, as there is a 20 percentage point difference in the probability of aspiring to at least a bachelor's degree between students whose parents expect them to attain at least a bachelor's degree and students whose parents expect them to attain less than a bachelor's degree. For Latinos/as, high parental aspirations has a 14 percentage point effect on the students' aspirations.

In terms of social capital, school personnel aspirations interacted with Multiracial students. Table 4.9 shows that for White students, missing data on the school personnel aspirations measure is associated with a seven percentage point lower likelihood of holding high educational aspirations in the 12th grade. In contrast, for Multiracial students, missing data on this same measure increases the probability of holding high educational aspirations when in the 12th grade. Also, for White students having neither a teacher nor counselor who expect college attendance is associated with an eight percentage point lower probability of holding high educational aspirations, net of other variables. Having neither a teacher nor counselor expect college is unrelated to 12th grade aspirations, after controlling for other variables, for Multiracial students.

For both Latino/a and White students, aspiring to less than a bachelor's degree in 10th grade is associated with a substantially lower probability of having high educational aspirations in the 12th grade. After controlling for background characteristics, academic preparation and achievement, cultural and social capital and economic measures, and 10th grade aspirations, the probability of aspiring to at least a bachelor's degree in 12th grade is reduced by 17 percentage points for Latino/a students and 27 percentage points for White students who aspired to less than a bachelor's degree rather than at least a bachelor's degree in 10th grade.

In summary, the logistic regression models tested for interactions to determine if the predictors of educational aspirations varied by race/ethnicity. The results found that five variables interacted with Latinos/as (i.e., socioeconomic status, high school program, mathematics test scores, parental aspirations, and 10th grade aspirations) and one variable interacted with Multiracial students (i.e., school personnel aspirations). To facilitate the interpretation of the interactions, separate logistic regression models were conducted for Latino/a, Multiracial, and White students. These separate analyses show that cultural and social capital and economic measures improve the model's explanatory power for all groups. However, the magnitude of the contribution of these constructs varied for each group. For Latino/a students, academic preparation made the greatest contribution followed by 10th grade aspirations, then cultural and social capital and economic measures. Similar to Latinos/as, academic preparation and achievement made the greatest contribution to the model for White students. However, cultural and social capital and economic measures made the second contribution followed by 10th grade aspirations. For Multiracial students, cultural and social capital and economic measures made the greatest contribution to the model with comparable contributions for academic preparation and achievement and 10th grade aspirations.

CHAPTER 5

DISCUSSION, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS FOR FUTURE RESEARCH

Introduction

This study extends prior research that has analyzed the development of postsecondary educational aspirations during the high school years (Kao & Tienda, 1998). Using an integrated conceptual model that combines aspects of sociological and econometric frameworks, this study seeks to better understand how students develop and sustain high aspirations between 10th and 12th grades. Specifically, the study explores the characteristics of students according to the stability of their aspirations, examines differences in the stability of aspirations across racial/ethnic and gender groups, and analyzes the predictors of high aspirations. Data from the base-year and first follow-up survey of the Educational Longitudinal Study of 2002 (ELS:2002/04) are used to examine the following three research questions:

1. What are the characteristics of students who increase, decrease, and maintain educational aspirations between 10th and 12th grades? To what extent do male and female students of differing racial/ethnic groups maintain postsecondary educational aspirations between 10th and 12th grades?
2. Does a conceptual model that adds cultural and social capital and economic constructs to the modified status attainment model for

postsecondary educational aspirations improve the explanatory power of the model?

3. How do 12th grade educational aspirations vary by race/ethnicity after controlling for other variables?

This chapter summarizes the findings of this study and uses the conclusions to draw implications and offer suggestions for future research. The first section of this chapter summarizes the results of analyses for each research question. The next section highlights conclusions that may be drawn from the study's results. The following sections discuss the implications of the study and suggest directions for future research.

Summary of Findings

Research Question One: Characteristics of Students by Stability of Aspirations

Unlike previous research, this study uses the most recent national, longitudinal data (ELS:2002/04) available to update and expand prior aspirations research. Similar to Kao and Tienda (1998), this study uses descriptive data to illustrate patterns in the stability of students' aspirations between 10th and 12th grade according to race/ethnicity and gender. In addition, the study illustrates the patterns and characteristics of students who increase, decrease, and maintain aspirations between 10th and 12th grade.

Stability of Postsecondary Educational Aspirations

This study's descriptive analyses show that students' early postsecondary educational aspirations (e.g., 10th grade) are higher than ever reported by any analyses using NELS:88/94 (i.e., Kao & Tienda, 1998; NCES, 1996; 2002; Qian & Blair, 1999;

Trusty, 2000). This study finds that 76% of 10th graders in 2002 expected to earn at least a bachelor's degree, 15% aspired to less than a bachelor's degree, and 9% were undecided about their postsecondary plans, while NELS:88/92 shows that 66% of 8th graders in 1988 aspired to less than a bachelor's degree and 34% aspired to less postsecondary education (NCES, 1996).

This high percentage of students with early aspirations for at least a bachelor's degree does not reveal the stability of students' aspirations between 10th and 12th grades. Descriptive analyses of the stability in aspirations show that sizeable percentages of 10th graders in 2000 increased or decreased aspirations by 2002. For example, of those students who had undecided aspirations in 10th grade, over three-quarters (77%) had developed some postsecondary educational plans by 12th grade. In addition, 38% of students who aspired to less than a bachelor's degree in 10th grade maintained and 40% increased aspirations by 12th grade. One-fifth of these students with already low 10th grade aspirations further decreased them. Of those students who aspired to a bachelor's degree or higher in 10th grade, more than ½ maintained, 12% increased, and over one-third decreased aspirations by 12th grade.

As an update to Kao and Tienda's (1998) analyses of aspirations using NELS:88/94, this study examines the stability of aspirations between 10th and 12th grade according to race/ethnicity and gender. The findings in this study show even greater instability in aspirational patterns when the data are disaggregated by racial/ethnic and gender groups. For example, examining the maintenance of aspirations for a bachelor's degree between 10th and 12th grades shows that for all groups, some percentage of students decreased their aspirations, regardless of race/ethnicity and gender. However,

this decline is most notable among Black males and Latino men and women. The data show that 43% of Latino men and over one-third of Black men compared to 30% of Multiracial men, 27% of White men, and 18% of Asian men decreased 10th grade aspirations for a bachelor's degree to undecided or less postsecondary education by the 12th grade. Among the women, 40% of Latinas who indicated in 10th grade that they expected to attain a bachelor's degree decreased aspirations by the 12th grade, compared to only 19% of Asian women, 23% of Black women, 24% of White women, and 30% of Multiracial women. In addition, this study's descriptive findings show that a higher percentage of women than men of the same race/ethnicity for all racial/ethnic groups, except Multiracial women, maintained aspirations for graduate degrees between 10th and 12th grade, with the greatest gender gap for Latinos/as.

Characteristics of Students According to Stability of Aspirations

Because little is known about the characteristics of students according to the stability of aspirations, this study examines the attributes of students who increase, decrease, and maintain aspirations between 10th and 12th grades. The following sections summarize the results of the descriptive analyses examining the characteristics of students based on the stability of the 10th grade aspirations for at least a bachelor's degree and less than a bachelor's degree.

10th grade aspirations for at least a bachelor's degree.

Descriptive analyses find that, for those who aspired to at least a bachelor's degree in 10th grade, the stability of aspirations varies by race/ethnicity, gender,

socioeconomic status, academic preparation and achievement, and a number of cultural and social capital and economic measures. In terms of background characteristics, higher percentages of Asian than of students from other racial/ethnic groups and students with higher rather than lower socioeconomic status maintained aspirations for at least a bachelor's degree. With regard to academic preparation and achievement, higher percentages of students enrolled in vocational and general courses than of students enrolled in college preparatory courses and with lower rather than higher mathematics achievement were observed to decrease their aspirations. Considering cultural capital measures, these data show that students who maintained aspirations had parents who held high aspirations for them, had all three educational materials in the home, and participated in cultural activities.

In terms of social capital, students with above average levels of parental involvement in student's education, peers' educational values, and student-teacher relations tended to maintain or increase aspirations. In addition, higher percentages of students whose parents' contacted the school more than once rather than never or who had either a teacher or counselor who expected them to attend college compared to those who had neither teacher or counselor expecting college enrollment maintained or increased aspirations. For school resources, students who decreased their aspirations attend schools with higher average levels of free and reduced lunch participants than students who maintained or increased aspirations.

With regard to the economic indicators, the descriptive analyses show that higher percentages of students whose parents perceived costs and aid to be of little importance than of students whose parents perceived costs and aid to be very important maintained or

increased aspirations. In contrast, higher percentages of students whose parents indicated that costs and aid held high importance than low importance decreased aspirations.

10th grade aspirations for less than a bachelor's degree.

In comparing the characteristics of students according to the stability of 10th grade aspirations for less than a bachelor's degree, descriptive data reveal distinctions in terms of race/ethnicity, academic preparation and achievement, and parental aspirations and involvement. Compared to students of other racial/ethnic groups, higher percentages of White and Multiracial students maintained aspirations for less than a bachelor's degree, while a higher percentage of Asians increased aspirations. In terms of academic preparation and achievement, higher percentages of students enrolled in vocational or general courses than enrolled in college preparatory courses and students with below average standardized mathematics test scores decreased aspirations. Also, the encouragement and involvement of parents was related to the stability of aspirations for those who aspired to less than a bachelor's degree, in 10th grade. A higher share of students whose parents expected at least a bachelor's degree than parents who expected less than a bachelor's degree and those with above average levels of parental involvement in student's education increased aspirations. Among students, who aspired to less than a bachelor's degree in 10th grade, the stability of 12th grade aspirations was not related to the importance of costs and aid or public four-year college tuition.

Summary

In summary, descriptive analyses of data from the Educational Longitudinal Study of 2002 (ELS:2002/04) describe the stability of students' educational aspirations between 10th and 12th grades and examines the characteristics of students according to the stability of aspirations. These data show that 76% of 10th graders in 2002 aspired to at least a bachelor's degree, which is higher than in preceding cohorts (i.e., NELS:88). Between 10th and 12th grade, aspirations declined for 34% of students who aspired to at least a bachelor's degree and 20% of students who aspired to less than a bachelor's degree in 2002. Disaggregating the data by race/ethnicity and gender shows that aspirations decline between 10th and 12th grade for a substantial portion of students in all groups. Comparing these descriptive analyses with results from the previous cohort (i.e., NELS:88, Kao & Tienda, 1998) show that not only are early aspirations higher than ever before, but also that the rate of decline in high early aspirations is higher than in the previous cohort.

In addition, this study finds that some characteristics are related to the stability of aspirations among both students who aspired to at least a bachelor's degree and students who aspired to less than a bachelor's degree in 10th grade: race/ethnicity, academic preparation and achievement, parental aspirations, and parental involvement with student's education. For students who aspired to at least a bachelor's degree, in 10th grade, other characteristics including gender, socioeconomic status, educational materials in the home, involvement in cultural activities, parental involvement with student's school, school personnel aspirations, student-teacher relations, peers' educational values, and importance of costs and aid were also observed to be related to the stability of

aspirations. The only characteristic that was unrelated to the stability of aspirations in the descriptive analyses for both groups was public four-year college tuition. For students with low postsecondary educational aspirations in 10th grade (i.e., aspire to less than a bachelor's degree), socioeconomic status, mathematics test scores, student-teacher relations, and peers' educational values were below the average for all 10th graders nationwide, regardless of whether students increase, decrease, or maintain educational aspirations.

Research Question Two: Improvement of Model's Explanatory Power and Predictors of 12th Grade Aspirations

This study uses an integrated conceptual model, which incorporates key aspects of sociological and econometric frameworks. Entering the variables into the logistic regression model in conceptually related blocks illustrates how these theoretical and conceptual modifications to the original status attainment framework improve the model's predictability. To assist in the interpretation of the logistic regression coefficients, delta-*p* statistics measure the change in probability of aspiring to at least a bachelor's degree that is associated with a one-unit change in the dependent variable (Cabrera, 1994).

Improvement in Model's Explanatory Power

This study shows that an integrated conceptual model is a more effective approach to the study of postsecondary educational aspirations than the traditional status attainment model alone. Using five indicators to assess the model's fit (i.e., scaled

deviance, ratio of the scaled deviance to its degrees of freedom, pseudo R^2, the percentage of cases correctly classified, and the block χ^2 statistic), this study finds that adding cultural and social capital and economic measures improves the model's explanatory power. The block χ^2 statistic shows that adding academic achievement has the greatest effect on the full model, followed by cultural and social capital, economic measures, and 10^{th} grade aspirations.

Other measures of fit, such as the scaled deviance (G^2), ratio of the scaled deviance to degrees of freedom (G^2/df), pseudo R^2, and percentage of cases correctly predicted, also indicate improvements to the model's power with the addition of these variables. The data show that the scaled deviance (G^2) is reduced with each successive block and is associated with a statistically significant *p*-value. The largest reduction in the scaled deviance occurs between Model 1 (background characteristics) and Model 2 (academic preparation and achievement). Then, the second largest reduction occurs between Model 2 (academic preparation and achievement) and Model 3 (cultural and social capital and economic measures). With regard to the ratio of the scaled deviance to its degrees of freedom (G^2/df), in this study, the G^2/df begins at 1.0 in Model 1 and decreases to 0.9 in Model 2. A further reduction in G^2/df occurs between Model 2 and Model 3 (0.9 to 0.8, respectively), then remains steady for the final logistic regression model. Both pseudo R^2 measures increase with each step and is 0.278 (Cox & Snell) and 0.414 (Nagelkerke) in the final step of the logistic regression model. The final model correctly predicts 82% of the cases for all students, 93% of the cases for students who aspired to at least a bachelor's degree, and 48% of the cases for students who expected to attain less than a bachelor's degree.

Predictors of 12th Grade Aspirations

This study uses logistic regression to examine the relationship between variables measuring student background characteristics, academic preparation and achievement, cultural and social capital and economic measures, and 10th grade aspirations on 12th grade aspirations. The dependent variable—12th grade aspirations—has two categories: aspire to at least a bachelor's degree and aspire to less than a bachelor's degree. The logistic regression analyses show that several background characteristics, academic preparation and achievement, some measures of cultural and social capital, and 10th grade aspirations were significant predictors of 12th grade aspirations.

Race/ethnicity was related to 12th grade aspirations, even after controlling for other variables. Net of other variables, Asians, Blacks, and Latinos/as were more likely than Whites to aspire to at least a bachelor's degree between 10th and 12th grade. There were no substantive differences in aspirations between White and Multiracial students. When academic preparation and achievement were added to the model, the probability of aspiring to at least a bachelor's degree substantively increased for Black and Latino/a students (by eight percentage points and seven percentage points, respectively). This finding indicates that part of the observed variability in aspirations for these groups can be explained by differences in academic preparation and achievement.

Although previous aspirations research drew differing conclusions regarding the relationship between race/ethnicity and educational aspirations, these discrepant findings may have been the result of differences in methodological design. The findings of this study are consistent with those of Qian and Blair (1999), who used NELS:92. In their analysis of racial/ethnic differences of high school seniors, Qian and Blair found that

Asian, Black, and Latino/a students were more likely than Whites to have high educational aspirations during their senior year. Additionally, they found that the probability of having high aspirations increased for Blacks and Latinos/as when also controlling for academic achievement, as measured by standardized test scores. In contrast, Hossler and Stage (1992), using single-state data, found no significant differences in aspirations across racial/ethnic groups.

This study finds that women were more likely than men to aspire to at least a bachelor's degree between 10th and 12th grade, net of all other variables. Similarly, Qian and Blair (1999) found that 12th grade women were more likely to aspire to a bachelor's degree than men. In other studies, separate regression models were assessed for men and women (Bateman & Hossler, 1996; Hamrick & Stage, 2004; Kao & Tienda, 1998; Trusty, 2000). In doing so, these studies highlight differences in the variables that explain aspirations for men and women. This study does not analyze separate logistic regression models for men and women.

Previous findings on the relationship between socioeconomic status and students' 12th grade aspirations indicate that a composite measure for socioeconomic status exerts a strong, positive influence on students' aspirations for college (McDonough, 1997; National Center for Education Statistics, 1996; Smith-Maddox, 2000; Solorazano, 1992). Consistent with previous research, this study shows that students with above average socioeconomic status were substantially more likely than students with lower socioeconomic status to aspire to a bachelor's degree or higher in the 12th grade, after controlling for all other variables. Although socioeconomic status was significant in each step of the model, the magnitude of the effect was reduced by three percentage points

between Model 1 and Model 2, when controlling for academic preparation and achievement. This finding suggests that academic preparation and achievement may explain some of the observed difference in educational aspirations by socioeconomic status.

Measures of academic preparation and achievement were also significant predictors of aspiring to at least a bachelor's degree or higher between 10th and 12th grade, after controlling for all other variables in the model. Students enrolled in vocational or general courses were less likely than students enrolled in college preparatory courses to increase aspirations between 10th and 12th grade. Other researchers have noted the negative effects of tracking on aspirations, as students in the lower tracks (e.g., general, vocational) have less access to information and resources that can result in high educational aspirations (Smith-Maddox and Wheelock, 1995; Wimberly & Noeth, 2005). In addition, this study finds that an increase in mathematics achievement increased the probability of aspiring to a bachelor's degree or higher. These findings are consistent with previous aspirations research (Hossler, Schmit, and Vesper, 1999; Kao & Tienda, 1998; Smith-Maddox & Wheelock, 1995; Trusty, 2000). Trusty (2000) found that mathematics test scores were a positive predictor of high educational aspirations.

In terms cultural capital, only parental aspirations were related to high aspirations between 10th and 12th grade, net of other variables. A student whose parents expected him/her to attain less than a bachelor's degree was less likely to hold aspirations for a bachelor's degree in 12th grade. Aspirations studies consistently show that high levels of parental support, manifested through parental aspirations, were positively related to high

educational aspirations (Hossler et al., 1999; Schneider and Stevenson, 1999). Schneider and Stevenson (1999) found that among 10th and 12th grade students who reported high levels of support and encouragement from parents, more than 88% aspired to attain at least a bachelor's degree. Other measures of cultural capital, including educational materials in the home and involvement in cultural activities were positive predictors of 12th grade aspirations after controlling for background characteristics, academic preparation and achievement, cultural and social capital, and economic measures. Students who had one or fewer educational items in the home (i.e., daily newspaper, access to a computer, more than 50 books) rather than all three items were less likely to aspire to a bachelor's degree or higher. Similarly, students who participated in cultural activities at least once a week rather than rarely or never were more likely to hold high aspirations in 12th grade. Other studies found educational materials in the home were related to postsecondary educational aspirations (Qian & Blair, 1999).

With regard to social capital, parental involvement with student's education, school personnel aspirations, and peers' educational values were predictors of high aspirations between 10th and 12th grade, net of all other variables. Students with higher parental involvement were more likely than students with lower parental involvement to hold high aspirations, but the relationship was small. Similarly, Qian and Blair (1999) found that parental involvement was a positive predictor of aspirations for most racial/ethnic groups.

Students with higher peers' educational values were more likely than other students to aspire to at least a bachelor's degree between 10th and 12th grade, however the magnitude of the relationship was modest. Studies examining the role of peers in

educational aspirations offer differing opinions. Some researchers cite peers as central to the development of high educational aspirations (McDonough, 19997; Wimberly, 2000), while others suggest that peers have a minimal effect on aspirations (Hossler et al., 1999; Schneider & Stevenson, 1999). This study supports the conclusions of researchers who report a modest effect of peers on aspirations.

Prior aspirations research has not explored the impact of economic indicators on students' educational aspirations. Because research has shown that some students, in particular Blacks, Latinos/as, and those from low- and moderate-income families, are concerned about college costs and financial aid (Advisory Committee on Student Financial Assistance, 2002; Freeman, 1997, 1999; NCES, 2003; Kao & Tienda), some speculate that economic measures may influence aspirations (Morgan, 1996; St. John, 2003). The two measures used in this study's logistic regression analyses, importance of costs and aid and four-year college tuition, were not significant predictors of aspirations in 12th grade.

This study finds that 10th grade aspirations were a significant predictor of 12th grade aspirations, even after controlling for background characteristics, academic preparation and achievement, cultural and social capital, and economic measures. Compared to students who aspired to a bachelor's degree in 10th grade, students who were undecided or expected to attain less than a bachelor's degree in 10th grade were less likely to increase aspirations by 12th grade, while students who planned to attain a graduate degree in 10th grade were more likely to have high 12th grade aspirations. These findings are consistent with Kao and Tienda's (1998) conclusions. For example, Kao and Tienda found that aspiring to less than a bachelor's degree in 10th grade rather a

bachelor's degree was associated with a 13 percentage point reduction in the probability of high 12th grade aspirations. In the current study, that probability of aspiring to at least a bachelor's degree in the 12th grade was 24 percentage points lower for students with low 10th grade aspirations. Additionally, aspiring to more than a bachelor's degree in the 10th grade was associated with a 20 percentage point increase in the probability of aspiring to at least a bachelor's degree in the 12th grade in Kao and Tienda's study, but only an 11 percentage point increase for the current analyses. The results of the logistic regression analyses are consistent with the results of the descriptive analyses that show, of those students with already low aspirations in 10th grade, 50% maintain and 20% further decrease aspirations, and, of those students with aspirations for at least a bachelor's degree in 10th grade, 12% increased aspirations by 12th grade.

In summary, this study's multivariate analyses examine the impact of adding cultural and social capital and economic measures on the model's explanatory power and describes the relationship between various student characteristics (i.e., background characteristics, academic preparation and achievement, cultural and social capital and economic measures, and 10th grade aspirations) and 12th grade aspirations. The study finds that incorporating additional sociological and econometric measures to the status attainment model improves the model's predictability, although the multivariate analyses found none of the econometric variables to be statistically significant to 12th grade aspirations. In addition, the study finds that background characteristics (i.e., race/ethnicity, gender, and socioeconomic status), academic preparation and achievement, parental aspirations, parental involvement with the school, school personnel

aspirations, peers' educational values, and 10th grade aspirations were significant predictors of aspiring to at least a bachelor's degree in 12th grade.

Research Question Three: Variation in Educational Aspirations by Race/Ethnicity

To determine if the predictors of educational aspirations varied by race/ethnicity after controlling for other variables, the logistic regression analyses tested for interactions. Five variables interacted with Latinos/as to improve the model: socioeconomic status, high school program, mathematics test scores, parental aspirations, and 10th grade aspirations. One variable, school personnel aspirations, interacted with Multiracial students. There were no statistically significant interactions for Asians or Blacks at $p<.01$.

Improvement of Model for Latinos/as, Multiracials and Whites

To facilitate the interpretation of the interactions, separate logistic regressions were conducted for Latino/a, Multiracial, and White students. The block χ^2 statistic for these separate models shows that adding proxies for cultural and social capital and economic measures significantly improves the fit of the model for Latino/a, Multiracial, and White students. Academic preparation and achievement contributed most to the fit for Latinos/as, followed by 10th grade aspirations, then cultural and social capital and economic measures. These findings suggest that the proxies for cultural capital, social capital, and economic indicators may be less appropriate for Latino/a students than students in the other racial/ethnic groups. For Multiracial students, cultural and social capital contributed most to the fit, with comparable effects for academic preparation and

achievement and 10th grade aspirations. For White students, the model's fit was most improved by academic preparation and achievement followed by cultural and social capital and economic measures, then 10th grade aspirations.

Additional measures of fit show that the models were less predictive for Latino/a students than for White and Multiracial students. For each racial/ethnic group, the ratio of the scaled deviance to the degrees of freedom (G^2/df) was less than 2.5. However, for Latinos/as the G^2/df is 1.1, whereas the G^2/df for White and Multiracial students is 0.7. In the final model, the Cox & Snell and Nagelkerke pseudo R^2 measures were higher for Multiracial students (0.337 and 0.502, respectively) and White students (0.314 and 0.475, respectively) than for Latino/a students (0.208 and 0.287, respectively). In addition, the percentage of cases correctly predicted for Latinos/as was 72%, but 86% for Multiracial students and 84% for White students.

Predictors of 12th grade Aspirations for Latinos/as, Multiracials, and Whites

When comparing the separate regression models for Latino/a, Multiracial, and White students on the variables with significant interactions, several relationships between the variables that influence high aspirations for each group become apparent. For both Latino/a and White students, socioeconomic status and mathematics achievement were positive predictors of high aspirations in 12th grade, net of other variables. After controlling for all other variables, being enrolled in a general curriculum rather than a college preparatory curriculum was negatively associated for Latinos/as and Whites. Net of other variables, being in a vocational program rather than a college preparatory program was also a negative predictor of aspirations for Whites, but was

unrelated to aspirations for Latino/a students. Having parental aspirations for less than a bachelor's degree was also a negative predictor of high 12th grade aspirations for Latino/a and White students, when controlling for all variables in the model. However, the magnitude of the relationship was six percentage points higher for White students than Latinos/as. For Multiracial students, school personnel aspirations was the only significant interaction. On this measure, Multiracial students with missing data were more likely to have high aspirations than students for whom both teacher and counselor expected college, while White students with missing data were less likely to hold high aspirations, net of other variables. These findings suggest that high-aspiring Multiracial students did not respond to this question. For both Latino/a and White students, aspiring to less than a bachelor's degree in 10th grade substantially lowered the probability of aspiring to a bachelor's degree by 12th grade (17 and 27 percentage points, respectively).

In summary, the logistic regression models tested for interactions to determine if the predictors of educational aspirations varied by race/ethnicity. Test results found that five variables interacted with Latinos/as (i.e., socioeconomic status, high school program, mathematics test scores, parental aspirations, and 10th grade aspirations) and one variable interacted with Multiracial students (i.e., school personnel aspirations). To assist with the interpretation of the interactions, separate logistic regression models were conducted for Latino/a, Multiracial, and White students. The separate analyses showed that cultural and social capital and economic measures improved the model's explanatory power for all groups. However, the relationship between these constructs and 12th grade aspirations varied across the three groups.

Conclusions

Developing and sustaining high postsecondary educational aspirations is the critical first step toward college access and eventual degree attainment. Therefore, better research and understanding of the development of aspirations, particularly during the high school years, can inform policies and practices linked to improving college access and educational attainment—both of which are national imperatives. The findings of this study contribute to this endeavor, as it advances research and understanding about: 1) the patterns and stability of postsecondary educational aspirations during the latter years of high school, specifically by race/ethnicity and gender; 2) the characteristics of students who increase, decrease, and maintain aspirations; 3) the predictors of high 12th grade aspirations; and 4) the variations in predictors of high 12th grade aspirations by race/ethnicity. Based on these findings, at least four conclusions may be drawn.

First, when comparing this study's data with the previous NCES cohort (i.e., NELS:88, Kao & Tienda, 1998), we see that students' early aspirations have increased over the past decade. This finding suggests that early awareness efforts aimed at highlighting the benefits of college are likely having a positive impact on students' early aspirations (i.e., 10th grade). Numerous early awareness initiatives are sponsored by local, state, and federal entities. One example is Oklahoma's GEAR UP, a federally funded program administered by the Oklahoma State Regents for Higher Education. In 2005, the state used a portion of GEAR-UP funds to initiate the *Raising College Aspirations Community-Based Organization (CBO) Incentive Grant Program*. Grants were awarded to fifteen community organizations to design programs to help increase educational aspirations and encourage college participation among low- and moderate-

income students, in particular. Some of the activities that participating organizations offer include mentoring, tutoring, college campus tours, and individualized academic and financial aid counseling (Oklahoma State Regents of Higher Education, 2006).

Second, while the share of students holding high aspirations in the 10th grade has increased, aspirations continue to fluctuate during the latter high school years. Aspiring to less than a bachelor's degree rather than a bachelor's degree in 10th grade was associated with a 24 percentage point reduction in the probability of high 12th grade aspirations among the 2002 cohort, but a 13 percentage point decline among the 1992 cohort (Kao & Tienda, 1998). Aspiring to more than a bachelor's degree rather than a bachelor's degree in 10th grade was associated with an 11 percentage point increase in the probability of high 12th grade aspirations among the 2002 cohort, but a 20 percentage point increase among the 1992 cohort (Kao & Tienda, 1998). In other words, this study finds that compared to the previous cohort, aspirations appear more stable between the 10th and 12th grades for 10th graders with the lowest aspirations and less stable for 10th graders with the highest aspirations.

In addition, like Kao and Tienda (1998), this study's descriptive findings show the instability of aspirations by racial/ethnic and gender group. In both studies, descriptive data show that Black and Latino men decrease aspirations for a bachelor's degree at a rate higher than all other students. Kao and Tienda find that one-quarter of both Black and Latino/a men decrease aspirations for a bachelor's degree between 10th and 12th grade. The current study, however, shows that 34% of Black men and 43% of Latino men decrease aspirations for a bachelor's degree between 10th and 12th grade. While it appears that high aspirations continue to be unstable for the current students, the rate of

the increase is now higher for Latino men than Black men. Likewise, compared to Kao and Tienda, the current study shows that Latinas decrease aspirations for a bachelor's degree between 10th and 12th grade at a rate higher than women of other racial/ethnic groups.

Some researchers suggest that declines in aspirations may reflect increases in the realism and attainability of aspirations, as stated aspirations may reflect an assessment of students' interests and abilities, financial circumstances, and other lifestyle considerations (Kao & Tienda, 1998; NCES, 1997). While this may be true, the maintenance of low aspirations and decrease in high aspirations, particularly for Black men and Latino men and women in particular, is disheartening. At a time when our nation needs more students of diverse backgrounds entering college and preparing for the workforce, smaller proportions than in the past (i.e., Kao & Tienda, 1998) are planning to do so when in 12th grade.

Third, this study finds that the status attainment model continues to be an appropriate theoretical framework for the study of postsecondary educational aspirations, but its explanatory power is enhanced by adding cultural and social capital and economic measures. Economic measures were added to the logistic regression model simultaneous to the cultural and social capital measures, however it should be noted that, contrary to speculation by some researchers (St. John, 2003), economic variables were unrelated to 12th grade aspirations in the multivariate analyses. This finding suggests that the economic measures may not have contributed as much to the model's explanatory power as the cultural and social capital measures or that other variables already entered into the model masked the effect of the economic measures. Nonetheless, this study confirms

that status attainment variables, which include background characteristics, academic preparation and achievement, and significant others (e.g., parents, peers, and school personnel) continue to be important predictors of high aspirations. Applying social and cultural capital theory to the examination of significant others provides more insight into the role and effect these individuals (e.g., parents, peers, school personnel) have on students' aspirations.

Fourth, this study shows variations in the characteristics of students by the stability of aspirations and the relationship between race/ethnicity and aspirations. Descriptive findings illustrate the importance of background characteristics, academic preparation and achievement, cultural capital, social capital, and economic measures on students' aspirations. The study's descriptive and logistic regression analyses reveal differences across racial/ethnic groups in the stability and probability of 12th grade aspirations for at least a bachelor's degree. For example, descriptive data show that although students in all groups decrease aspirations, Black men and Latino/a students decrease at a higher rate. In addition, this study finds that women of all racial/ethnic groups, except for Multiracial women, hold higher educational aspirations than men of the same racial/ethnic group. Separate logistic regression analyses for Latino/a, Multiracial, and White students show that the predictability of the logistic regression model is lower for Latino/a students than for others. This finding suggests that the variables included in the study, particularly those related to cultural and social capital and economic indicators, may have less relevance for Latino/a students than for other groups. The cultural and social capital and economic measures used in the study make a greater contribution to the model's explanatory power for Multiracial students than for Latinos/as

or Whites. No significant interactions were found for Asian and Black students, suggesting that the predictors of high aspirations for these groups of students may be similar to those for Whites.

Implications

The results of this study have several implications for research, policy, and practice. The following section first describes the implications for policy and practice and then offers recommendations for research.

Recommendations for Policy and Practice

This study offers one overarching policy implication, with three accompanying practice-based strategies. Because this study focuses on the stability and predictors of postsecondary educational aspirations during the high school years, I conclude that the high school is an appropriate starting point to offer recommendations for policy and practice. Also, recognizing that the study's findings indicate that a variety of measures, including background characteristics, academic preparation and achievement, and cultural and social capital measures characterize the stability of aspirations and reveal the predictors of high aspirations, it is important that these recommendations be holistic in scope. Given these considerations, findings from this study suggest that one policy solution for increasing and maintaining high aspirations should focus on enhancing high school reform efforts.

Across the nation, high schools are engaged in efforts to restructure and improve their academic programs and services. These restructuring efforts are fueled, in part by

the federal government's academic standards and accountability movement (e.g., No Child Left Behind) as well as state and local educators own desire to increase students' college- and work-readiness (Achieve, 2005). Central to some of the existing reform efforts is a focus on increasing students' academic skills (Achieve, 2006). The findings from this study suggest that efforts to increase college-readiness, specifically, must focus on student's academic skills as well as provide social supports and other college-preparatory resources. In other words, this study suggests that a more holistic approach to high school reform, may better prepare students for college, and as a result help to raise and maintain high postsecondary educational aspirations.

Strategies for Holistic High School Reform

In order to raise and sustain high aspirations, the findings of this study suggest that practitioners engage in efforts that enhance students' preparation and confidence for college. These efforts can be achieved by three strategies: 1) expose students, particularly those most at-risk, to college-readiness and early intervention efforts, 2) equalize academic standards and expectations, and 3) increase collaboration between the student's school and home environments. Efforts that are narrowly focused on one area of concern (i.e., a singular focus on inadequate academic preparation, lack of effective mentors, or dissemination of college preparatory information), instead of a holistic, multi-faceted approach will likely yield only partial results.

Expose students to college-readiness and early intervention efforts.

In order to raise and sustain students' high postsecondary educational aspirations, existing high school reform policies must be intentionally linked to college-awareness and college-preparatory activities. As it stands, much of the college outreach occurring within high schools is geared toward select students (i.e., upper-income, advanced academic tracks, Gladieux & Swail, 1998; Smith-Maddox, 2000, 2001), while college-awareness activities for more at-risk students (i.e., low academic tracks, low-income) are often provided out-of-school through private and non-profit college access organizations (Gladieux & Swail, 1998; Swail & Roth, 2000).

First, it is important that college-readiness activities and early intervention programs be linked to high school reform efforts, especially for students most at-risk of decreasing high aspirations and students likely to maintain or further decrease already low aspirations. In other words, these early awareness and college preparatory programs must be seamlessly woven into classroom instruction as well as be integrated into co-curricular activities. As Swail and Roth (2000) note, "early intervention programs themselves are unlikely to have any long-term or systemic effects on the education system unless they have, at their core, a desire to help change the very system whose failure required their existence" (p. 14). Although it is preferable to expose all students to these early intervention efforts, at a minimum they must be made available to students most at-risk. This study finds that students requiring targeted interventions include those with low socioeconomic status, low levels of mathematics achievement, enrolled in vocational and general courses, Latinas, and males, particularly Black and Latino males.

Focusing early awareness and college-readiness efforts on students with these characteristics may enhance and sustain these students' interest in college.

Some school districts, including Los Angeles Unified School District (CA) and Chicago Public Schools (IL) have begun to incorporate early intervention efforts into their school reform initiatives (Jager-Hyman, forthcoming). For example, the Los Angeles Unified School District (LAUSD) has recently established as part of its high school reform efforts a central office where administrators coordinate college-planning services that focus on academic preparation and early financial aid information to ensure that students and parents receive the information needed to positively impact aspirations and subsequent enrollment in college (Jager-Hyman, forthcoming). Likewise, the Chicago Public School (CPS) system has created a district-level department to promote college access and success—The Department of Postsecondary Education. This department coordinates college-preparatory activities and provides information to 9-12th grade students, parents, teachers, and counselors. Through these efforts, the district hopes to substantially increase the number of Chicago Public School graduates who develop aspirations for college, complete high school, and enroll in college by 2010 (Jager-Hyman, forthcoming). While no rigorous research exists on the effectiveness of these efforts, researchers (Swail & Roth, 2000) suggest that by linking early intervention efforts directly with long-term school reform will lead to better educational outcomes for all students.

Equalize academic standards and expectations.

A key element of the policy framework for holistic high school reform involves a focus on academic preparation and achievement. This study finds that students enrolled in vocational and general courses rather than college preparatory courses and students with low mathematics achievement were less likely than other students to aspire to a bachelor's degree or higher in 12th grade. Numerous studies have shown that the practice of tracking has negative consequences on educational aspirations and future opportunities for many children, particularly low-income, Black, and Latino/a children (Oakes, 1985; Smith-Maddox and Wheelock, 1995). Given these findings, to maintain and increase high postsecondary educational aspirations, school reform efforts must ensure equitable educational opportunities for all students. A necessary step in that process involves eliminating curricular tracking and providing all students with access to a rigorous academic core curriculum. In Arkansas, Indiana, and Texas, all high school students are automatically enrolled in a "default" or required curriculum that is intended to align with college-ready expectations (Achieve, 2004). Although students have the option to withdraw from this course of study with permission from parents and school administrators, this method is preferable to the traditional method of curricular tracking, where students and parents must petition or be recommended for the more rigorous courses. While this may be a preferable strategy, it is not a cost-neutral strategy. For example, to minimize costs associated with teacher professional development and the review and piloting of assessments, among other activities, key components of Indiana's Core 40—required academic curriculum—were phased in over ten years. As of April 2005, Core 40 became the default curriculum, required of all students but with an opt-out

provision, and it is the requirement for admission to the state's four-year universities and receipt of state financial aid to attend four-year institutions (Achieve, 2005). These changes take affect for students entering high school in 2007.

In addition, school principals and teachers need to implement an early-warning system that identifies high-aspiring, academically-underprepared students during the early high school years. In doing so, efforts can be taken to alleviate the aspirations-achievement gap, where in spite of high educational aspirations, some students suffer from low academic achievement, which is a barrier to fulfilling their aspirations (Mickelson, 1990; Trusty, 2000). Because this study and others have found that mathematics achievement is a strong predictor of stable high aspirations (Smith-Maddox, 2000; Trusty, 2000), educators could begin by monitoring students' mastery of mathematical and analytical concepts.

Increase collaboration between the student's home and school environment.

Because the findings of this study highlight the importance of individuals in both the school (e.g., school administrators, teachers, counselors, peers) and home environments (e.g., parents, peers), school reform efforts must encourage collaboration among school administrators, teachers, parents, and other influential adults. Intentional collaboration among these individuals can ensure that the learning that occurs in the classroom is reinforced and congruent with the values and culture of the home and community. To ensure that this communication occurs, not only must parents and families participate in school activities, but also school administrators and personnel must interact with the school's local community to invite and encourage parental participation

and involvement (Hoover-Dempsey, K. V. & Sandler, H.M., 1995; Hoover-Dempsey, K.V., Walker, J.M.T., Jones, K.P, and Reed, R.P., 2002). It is also essential that the individuals with whom the student interacts regularly (i.e., parents, teachers, counselors, peers) communicate and hold high educational expectations for the student, as this study finds that high aspirations communicated by parents, teachers, and counselors are related to high aspirations held by the student. In addition, the data show that high levels of parental involvement with the students' education are positively related to 12th grade aspirations for at least a bachelor's degree. Therefore, it is critical for teachers and counselors to share appropriate educational and developmental information with parents, including information about academic services, school programs and events, and college planning activities.

It is also important that parents have opportunities within the school to begin planning for their child's college education, such opportunities may include seminars about college costs, financial aid, and saving for college. Although this study's multivariate analyses show no relationship between the economic variables and 12th grade aspirations, the study's descriptive findings show that parents' perceptions of costs and aid are correlated with whether students increase, decrease, or maintain postsecondary educational aspirations between 10th and 12th grades. Moreover, the measure of socioeconomic status, a composite that includes family financial resources, remained statistically significant in each step in the model, suggesting that finances are related to aspirations. Specifically, this study's descriptive data show that high percentages of students whose parents indicated that costs and aid held little importance than of high importance maintained or increased aspirations. In contrast, higher

percentages of students whose parents perceived costs and aid to be of high importance than low importance decreased aspirations. Wimberly and Noeth (2005) recommend that high schools help students and parents create a financial plan to pay for college. Creating such a plan requires that students and parents receive early information about the college planning process and be fully informed about college costs, financial aid, and other financing options.

While teachers and counselors are integral to these and other college-preparatory tasks, structural constraints at some schools (e.g., high counselor or teacher/student ratio, inadequate funding and materials), particularly those with high proportions of low-income and minority students, restrict the ability of teachers and counselors to assist with and influence students' aspirations (House & Hayes, 2002; McDonough, 1997). Similar to previous research, this study reinforces the important role that teachers and counselors play in developing students' college aspirations, as these individuals are often the gate-keepers of knowledge and information about the college-going process (Hossler et al., 1999; House & Hayes, 2002; McDonough, 1997). Even though the multivariate analyses do not identify school resources (measured by the percentage of students enrolled in free and reduced lunch) as a significant predictor of 12th grade aspirations, this study's descriptive findings show that students who decreased their aspirations for at least a bachelor's degree between 10th and 12th grades attended schools with higher average levels of free and reduced lunch participation than students who maintained or increased their aspirations. In other words, these descriptive data suggest that structural restraints at low-resource schools may limit the ability of teachers and counselors to provide students with the information and resources (assistance with scheduling and course-

selection, college counseling, college admissions and testing information) that are needed to raise and sustain high educational aspirations.

To compensate for the inadequacies of such school structures, several partnership agreements between school districts and postsecondary institutions, community organizations, and private corporations have been instituted. One of the most comprehensive and well-researched program is the Indiana 21st Century Scholars Program. The program's college awareness and early intervention strategies, which are targeted at low-income students and incorporate academic preparation, encourage parental and teacher involvement, offer mentoring and support services, and provides students with an early assurance of financial aid for college, helps students overcome barriers to college access (St. John, Musoba, Simmons, and Chung, 2002). Another example of a public-private partnership designed to increase students' aspirations and subsequent college enrollment takes place within the Chicago Public Schools. This school district partners with the Illinois College Access Network, Chicagoland Chamber of Commerce Foundation, local postsecondary institutions, and several other organizations to promote college readiness and early awareness of financial aid. Chicago Public School administrators believe that through these partnerships, they are better able to provide services and create experiences for students that will have a positive effect on their aspirations and college enrollment (Jager-Hyman, forthcoming). Although the potential impact of these partnerships is strong, they should not be seen as substitutes for systemic school improvement. Ongoing efforts must occur within schools and school districts to strengthen the resources of all schools, primarily high-poverty schools (i.e., schools with high levels of free and reduced lunch participants) that are often plagued by

limited instructional funds, low-levels of academic achievement, and a short supply of qualified teachers and counselors.

Recommendations for Research

The results of this study contribute to the body of research analyzing student's postsecondary educational aspirations. In spite of its contributions, this study is only a small piece of the mosaic, and further research is needed to complete this portrait. The following section outlines five areas for additional research.

First, because researchers speculate that a correlation exists between educational aspirations and college enrollment (NCES, 1996, 2005), additional analyses of the Educational Longitudinal Study of 2002 (ELS:2002) are needed to examine these relationships. The National Center for Education Statistics (NCES, n.d.) anticipates that transcript data on high school students and survey data on students two years after high school graduation will be available in mid-2006 and mid-2007, respectively. With these data, researchers can analyze questions related to aspirations and academic preparation and track students' high school graduation and postsecondary enrollment patterns by their level of aspirations. NCES will provide one or more additional follow-ups that will allow for the examination of high school aspirations on college persistence, degree attainment, and postsecondary employment (NCES, n.d.). Longitudinal analyses, such as those recommended here, can further uncover inequities, cracks, and leaks along the academic pipeline.

Second, research should continue to explore the effect of adding sociological and econometric variables to the traditional status attainment model for the study of

postsecondary educational aspirations. Findings from this study suggest the need to explore the feasibility of better additional proxies for social capital and cultural capital and economic measures, especially for Latino/a students. In this study, multivariate analyses showed that some of the cultural and social capital measures had a stronger impact than others. None of the economic measures were related to aspirations, net of other variables. While the availability of suitable proxies for all these measures is, in many respects, limited by the dataset, additional research should explore this area. In future review panels for NCES databases, researchers and survey developers should utilize existing knowledge of cultural and social capital and econometric theory to consider alternative proxies for these measures, including measures that capture aspects of family and community support and spirituality, as some qualitative research (Franklin, 2002; Morris, 2004; Romanowski, 2003; Yosso, 2005) suggests these constructs may be especially appropriate indicators of social and cultural capital for Blacks and Hispanics.

Third, in order to understand better the development of aspirations among racial/ethnic groups, future research should continue to refine conceptual models for the study of postsecondary educational aspirations. Specifically, future aspirations research should consider incorporating other sociological perspectives to the study of aspirations, such as the blocked-opportunities framework, which endeavors to better explain minority and non-minority differences in educational outcomes (Kao & Tienda, 1998). Research using this framework often seeks to explore how students, typically minority students respond to structural and social barriers to educational and occupational success (Kao & Tienda, 1998; MacLeod, 1995). In terms of racial/ethnic minorities, this theory suggests that some students may "overcompensate for the liabilities of minority group status by

overachieving scholastically" while others may become "skeptical about the value of educational success as a means to upward mobility" (Kao & Tienda, 1998, p. 353). Because this study finds that the stability and predictors of aspirations varies according to race/ethnicity, incorporating elements of the blocked-opportunities framework into the traditional status attainment model may determine whether the decrease in high aspirations during the high school years is based in a belief that educational success will not produce economic success.

Fourth, aspirations research needs to further explore under-analyzed racial/ethnic groups. For example, this study does not consider Native American students in the analyses because of their low representation in the dataset. Therefore, our understanding of the development of aspirations for these students is limited. Prior to this study, aspirations research have not included Multiracial students. While this study uncovers some patterns in terms of the stability of these students' aspirations and the indicators of high aspirations, the findings suggest that Multiracial students have patterns that overlap with patterns for other racial/ethnic groups. As the descriptive and multivariate analyses show, in some instances, Multiracial students' patterns are similar to Blacks and Latinos/as, in other instances they appear closer to Whites. Then, in some cases, as when examining the separate logistic regression model for Multiracial students, these students have patterns unique to themselves. The complexity of analyzing Multiracial students may be a result of the groups' heterogeneity. In any event, the findings of this study suggest that additional research consider these students, as more data may be needed to better understand these patterns. Also, future aspirations research should analyze other

potentially heterogeneous racial/ethnic groups, including Asians and Latinos/as, groups that comprise a number of subpopulations.

Finally, research could benefit from the examination of the stability of aspirations and predictors of high aspirations among students according to socioeconomic status levels. Similar to previous research (Hossler et al., 1999; Kao & Tienda, 1998; Qian & Blair, 1999), this study confirms a relationship between socioeconomic status and aspirations. Specifically, it finds that students with lower socioeconomic status hold lower aspirations and are more inclined to decrease aspirations than students with higher socioeconomic status. Multivariate analyses also show that socioeconomic status is a predictor of high aspirations. Additional research should consider replicating this study's methodology by testing variations by socioeconomic status instead of race/ethnicity.

For a more nuanced examination, socioeconomic status can be disaggregated further by race/ethnicity and gender. Such analyses would provide insight about the intersection of class, race/ethnicity, and gender and its impact on students high school characteristics and experiences as it relates to the stability and predictors of high educational aspirations. This type of analyses would also benefit from qualitative study. Qualitative analyses, such as focus group discussions among students of the same racial/ethnic, socioeconomic, and gender groups may enhance understanding of the relationship between background or identity and postsecondary educational aspirations and offer additional insight into areas that are not well informed by quantitative databases (e.g., type and influence of other indicators of cultural capital, social capital, and economic measures). In this case, quantitative data and qualitative data may be used to amplify conclusions, with quantitative data illustrating national trends and providing

empirical data, and qualitative data giving voice to students' personal stories and experiences.

Final Thoughts

In summary, this study of postsecondary educational aspirations advances related research, policy, and practice. Specifically, the descriptive findings of the study highlight the patterns and stability of postsecondary educational aspirations during the latter years of high school, especially by race/ethnicity and gender, and describe the characteristics of students who increase, decrease, and maintain aspirations. The multivariate analyses test the applicability of an integrated conceptual model that combined aspects of sociological and econometric frameworks, identifies the predictors of high 12th grade aspirations, and examines the variations in predictors of high 12th grade aspirations by race/ethnicity.

With regard to policy and practice, this study's findings confirm the need for holistic high school reform efforts that focus on enhancing students' college-awareness and readiness skills and resources. The study finds that the indicators that predict high postsecondary educational aspirations are complex, including constructs such as background characteristics (i.e., race/ethnicity, gender, socioeconomic status), academic preparation and achievement (i.e., high school curriculum program and mathematics test scores), and parent and school personnel aspirations, to name a few. Because of these varied indicators, an effective policy framework for high school reform must integrate early intervention and college-preparatory activities into classroom instruction, increase academic preparation and achievement, and encourage collaboration between school and family. The strategies for high school reform that this study outlines are reflective of the

study's findings, but they are not an exhaustive list of reform strategies. Other notable strategies for increasing and sustaining aspirations have been recommended by the Stanford Bridge Project (i.e., Venezia, Kirst, and antonio, 2003). In their study of aspirations from a state-policymaking context, Venezia, Kirst, and antonio offer additional strategies, such as improving P-16 alignment of standards and assessments as well as expanding dual or concurrent enrollment programs. Regardless of the components, policymakers and practitioners engaged in school reform efforts must remember that a one-size-fits-all solution to raising and sustaining high aspirations will be ineffective. Instead, efforts must be holistic and multifaceted.

In this current fiscal environment, where funding for education, at least at the federal level, is expected to decline (President Bush's 2007 budget proposal), policymakers and practitioners may find it necessary to make difficult choices about programs and initiatives. In such instances, the holistic approach to high school reform should not be compromised. Instead, these suggested programs should be made scalable, with flexibility to increase as funding sources increase. Implementing these policy and practice-based solutions will help to restore the efficiency and equity of the educational pipeline, wherein the development and maintenance of high postsecondary educational aspirations is crucial because holding high aspirations is the first step in the process toward degree attainment.

APPENDICES

Appendix A. Percentage of Cases with Missing Data for Selected Characteristics of 12th Grade Students

Characteristics	% Missing
12th Grade Aspirations***	
Do Not Know	68.9
Less than a Bachelor's Degree	70.3
At least a Bachelor's Degree	55.1
10th Grade Aspirations***	
Do Not Know	69.3
Less than a Bachelor's Degree	71.0
At least a Bachelor's Degree	56.3
Race***	
Asian	68.1
Black	73.8
Latino/a	67.3
Multiracial	67.3
White	54.1
Gender***	
Men	63.0
Women	56.3
Socioeconomic Status Quartile***	
First Quartile (Lowest)	70.7
2nd Quartile	63.8
3rd Quartile	57.3
4th Quartile (Highest)	49.6
Academic Achievement***	
First Quartile (Lowest)	74.2
2nd Quartile	64.6
3rd Quartile	56.5
4th Quartile (Highest)	48.1

Source: Analyses of ELS:2002/04
Note: Data are weighted by normalized F1PNLWT panel weight
***$p<.001$

An analysis of missing data illustrates that the data are not randomly missing (Table 3.6). Students enrolled in 10th and 12th grades with aspirations to attain less than a bachelor's degree (71.0% and 70.3% respectively) as well as undecided students (i.e., do not know, 69.3% and 68.9% respectively) were more likely to have missing data on one or more variables than students who aspired to at least a bachelor's degree (56.3% and

55.1% respectively). Missing data are more common among racial/ethnic minorities (Asians, 68.1%; Blacks, 73.8%; Latinos/as, 67.3%) and Multiracial students (67.3%) compared to Whites (54.1%). Missing data for men are nearly seven percentage points higher than women (63.0% versus 56.3%). Higher percentages of students from the lowest socioeconomic quartile (70.7%) than of students in the second quartile (63.8%), third quartile (57.3%), and fourth quartile (49.6%) had missing data on at least one variable. Similarly, students from the lowest academic achievement quartile (74.2%) were more likely to have missing data on one or more variables compared to students from the second, third, and fourth quartiles (64.6%, 56.5%, and 48.1% respectively).

Appendix B1. Coefficients, Standard Errors, and Odds-Ratios for the Change in Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade (Model 1)

Independent Variable	B	S.E.	Exp(B)
Race			
Asian	0.875	0.139	2.398***
Black	0.333	0.071	1.395***
Latino/a	0.107	0.068	1.113
Multiracial	0.093	0.120	1.098
White (ref.)			
Gender			
Male	-0.633	0.046	0.531***
Female (ref.)			
Socioeconomic Status	0.823	0.028	2.277***
Constant	1.487	0.039	4.426***

Source: Analyses of ELS:2002/04
Note: The reference group, noted by italics, represents the category with for each independent variable with the largest percentage.
Data re weighted by normalized F1PNLWT panel weight.
***p<.001, **p<.01

Appendix B2. Coefficients, Standard Errors, and Odds-Ratios for the Change in Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade (Model 2)

Independent Variable	B	S.E.	Exp(B)
Race			
Asian	0.837	0.149	2.309***
Black	0.999	0.079	2.715***
Latino/a	0.545	0.075	1.725***
Multiracial	0.354	0.131	1.425**
White (ref.)			
Gender			
Male	-0.736	0.051	0.479***
Female (ref.)			
Socioeconomic Status	0.594	0.030	1.810***
High School Curricular Program			
Vocational	-0.984	0.079	0.374***
General	-0.783	0.053	0.457***
College preparatory (ref.)			
Mathematics Test Score	0.877	0.031	2.403***
Constant	1.923	0.051	6.842***

Source: Analyses of ELS:2002/04
Note: The reference group, noted by italics, represents the category with for each independent variable with the largest percentage.
Data re weighted by normalized F1PNLWT panel weight.
***p<.001, **p<.01

Appendix B3. Coefficients, Standard Errors, and Odds-Ratios for the Change in Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade (Model 3)

Independent Variable	B	S.E.	Exp(B)
Race			
Asian	0.760	0.153	2.139***
Black	0.791	0.083	2.206***
Latino/a	0.443	0.079	1.557***
Multiracial	0.365	0.136	1.441**
White (ref.)			
Gender			
Male	-0.528	0.054	0.590***
Female (ref.)			
Socioeconomic Status	0.466	0.033	1.594***
High School Curricular Program			
Vocational	-0.748	0.083	0.473***
General	-0.591	0.056	0.554***
College preparatory (ref.)			
Mathematics Test Score	0.780	0.033	2.181***
Parent's Aspirations			
Attain less than a BA	-1.157	0.076	0.314***
Attain at least a BA (ref.)			
Educational Materials in Home			
Missing	-0.108	0.086	0.898
One or fewer items	-0.286	0.082	0.752***
Any two items	-0.121	0.063	0.886
All three items (ref.)			
Involve. in Cultural Activities			
Missing	-0.049	0.112	0.952
At least once a week	0.204	0.071	1.227**
Never or less than once a week (ref.)			
Parent Involve w/Student's Ed.	0.084	0.027	1.088**
Parent Involve w/Student's School			
Missing	-0.001	0.106	0.999
Contacted more than once	0.173	0.086	1.189
Contacted once	0.035	0.083	1.035
No contact (ref.)			
School Resources	-0.022	0.026	0.979

Appendix B3. Coefficients, Standard Errors, and Odds-Ratios for the Change in Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade (Model 3) continued

Independent Variable	B	S.E.	Exp(B)
School Personnel Aspirations			
Missing	-0.417	0.075	0.659***
Neither teacher/counselor wish for college	-0.475	0.062	0.622***
Either teacher/counselor wish for college	-0.160	0.138	0.852
Teacher and counselor wish for college (ref).			
Student-Teacher Relations	0.078	0.025	1.081**
Peers' Educational Values	0.182	0.027	1.199***
Importance of Costs and Aid			
Missing	-0.001	0.106	0.999
Little importance	0.146	0.114	1.158
Somewhat important	0.035	0.079	1.036
Very important (ref.)			
Average Four-Year Public Tuition	-0.017	0.026	0.983
Constant	2.147	0.074	8.559***

Source: Analyses of ELS:2002/04
Note: The reference group, noted by italics, represents the category with for each independent variable with the largest percentage.
For all categorical variables with missing data, a dummy variable, labeled "missing" is added to retain sample size.
Data re weighted by normalized F1PNLWT panel weight.
***p<.001, **p<.01

Appendix B4. Coefficients, Standard Errors, and Odds-Ratios for the Change in Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade (Model 4)

Independent Variable	B	S.E.	Exp(B)
Race			
Asian	0.686	0.158	1.985***
Black	0.710	0.086	2.034***
Latino/a	0.370	0.081	1.448***
Multiracial	0.186	0.139	1.204
White (ref.)			
Gender			
Male	-0.411	0.056	0.663***
Female (ref.)			
Socioeconomic Status	0.423	0.034	1.526***
High School Curricular Program			
Vocational	-0.589	0.087	0.555***
General	-0.454	0.058	0.635***
College preparatory (ref.)			
Mathematics Test Score	0.650	0.034	1.915***
Parent's Aspirations			
Attain less than a BA	-0.823	0.080	0.439***
Attain at least a BA (ref.)			
Educational Materials in Home			
Missing	-0.013	0.088	0.987
One or few items	-0.148	0.086	0.862
Any two items	-0.089	0.065	0.915
All three items (ref.)			
Involve. in Cultural Activities			
Missing	-0.043	0.116	0.958
At least once a week	0.171	0.073	1.187
Never or less than once a week (ref.)			
Parent Involve w/Student's Ed.	0.073	0.028	1.075**
Parent Involve w/Student's School			
Missing	-0.005	0.109	0.995
Contacted more than once	0.202	0.089	1.223
Contacted once	0.030	0.086	1.031
No contact (ref.)			
School Resources	-0.035	0.027	0.966

Appendix B4. Coefficients, Standard Errors, and Odds-Ratios for the Change in Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade (Model 4) continued

Independent Variable	B	S.E.	Exp(B)
School Personnel Aspirations			
Missing	-0.335	0.077	0.716***
Neither teacher/counselor wish for college	-0.304	0.065	0.738***
Either teacher/counselor wish for college	-0.082	0.143	0.922
Teacher and counselor wish for college (ref).			
Student-Teacher Relations	0.063	0.026	1.065
Peers' Educational Values	0.116	0.028	1.123***
Importance of Costs and Aid			
Missing	0.031	0.109	1.032
Little importance	0.179	0.118	1.196
Somewhat important	0.035	0.081	1.036
Very important (ref.)			
Average Four-Year Public Tuition	-0.015	0.027	0.985
10th Grade Aspirations			
Do Not Know	-0.600	0.088	0.549***
Less than a BA	-1.073	0.073	0.342***
More than a BA	0.745	0.069	2.107***
Receive a BA (ref.)			
Constant	1.882	0.081	6.567***

Source: Analyses of ELS:2002/04
Note: The reference group, noted by italics, represents the category with for each independent variable with the largest percentage.
For all categorical variables with missing data, a dummy variable, labeled "missing" is added to retain sample size.
Data re weighted by normalized F1PNLWT panel weight.
***p<.001, **p<.01

Appendix C. Change in the Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade Associated with a One Unit Change in Each Independent Variable for Latino/a Students (delta-*p* statistics, adjusted weighted *n*=1,525)

Independent variable	Block 1: Background Characteristic	Block 2: Academic Prep. & Achievement	Block 3: Cultural & Social Cap. & Economic Measures	Block 4: 10th Grade Aspirations
Gender				
Male	-0.134***	-0.169***	-0.138***	-0.114***
Female (ref.)				
Socioeconomic Status	0.107***	0.074***	0.050***	0.039**
High School Curricular Program				
Vocational		-0.114**	-0.084	-0.057
General		-0.149***	-0.124***	-0.099**
College Preparatory (ref.)				
Mathematics Test Score		0.132***	0.119***	0.105***
Parent's Aspirations				
Attain less than a BA			-0.197***	-0.136**
Attain at least a BA (ref.)				
Educational Materials in the Home				
Missing			-0.026	-0.021
One or fewer items			-0.074	-0.055
Any two items			0.006	0.008
All three items (ref.)				
Involvement in Cultural Activities				
Missing			0.106	0.105
At least once a week			-0.009	0.005
Rarely or never (ref.)				

Appendix C. Change in the Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade Associated with a One Unit Change in Each Independent Variable for Latino/a Students (delta-*p* statistics, adjusted weighted *n*=1,525)

Independent variable	Block 1: Background Characteristic	Block 2: Academic Prep. & Achievement	Block 3: Cultural & Social Cap. & Economic Measures	Block 4: 10th Grade Aspirations
Parental Involvement with Student's Education			0.016	0.015
Parental Involvement with Student's School				
Missing			-0.021	0.007
Contacted more than once			0.052	0.061
Contacted once			0.050	0.054
No contact (ref.)				
School Resources			-0.021	-0.025
School Personnel Aspirations				
Missing			-0.118**	-0.116**
Neither teacher/counselor wish for college			-0.048	-0.008
Either teacher/counselor wish for college			-0.064	-0.057
Both teacher & counselor wish for college (ref.)				
Student-Teacher Relations			0.009	0.007
Peers' Educational Values			0.017	0.003
Importance of Costs and Aid				
Missing			0.067	0.060
Little importance			0.104	0.093
Somewhat important			0.064	0.061
Very important (ref.)				
Average Four-Year Public Tuition			0.025	0.021

Appendix C. Change in the Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade Associated with a One Unit Change in Each Independent Variable for Latino/a Students (delta-*p* statistics, adjusted weighted *n*=1,525)

Independent variable	Block 1: Background Characteristic	Block 2: Academic Prep. & Achievement	Block 3: Cultural & Social Cap. & Economic Measures	Block 4: 10th Grade Aspirations
10th Grade Aspirations				
Do Not Know				-0.112
Less than a BA				-0.167***
More than a BA				0.149***
Constant	0.218***	0.273***	0.277***	0.255***
Number of cases	1,525			
Model χ^2, *df*	99, 2***	238, 5***	288, 25***	355, 28***
Block χ^2, *df*	99, 2***	139, 3***	50, 20***	67, 3***
G^2	1,857	1,719	1,658	1,601
Df	1,523	1,520	1,495	1,497
G^2/df	1.2	1.1	1.1	1.1
Cox & Snell Pseudo R^2	0.063	0.144	0.178	0.208
Nagelkerke Pseudo R^2	0.087	0.200	0.246	0.287
Percent correctly classified	67%	70%	72%	72%
Percent at least a BA correctly classified	93%	88%	88%	86%
Percent less than BA correctly classified	18%	35%	42%	46%
Baseline *p*	0.659			

Source: Analyses of ELS:2002/04

Notes: The delta-*p* statistic is used to represent the change in the probability of aspiring to attain at least a bachelor's degree associated with a one-unit change in each independent variable Cabrera (1994).

According to the method recommended by Cabrera (1994), G^2 represents the scaled deviance (-2 log likelihood), and *df* represents degrees of freedom. Pseudo $R^2 = C^2/(N+C^2)$; Delta-*p* = $\exp(L_1)/[1 + \exp(L_1)] - P_0$ (Cabrera, 1994).

The reference group, noted by italics, represents the category with for each independent variable with the largest percentage.

For all categorical variables with missing data, a dummy variable, labeled "missing" is added to retain sample size.

***p<.001 , **p<.01

Data are weighted by normalized F1PNLWT panel weight

Appendix D. Coefficients, Standard Errors, and Odds-Ratios for the Change in Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade for Latino/a students (final model, adjusted weighted *n*=1,525)

Independent Variable	B	S.E.	Exp(B)
Gender			
Male	-0.478	0.131	0.620***
Female (ref.)			
Socioeconomic Status	0.181	0.077	1.198
High School Curricular Program			
Vocational	-0.244	0.196	0.784
General	-0.416	0.135	0.660**
College preparatory (ref.)			
Mathematics Test Score	0.518	0.079	1.678***
Parent's Aspirations			
Attain less than a BA	-0.568	0.205	0.567**
Attain at least a BA (ref.)			
Educational Materials in Home			
Missing	-0.090	0.200	0.914
One or fewer items	-0.236	0.179	0.790
Any two items	0.034	0.173	1.034
All three items (ref.)			
Involve. in Cultural Activities			
Missing	0.516	0.264	1.676
At least once a week	-0.024	0.178	0.976
Never or less than once a week (ref.)			
Parent Involve w/Student's Ed.	0.067	0.061	1.070
Parent Involve w/Student's School			
Missing	0.030	0.242	1.031
Contacted more than once	0.288	0.220	1.334
Contacted once	0.250	0.210	1.284
No contact (ref.)			
School Resources	-0.109	0.062	0.897
School Personnel Aspirations			
Missing	-0.487	0.170	0.614**
Neither teacher/counselor wish for college	-0.035	0.159	0.965
Either teacher/counselor wish for college	-0.243	0.349	0.785
Teacher and counselor wish for college (ref).			
Student-Teacher Relations	0.030	0.065	1.030

Appendix D. Coefficients, Standard Errors, and Odds-Ratios for the Change in Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade for Latino/a students (final model, adjusted weighted *n*=1,525)

Independent Variable	B	S.E.	Exp(B)
Peers' Educational Values	0.014	0.069	1.014
Importance of Costs and Aid			
Missing	0.283	0.246	1.327
Little importance	0.450	0.475	1.568
Somewhat important	0.284	0.263	1.328
Very important (ref.)			
Average Four-Year Public Tuition	0.093	0.075	1.098
10th Grade Aspirations			
Do Not Know	-0.471	0.201	0.624
Less than a BA	-0.690	0.165	0.501***
More than a BA	0.780	0.163	2.181***
Receive a BA (ref.)			
Constant	1.700	0.206	5.472***

Source: Analyses of ELS:2002/04
Note: The reference group, noted by italics, represents the category with for each independent variable with the largest percentage.
For all categorical variables with missing data, a dummy variable, labeled "missing" is added to retain sample size.
Data are weighted by normalized F1PNLWT panel weight
***p<.001, **p<.01

Appendix E. Change in the Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade Associated with a One Unit Change in Each Independent Variable for Multiracial Students (delta-*p* statistics, adjusted weighted *n*=443)

Independent variable	Block 1: Background Characteristic	Block 2: Academic Prep. & Achievement	Block 3: Cultural & Social Cap. & Economic Measures	Block 4: 10th Grade Aspirations
Gender				
Male	-0.122	-0.106	-0.039	-0.015
Female (ref.)				
Socioeconomic Status	0.112***	0.076**	0.044	0.029
High School Curricular Program				
Vocational		-0.212	-0.182	-0.298
General		-0.212***	-0.181	-0.152
College Preparatory (ref.)				
Mathematics Test Score		0.107***	0.130***	0.125***
Parent's Aspirations				
Attain less than a BA			-0.395***	0.118
Attain at least a BA (ref.)				
Educational Materials in the Home				
Missing			-0.154	-0.231
One or fewer items			-0.161	-0.139**
Any two items			-0.192**	-0.247
All three items (ref.)				
Involvement in Cultural Activities				
Missing			-0.108	0.022
At least once a week			0.104	0.104
Rarely or never (ref.)				

Appendix E. Change in the Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade Associated with a One Unit Change in Each Independent Variable for Multiracial Students (delta-*p* statistics, adjusted weighted *n*=443) continued

Independent variable	Block 1: Background Characteristic	Block 2: Academic Prep. & Achievement	Block 3: Cultural & Social Cap. & Economic Measures	Block 4: 10th Grade Aspirations
Parental Involvement with Student's Education			0.008	0.021
Parental Involvement with Student's School				
Missing			0.116	0.063
Contacted more than once			0.058	0.062
Contacted once			0.066	0.020
No contact (ref.)				
School Resources			-0.030	-0.040
School Personnel Aspirations				
Missing			0.164***	0.179**
Neither teacher/counselor wish for college			0.008	0.043
Either teacher/counselor wish for college			0.200	0.215
Both teacher & counselor wish for college (ref.)				
Student-Teacher Relations			0.005	0.013
Peers' Educational Values			0.071**	0.053
Importance of Costs and Aid				
Missing			-0.007	0.046
Little importance			-0.015	-0.042
Somewhat important			-0.073	-0.063
Very important (ref.)				
Average Four-Year Public Tuition			-0.014	-0.006

Appendix E. Change in the Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade Associated with a One Unit Change in Each Independent Variable for Multiracial Students (delta-*p* statistics, adjusted weighted *n*=443) continued

Independent variable	Block 1: Background Characteristic	Block 2: Academic Prep. & Achievement	Block 3: Cultural & Social Cap. & Economic Measures	Block 4: 10th Grade Aspirations
10th Grade Aspirations				
Do Not Know				-0.149
Less than a BA				-0.307**
More than a BA				0.174***
Constant	0.179***	0.208***	0.208***	0.189***
Number of cases	443			
Model χ^2, *df*	39, 2***	84, 5***	143, 25***	182, 25***
Block χ^2, *df*	39, 2***	44, 3***	60, 20***	38, 3***
G^2	452	408	348	310
Df	441	438	418	415
G^2/df	1.0	0.9	0.8	0.7
Cox & Snell Pseudo R^2	0.085	0.172	0.276	0.337
Nagelkerke Pseudo R^2	0.126	0.256	0.412	0.502
Percent correctly classified	76%	76%	83%	86%
Percent at least a BA correctly classified	97%	92%	94%	95%
Percent less than BA correctly classified	9%	27%	50%	59%
Baseline *p*	0.756			

Source: Analyses of ELS:2002/04

Notes: The delta-*p* statistic is used to represent the change in the probability of aspiring to attain at least a bachelor's degree associated with a one-unit change in each independent variable Cabrera (1994).

According to the method recommended by Cabrera (1994), G^2 represents the scaled deviance (-2 log likelihood), and *df* represents degrees of freedom. Pseudo $R^2 = C^2/(N+C^2)$; Delta-$p = \exp(L_1)/[1 + \exp(L_1)] - P_0$ (Cabrera, 1994)

The reference group, noted by italics, represents the category with for each independent variable with the largest percentage.

For all categorical variables with missing data, a dummy variable, labeled "missing" is added to retain sample size.

***p<.001 , **p<.01

Data are weighted by normalized F1PNLWT panel weight

Appendix F. Coefficients, Standard Errors, and Odds-Ratios for the Change in Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade for Multiracial Students (final model, adjusted weighted *n*=443)

Independent Variable	B	S.E.	Exp(B)
Gender			
Male	-0.081	0.310	0.922
Female (ref.)			
Socioeconomic Status	0.162	0.188	1.176
High School Curricular Program			
Vocational	-1.298	0.586	0.273
General	-0.709	0.373	0.492
College preparatory (ref.)			
Mathematics Test Score	0.873	0.195	2.395***
Parent's Aspirations			
Attain less than a BA	-0.858	0.456	0.424
Attain at least a BA (ref.)			
Educational Materials in Home			
Missing	-1.031	0.490	0.357
One or fewer items	-0.653	0.518	0.521
Any two items	-1.094	0.364	0.335**
All three items (ref.)			
Involve. in Cultural Activities			
Missing	-0.116	0.698	1.890
At least once a week	0.681	0.381	1.976
Never or less than once a week (ref.)			
Parent Involve w/Student's Ed.	0.120	0.162	1.128
Parent Involve w/Student's School			
Missing	0.379	0.654	1.461
Contacted more than once	0.373	0.462	1.452
Contacted once	0.112	0.525	1.119
No contact (ref.)			
School Resources	-0.205	0.160	0.815
School Personnel Aspirations			
Missing	1.531	0.499	4.624**
Neither teacher/counselor wish for college	0.251	0.368	1.285
Either teacher/counselor wish for college	2.386	0.998	10.871
Teacher and counselor wish for college (ref).			
Student-Teacher Relations	0.072	0.155	1.075

Appendix F. Coefficients, Standard Errors, and Odds-Ratios for the Change in Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade for Multiracial Students (final model, adjusted weighted *n*=443)

Independent Variable	B	S.E.	Exp(B)
Peers' Educational Values	0.313	0.176	1.367
Importance of Costs and Aid			
Missing	0.268	0.646	1.308
Little importance	-0.214	0.662	0.807
Somewhat important	-0.317	0.434	0.728
Very important (ref.)			
Average Four-Year Public Tuition	-0.030	0.149	0.970
10th Grade Aspirations			
Do Not Know	-0.696	0.628	0.498
Less than a BA	-1.335	0.444	0.263**
More than a BA	1.462	0.383	4.314***
Receive a BA (ref.)			
Constant	1.722	0.424	5.598***

Source: Analyses of ELS:2002/04

Note: The reference group, noted by italics, represents the category with for each independent variable with the largest percentage.

For all categorical variables with missing data, a dummy variable, labeled "missing" is added to retain sample size.

Data are weighted by normalized F1PNLWT panel weight

***p<.001, **p<.01

Appendix G. Change in the Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade Associated with a One Unit Change in Each Independent Variable for White Students (delta-*p* statistics, adjusted weighted *n*=7,556)

Independent variable	Block 1: Background Characteristic	Block 2: Academic Prep. & Achievement	Block 3: Cultural & Social Cap. & Economic Measures	Block 4: 10th Grade Aspirations
Gender				
Male	-0.136***	-0.158***	-0.106***	-0.078***
Female (ref.)				
Socioeconomic Status	0.133***	0.105***	0.087***	0.083***
High School Curricular Program				
Vocational		-0.284***	-0.196***	-0.149***
General		-0.174***	-0.202***	-0.075***
College Preparatory (ref.)				
Mathematics Test Score		0.130***	0.121***	0.106***
Parent's Aspirations				
Attain less than a BA			-0.288***	-0.197***
Attain at least a BA (ref.)				
Educational Materials in the Home				
Missing			-0.013	0.018
One or fewer items			-0.021	0.013
Any two items			-0.032	-0.020
All three items (ref.)				
Involvement in Cultural Activities				
Missing			-0.042	-0.035
At least once a week			0.042**	0.033
Rarely or never (ref.)				

Appendix G. Change in the Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade Associated with a One Unit Change in Each Independent Variable for White Students (delta-*p* statistics, adjusted weighted *n*=7,556) continued

Independent variable	Block 1: Background Characteristic	Block 2: Academic Prep. & Achievement	Block 3: Cultural & Social Cap. & Economic Measures	Block 4: 10th Grade Aspirations
Parental Involvement with Student's Education			0.017**	0.014
Parental Involvement with Student's School				
Missing			0.007	0.006
Contacted more than once			0.026	0.029
Contacted once			-0.005	-0.008
No contact (ref.)				
School Resources			-0.003	-0.006
School Personnel Aspirations				
Missing			-0.092***	-0.069***
Neither teacher/counselor wish for college			-0.117***	-0.077***
Either teacher/counselor wish for college			-0.039	-0.019
Both teacher & counselor wish for college (ref.)				
Student-Teacher Relations			0.012	0.008
Peers' Educational Values			0.034***	0.023***
Importance of Costs and Aid				
Missing			-0.016	-0.008
Little importance			0.026	0.037
Somewhat important			-0.004	-0.004
Very important (ref.)				
Average Four-Year Public Tuition			-0.009	-0.007

Appendix G. Change in the Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade Associated with a One Unit Change in Each Independent Variable for White Students (delta-*p* statistics, adjusted weighted *n*=7,556) continued

Independent variable	Block 1: Background Characteristic	Block 2: Academic Prep. & Achievement	Block 3: Cultural & Social Cap. & Economic Measures	Block 4: 10th Grade Aspirations
10th Grade Aspirations				
Do Not Know				-0.133***
Less than a BA				-0.268***
More than a BA				0.114***
Constant	0.171***	0.194***	0.202***	0.191***
Number of cases	7,556			
Model χ^2, *df*	1,004, 2***	2,093, 5***	2,500, 25***	2,849, 28***
Block χ^2, *df*	1,004, 2***	1,089, 3***	407, 20***	349, 3***
G^2	7,193	6,104	5,697	5,348
Df	7,554	7,551	7,531	7,528
G^2/*df*	1.0	0.8	0.8	0.7
Cox & Snell Pseudo R^2	0.124	0.242	0.282	0.314
Nagelkerke Pseudo R^2	0.188	0.365	0.425	0.475
Percent correctly classified	77%	82%	83%	84%
Percent at least a BA correctly classified	96%	93%	94%	94%
Percent less than BA correctly classified	14%	43%	47%	53%
Baseline *p*	0.767			

Source: Analyses of ELS:2002/04

Notes: The delta-*p* statistic is used to represent the change in the probability of aspiring to attain at least a bachelor's degree associated with a one-unit change in each independent variable Cabrera (1994).

According to the method recommended by Cabrera (1994), G^2 represents the scaled deviance (-2 log likelihood), and *df* represents degrees of freedom. Pseudo $R^2 = C^2/(N+C^2)$; Delta-$p = \exp(L_1)/[1 + \exp(L_1)] - P_0$ (Cabrera, 1994)

The reference group, noted by italics, represents the category with for each independent variable with the largest percentage.

For all categorical variables with missing data, a dummy variable, labeled "missing" is added to retain sample size.

***p<.001 , **p<.01

Data are weighted by normalized F1PNLWT panel weight

Appendix H. Coefficients, Standard Errors, and Odds-Ratios for the Change in Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade for White Students (final model, adjusted weighted *n*=7,556)

Independent Variable	B	S.E.	Exp(B)
Gender			
Male	-0.394	0.074	0.675***
Female (ref.)			
Socioeconomic Status	0.543	0.047	1.721***
High School Curricular Program			
Vocational	-0.711	0.122	0.491***
General	-0.382	0.077	0.683***
College preparatory (ref.)			
Mathematics Test Score	0.739	0.045	2.095***
Parent's Aspirations			
Attain less than a BA	-0.908	0.102	0.403***
Attain at least a BA (ref.)			
Educational Materials in Home			
Missing	0.104	0.128	1.109
One or fewer items	0.077	0.126	1.081
Any two items	-0.110	0.081	0.896
All three items (ref.)			
Involve. in Cultural Activities			
Missing	-0.187	0.164	0.830
At least once a week	0.194	0.098	1.214
Never or less than once a week (ref.)			
Parent Involve w/Student's Ed.	0.080	0.037	1.083
Parent Involve w/Student's School			
Missing	0.034	0.151	1.035
Contacted more than once	0.170	0.113	1.186
Contacted once	-0.043	0.109	0.958
No contact (ref.)			
School Resources	-0.033	0.036	0.968
School Personnel Aspirations			
Missing	-0.356	0.106	0.701***
Neither teacher/counselor wish for college	-0.390	0.083	0.677***
Either teacher/counselor wish for college	-0.102	0.184	0.903
Teacher and counselor wish for college (ref).			
Student-Teacher Relations	0.044	0.035	1.045

Appendix H. Coefficients, Standard Errors, and Odds-Ratios for the Change in Probability of Aspiring to at Least a Bachelor's Degree in 12th Grade for White Students (final model, adjusted weighted *n*=7,556) continued

Independent Variable	B	S.E.	Exp(B)
Peers' Educational Values	0.133	0.036	1.143***
Importance of Costs and Aid			
Missing	-0.044	0.149	0.957
Little importance	0.218	0.140	1.244
Somewhat important	-0.024	0.095	0.977
Very important (ref.)			
Average Four-Year Public Tuition	-0.040	0.035	0.961
10th Grade Aspirations			
Do Not Know	-0.643	0.114	0.526***
Less than a BA	-1.196	0.099	0.302***
More than a BA	0.812	0.091	2.251***
Receive a BA (ref.)			
Constant	1.943	0.101	6.978***

Source: Analyses of ELS:2002/04
Note: The reference group, noted by italics, represents the category with for each independent variable with the largest percentage.
For all categorical variables with missing data, a dummy variable, labeled "missing" is added to retain sample size.
Data are weighted by normalized F1PNLWT panel weight
***p<.001, **p<.01

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