Latino Youth and the Pathway to College

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Executive Summary

The act of going to college and earning a degree is more important than ever to today's youth and our society. Individuals with A bachelor's degree earn much more than high school graduates, and society as a whole also gains from an educated citizenry. Unfortunately, access to a postsecondary education is not equal in America. Students historically underrepresented at the postsecondary level—*students of color, those from low-income backgrounds, and first-generation students*—are still less likely to prepare for, apply for, enroll in, and persist through postsecondary education.

This study was conducted by the Educational Policy Institute through a grant from the Pew Hispanic Center to provide the most up-to-date analysis of Latino achievement through postsecondary education. What follows is our analysis of the latest installment of the National Educational Longitudinal Study (NELS), begun in 1988 with eighth grade students and followed up several times, with the last follow-up survey in 2000: eight years after scheduled high school graduation.

This report outlines the pathway to and through postsecondary education for Latinos and other students, and looks at a number of variables which offer insight into how motivated and prepared these students are for postsecondary work. The following is a summary of the study findings.

Main Findings

Family Income. Over half of Latino students came from families with incomes less than $25,000 a year, while only 7.5 percent had a family income of $75,000 or higher. Only 23 percent of white students came from families below the $25,000 level, and 18.3 percent were $75,000 and above.

Educational Legacy. Seventy-two percent of NELS youth had at least one parent with postsecondary experience, 30 percent of whom had achieved at least a bachelor's degree. Conversely, only half (49.4 percent) of Latino youth had a parent who had gone to college, and only 14.1 percent had received a bachelor's degree or higher—half the rate of the national average.

Aspirations. Seventy-three percent of Latinos aspired to postsecondary education, but only 55 percent—a full 20 percent lower than the national average—aspired to a BA. The aspirations of Latino students in the US were the lowest of any other group in our analysis, thus a cause for concern to policymakers.

Academic Preparation. A high proportion of Latino and African American students were classified as not qualified for postsecondary education. For Latinos, 59 percent of students were characterized as such, compared to 44 percent of the total NELS cohort and 41 percent for White students. Looking at the other end of the qualification spectrum, approximately twice the percent of White students were qualified for higher education than Latinos and African Americans. Only 1 in 4 Latino students were qualified for the postsecondary world.

Risk Factors. Latinos have, on average, more risk factors than any other student group except African Americans. Almost half of all Latino students, or 49.2 percent, have three or more risk factors, compared to a cohort average of 31.6 and a White average of 25.4 percent.

Risk areas where Latinos were overrepresented include parents without a high school degree, low-family income, having sibling dropouts, being held back in school, changing schools, earning a C or less GPA, and bearing children while still in high school.

Mathematics Course Taking Statistics. Latinos are much more likely to complete their public education with lower-level courses than other students. In fact, over 58 percent of Latino students finished with standard geometry and never proceeded any further in the mathematics discipline. Comparatively, 44 percent of all students and 41 percent of White students discontinued their mathematics studies at this level. Latinos completed calculus at half the rate of all students.

High School Completion. On average, 92.3 percent of the NELS 8th grade cohort received a high school diploma, GED, or equivalent credential by 2000. Comparatively, 86.4 percent of Latinos received their high school credential, the lowest of the groups observed. Almost 10 percent of Latino students received a GED rather than the traditional diploma. High School completion patterns exhibited by Whites lay in exact opposition to Latino students' pattern. The vast majority of Whites secured a standard high school diploma (86.4 percent). Only 6.8 percent of White students obtained a GED or other high school equivalency.

Participation at the Postsecondary Level. For the eighth-grade NELS cohort, 72.6 percent of students went on to some form of postsecondary study by 2000, or eight years past scheduled high school graduation. Sixty-six percent of Latino students enrolled and participated in postsecondary education, compared to 74.5 percent of White students and 90 percent of Asian Americans.

Four-Year Enrollment. Of the original eighth-grade cohort, 37.3 percent made their initial enrolment at the four-year level. By comparison, only 22.1 percent of Latinos—almost half the four-year participation rate of Whites (40.8), enrolled at the four-year level.

Two-Year Enrollment. A much higher percent of the original cohort of Latinos, 40 percent, participates at two-year schools compared to other student groups (32.3 percent on average).

Matriculation to Higher Education. Almost all students considered college "qualified" went on to higher education, regardless of race/ethnicity. However, because only 277 out of 1000 Latinos were categorized as such, there were far fewer qualified Latino students in postsecondary education than White students.

Institutional Sector. Seventy-eight percent of NELS postsecondary students enrolled at a publicly-controlled postsecondary institution, with 19 percent enrolling at private, not-for-profit institutions. Latinos were more likely to enroll at public institutions (83.2 percent) than other student groups and the least likely to enroll at private, not-for-profit institutions.

Institutional selectivity. Latino students were much less likely to attend selective institutions than other students. In fact, only 7.7 percent of Latino students attending a postsecondary institution enrolled in either a selective or highly selective institution, compared to 15 and 30 percent of White and Asian American students, respectively.

Institutional Cost. Latinos were more likely to attend institutions with a lower average tuition charges than other students. On average, students from our 8th grade cohort attend postsecondary institution that cost $5,646 on average, while Latino students attended institutions costing $3,978.

Delayed Postsecondary Entry. Approximately one-of-five students (19.3 percent) delayed entry into postsecondary education after high school, compared to 23.3 percent of Latinos students.

Attendance Patterns. Latino students were much more likely to attend postsecondary education on a part-time basis than other students. Of the total cohort that went on to postsecondary education, 38.6 percent of students attended on a part-time basis. However, over half (51.8 percent) of Latino students that enrolled in postsecondary education attended part-time.

Continuous enrolment. On average, 43 percent of Latinos maintained continuous enrolment in postsecondary education, compared to 62.9 percent of the entire cohort and 67 percent of White students.

Postsecondary Completion. Of only those eighth-grade students that went on to postsecondary studies, 43.4 percent received a bachelor's degree and 12.6 percent received a certificate or associate's degree. Forty-four percent of those who went on to postsecondary education did not receive a degree by 2000. Among Latinos, only 23.2 percent received a bachelor's degree and 12.8 percent a certificate or associate's degree. Almost

two thirds (64 percent) of Latinos who entered postsecondary education did not receive a degree by 2000.

Time to degree. Forty-two percent of students who completed at BA did so within four years, compared to 23 percent of Latino students. However, 42.5 percent of Latino students completed their BA beyond the five-year mark, suggesting that Latino students, for a variety of reasons, take extra time to degree—but they do get the degree.

Earned BA. More than twice as many White students from a universe of 1000 students who initially enrolled at a four-year institution earned a BA compared to Latino students. According to our analysis, 318 White students from the original eighth-grade universe of 1000 students initially enrolled at a four-year institution and graduated with a bachelor's degree. Within the Latino cohort, only 142, or 14.2 percent, traveled and completed the same path.

Chance for a BA among Eighth-Grade Students. Among all eighth grade students, 15.2 percent of Latino youth earned a BA within 8 years of scheduled high school graduation, compared to 35.7 percent of White students. This results in a projected BA ratio of 2:1 of Whites to Latinos in the eighth grade.

Summary and Conclusion

The challenges facing Latino students on their pathway to college are enormous at best, impossible at worst. At almost every level of this analysis, Latino youth face an upward struggle. The impact of these forces is to suppress the educational opportunity for these youth and lead them to a future that requires more effort to keep on current standing with other students, much less than trying to climb up the ladder of opportunity.

Considering the impending demographic changes in the US, policymakers must renew their commitment to the education of all students, which can only be done through broad social programming. Comprehensive and radical reform effort of the education of youth from low-income populations along the entire K-16 system are necessary to realize genuine change.

Unfortunately, the recent budget crisis is handcuffing legislators. The excesses of the 1990s provided ample opportunity and resources to deal with many of these issues, but those opportunities have been squandered through imprudent tax cuts and other policy decisions. It is our hope that the data in this report will spark a renewed commitment to the education of Latino youth and other disadvantaged students.

Prelude

Juan is an eighth-grade Latino youth in a Houston school where most of the students look like him. He likes school and plans to graduate from high school and go to college, probably at one of the state colleges close to home. He hopes one day to be an engineer and work for one of the aerospace companies in the Houston area. Juan is different from many of his friends. They aspire to college, but haven't looked at what it takes to make it there. Sometimes students make fun of Juan, but he shrugs it off and keeps planning.

Not far away from Juan is Susan, also an eighth grade student. Susan is White and goes to school in one of Houston's suburban school districts. Most of the students in her school look her. Like Juan, she has grand plans to graduate from high school and earn a business degree from UT Austin. She is an achiever and she and her parents, both professionals, have no doubt of her impending success. It's in the cards.

At the eighth grade, most students like Juan and Susan share aspirations for life and career beyond high school, and most see postsecondary education as the lever to make that happen. This is what we expect and hope for—that our youth aspire to great things—for themselves and society. However, the truth is that aspirations among some eighth grade students erode as they continue through the public school system. Almost all students expect to go to college, the vast majority of students end up going, but only a relatively small number of students complete a bachelor's degree. For students whose parents went to college, who come from moderate to high income families, and who are from two-parent homes, aspirations generally turn into action and opportunity. For students at the other end of the spectrum—those whose parents didn't finish high school, are from low-income backgrounds, and are being raised by a single parent, the opportunities are reduced and aspirations vaporize within a few short years.

It's uplifting that Juan has great aspirations for aerospace engineering, because his drive and the help of peers and family will be critical in reaching the next level. Juan has, on

average, a 1 in 7 chance of earning a bachelor's degree and reaching his goal. If he is academically prepared for college, his chances rise to almost 50:50, but if he carries the risk factors that more often beset Latino students than other students, his chances dwindle considerably.

Susan, on the other hand, enjoys an easier road to success. On average, students like Susan have a 1 in 3 chance of earning a BA. Because Susan is a high achiever, her actual chances of earning a BA jump to 2:3. If she initially enrolls at a four-year institution, her chances skyrocket to four-in-five.

This is the reality in America for Latino students versus their White counterparts. The road to success has more bumps, barriers, and detours than for most other students, but the road still exists. The pathway to success for Latino youth requires a motivation to succeed, a plan of action, a willingness and need to act on one's intentions, and perhaps most importantly, a support system of family, friends, teachers, and community to help them reach toward their goals.

We think Juan has a fair chance at meeting his goals because of his commitment, albeit the barriers that lay in his path. We're not too worried about Susan—her support system is in place. But for all the Juans in America, we understand that more must be done. To ensure that aspirations don't vaporize into thin air, public policy must do more to eliminate the barriers to future opportunity and provide truly real hope for millions of students across the country.

Introduction

The act of going to college and earning a degree is more important than ever to today's youth and our society. Individuals with a bachelor's degree have an opportunity earn as

much as double what a high school graduate earns over a lifetime; those with professional degrees earn triple.

Beyond the individual returns, society as a whole also gains from an educated citizenry. The private sector becomes more competitive, tax resources increase, and other public issues, such as public safety, are affected.

Unfortunately, access to a postsecondary education is not equal in America. Students historically underrepresented at the postsecondary level—*students of color, those from low-income backgrounds, and first-generation students*—are still less likely to prepare for, apply for, enroll in, and persist through postsecondary education (Cabrera & La Nasa, 2000).

Latino students, as other visible minorities, fit this profile. Following high school 65 percent of Latinos go on to a two- or four-year institution, compared to 74.5 percent of White students. At the four-year level, Latinos enroll at about half the rate of White students. Less than one-quarter of Latino youth receive a postsecondary certificate or degree.

This study was conducted by the Educational Policy Institute through a grant from the Pew Hispanic Center to provide the most up-to-date analysis of Latino achievement through postsecondary education. What follows is our analysis of the latest installment of the National Educational Longitudinal Study (NELS), begun in 1988 with eighth grade students and followed up several times, with the last follow-up survey in 2000—eight years after scheduled high school graduation. This latest version of the NELS database includes transcript data from postsecondary institutions, thus eliminating self-reported information on academic performance, type of postsecondary education attended, and type of postsecondary degree attained. Transcript data provides a far more accurate picture of Latino educational program than any prior study to date.

Throughout this study, we look mostly at how Latinos compare with all students, but also provide comparisons with White, Asian, and African American students. In addi-

tion to background descriptive data, we look at a number of variables which offer insight into how motivated and prepared these students are for postsecondary work, risk factors that inhibit progress, and details about their educational pathway.

The discussion is supported by exhibits from our analysis, and the reader will find a series of tables at the end of this report for review.

Methodology

The sample for this study was drawn from the National Longitudinal Study of 1988 8th grade cohort. The NELS:88 tracks nearly 15,000 1988 eight graders with follow-up surveys in 1990 (10th grade), 1992 (12th grade), 1994 (2 years out of high school), and 2000 (8 years out of high school). Two databases were employed in this report: the NELS: 88/2000 (CD# 2003-348) and the Postsecondary transcript study (NELS: 88/2000 (PETS), CD# 2003-402). The PETS reports the results of an exhaustive examination of college transcripts from all postsecondary institutions student reported attendance between 1992 and 2000 (Adelman, Berkovits & Owens, 2003).

Further details on our analytical procedures and definitions of variables can be found in the Appendix B on page 51 of this report.

Postsecondary Pathways

We begin our analysis by looking at the big picture of postsecondary education. Of importance is the pathway to postsecondary success and where students fall out of the pipeline. Using the NELS data, we've adjusted our calculations to approximate a universe of 1,000 eighth grade students from the 1988 NELS cohort and how those students flow from eighth grade to a bachelor's degree. We have also introduced a college quali-

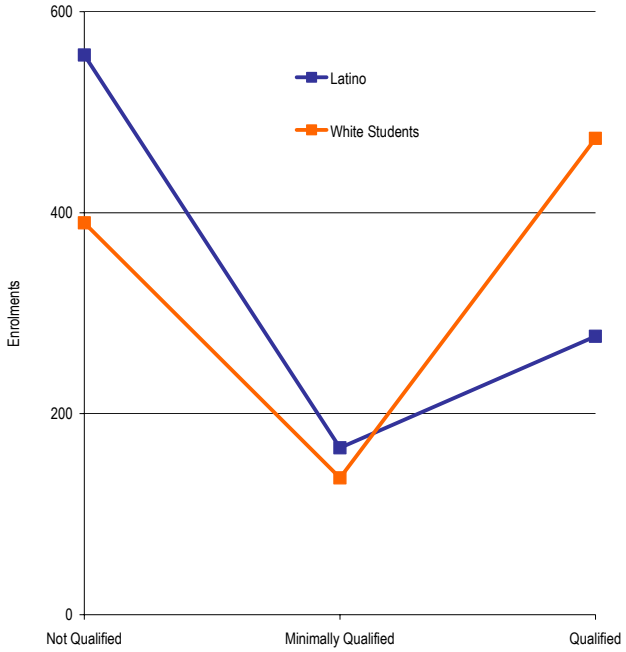
fication variable, as first defined by Berkner and Chavez (1997). The college-qualification index attempts to approximate college admissions criteria using cumulative academic course GPA, senior class rank, the 1992 NELS aptitude test scores, and the SAT and ACTS scores. More information on this index may be found in Appendix B.

College Qualifications of Latino Students

Exhibit 1 on page 13 illustrates the college qualification levels of Latino and White students. Our analysis uses three classifications of college qualifications: not qualified, minimally qualified, and qualified.

As illustrated, 557 Latino students from our 1000 student universe were considered "not qualified" for college, 166 "minimally qualified," and 277 "qualified" for postsecondary education. These rates compare to 390 not-qualified, 136 minimally qualified, and 474 qualified White students. In comparison to White students, Latinos were overrepresented by 17 percent at the not-qualified level, for a numerical difference of 167 students. Said differently, out of a 1000 student universe, 167 more Latino students were considered underprepared for postsecondary education than White students.

Exhibit 1. College Qualifications of 1988 NELS 8th grade Latinos and White students.



SOURCE: US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

At the minimally-qualified level, 166 Latino students represent an overrepresentation of only 3 percent compared to White students, a figure more at par than at the not-qualified level. However, at the "qualified level, the trend reverses. Now Latino students are far underrepresented compared to White students. Of the 1,000 student cohort, only 277 Latino students, slightly more than one-in-four, are considered qualified for college-level work. Conversely, almost half of all White students, or 47.4 percent, are similarly qualified. The impact of this dynamic is that for every 1,000 eighth grade students from the NELS cohort, 200 more White students are academically qualified for postsecondary education than Latino students. Reduced to a smaller ratio, for every 7 college-qualified Latino students there are 12 similarly-qualified White students. The situation is some-what reversed at the not-qualified end of the distribution, where for every 7 non-qualified White students there are 10 non-qualified Latino students.

Using this information as our baseline, we are now set to take three passes through the postsecondary pipeline: the first for those eighth-grade students considered "not qualified," the second for those considered "minimally qualified," and the third for college "qualified" students.

Not-Qualified Students

Although a much higher number of not-qualified Latino students in our cohort do not go on to postsecondary studies, the percentage of not-qualified students attending postsecondary education is slightly higher than similarly-qualified White students (46 versus 43 percent). However, Latino students from this group are underrepresented at the four-year level and overrepresented at the two-year level in comparison to White students.

Postsecondary participation. Approximately 240 of the 557 non-qualified Latino students, or 43 percent, failed to pursue any type of postsecondary education. Thus, one quarter of all Latino youth were not qualified and did not go on to postsecondary education. Within the White cohort, 183 students did not go on to postsecondary studies, or 47 percent of the White non-qualified cohort (or 18.3 percent of all White 8th grade students).

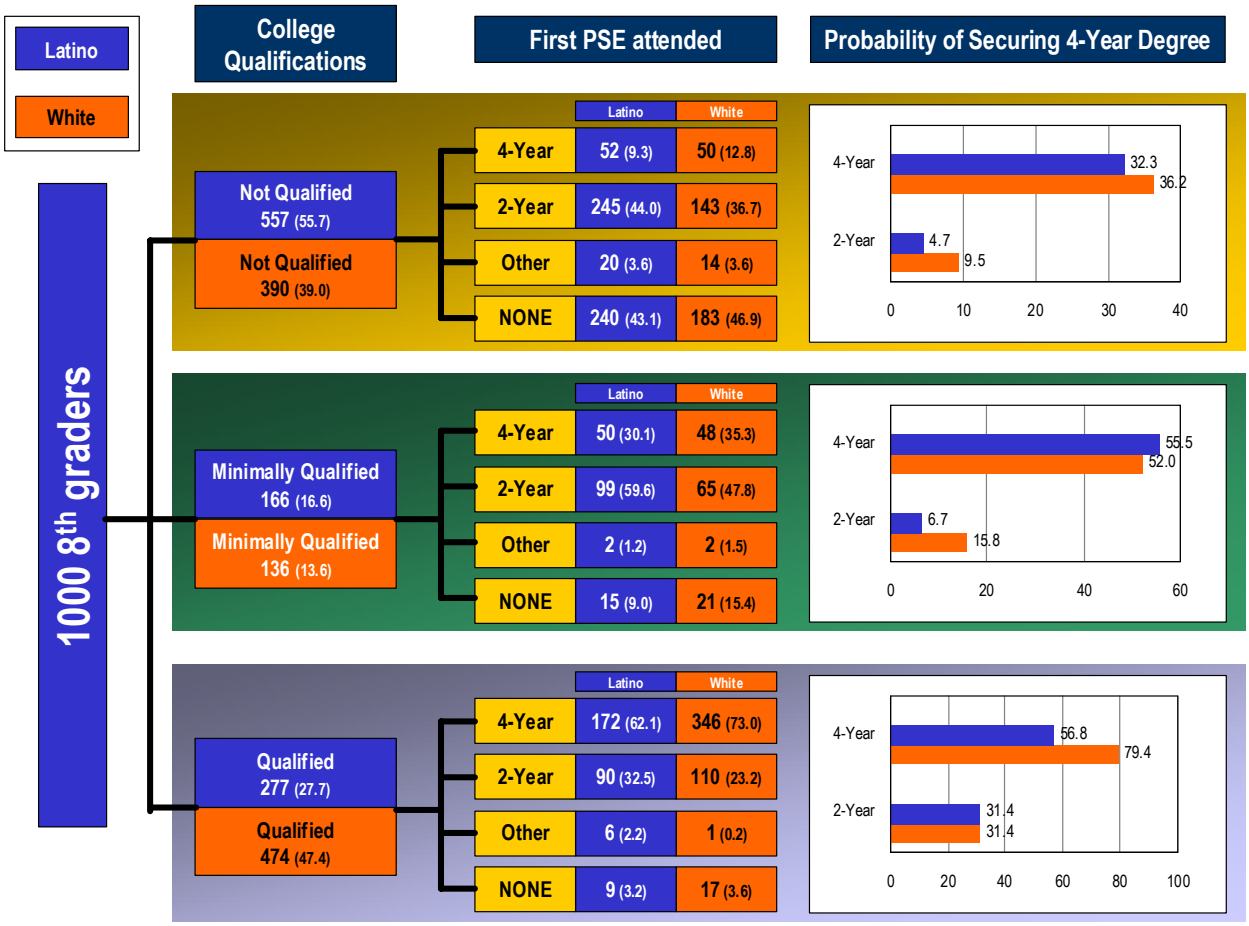
Four-year enrolment. About the same number of non-qualified Latino and White students enroll at the four-year level (52 vs. 50). This is significant because the number of non-qualified White students is approximately one-third (30 percent) less than Latino students. Still, the number of four-year students from this non-qualified pool is the same.

Two-year enrolment. A much larger group of non-qualified Latino students enroll at the two-year level than do White students. In total, 245 non-qualified Latino students, or 44 percent of all non-qualified Latinos, enroll in a two-year institution. Comparatively, 143 non-qualified White students, or 37 percent of the non-qualified White students, similarly enrolled in a two-year institution.

For Latinos, this is significant. One quarter of all Latino eighth grade students are underprepared for postsecondary education AND enroll at the two-year level, a rate 10 percentage points higher than that for White students.

Degree Completion. Among non-qualified students, approximately one-third of Latino and White students who initially enrolled at a four-year institution managed to secure a four-year degree (32.3 percent Latino vs. 36.2 percent White). Thus, those underprepared students who entered at the four-year level had about the same chance of success at the BA level. At the two-year level, White students were twice as successful or twice as likely as Latino students (9.5 vs 4.7 percent) to secure a bachelor's degree. Only 1-in-20 two-year Latino students successfully completed a four-year program.

Exhibit 2. Pathways to baccalaureate degree attainment for 1000 NELS 8th grade cohort[1]



NOTE: Numbers in parentheses indicate percentage of larger or parent group.
Source: US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Minimally-Qualified Students

The second layer of data in Exhibit 2 depicts students deemed "minimally qualified" for college. As illustrated, a much smaller group of Latinos and White students wound up in this category, suggesting a reverse bell curve where most students were categorized as either "non-qualified" or "qualified."

Postsecondary participation. Again, our analysis found that Latino youth were under-represented at the four-year level and overrepresented at the two-year level within the

[1] The NELS cohort identified and used for this analysis differs slightly from the cohort used in analysis later in this publication. This analysis is limited to students who started in the eighth grade but also had the necessary information in order to categorize them in terms of their college qualifications. This requires us to remove a small percentage of students from the original cohort.

classification of minimally-qualified for college. But within the group of minimally-qualified students, Latinos were more likely to participate in postsecondary education than were White students. Specifically, 91 percent of minimally-qualified Latino students went on to some form of postsecondary education, compared to 85 percent of similarly-qualified White students.

Four-year enrollment. As with non-qualified students, the same number of minimally-qualified Latino and White students within the 1000 student universe enrolled in a four-year institution (50 vs. 48), but a higher percentage of minimally-qualified White students wound up in a four-year institution (35 percent) than Latino students (30 percent).

Two-year enrollment. At the two-year level, the trend in enrollment shifts. Ninety-nine minimally-qualified Latino students enrolled at a two-year institution (59.6 percent) compared to 65 White students (47.8 percent).

Degree Completion. With respect to the probability of securing a four-year degree, minimally-qualified Latinos were slightly more likely than White students to earn a BA (55.5 vs. 52.0 percent). At the two-year level, White students completed at twice the rate of Latinos (15.8 to 6.7 percent).

College-Qualified Students

The third and final layer of our analysis focuses on students considered "qualified" for college. The first and best news is that almost all college-qualified students, Latino or White, went on to some form of postsecondary education within eight years of scheduled high school graduation.

Postsecondary participation. Only 9 of 277 qualified Latino students and 17 of 474 qualified White students did not make it to the postsecondary world. In any analysis, those data suggest almost full access to PSE. However, those same two numbers—277 and 474—place an exclamation mark on the underrepresentation of Latino students in

the college-qualified pool of students. For every 10 White students who are college qualified, only 7 Latino students are similarly qualified.

Four-year enrolment. At the four-year level, 346 college-qualified White students made it to the four-year track, representing 73 percent of all college-qualified White students. Comparatively, only 172 Latino students—or 62 percent of all college-qualified Latino youth—enrolled in a four-year institution. Alternatively stated, almost 40 percent of Latino students considered worthy academically for four-year studies failed to enroll at a four-year institution. In a broader picture, one-third of all White students were both college qualified and enrolled at a four-year school. In the Latino world, only 17 percent of eighth graders—half the rate of White students—were both qualified and four-year enrolled.

Two-year enrolment. The two-year level of college-qualified students is the only sector where we see White students outnumber Latino students (110 vs. 90). However, the percentage of college-qualified Latino students entering two-year schools, 32.5 percent, is still higher than the 23.2 percent of qualified White students entering two-year institutions.

Degree Completion. A disturbing finding comes out of the probability of securing a four-year degree data. Whereas college-qualified White students have a 79.4 percent probably of completing a BA, the Latino success rate is only 56.8 percent—20 percent lower than their White peers. Important to remember is that this is indicative of "college qualified" students, and of this group 43 percent of prepared Latino students aren't completing their BA to only 20 percent of White students. At the two-year level, Latinos and Whites fared identically: 31.4 percent of both groups who initially attended a two-year college secured a certificate or associates degree.

Earning a Bachelor's Degree

From our universe of 1000 students, more than twice as many White students who initially enrolled at a four-year institution earned a BA compared to Latino students. According to our analysis, 318 White students from the original eighth-grade universe of 1000 students initially enrolled at a four-year institution and graduated with a bachelor's degree (see Exhibit 3). Within the Latino cohort, only 142, or 14.2 percent, traveled and completed the same path.

Those with greater academic qualifications were much more likely to enroll at a four-year institution and complete a BA. Interesting enough, 86 percent of all degrees conferred to White students enrolled at four-year institutions went to students considered "qualified." Latinos, however, were more diverse in their qualifications. Only 69 percent of Latino BAs came from those "qualified" for college. Twenty percent came from minimally-qualified students and 12 percent from non-qualified students.

Exhibit 3. Average number of earned bachelor's degrees by NELS students from a universe of 1000 who initially enrolled at a four-year institution by 2000, by college qualification index

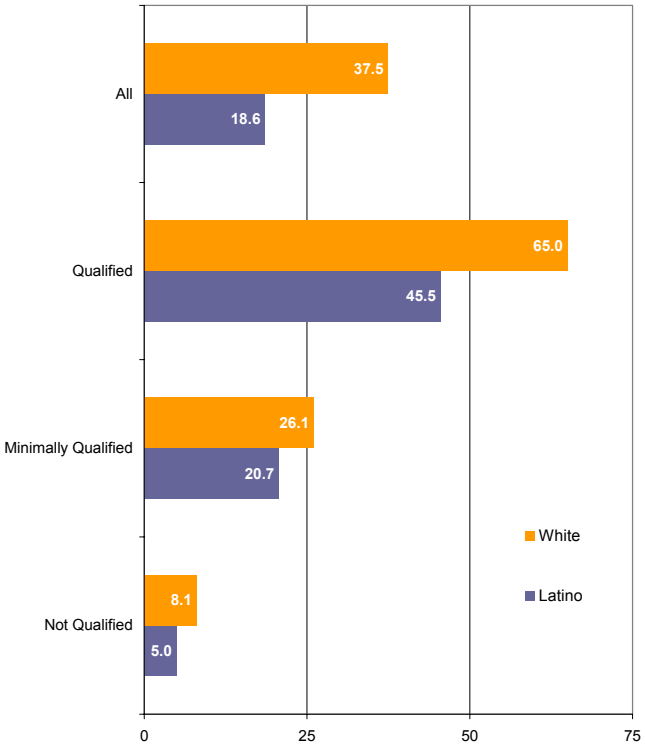
Qualification Index	Latino	White	All Students
Not Qualified	17	18	52
Minimally Qualified	28	25	50
Qualified	98	275	172
Total	142	318	274

Of course, students who begin at institutions other than the four-year type also have opportunity to earn a BA over time. Considering that a large percentage and number of Latino students enter initially at the two-year level, it is within reason that some of those students eventually transfer to a four-year institution and ultimately receive a bachelor's degree. The result is that the number of BAs conferred is moderately higher than our previous assertion. However, the probability rate is reduced because we now consider all students, not just those who started at a four-year institution.

Exhibit 4 illustrates the BA probability rate of all eighth-grade students, regardless of if or where they initially enrolled at the postsecondary level. Over all, 37.5 percent of eighth-grade White students earned a BA within 8 years of scheduled high school graduation, compared to 18.6 percent of Latino youth. From a 1000 person cohort, we would expect 375 White students and only 186 Latino students to earn a BA—again a ratio of 2:1.

Of qualified students, 65 percent of White eighth-grade students and 45.5 percent of Latino students earn a BA. At the lowest end of the index, 8.1 percent of White students and 5.0 percent of Latino students earn a BA. Thus, in every category and in every analysis, Latino students are underrepresented.

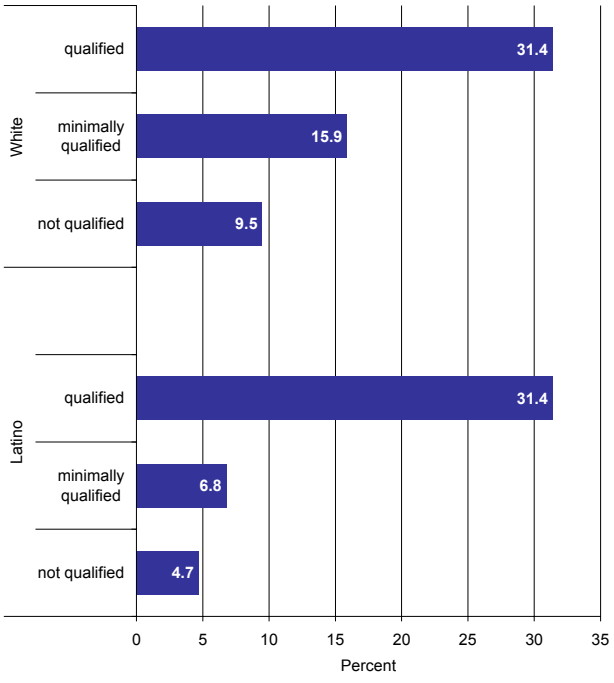
Exhibit 4. Percentage of NELS 88 eighth grade students who earned a bachelor's degree by 2000, by college qualification index



NOTE: These figures do not match up exactly with those on Tables 1 or Exhibit 2 due to the slight differences in statistical cohorts required to calculate college qualification index.
SOURCE: US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Also interesting is how students who initially enroll at a community college fair in the educational pipeline. As featured in Exhibit 5, students who are qualified for college-level work, regardless of race/ethnicity, are equally likely to transfer and earn a bachelor's degree within eight-years of scheduled high school graduation. In other terms, one quarter of all entering college-qualified students at the community college level end up with a bachelor's degree. The variations between White and Latino students only rise at the minimally and not qualified levels. For instance, 15.9 percent of minimally-qualified White students end up with a bachelor's degree, compared to only 6.8 percent of Latino students. And 9.5 percent of White students who are not qualified for college end up with a bachelor's degree, compared to 4.7 percent of similar Latino students.

Exhibit 5. Percentage of NELS Latino and White two-year students (initial enrolment) who earned a bachelor's degree by 2000, by college qualification index



SOURCE: US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Thus, the differences between White and Latino students with regard to transfer and BA degree completion are not staggering. In fact, this statistical relationship also transfers to two-year certificates and associates degrees (Exhibit 6), suggesting that, given appropri-

ate opportunity to learn at the pre-college levels, Latinos and White students who enroll at the community college have similar opportunities to reach their academic goals. Challenges exist more so for Latino students who are not appropriately prepared compared to White students.

Exhibit 6. Percentage of NELS Latino and White two-year students (initial enrolment) who earned an academic credential by 2000, by degree type and college qualification index

		None	Certificate	Associate's	Bachelor's	Graduate Studies	Total
Latino	not qualified	81.8	5.9	7.6	2.1	2.6	100.0
	minimally qualified	82.1	3.5	7.8	3.7	3.1	100.0
	Qualified	42.6	6.6	19.4	24.5	6.9	100.0
White	not qualified	71.3	7.4	11.8	7.3	2.2	100.0
	minimally qualified	58.5	8.8	16.9	12.3	3.6	100.0
	Qualified	41.5	6.9	20.1	24.6	6.8	100.0

Background Characteristics

This section provides an overview of the dataset by a variety of background characteristics of Latino students in comparison to other groups.

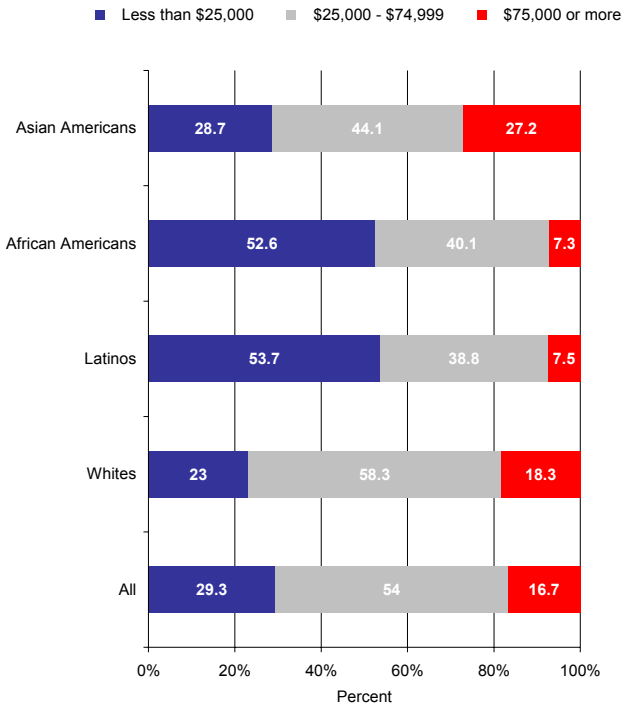
Gender. On average, the NELS cohort was split evenly between males and females. However, the Latino cohort was not as balanced by gender, with Males representing 46.6 of the cohort. This has some implications for educational pathways, since males are less likely to complete high school, less likely to enroll in postsecondary education, and less likely to persist through graduation.

Family Income. Latinos and African Americans were equally the least affluent members of the 8th grade cohort. Over half of Latinos had family incomes of less than $25,000 a year, while only 7.5 percent had a family income of $75,000 or higher. This compares to the average NELS population where 29 percent of students came from families below $25,000 a year in income and 16.7 percent were above. White students were more afflu-

ent. Only 23 percent of white students came from families below the $25,000 level, and 18.3 percent were $75,000 and above.

Socially-economically, income matters because it relates to a family's ability to choose their living characteristics. Families with higher incomes have greater opportunity to move into neighborhoods with higher average home prices, thus schools that have often have better funding, typically resulting in a better learning environment (McDonough, 1997).

Exhibit 7. Family Income of 1988 NELS 8th grade cohort

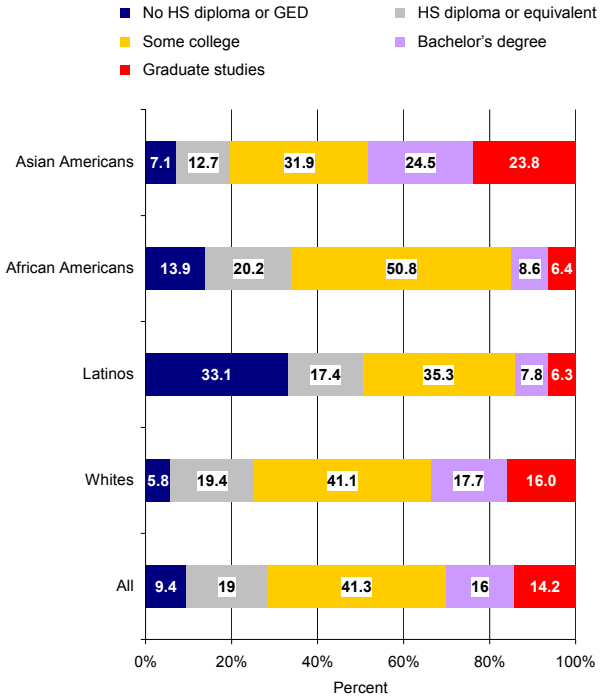


US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Educational Legacy. One of the key precursors to aspiring and enrolling in postsecondary education for youth is the educational legacy they are left with by their parents. Students whose parents went to college or university were generally much more likely to participate in postsecondary studies themselves (Cabrera & La Nasa, 2000). All tolled, 72 percent of NELS youth had at least one parent with postsecondary experience, 30 percent of whom had achieved at least a bachelor's degree. Conversely, only half (49.4 per-

cent) of Latino youth had a parent who had gone to college, and only 14.1 percent had received a bachelor's degree or higher—half the rate of the national average. In comparison, 33.7 percent of White students and 48.3 percent of Asian parents held at least a BA.

Exhibit 8. Highest parental education of 1988 8th grade cohort



SOURCE: US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Preparation for Postsecondary Studies

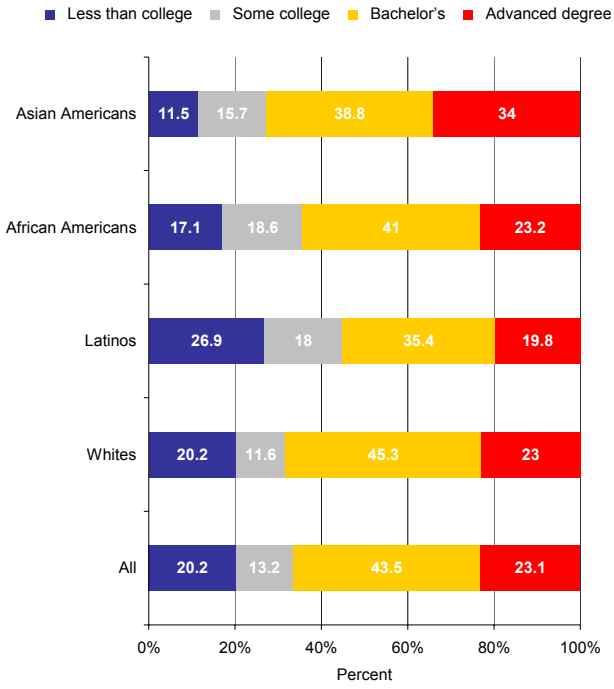
Central to the eventual enrolment and completion of postsecondary education is the preparation of students for further education (Adelman, 1999). In our analysis, we were able to look at aspirations of students for education beyond high school back in the 8th grade, and then the actual course-taking patterns and academic preparedness during the high school years.

Aspirations and plans

The first step on the ladder toward postsecondary education is an aspiration toward that goal. On the whole, it's good news that most 8th grade students expected to participate in some form of postsecondary education after they graduate from high school. In fact, four-of-five students (80 percent), on average, aspired to that level, and two thirds aspired to at least a bachelor's degree.

The overall picture is less positive for Latino students. Seventy-three percent of Latinos aspired to postsecondary education, but only 55 percent—a full 20 percent lower than the national average—aspired to a BA. The aspirations of Latino students in the US were the lowest of any other group in our analysis, thus a cause for concern to policymakers. Generally speaking, students who do not aspire to postsecondary education self-select themselves out of the pipeline. Thus, 27 percent of Latino students—over one quarter—are gone by the 8th grade.

Exhibit 9. Highest degree planned by students in the 1988 NELS 8th grader cohort in 8th grade



US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Academic Preparation

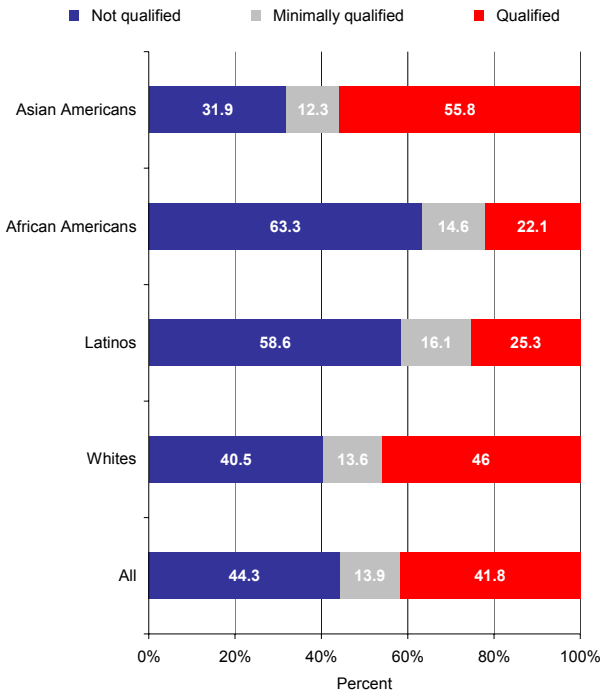
Aspirations are important to postsecondary access and success, but it only matters if students put those aspirations into motion. We looked at two variables to characterize academic preparation for postsecondary education. In the last section, we took an in-depth look at the college qualifications of students. We start with a broad look at these qualifications across all subgroups.

As Exhibit 10 illustrates, a high proportion of Latino and African American students were classified as not qualified for postsecondary education. For Latinos and African Americans, 59 percent and 63 percent respectively were characterized as such, compared to 44 percent of the total NELS cohort and 41 percent for White students. Again, a gap of approximately 20 percent in terms of those who are at least minimally qualified for post-secondary education between students of color[2] and White or Asian students.

Looking at the other end of the qualification spectrum, approximately twice the percent of White students were qualified for higher education than Latinos and African Americans. Only 1 in 4 Latino students were qualified for the postsecondary world, compared to 46 percent of White students.

[2] Students of color in this report refers to Latino and African Americans, and not Asian Americans. Native Americans were not included in this analysis.

Exhibit 10. Distribution of 1988 NELS 8th grader cohort by level of academic preparedness



US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Our second variable of interest is the highest level of mathematics completed during high school. A number of studies have found mathematics to be the primary gatekeeper to postsecondary entry (Pelavin and Kane, 1990; Adelman, 1999), and those students who stay at the rudimentary levels of mathematics are far less likely to participate and excel at the postsecondary level. Our analysis buttresses those findings.

Exhibit 11 illustrates the course-taking patterns of NELS high school students in mathematics. For simplicity, we only show the percentages for Latinos versus all students[3]. As depicted, low-level courses are found at the top of the exhibit and higher-level courses toward the bottom.

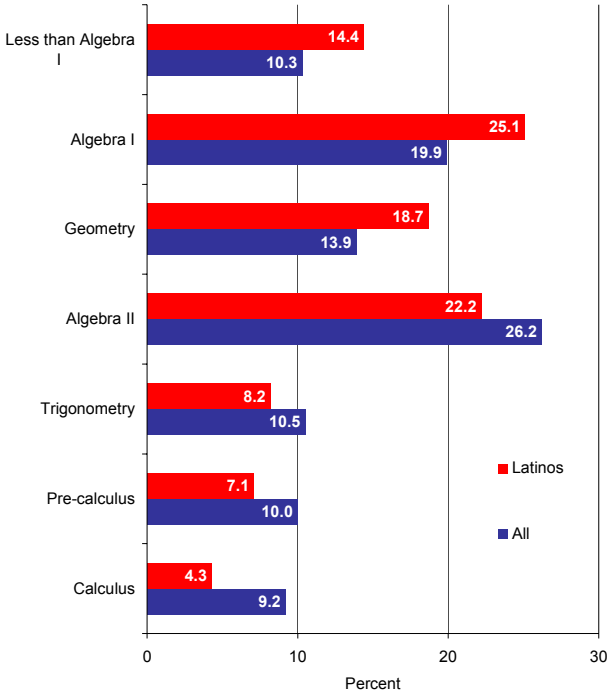
As illustrated, Latinos are much more likely to complete their public education with lower-math level courses than other students. In fact, over 58 percent of Latino students finished with standard geometry and never proceeded any further along the mathemat-

[3] Further details may be found in the tables in the appendices of this report.

ics track. Comparatively, 44 percent of all students and 41 percent of White students discontinued their mathematics studies at this level. As the progression toward more challenging mathematics coursework continues, the percent of Latinos trailed off considerably. The percent differences aren't necessarily huge by any sense, but they make a real difference in the number of students ready for higher-level learning. For instance, Latinos completed calculus at half the rate of all students.

What does this mean? For one, lower levels in mathematics suggest limited admission to most state universities and no admission to top-tier institutions. Second, it suggests limited access to high tech industrial careers that pay more than a living wage. And third, those with lower levels of mathematics are also less likely to even complete their high school career, let alone a postsecondary experience.

Exhibit 11. Highest level of mathematics completed during high school by 1988 NELS 8th grader cohort



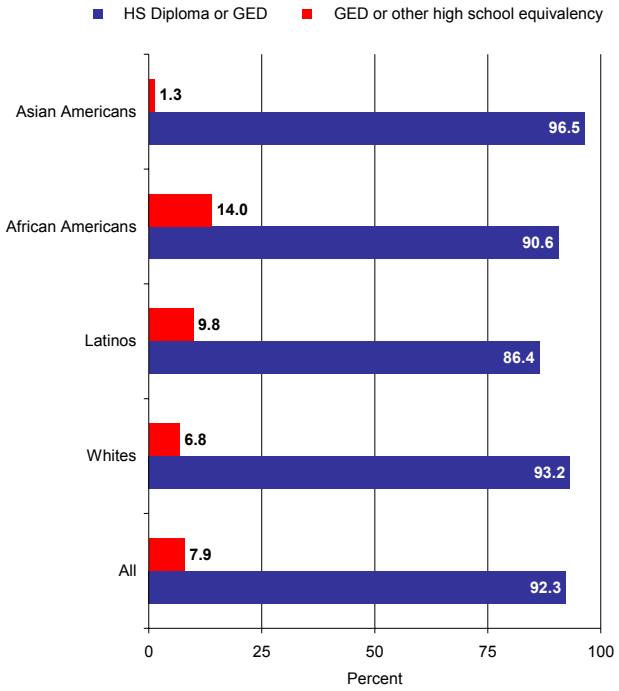
US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

High School Completion

On average, 92.3 percent of the NELS 8th grade cohort received a high school diploma, GED, or equivalent credential by 2000. Comparatively, 86.4 percent of Latinos received their high school credential, the lowest of the groups observed. Thus, the issues covered prior to this stage of our analysis are already having an impact on the educational pipeline of Latino students.

Almost 10 percent of Latino students received a GED rather than the traditional diploma, about 2 percentage points higher than the national average. This is considerably below the 14 percent GED rate for African Americans, but significantly higher than the 6.8 percent of White students who earn a GED.

Exhibit 12. Percent of 1988 NELS 8th grade cohort that received a high school diploma or GED



US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

The Postsecondary Experience

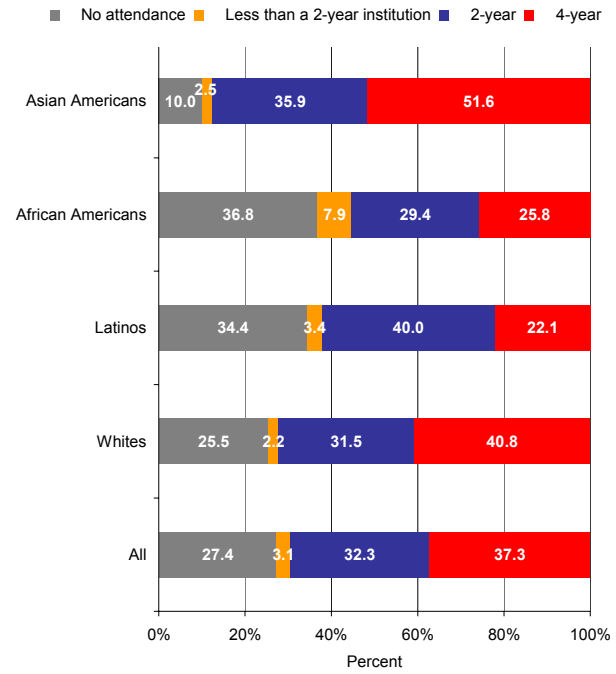
Our analysis now progresses to the postsecondary level. In this section, we discuss who went to postsecondary education and where, who completed, along with various characteristics of enrolment and postsecondary participation.

Participation at the Postsecondary Level

For the eighth-grade NELS cohort, 72.6 percent of students went on to some form of postsecondary study by 2000, or eight years past scheduled high school graduation. Sixty-six percent of Latino students enrolled and participated in postsecondary education, compared to 74.5 percent of White students and 90 percent of Asian Americans. African American students faired slightly worse than Latinos at 63.2 percent.

Of the original cohort, 37.3 percent made their initial enrolment at the four-year level. By comparison, only 22.1 percent of Latinos—almost half the four-year participation rate of Whites (40.8), enrolled at the four-year level. A much higher percent of the original cohort of Latinos, 40 percent, participates at two-year schools compared to other student groups (32.3 percent on average).

Exhibit 13. Percent distribution of 1988 NELS 8th grade cohort by postsecondary participation

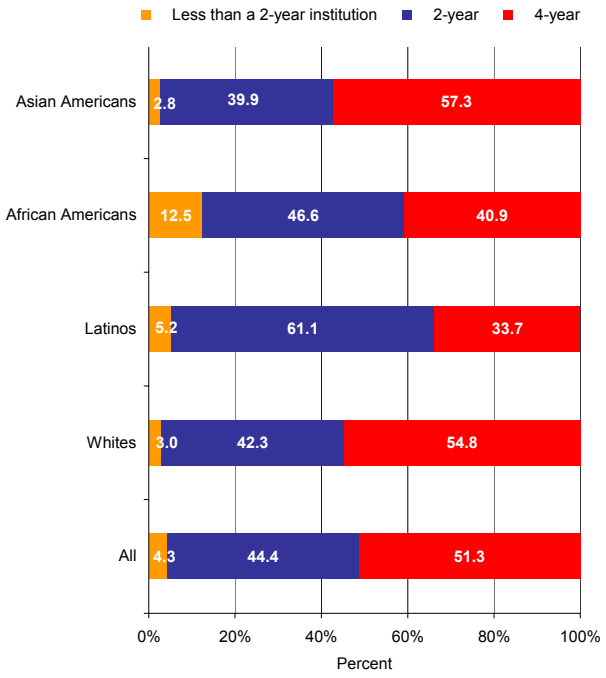


US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Of the group of students who matriculated to postsecondary education, approximately half first enrolled at a four-year institution (51.3 percent). Asians enrolled at a rate of 57.3 percent and White students at 54.8 percent. Only one-of-three Latino students, in comparison, made their first postsecondary enrollment at the four-year level. Forty-one percent of African American students enrolled in a four-year institution.

As illustrated previously, Latinos are much more likely to enroll at the two-year level than other students. Of those Latino students who went on to postsecondary education, almost two-of-three, or 61.1 percent, enrolled in a two-year institution. This is much higher than the cohort average of 44.4 percent and higher than that of African American students (46.6 percent).

Exhibit 14. Percentage distribution of 1988 NELS 8th grade cohort postsecondary participators by type of institution participated

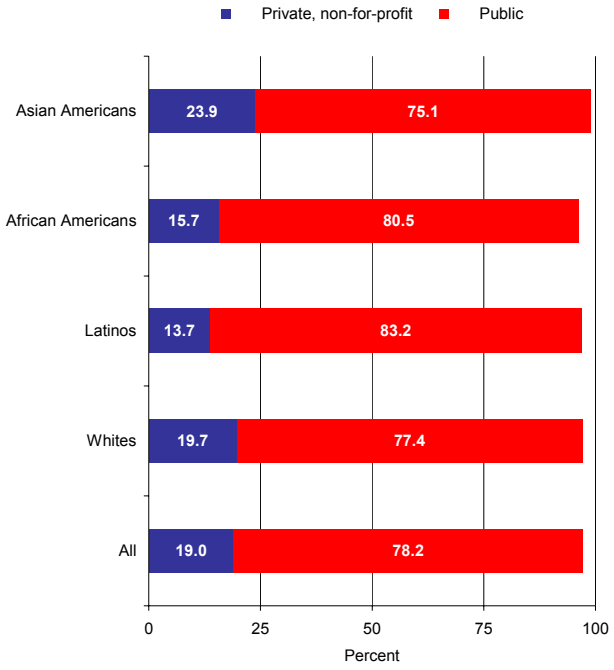


US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Institutional Sector

Most postsecondary students participated in a publicly-funded and operated institution. On average, 78.2 percent of students enrolled at this type of institution, with 19 percent enrolling at private, not-for-profit institutions. Latinos tended to enroll at public institutions at higher rates (83.2 percent) than other student groups and the least likely to enroll at private, not-for-profit institutions.

Exhibit 15. Percentage distribution of 1988 NELS 8th grade cohort by type of institution participated



US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Institutional selectivity

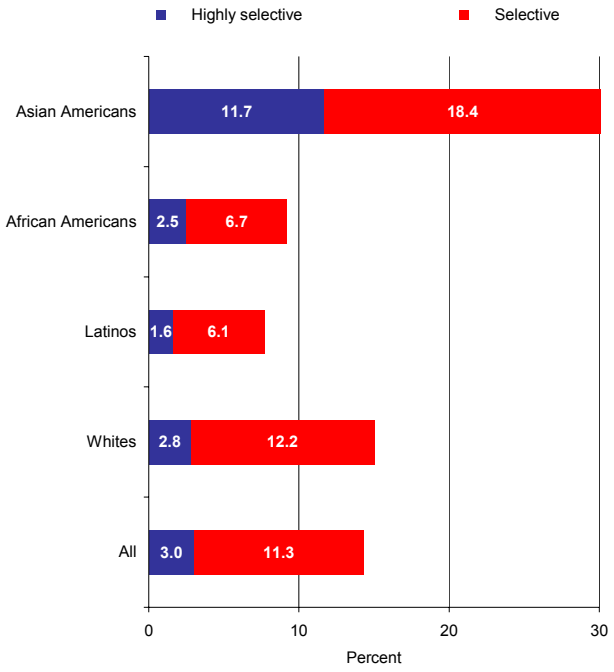
Selectivity of postsecondary institution is both a proxy for academic preparation and for future educational and career opportunities. Institutions were rated as highly selective, selective, non-selective, and open-door institutions[4]. A small proportion of students attend institutions that are not ratable (approx. 2.9 percent).

A higher percentage of Asian Americans attended selective or highly selective institutions than other students. In total, 18.4 percent of Asian Americans attended selective institutions and 11.7 percent attended highly selective institutions. These were far higher percentages than on average, where students attended at rates of 11.3 and 3.0 percent respectively. Approximately 15 percent of White students attended a selective or highly selective institution.

[4] Assignment of institutions to each band was based first on the selectivity cells used in the Cooperative Institutional Research Project (CIRP) for 1992. The NELS open door category includes community colleges and area vocational technical institutes.

Latino students were much less likely to attend selective institutions than other students. In fact, only 7.7 percent of Latino students attending a postsecondary institution attended either a selective or highly selective institution. Only 1.6 percent attended a highly selective institution. Conversely, Latinos were more inclined to attend "open-door" institutions (not depicted in Exhibit 16). Fifty-five percent of Latino students attended the open-door style of institution, compared to an average of 42.5 percent.

Exhibit 16. Selectivity of postsecondary institution attended by 1988 NELS 8th grade cohort who went on to postsecondary education

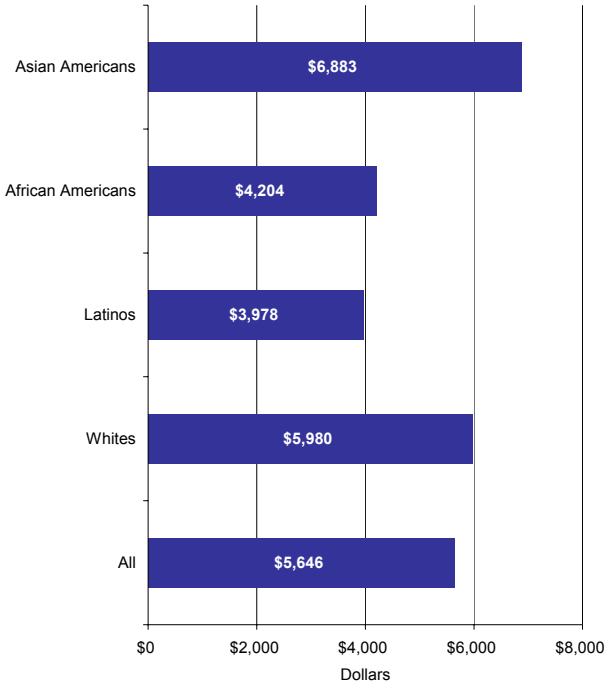


US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Institutional Cost

Latinos were also more likely to attend institutions with a lower average tuition charges than other students. On average, students from our 8th grade cohort attend postsecondary institution that cost $5,646 on average. Comparatively, Latino students attend institutions that cost $3,978, the lowest average cost of any student group. Asians attended the highest-cost institutions ($6,883) followed by White students ($5,980).

Exhibit 17. Average tuition fees for 1st postsecondary institution attended by 1988 NELS 8th grader cohort



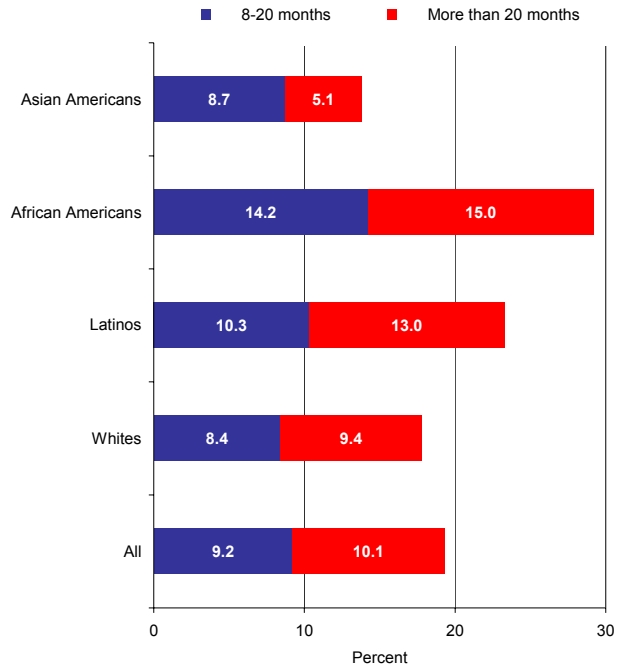
US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Delayed postsecondary entry

Students who delay entry into postsecondary education do not succeed as well as those who go directly from high school to postsecondary education (Adelman, 1999). Based on our analysis of the NELS data, approximately one-of-five students (19.3 percent) delayed entry into postsecondary education after high school. A slightly larger percentage of Latino students, 23.3 percent, delayed entry.

Of those that delayed entry into postsecondary education, approximately 50 percent delayed more than 20 months, while the remainder delayed between 8-20 months. A slightly higher percentage of Latinos delayed for a longer period (13 percent of total PSE cohort; 56 percent of delayed cohort). Overall, the differences in delay by subgroup are not very significant, with the exception of Asian Americans, who delayed the least overall (13.8 percent) and were more likely to delay for shorter periods.

Exhibit 18. Number of months between high school graduation and entry into postsecondary for 1988 NELS 8th grade cohort

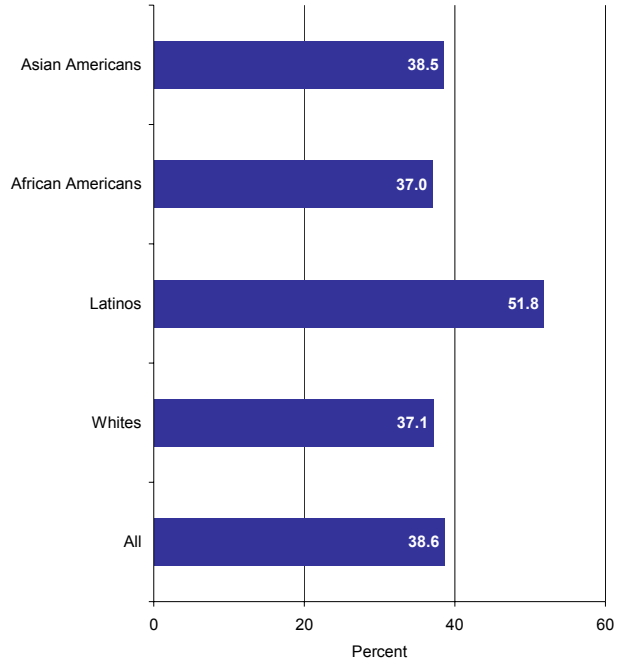


US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Attendance Patterns

Latino students were much more likely to attend postsecondary education on a part-time basis than other students. Of the total cohort that went on to postsecondary education, 38.6 percent of students attended on a part-time basis. However, over half (51.8 percent) of Latino students who enrolled in postsecondary education attended part-time. Most other student groups hovered around the cohort average, but Latinos attended on a part-time basis in much greater fashion than their peers.

Exhibit 19. Percent of postsecondary students from the 1988 NELS 8th grader cohort who attended postsecondary institutions on a part-time basis.



US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

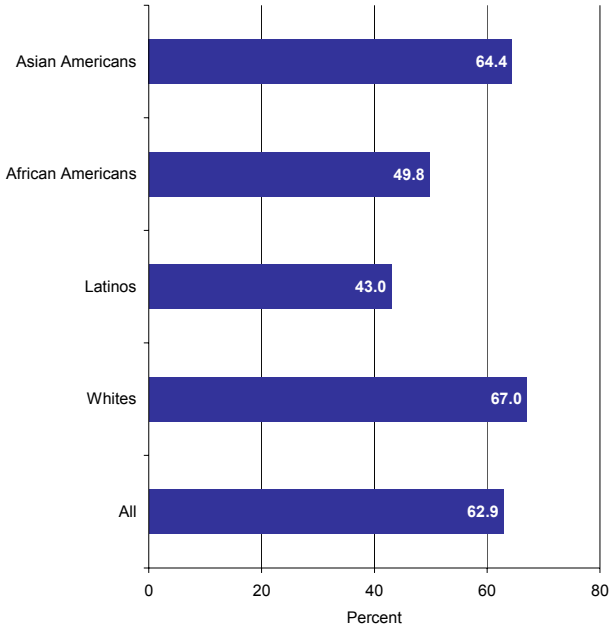
Institutions attended. Approximately 30 percent of students attended more than one postsecondary institution, and a slightly higher percentage (32.4 percent) changed majors. There were no significant differences by race/ethnic group.

Institutional Transfers. While almost one-third of our cohort transferred from a two-year to a four-year institution during their postsecondary experience, only 18.9 percent of Latinos did the same. Comparatively, 37 percent of Asian students transferred from two- to four-year institutions.

Continuous enrolment. Another predictor of academic success and completion is continuous enrolment (Adelman, 1999). A student is considered continuously enrolled if they attend successive semesters and do not stop-out of studies for more than four months at one time. Our analysis found that Latinos are much less likely to maintain continuous enrolment than other students. On average, 43 percent of Latinos maintained continuous enrolment in postsecondary education, compared to 62.9 percent of the en-

tire cohort and 67 percent of White students. With regard to stopouts, Latino students were more likely to take time off from their studies than other students (40.2 percent compared to cohort average of 27.7 percent).

Exhibit 20. Percent of postsecondary students from the 1988 NELS 8th grader cohort who maintained continuous enrollment while in PSE



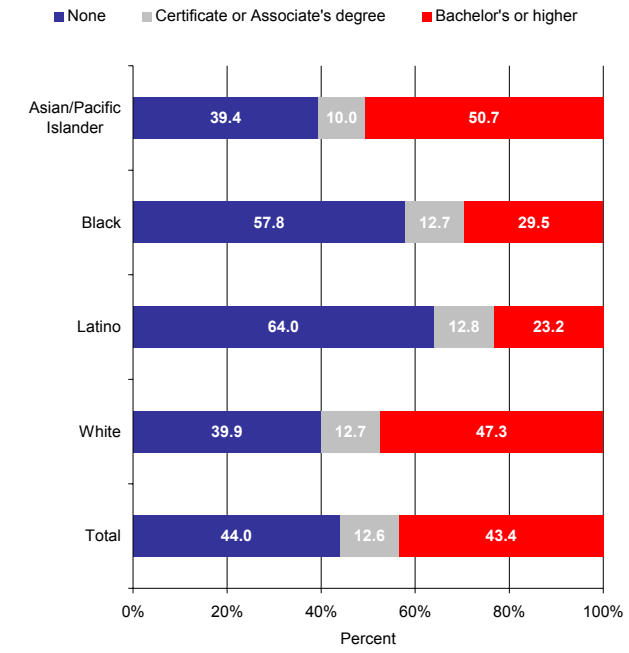
US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Postsecondary Completion

The most decisive trend differential between Latino and White students was that of postsecondary completion. Of only those eighth-grade students that went on to postsecondary studies, 43.4 percent received a bachelor's degree and 12.6 percent received a certificate or associate's degree. Forty-four percent of those who went on to postsecondary education did not receive a degree by 2000. Among Latinos, only 23.2 percent received a bachelor's degree and 12.8 percent a certificate or associate's degree. Almost two thirds (64 percent) of Latinos who entered postsecondary education did not receive a degree by 2000. Comparatively, White students faired much better. Forty-seven per-

cent of White students earned a BA, 12.7 percent a certificate or associate's degree, and 39.9 percent did not complete a degree of any type.

Exhibit 21. Highest postsecondary degree attained by 2000 (eight years after scheduled high school graduation) by 1988 NELS 8th grade cohort



US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

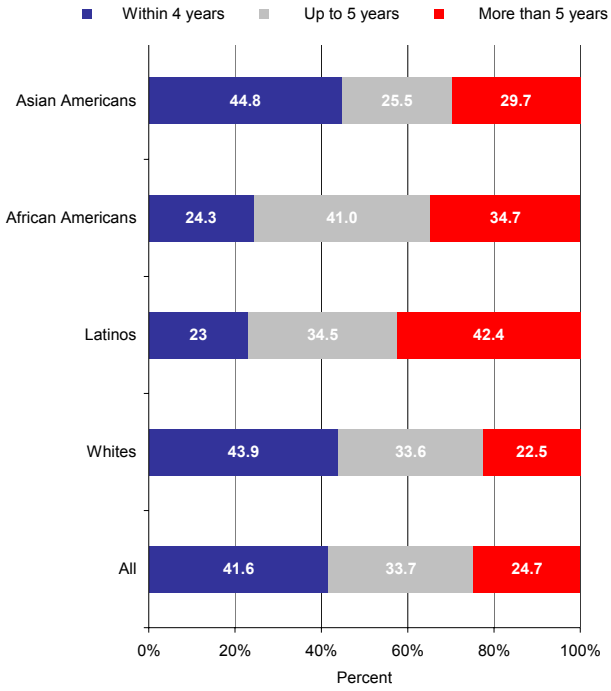
Time to degree

Research has suggested that low-income and students of color do not complete their postsecondary certificates or degrees within the standard four-year period (Adelman, 1999; Hafner et al., 1990). Our analysis finds that most students do not complete within four-years, and that students of color, with the exception of Asian Americans, fair worse than White students.

Overall, 41.6 percent of PSE students who completed a BA did so within four years, with an additional 33.7 percent completing within five years. Therefore, three quarters (75.3 percent) of all students who completed a BA did so within a five-year period. Latino students completed at more relaxed rates. Only 23 percent of Latino students who completed a BA did so within four-years. In total, 57.5 percent completed within five years. This is the lowest rate of progress by race/ethnic group in our analysis. On the flip side,

42.5 percent of Latino students completed their BA beyond the five-year mark, compared to one quarter (24.7 percent) of the entire cohort. This suggests that Latino students, for a variety of reasons, take extra time to degree—but they do get the degree.

Exhibit 22. Time to bachelor degree completion for 1988 8th grade cohort



US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Risk Factors

During the first analysis of NELS data in 1990, Hafner, Ingels, Schneider, and Stevenson (1990) identified a series of six risk factors to postsecondary participation which included:

- Single parent family
- Income less than $15,000
- Home alone more than 3 hours a day
- Parents have no high school diploma
- Has a sibling who dropped out
- Limited-English-proficient

In addition to these risk factors, the following were identified and used in our analysis:

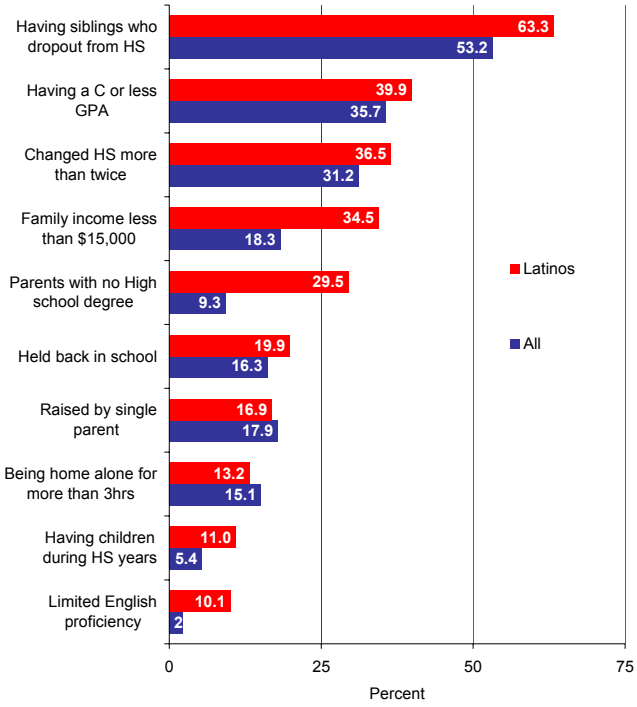
- Held back in school
- Changed high school more than twice
- Having a C or lower GPA in high school
- Having children during high school years

Exhibit 23 compares individual risk factors for Latino youth with the entire cohort. With the exception of two factors, a higher percentage of Latino students consistently were at-risk when compared with the total cohort, averaging 7 percentage points above the cohort average in each risk category. Comparatively, the percentage of White students within each risk factor was below the cohort average in each factor, running an average of 2.6 percentage points below the national average in most categories.

Risk areas where Latinos were overrepresented include parents without a high school degree, low-family income, and sibling dropouts. Slightly less than one-third (29.5 percent) of Latino students had parents without a high school degree, 20 percentage points above the cohort average. Over one-third (34.5 percent) were from extremely low-income backgrounds, 16 percentage points higher than the cohort average of 18.3 percent. And 63.3 percent of Latino youth had siblings who had dropped out from high school, 10 percentage points higher than the cohort average of 53.2 percent. Additionally, 10 percent of Latino students were limited English proficiency, 8 percentage points higher than the cohort average.

In other risk areas, including being held back in school, changing schools, earning a C or less GPA, and bearing children while still in high school, Latino youth were slightly overrepresented (between 3.6 and 5.6 percent) compared to the cohort average.

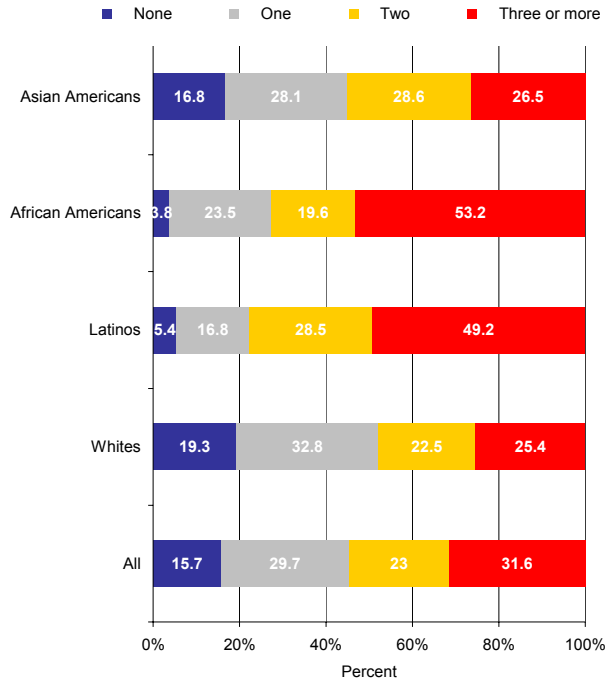
Exhibit 23. At-risk factors for Latino students versus all students of 1988 NELS 8th grade cohort



US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

As evidenced in Exhibit 24, Latinos have, on average, more risk factors than any other student group except African Americans. Almost half of all Latino students, or 49.2 percent, have three or more risk factors, compared to a cohort average of 31.6 and a White average of 25.4 percent. Over three quarters of Latino youth have two or more factors (compared to 54.6 percent on average) and higher than the rate for African Americans (72.8 percent). Nineteen of 20 (94.5 percent) Latino students have at least one risk factor (compared to 84.3 percent on average).

Exhibit 24. Number of risk factors for 1988 NELS 8th grade cohort



US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Summary and Conclusion

At the beginning of this report, we introduced readers to Juan and Susan, two high school students from Texas with a sight on their future. Through our analyses of the most recent NELS dataset, we conclude that Juan's pathway to and through postsecondary education is far more challenging than Susan's.

Page by page, we have introduced data into the public arena that clearly illustrates where the challenges lay for Latino students versus students from other race/ethnic backgrounds, particularly White students. Taken together and in sum, the evidence is strong and unambiguous: Latino students are clearly at a deficit in terms of aspirations, preparation, access, and completion of postsecondary education.

To conclude, we summarize the research issues raised through this report. Our analysis found that during the high school years, Latino students were more likely to:

- have been held back in school
- have changed HS more than twice
- earn a C or less in high school
- take lower forms of mathematics in high school
- leave high school before graduation
- earn a GED

These are partially the result of other background characteristics which were present for Latino students. For instance, Latino students were more likely to:

- be from a low-income family
- have a sibling who dropped out of school
- be limited in their English proficiency
- have a parent who did not graduate from high school
- have children during high school
- have a parent without any postsecondary experience

As expected, the weight of these forces compounds to further reduce opportunities for Latino youth, such that they were:

Less likely to:	***More likely to:***
▪ aspire to postsecondary education and to a Bachelor's or advanced degree ▪ enroll in postsecondary education ▪ be academically qualified for postsecondary education ▪ enroll at a selective postsecondary institution ▪ maintain continuous enrolment through to degree ▪ complete a postsecondary degree ▪ earn a degree within four years	▪ enroll in a two-year rather than a four-year institution ▪ delay entry into postsecondary education and delay for longer periods ▪ attend part-time ▪ attend more than one postsecondary institution ▪ enroll at a publicly-funded postsecondary institution ▪ attend lower-cost institutions

It isn't until we see this inventory of challenges facing Latino students that one can truly comprehend the scale of this issue. At almost every level, Latino youth face an upward

struggle. The impact of these forces is to suppress the educational opportunity for these youth and lead them to a future that requires more effort to keep on current standing with other students, much less than trying to climb up the ladder of opportunity.

The US is more racially and ethnically diverse than at any time in its history, and the near future promises a continuation of this trend. By 2050, Latinos will be the majority ethnic group in America. For that reason and others, it is imperative that public policy focus more rigorously on the academic pipeline issues for Latino youth, understanding completely that dealing with these issues has the potential to raise the bar for all children.

This can only be done through broad social programming. Turning a few screws on current policy and programs will result in limited incremental reforms, which in turn will result in little if any progress in attainment for at-risk youth. This is an important point. If our society is only interested in playing at the margins of social engineering, we must reasonably expect marginal outcomes. If a true interest is in place or can be set in place to remedy past and current inequities, only then can we achieve a broader set of outcomes based on research and knowledge. It will require a comprehensive and radical reform effort of the education of youth from low-income populations along the entire K-16 system to realize genuine change.

Unfortunately, given the recent budget crisis of our federal and state governments, investment in education at the elementary, secondary, and postsecondary levels is expected to stay dormant for the next several years. The excesses of the 1990s provided ample opportunity and resources to deal with many of these issues, but those opportunities have been squandered through imprudent tax cuts and other policy decisions.

Hopefully policymakers will look at the data in this report and realize that a renewed commitment to the education of all students is the only answer to our dilemma. Given that commitment and the commitment of educators, parents, and citizens, then perhaps

students like Juan can have the choice to mark out their own future, not have society mark it out for them.

Appendix A. Data Tables

Table 1. Selected socio-economic and demographic characteristics of the 1988 8th graders cohort across ethnicity in percentages

Factor	All	Whites	Latinos	African Americans	Asian Americans
Gender					
Male	49.9	49.7	46.6	54.2	48.8
Female	50.1	50.3	53.4	45.8	51.2
Highest parental education					
No HS diploma or GED	9.4	5.8	33.1	13.9	7.1
HS diploma or equivalent	19	19.4	17.4	20.2	12.7
Some college	41.3	41.1	35.3	50.8	31.9
Bachelor's degree	16	17.7	7.8	8.6	24.5
Graduate studies	14.2	16	6.3	6.4	23.8
Family income					
Less than $25,000	29.3	23	53.7	52.6	28.7
$25,000 - $74,999	54	58.3	38.8	40.1	44.1
$75,000 or more	16.7	18.3	7.5	7.3	27.2
Highest degree planned in the 8th grade					
Less than college	20.2	20.2	26.9	17.1	11.5
Some college	13.2	11.6	18	18.6	15.7
Bachelor's	43.5	45.3	35.4	41	38.8
Advanced degree	23.1	23	19.8	23.2	34
Preparation for college					
Not qualified	44.3	40.5	58.6	63.3	31.9
Minimally qualified	13.9	13.6	16.1	14.6	12.3
Qualified	41.8	46	25.3	22.1	55.8
Highest mathematics in High School					
Calculus	9.2	9.9	4.3	3.8	23
Pre-calculus	10	10.8	7.1	4.9	15.3
Trigonometry	10.5	11	8.2	8.8	11
Algebra II	26.2	27.7	22.2	20.6	21.9
Geometry	13.9	13.7	18.7	13.2	9.6
Algebra I	19.9	18	25.1	31	14.7
Less than Algebra I	10.3	9	14.4	17.8	4.5

Source: US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

Table 1 (continued). Selected socio-economic and demographic characteristics of the 1988 8th graders cohort across ethnicity in percentages

Factor	All	Whites	Latinos	African Americans	Asian Americans
High School completion by 2000					
HS Diploma or GED	92.3	93.2	86.4	90.6	96.5
No HS credential	7.6	6.7	13.3	9	3.4
Standard HS diploma	84.4	86.4	76.6	76.5	95.2
GED/other HS equivalency	7.9	6.8	9.8	14	1.3
Certificate of attendance	0.2	0.1	0.3	0.4	0.1
First type of PSE institution attended					
No attendance	27.4	25.5	34.4	36.8	10
Less than a 2-year institution	3.1	2.2	3.4	7.9	2.5
2-year	32.3	31.5	40.0	29.4	35.9
4-year	37.3	40.8	22.1	25.8	51.6
Highest PSE degree attained by 2000 [1]					
None	58.5	54.7	76.4	71.5	45.1
Certificate/License	3.7	3.6	3.3	4.3	4.6
Associate degree	5.7	6.1	5	4.2	4.6
Bachelor's degree	22.2	24.5	10.6	15	30.2
Graduate studies	10	11.2	4.6	4.9	15.5

Source: US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).
[1] Highest PSE attained was ascertained from college transcripts (HDEG).

Table 1 (continued). Selected socio-economic and demographic characteristics of the 1988 8th graders cohort across ethnicity in percentages

Factor	All	Whites	Latinos	African Americans	Asian Americans
1. Raised by single parent	17.9	13.9	16.9	44.3	6
2. Parents with no High school degree	9.3	6.1	29.5	11.2	6.7
3. Having siblings who dropout from HS	53.2	51.5	63.3	54.4	53.6
4. Being home alone for more than 3hrs	15.1	12.7	13.2	29.4	16.5
5. Limited English proficiency	2.3	0.8	10.1	2.2	8.7
6. Family income less than $15,000	18.3	12.4	34.5	39.2	12.1
7. Held back in school	16.3	14.4	19.9	26.7	15.4
8. Changed HS more than twice	31.2	29	36.5	36.7	46.2
9. Having a C or less GPA	35.7	33.6	39.9	48.8	25.1
10. Having children during HS years	5.4	4	11	9.5	1.1
Number of at-risk factors					
None	15.7	19.3	5.4	3.8	16.8
One	29.7	32.8	16.8	23.5	28.1
Two	23	22.5	28.5	19.6	28.6
Three or more	31.6	25.4	49.2	53.2	26.5
First type of postsecondary institution attended [1]					
No attendance					
Less than a 2-year institution	27.4	25.5	34.4	36.8	10
2-year	3.1	2.2	3.4	7.9	2.5
4-year	32.3	31.5	40	29.4	35.9
	37.3	40.8	22.1	25.8	51.6

Source: US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-402).

[1]Based on true first institution attended as verified by college transcripts (TRUFIRST).

Table 2. Various postsecondary outcomes and variables for those members 1988 8th graders who became postsecondary participants.

PSE Attendance	All	Whites	Latinos	African Americans	Asian Americans
Months between HS completion & PSE attendance					
0-7 months	80.7	82.3	76.7	70.7	86.1
8-20 months	9.2	8.4	10.3	14.2	8.7
More than 20 months	10.1	9.4	13	15	5.1
Selectivity of 1st PSE attended					
Highly selective	3	2.8	1.6	2.5	11.7
Selective	11.3	12.2	6.1	6.7	18.4
Non-selective	40.3	41.7	33.4	38.7	35.1
Open door	42.5	40.6	55.2	48.9	33.2
Not ratable	2.9	2.8	3.8	3.2	1.8
Sector of 1st PSE attended [1]					
Private, for-profit	2.9	2.8	3.1	3.8	1
Private, non-for-profit	19	19.7	13.7	15.7	23.9
Public	78.2	77.4	83.2	80.5	75.1
Average tuition for 1st PSE attended [1]	$5,646	$5,980	$3,978	$4,204	$6,883
Highest level of PSE attained					
None	44.0	39.9	64.0	57.8	39.4
Certificate	4.9	4.7	5.1	6.4	4.9
Associate's	7.7	8.1	7.7	6.2	5.1
Bachelor's	30.0	32.5	16.2	22.2	33.5
Graduate studies	13.4	14.8	7.0	7.3	17.2
PSE attendance patterns					
Maintained continuous enrollment [2]	62.9	67	43	49.8	64.4
Attended multiple schools [2]	30	30.3	28.2	26.2	31.7
Transferred from 2- to 4-year sector [3]	31.9	35.7	18.9	21.4	36.9
Took time off [4]	27.7	24.5	40.2	37.5	29.5
Part-time attendance [4]	38.6	37.1	51.8	37	38.5
Changed majors [4]	32.4	32.8	28.8	32.3	34.2
Time for Bachelor's completion [5]					
Within 4 years	41.6	43.9	23	24.3	44.8
Up to 5 years	33.7	33.6	34.5	41	25.5

More than 5 years	24.7	22.5	42.4	34.7	29.7

Sources: US Department of Education. National Center for Education Statistics. National Educational Longitudinal Study of 1988 (NELS: 88/2000, 2003-348 & 2003-402).

[1] Universe is made up of students whose first true institution attended was either a 2-year or a 4-year institution. Sector was ascertained by accessing IPEDS information for true first institution attended which was merged to this file(NELS 2003-402).

[2] Based on college transcripts contained in NELS 2003-402 (CONTIN & INSTCOMB, respectively).

[3] Universe is made of students whose first institution attended was a community college (TRUFIRST) and who transferred some credits (ATRANSFR variable with values 1, 2 and 3).

[4] Based on self-reported data contained in NELS 2003-348 (F4ETKOFF, F4EPARTT & F4ECHMAJ, respectively).

[5] Based on college transcripts (BACHTME).

Appendix B. Methodology

Methodology

Database. The sample for this study was drawn from the National Longitudinal Study of 1988 8th grade cohort. The NELS:88 tracks nearly 15,000 1988 eight graders with follow-up surveys in 1990 (10th grade), 1992 (12th grade), 1994 (2 years out of high school), and 2000 (8 years out of high school). Two databases were employed in this report: the NELS: 88/2000 (CD# 2003-348) and the Postsecondary transcript study (NELS: 88/2000 (PETS), CD# 2003-402). The PETS reports the results of an exhaustive examination of college transcripts from all postsecondary institutions student reported attendance between 1992 and 2000 (Adelman, Berkovits & Owins, 2003).

Weighting. The 2000 panel weight F4BYPNWT was used to estimate the number of 8th graders in the population that participated in both the base year and the fourth followed up that took place 12 years later (approximately 2.9 million). This weight was selected to maintain consistency with the results produced by Ingles, Curtin, Kaufman and Chen (2002) who examined postsecondary experiences of the 8th grade class twelve years later.

Standard errors. Due to the complex stratification procedures used in selecting the cases, the AM statistical software (American Institutes for Research, 2002) was used in estimating the correct standard errors for all variables reported in the tables. Building upon Minimum Maximum Likelihood procedures (MML), AM produces standard errors corrected for biases due complicated sampling procedures as those employed in NELS:88.

Variables

Background. Indicators for background characteristics relied on variables used in Ingels and associates (2002) as well as those employed in Adelman et al., (2003), corresponding to Gender (F4SEX) and ethnicity (RACE4). The ethnicity variable embraces standard race categories in 2000. In this study, the ethnic categories examined included: White (1), African American (2), Hispanic (3), and Asian American (4). Native Americans, due to their small number, were excluded from the analyses.

Parental Income. Parents' reported 1991 gross family income form all sources before taxes (F2P74). To maintain consistency with Berkner and Chavez (1997), the 13 income categories were collapsed into three: low (less than $25,000), middle ($25,000 to $74,999) and high ($75,000 or more).

Planned for college at 8th grade. Created by (Berkner & Chavez, 1997), BYS45 identifies the highest degree planned to obtain when the subject was in the 8th grade.

College Qualification Index. Developed by Berkner and Chavez (1997), the college-qualification index (CQCOMV2) attempts to approximate college admissions criteria. Thus, the index is based on cumulative academic course GPA, senior class rank, the 1992 NELS aptitude test scores, and the SAT and ACTS scores. Moreover, Berkner and Chavez adjusted this index to account for having taken rigorous high school academic work. The college qualification index ranges from 1 (not qualified) to 5 (very highly qualified). We found the college-qualification index to correlate significantly with the HIGHMATH, a scale developed after Adelman's HSB/So HIGHMATH variable (1999). Cabrera and La Nasa (2001) reported a large correlation CQCOMV2 and HIGHMATH (r= .723). Berkner and Chavez reported that meeting minimal college qualifications significantly predicts college enrollment. In this report, the college-qualification index was broken into three categories corresponding to 1) not qualified, 2) minimally qualified and 3) qualified.

Highest mathematics in high school. Adelman and associates developed this variable, labeled HIGHMATH in CD# 2003-402, based on high school and postsecondary transcripts.

High school completion. It is based on PETSGTYP, a variable derived from an examination of both high school and college transcripts (see CD# 2003-402).

At-risk factors. Ten indicators were employed. Nine of them were extracted from CD# 2003-348 indicating whether the 8th grader came from a single-parent family

(BYFCOMP=4 or 5), her parental income was less than $15,000 (BYFAMINC), had siblings who dropped out from high school (asked in the 10th grade, BYP6), had parents with no high school diploma (BYPARED=1), was home alone for more than three hours a day (BYS41=4), had limited English proficiency (BYLEP=1), changed school two or more times from 1st to 8th grade (BYP40), had average grades of C or lower from 6th to 8th grade (BYGRD68), and repeated an earlier grade from 1st to 8th grade (BYS74). The tenth indicator, having children during high school years (CHLD92), was extracted from PETS.

First type of postsecondary institution attended. This variable was derived from two PETS' variables that track the true first postsecondary institution attended (REFINST) and the basic combination of postsecondary institutions attended (INSTCOMB).

Highest PSE degree attained by 2000. Postsecondary attainment was ascertained from college transcripts (HDEG).

Month between HS completion & PSE attendance. Based on college transcripts, BATCHME, tracks the true total elapsed time to a bachelor's degree.

Selectivity of 1st PSE attended. Secured from IPEDS information, REFSELCT signifies the selectivity of the true first postsecondary institution attended.

Sector of 1st PSE attended and average tuition. Type of control and average tuition for first institution attended was ascertained from IPEDS data.

PSE attendance patterns. Six indicators were employed. Taking time off, part time attendance and changing majors were based on self-reported information contained in NELS 2003-348 (F4ETKOFF, F4EPARTT &F4ECHMAJ, respectively). The variable transferred from 2-year sector to 4-year sector is made up of subjects whose first institution attended was a community college (see First type of postsecondary institution attended), earned some credits and subsequently transferred to a 4-year institution (ATRANSFR variable with values 1, 2, and 3). The indicators of maintaining continuous enrollment in postsec-

ondary institutions and attending multiple institutions were derived from the college transcript database's (NELS 2003-402) variables CONTIN and INSTCOMB, respectively.

Time for bachelor's degree. This attainment variable was ascertained from the college transcript database's (NELS 2003-402) variable BACHTME, which index the true total elapsed time it took to complete a bachelor's degree.

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