

College Access and Success Among High School Graduates Taking the SAT[®]: Asian American Students

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TRENDS

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Executive Summary

This report shows college enrollment and graduation trends among Asian American SAT® takers who finished high school in 2004 and 2010 by student characteristics, including aspirations, self-perceived ability, and academic achievements. In every case, students in the top categories (high aspirations, high-perceived ability, high-assessed ability) were the most likely to enroll in four-year colleges within one year after graduating high school in 2004 and in 2010. Students in these top categories among the 2004 cohort were also more likely to graduate from a four-year college six years later. We find positive trends among Asian American SAT takers when comparing 2004 to 2010. Asian American students participated at a high rate on the SAT and AP® in both years, with increases from 2004 to 2010 in these participation rates as well as in the proportion of students scoring a 3 or higher on an AP Exam. Asian American SAT takers have high and stable college enrollment rates, and we found an increase among SAT takers in students with high aspirations and self-perceived ability. These positive trends, combined with the finding that relationships between student characteristics and college enrollment in 2010 were often quite similar to the relationships seen in 2004, suggest that an increased number of Asian American students may be graduating with college degrees in the coming years. We also find an increased proportion of Asian American SAT takers who report bilingualism, suggesting that we may see an increased number of college graduates who are bilingual in the coming years as well.

Introduction

This report documents the trends in college enrollment and four-year college degree attainment among Asian American SAT takers¹ from the high school graduating classes of 2004 and 2010. It is one in a series of four research reports examining high school student characteristics and college outcomes among students from African American, Asian American, Latino, and Native American backgrounds. This report may be used to consider characteristics of Asian American SAT takers in high school and how these characteristics are related to college access and success. However, it is descriptive in nature, so it cannot be used to draw conclusions about what *causes* positive college outcomes among Asian American students.

On average, Asian American students are as or more likely than white students to enroll and persist in college (Ross et al., 2012). However, we do not know enough about what characteristics among Asian American students are linked to college enrollment and success, and the quickly growing population of Asian American students in the U.S. makes our understanding of these patterns particularly important. There may be differences in the characteristics that contribute to Asian American college success that are not apparent in studies of college success among all students.

This report provides a revealing look at Asian American college enrollment in the high school graduating cohorts of 2004 and 2010 and six-year graduation rates of SAT takers in the cohort of 2004 who enrolled in a four-year college within one year of high school graduation. The National Student Clearinghouse (NSC) has recently provided the College Board with data showing postsecondary enrollment and graduation outcomes of SAT takers. NSC data are collected from more than 3,300 postsecondary institutions within the U.S., accounting for 96% of all U.S. college students. These data are combined with student demographic information and College Board Advanced Placement Program® and SAT assessment data, to show within-group variations in college attendance and graduation of Asian American students who attended both public and private high schools in the U.S.

By comparing characteristics of Asian American SAT takers graduating from high school in 2004 with those graduating high school in 2010, this report also offers a glimpse at what the future may hold for recent high school graduates. The data show that students who exited high school in 2004 and 2010 with high aspirations, high self-perceptions of their abilities, and high achievements tended to be more likely to enroll in college. Students graduating high school in 2004 with these characteristics also tended to be more successful in obtaining college degrees within six years. The sizeable increase in the number of Asian American students taking the SAT and the fact that four-year enrollment trends have held steady among this group suggest that many more Asian American students may experience college success by 2016.

1. Asian American students include students who selected "Asian, Asian American, or Pacific Islander" in response to the question "How do you describe yourself?" on the SAT Questionnaire. This may exclude some students who identify as Asian American and another race/ethnic group, as students were required to mark only one option. It also combines students of heterogeneous ethnic backgrounds into one race/ethnic category.

College Attendance and Graduation

In 2004, 105,716 Asian American students took the SAT in the U.S. by the time they graduated from high school. There were an estimated 142,555 Asian American graduating seniors in 2004, which suggests that we are capturing information on approximately² 74% of the population (Prescott & Bransberger, 2012). By 2005, 84% of these students had enrolled in college, with 20% first attending a two-year institution and 64% first attending a four-year institution. After 2005, an additional 7% enrolled in a two-year college, while 6% more enrolled in a four-year college. By 2010, 69% of the 2004 examinees who enrolled in a four-year college within one year of graduation had attained a bachelor's degree.³

In 2010, 135,448 Asian American graduating seniors had taken the SAT during high school, approximately 78% of Asian American graduating seniors, an increase of 4 percentage points compared to 2004. By 2011, 85% of these students had enrolled in college at some point, an enrollment rate similar to the 2004 cohort. Table 1 puts these numbers in context.

	Number of 2004 SAT Takers	First College Attended by 2005			Number of 2010 SAT Takers	First College Attended by 2011	
		2-Yr	4-Yr			2-Yr	4-Yr
			Graduated by 2010				
African American	144,520	21%	54%	49%	193,389	26%	54%
Asian American	105,716	20%	64%	69%	135,448	20%	65%
Latino	131,778	28%	47%	55%	217,520	32%	46%
Native American	8,423	24%	51%	54%	8,436	25%	54%
White	844,171	18%	65%	71%	836,294	20%	67%

Characteristics Related to College Enrollment and Graduation

Aspirations and Self-Perceived Ability

On the SAT Questionnaire, students were asked “What is the highest level of education you plan to complete beyond high school?” Figure 1 shows enrollment rates of Asian American SAT takers. Each bar in the figure shows the percentage of students who enrolled in a four-year college within the first year after high school among the 2004 and 2010 cohorts by degree goals. The lighter purple bar for 2004 shows the proportion of enrolled students who went on to graduate with a bachelor's degree by 2010.

This figure reveals several interesting trends. First, the most common goal among Asian American SAT takers in both 2004 ($N = 46,974$) and 2010 ($N = 75,353$) was a graduate

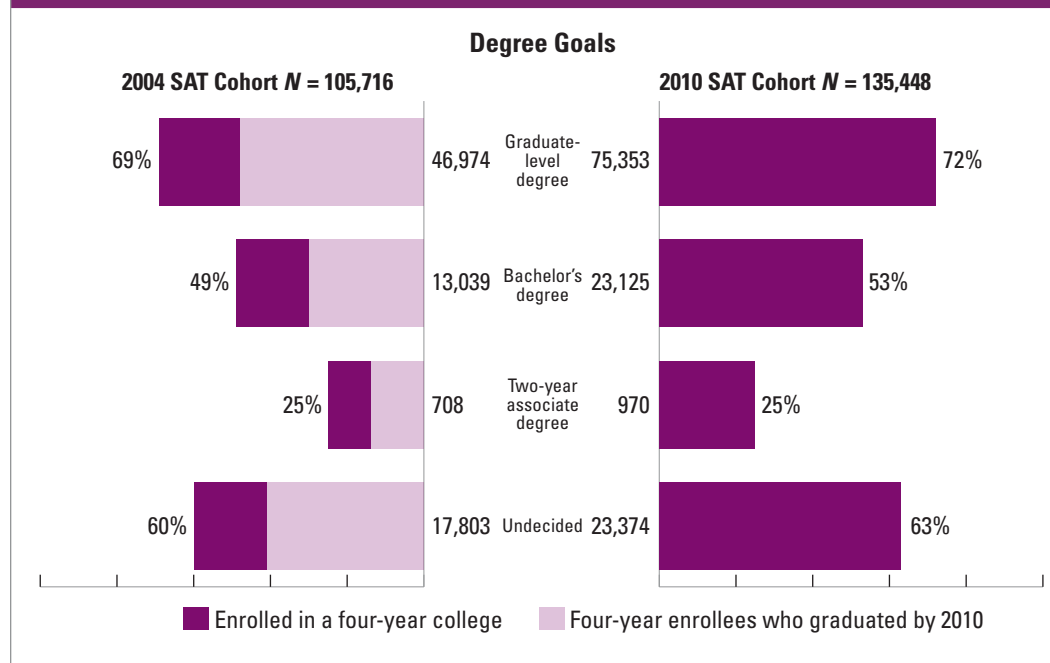
2. We include SAT takers from both public and private U.S. schools, while the student population counts referenced here include public school graduates only. Thus these estimates can only be considered approximate.

3. Available NSC data do not provide an accurate count of two-year college graduates, so this report focuses on four-year college graduation outcomes.

degree. Students interested in a graduate degree were also the most likely to enroll in a four-year college within one year after high school (69% in 2004 and 72% in 2010). Second, the increase in SAT takers from 2004 and 2010 was mainly seen among students aspiring toward a graduate degree, a group representing 44% of Asian American SAT takers in 2004 and increasing to 56% in 2010. Third, students who were undecided about their degree goals were more likely than students interested in only a bachelor's degree to enroll in a four-year college after high school. Fourth, once enrolled, 68% of the 2004 cohort who were undecided and 70% of those interested in a graduate degree succeeded in completing a bachelor's degree by 2010; 61% of students reporting an end goal of a bachelor's degree succeeded in that goal by 2010; 56% of students aspiring to an associate degree completed a bachelor's degree by 2010 instead.

Figure 1.

Percentage of Asian American SAT takers enrolling in and graduating from a four-year college among 2004 and 2010 cohorts, by degree goals.⁴



These trends suggest that aspirations to a goal are related to actually achieving that goal, and also that it is not a problem for students to have uncertainty about what their ultimate end goal may be. They also suggest that most Asian American SAT takers who enroll in four-year colleges aspire to go further and pursue graduate degrees.

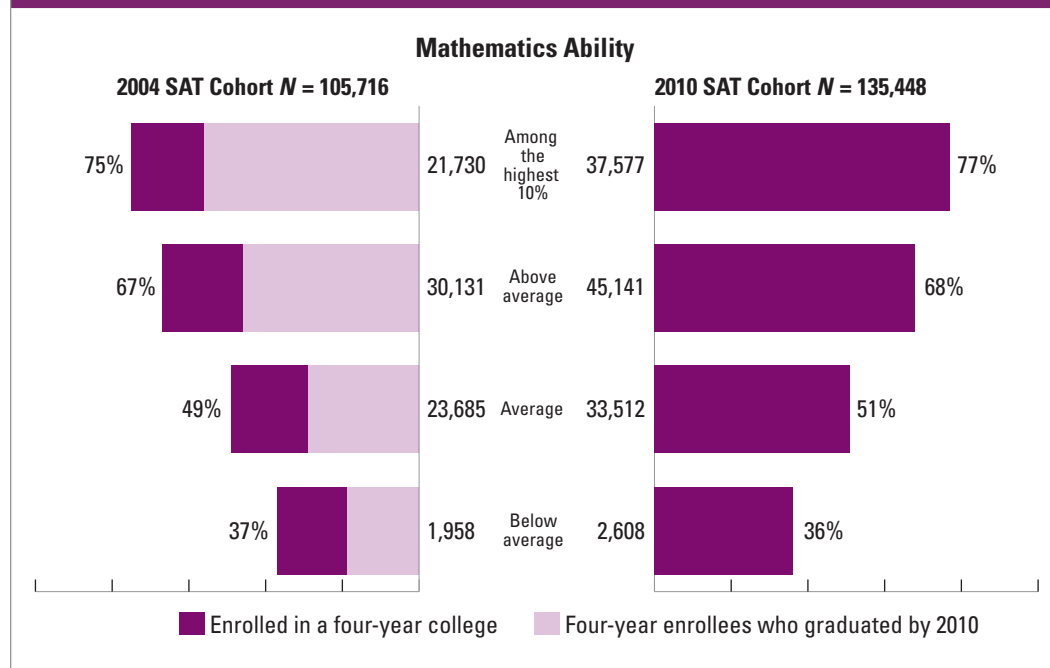
SAT takers were also asked, “How do you think you compare with other people your own age in the following three areas of ability?” Figure 2 reports the responses for mathematics. Most Asian American SAT takers considered themselves above average or among the highest 10% in ability. Additionally, there have been more increases in these top mathematics ability levels when comparing the 2004 cohort to the 2010 cohort, from representing nearly 50% of the Asian American SAT takers in 2004 to 61% in 2010. The higher a student's self-reported ability, the more likely he or she was to enroll in a four-year college within a year after high school.

4. College enrollment and graduation rates for students who did not complete a particular question on the SAT are excluded from the associated figure in this report. Thus, the counts for each category in a figure will not sum to the total SAT count.

Once enrolled, students reporting higher mathematics abilities in the 2004 cohort were more likely to graduate with a bachelor's degree by 2010 than those viewing themselves as less academically able. The patterns for science and writing ability (not shown) were similar to those for mathematics, though fewer Asian American students viewed themselves as above average or in the highest 10% in ability in these other subject areas.

Figure 2.

Percentage of Asian American SAT takers enrolling in and graduating from a four-year college among 2004 and 2010 cohorts, by self-estimated mathematics ability.



Academic Achievements

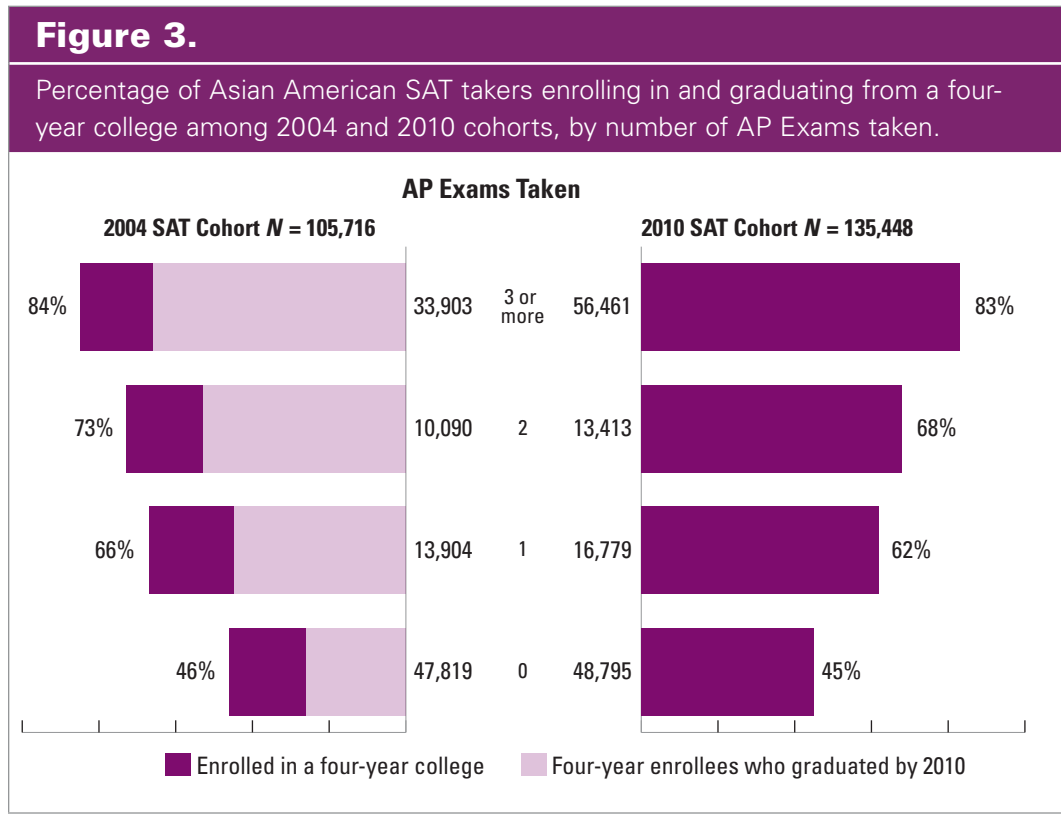
Beyond aspirations and perceptions of ability, we next look at actual achievement on assessments and cumulative grade point averages (GPA). Figure 3 shows college enrollment and graduation by the number of AP Exams student took, while Figure 4 displays college outcomes by the number of AP Exams on which a student scored a 3 or higher.⁵ These figures show that most Asian American SAT takers take at least one AP Exam, increasing from 55% in 2004 to 64% in 2010.⁶ A substantial proportion of Asian American SAT takers do also score a 3 or higher on at least one AP Exam while in high school, increasing from 38% in 2004 to 46% in 2010.

Students who took more AP Exams and those who scored a 3 or higher on the exams were more likely to enroll in four-year colleges. For example, 62% of Asian American SAT takers in the 2010 cohort who took one AP Exam enrolled in a four-year college by 2011, compared to 45% of students taking no AP Exams. In this same cohort, 71% of the students who scored a 3 or higher on one AP Exam enrolled in a four-year college by 2011, compared to 50% of

5. AP Exams are scored on a 1–5 scale, with scores of 3 or higher signifying a student being considered qualified to receive college credit, advanced placement, or both.

6. The number of Asian American SAT takers who were AP course participants is likely higher than the number of AP examinees, but the data used here do not provide a count of how many students took an AP course without taking its associated exam.

students with no AP score of 3 or higher. Additionally, among the 2004 cohort, there is a relationship between a student's AP Exam history and college graduation. Among students who enrolled in a four-year college within one year after high school graduation, the more AP Exams a student participated in and scored 3 or higher on, the more likely he or she was to graduate from college by 2010.



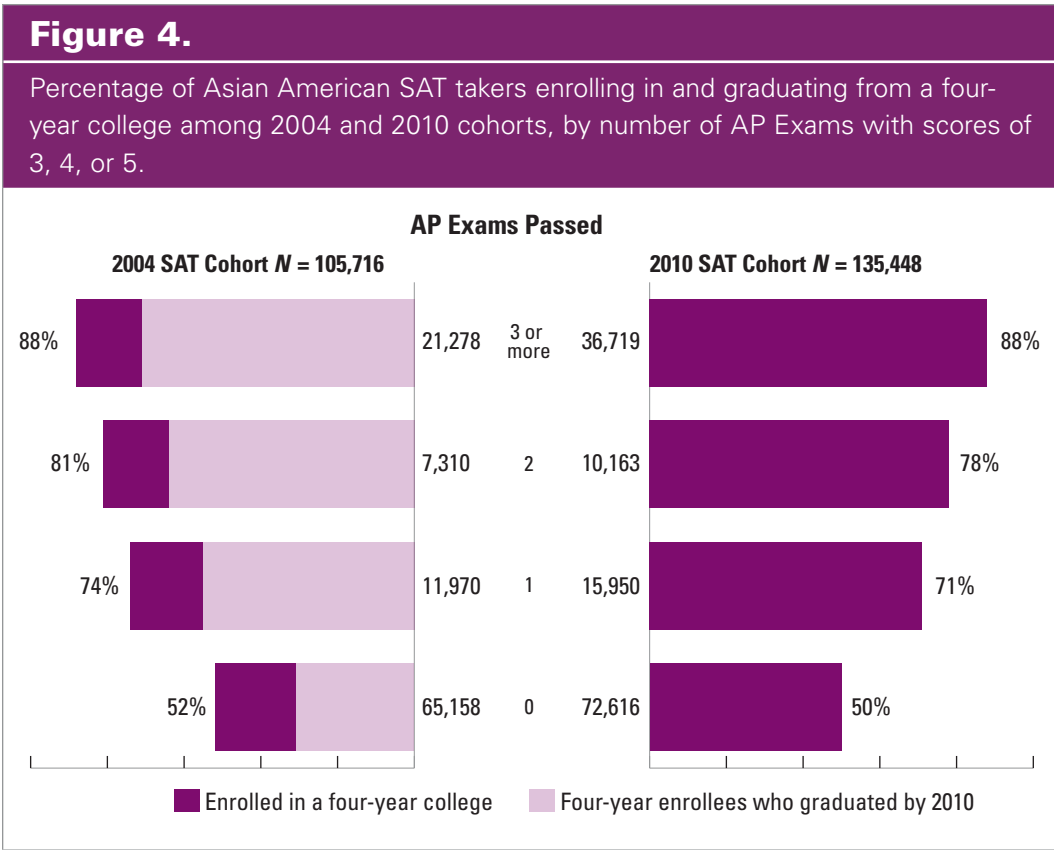


Figure 5 considers the relationship between SAT critical reading scores and college enrollment and graduation for Asian American students. SAT mathematics scores, not shown, present similar trends, though more students were clustered in the higher-scoring mathematics groups. Higher-scoring students are much more likely to enroll in a four-year college after high school than their lower-scoring peers. Also, among the 2004 cohort, higher-scoring students are much more likely than students with lower scores to graduate from college. The relationship between SAT scores and college enrollment appears stable, as it is similar in 2004 and 2010, even with increases in Asian American SAT takers within every score band.

Figure 5.

Percentage of Asian American SAT takers enrolling in and graduating from a four-year college among 2004 and 2010 cohorts, by SAT critical reading scores.

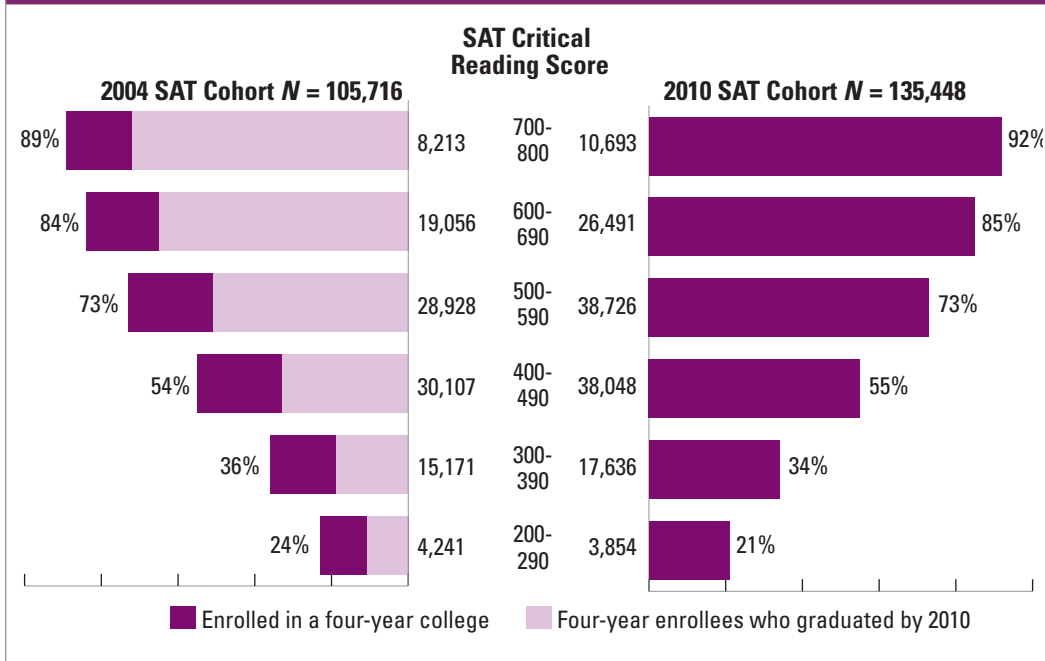
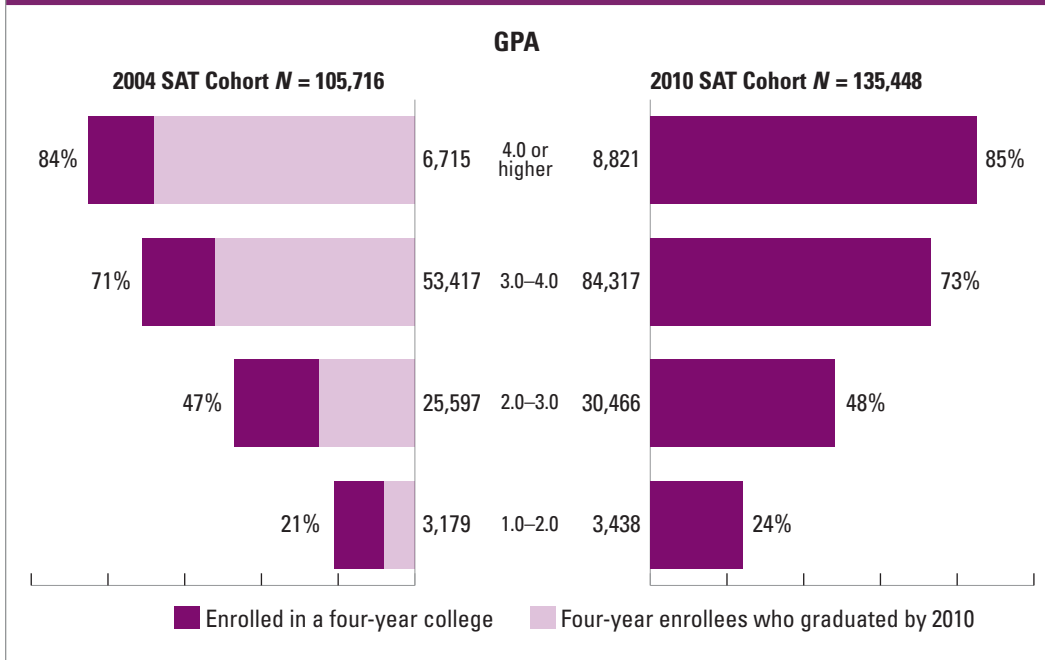


Figure 6.

Percentage of Asian American SAT takers enrolling in and graduating from a four-year college among 2004 and 2010 cohorts, by cumulative grade point average.

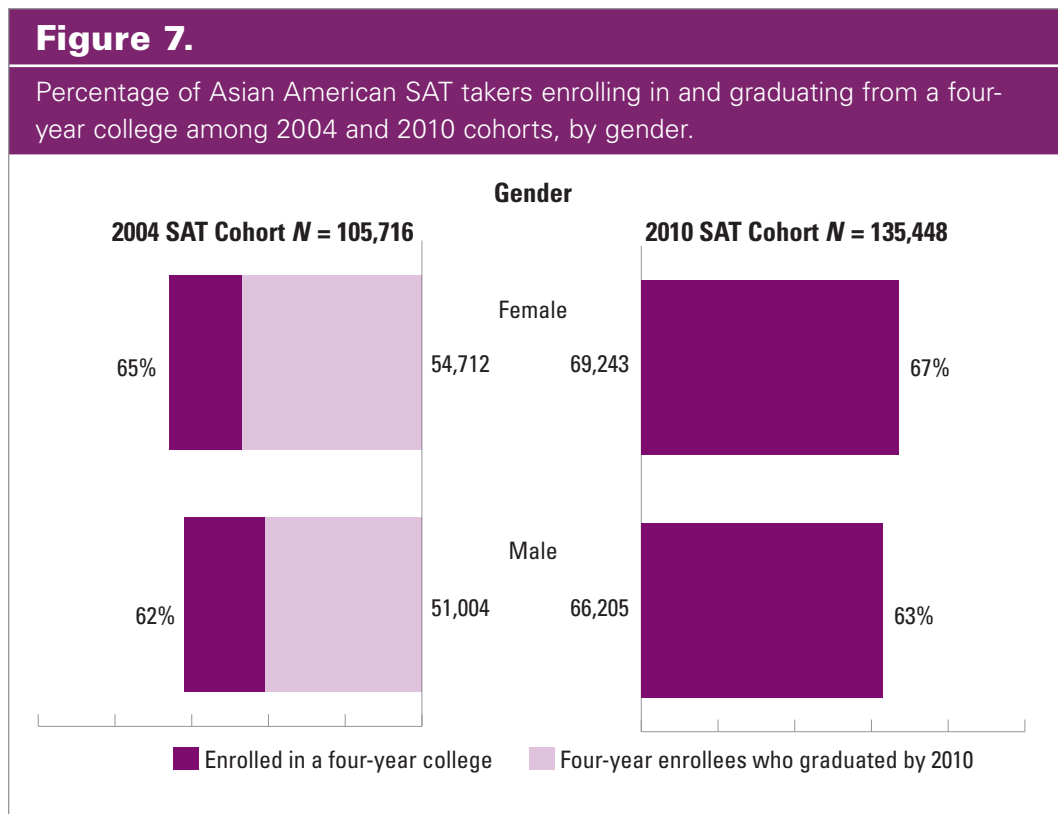


One last measure of academic achievement to consider is a student’s grades for course work in high school. On the SAT Questionnaire, students were asked to, “Indicate your cumulative grade point average for all academic subjects in high school.” Their responses were reported on an A+ (97-100) – F (below 65) scale, and were then converted to a 4.0 scale. As can be seen in Figure 6, trends here are similar to the other achievement measures: Students with higher GPAs are more likely to enroll in college, and these relationships appear stable over time. Students with higher GPAs who entered a four-year college by 2005 were also more likely to have graduated with a degree by 2010.

Gender, Parental Education, and Language Use

Among Asian American students, past research has noted within-group differences in college outcomes in terms of gender, and socioeconomic factors have been documented to have a strong relationship to educational achievement in general: Males and students from low-income families tend to underperform females and students from families with higher incomes (Aud et al., 2012; Cabrera & La Nasa, 2001).

There was not a large difference in the number of Asian American females who took the SAT compared to males in 2004, and even less of a difference in 2010. However, Asian American female SAT takers were somewhat more likely to enroll in a four-year college after high school compared to their male peers in 2004 and 2010. Among Asian American SAT takers who enrolled in college by 2005, 72% of females graduated from a four-year college by 2010 compared to 66% of males (the lighter purple bars in Figure 7).



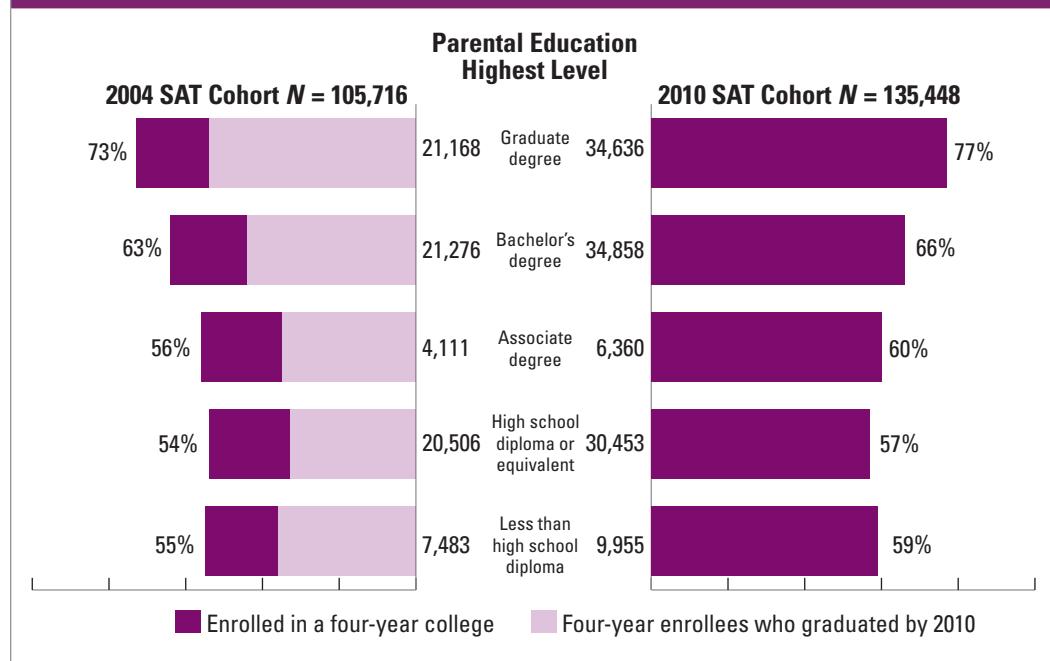
In terms of socioeconomic status, students were asked to “indicate the highest level of education completed by your father (or male guardian) and your mother (or female guardian).” Mother’s and father’s education were combined, and the student was placed in the category pertaining to the parent with the highest degree. Figure 8 shows Asian American students’

college enrollment and success patterns by parental education. Asian American SAT takers often have at least one parent with a bachelor's degree or higher, increasing from 40% of the group in 2004 to 51% in 2010. Meanwhile, there has also been a smaller increase in the number of Asian American SAT takers whose parents have a high school degree but no college degree, representing 19% of the group in 2004 and 22% in 2010. The higher a parent's educational level, the more likely the student is to enroll in college, though differences between students whose parents have an associate degree, high school degree, or less than high school are similar in their likelihood of college enrollment.

In general, Asian American SAT takers who enrolled in a four-year college after high school graduation in 2004 were more likely to graduate from college by 2010 if their parents had more education. A full 74% of students with parents who had a graduate degree received a bachelor's degree by 2010, compared to 69% of students whose parents had a bachelor's degree and 62% of students with parents having an associate degree or high school. Interestingly, 65% of Asian American SAT takers whose parents did not have a high school degree graduated with a bachelor's degree by 2010, a rate slightly higher than students whose parents had a high school or bachelor's degree. This positive finding for students whose parents have the least amount of education is a surprising one that warrants further investigation as it runs counter to the expected finding that higher socioeconomic status (here measured by parental education) is consistently positively linked to higher educational outcomes.

Figure 8.

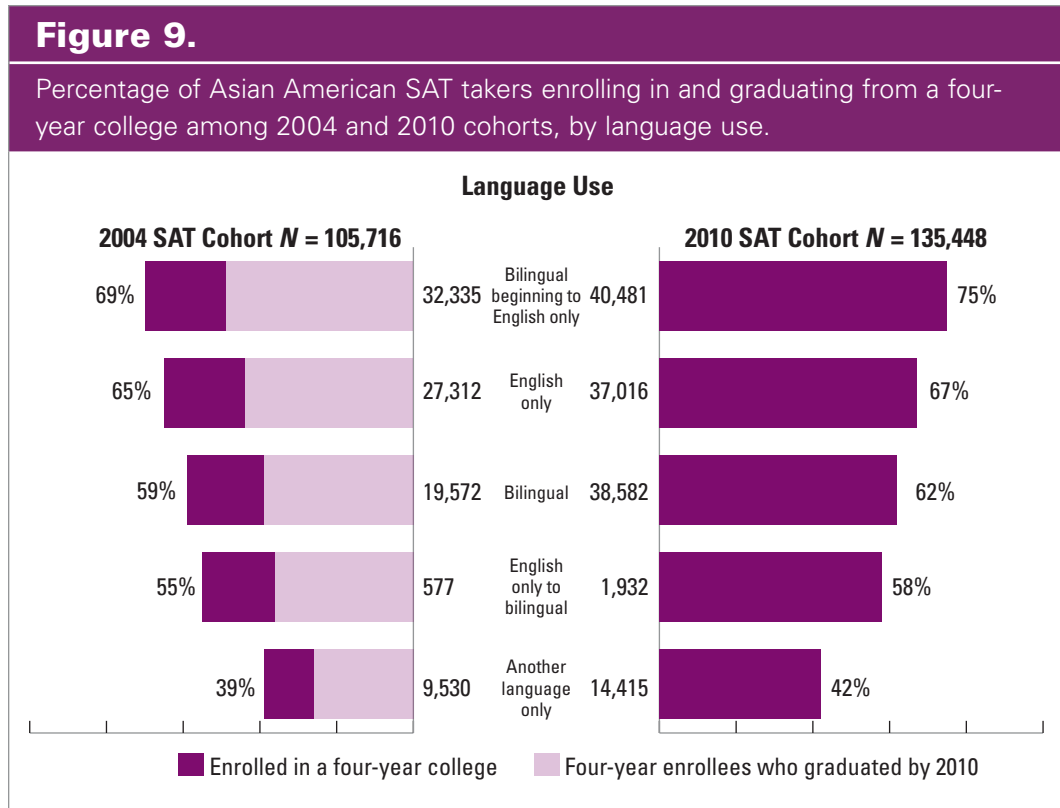
Percentage of Asian American SAT takers enrolling in and graduating from a four-year college among 2004 and 2010 cohorts, by parental education.



Immigrant status and language use among Latino students are important issues in schools, as many Latino students are children of immigrants or immigrants themselves. We do not know when a student first entered the U.S., but the SAT Questionnaire asks students, "What language did you learn to speak first?" and "What language do you know best?" On both questions, students can choose from the options: "English only," "English and another language," and "Another language." We combined these categories to place students into five

groups: students who spoke another language as their first language (alone or with English) but consider themselves English dominant; students who report English only as both their first and best language; students who report speaking another language as their first language and consider themselves bilingual (knowing both English and another language “best”); students who spoke English as their first language but at the time of the SAT consider themselves bilingual; and students whose first and best language is a language other than English.

Figure 9 shows Asian American students’ college enrollment and success patterns by language use. The dominant categories are English only and bilingual, with the bilingual group growing from representing 19% of total Asian American SAT takers to 30% by 2010 while the English only group changed from 26% to 27% of the group. Meanwhile, the proportion of Asian American SAT takers with bilingual beginnings who cite English only as their best language constituted 31% of the group in 2004 and 30% in 2010. Students in groups who report English as their only best language are more likely than those reporting dominance in another language to enroll in a four-year college after high school and slightly more likely to graduate with a degree by 2010. However, we strongly caution against drawing conclusions from these patterns regarding which languages Asian American students *should* speak and educational outcomes. The relationships seen here between bilingualism and lower college enrollment and persistence rates compared to English monolingual students are likely due to the strong correlations between other factors such as year of arrival in U.S., income, and parental education and both language use and college outcomes, none of which are explored here. (For more on this, see Portes & Rumbaut, 2006.) Prior research finds that bilingualism does not impede academic performance and offers some cognitive benefits (Bialystok, 2001).



Conclusion

This report shows college enrollment and graduation trends among Asian American SAT takers who finished high school in 2004 and 2010 by student characteristics, including aspirations, self-perceived ability, and academic achievements. In every case, students in the top categories (high aspirations, high-perceived ability, high-assessed ability) were the most likely to enroll in four-year colleges within one year after graduating high school in 2004 and in 2010. Students in these top categories among the 2004 cohort were also more likely to graduate from a four-year college six years later.

In terms of student demographic characteristics, Asian American females were not much more likely than males to take an SAT, but female SAT takers were somewhat more likely to enroll and graduate in a four-year college after high school compared to their male peers in 2004 and 2010. Asian American SAT takers who had parents with more education were generally more likely to enroll in and graduate from four-year colleges. However, among students whose parents did not have a four-year degree or more, the links between parental education and college outcomes were very similar, at times leaning toward favoring students whose parents did not have a high school degree.

We find positive trends among Asian American SAT takers when comparing 2004 to 2010. Asian American students participated at a high rate on the SAT and AP in both years, with increases from 2004 to 2010 in these participation rates as well as in the proportion of students scoring a 3 or higher on an AP Exam. Asian American SAT takers have high and stable college enrollment rates, and we found an increase among SAT takers in students with high aspirations and self-perceived ability. These positive trends, combined with the finding that relationships between student characteristics and college enrollment in 2010 were often quite similar to the relationships seen in 2004, suggest that an increased number of Asian American students may be graduating with college degrees in the coming years. We also find an increased proportion of Asian American SAT takers who report bilingualism, suggesting that we may see an increased number of college graduates who are bilingual in the coming years as well.

The trends show descriptive relationships between a high school student's characteristics and later college outcomes but do not consider the interaction between one characteristic and another. These results show patterns, but they cannot be used to draw conclusions about what *causes* positive college outcomes among Asian American students. We also do not consider the many other factors that may contribute to college access and success, including high school and college characteristics. Upcoming research considers the interaction between student high school characteristics among SAT takers and college outcomes by race and examines which characteristics are better predictors of college success (McKillip & Li, 2013).

References

- Aud, S., Hussar, W., Johnson, F., Kena, G., Roth, E., Manning, E., Wang, X., & Zhang, J. (2012). *The condition of education 2012* (NCES 2012-045). U.S. Department of Education, National Center for Education Statistics. Washington, DC: Government Printing Office.
- Bialystok, E. (2001). *Bilingualism in development: Language, literacy, and cognition*. New York: Cambridge University Press.
- Cabrera, A. F., & La Nasa, S. M. (2001). On the path to college: Three critical tasks facing America's disadvantaged. *Research in Higher Education, 42*(2).
- McKillip, M. E. M., & Li, J. (2013, April). *Is the whole equal to the sum of its parts? Race variations in a student's path from high school to college*. Paper presentation at the American Educational Research Association Annual Conference, San Francisco, CA.
- Portes, A., & Rumbaut, R. G. (2006). *Immigrant America: A portrait*. Berkeley, CA: University of California Press.
- Prescott, B., & Bransberger, P. (2012). *Knocking at the college door: Projections of high school graduates* (eighth edition). Boulder, CO: Western Interstate Commission for Higher Education.
- Ross, T., Kena, G., Rathbun, A., KewalRamani, A., Zhang, J., Kristapovich, P., & Manning, E. (2012). *Higher education: Gaps in access and persistence study* (NCES 2012-046). U.S. Department of Education, National Center for Education Statistics. Washington, DC: Government Printing Office.

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