



First Generation Students: College Aspirations, Preparedness and Challenges

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Who is in the Audience Today?

With a quick show of hands, how many of you are....

=> AP coordinators

=> Principals

=> Teachers

=> Counselors

=> Researchers

Who are First-Generation Students?

- first person in the immediate family to attend college
- highest degree attained by either parent was a high school diploma or equivalent or less
- not to be confused with first generation immigration status
- can come from low-, middle- or higher-income families

Why Do We Care About College?

- higher rates of employment and lifetime earnings
- higher levels of engagement in civic activities, such as voting and volunteering
- higher rates of living healthy lifestyles, including lower rates of smoking and obesity
- increased likelihood of engagement in educational activities with one's children

(College Board, 2010)

Why are We Looking at First-Generation Students?

- Unfortunately, first-generation students are underrepresented among college-going students
- A 2001 NCES study found that (Choy, 2001, p. xviii)
 - while 82 percent of non-first-generation students enrolled in college immediately after finishing high school
 - only 54 percent of students whose parents had completed high school did
 - and only 36 percent of students whose parents had less than a high school diploma did
- Focus of new College Board president is increasing socioeconomic diversity at top colleges and expanding opportunity for all students
(<http://www.nytimes.com/2013/03/31/opinion/sunday/a-simple-way-to-send-poor-kids-to-top-colleges.html>)

Today's Presentation Will...

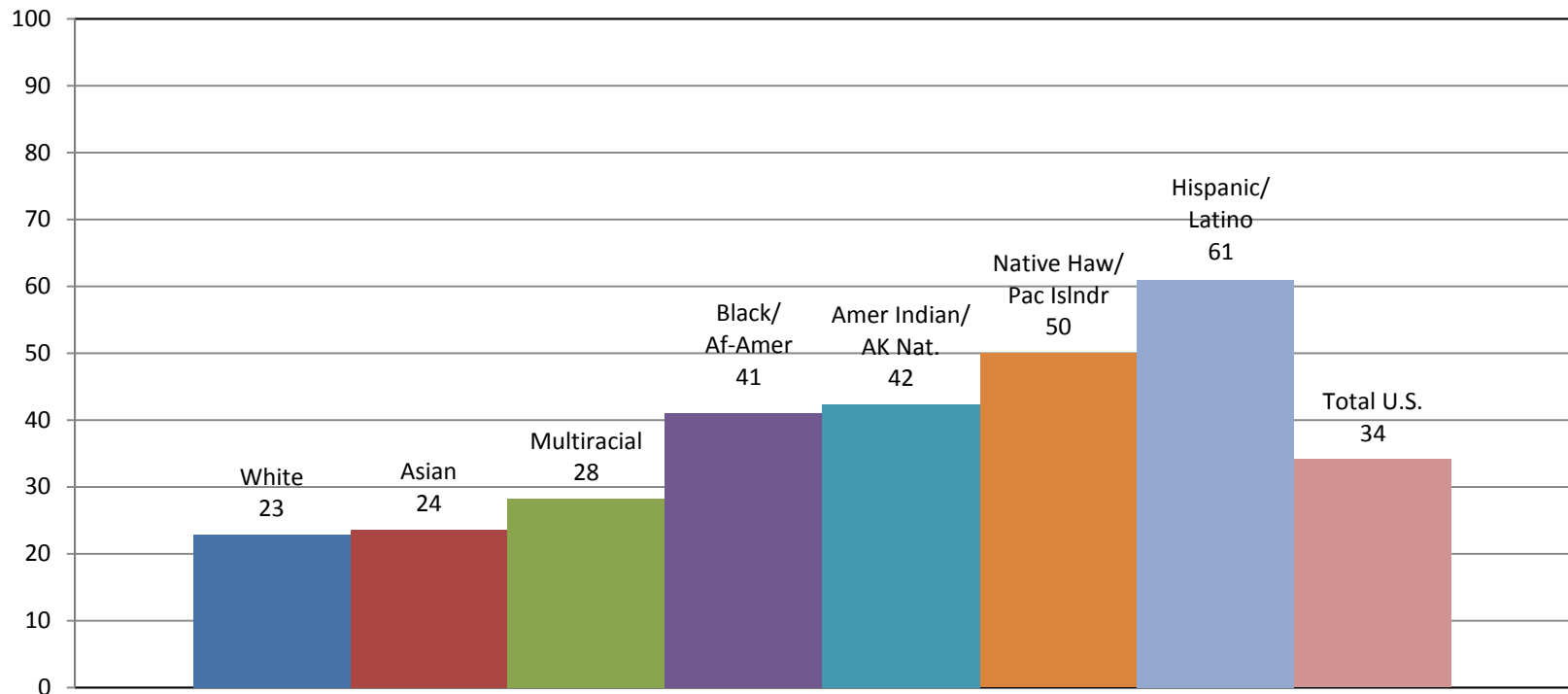
- take a close look at first-generation test takers to better understand the needs and challenges they face on their path to college
- focus on college-bound test takers who took the AP and/or the SAT
- examine a variety of data elements including student socio-economic background, high-school characteristics, course-taking patterns, and college plans and aspirations
- provide insight into particular needs of first-generation students and offer recommendations

Overview

- I. What the Literature Says
- II. Data and Methods
- III. Overall Trends and Demographic Characteristics
- IV. Academic Preparation and Exam Performance
- V. School Characteristics
- VI. College Aspirations and Planning
- VII. Discussion

I. What the Literature Says

Percentage Distribution of U.S. 5- to 17-Year-Olds by First-Generation Status and Race/Ethnicity, 2011



Source: *The Condition of Education 2012*, NCES

- More than 1/3 of 5-17 year-olds in the U.S. are first-generation students
- This rate is highest among underrepresented minority groups

I. Literature Review

First-generation students....

- disproportionately **overrepresented among most disadvantaged groups** (Engle, p.25)
- more likely to **delay college** entry, need **remedial coursework**, and **drop out** of college (Engle, p.25)
- report **lower educational expectations than their peers** as early as 8th grade (Choy, 2001, p.xxiv)
- often **begin college less academically prepared** than other students (Choy, 2001, p.xxxi)
- are **less likely to take algebra**, considered the “gateway” to advanced math courses in high school and associated with 4-year college enrollment (NCES, 2000, p.iv)
- tend to **know the least about the price of attending college** (Choy, 2001, p.xxx)
- are less likely to take college courses in academic areas such as mathematics, science, and computer science and **more likely to focus on vocational/technical fields** (NCES,2005, p.v-vi)
- tend to apply to and attend **less selective colleges** that are **closer to home** (Engle, p.32)
- more likely to **work while in college** and **live off campus**, negatively affecting college academic and social integration outcomes (Saenz et al., 2007)
- are **not more likely to receive help** from their schools in applying to colleges (Choy, 2001, p.xxix)

II. Data and Methods

II. Data and Methods

- Five years of graduating cohort data (2008-2012)
 - A cohort is a group of students belonging to a particular graduating class
- Data sample:
 - U.S. test-takers only
 - Analyses only include those test-takers who took the AP, SAT or both AP & SAT
 - SAT analyses include test-takers who took either the SAT Reasoning or SAT Subject Test
- First-generation/non first-generation analyses only include those test-takers who answered the parental education questions on either the SAT or AP student questionnaire
- AP questionnaire responses used over SAT responses, where not missing

III. Overall Trends and Demographic Characteristics

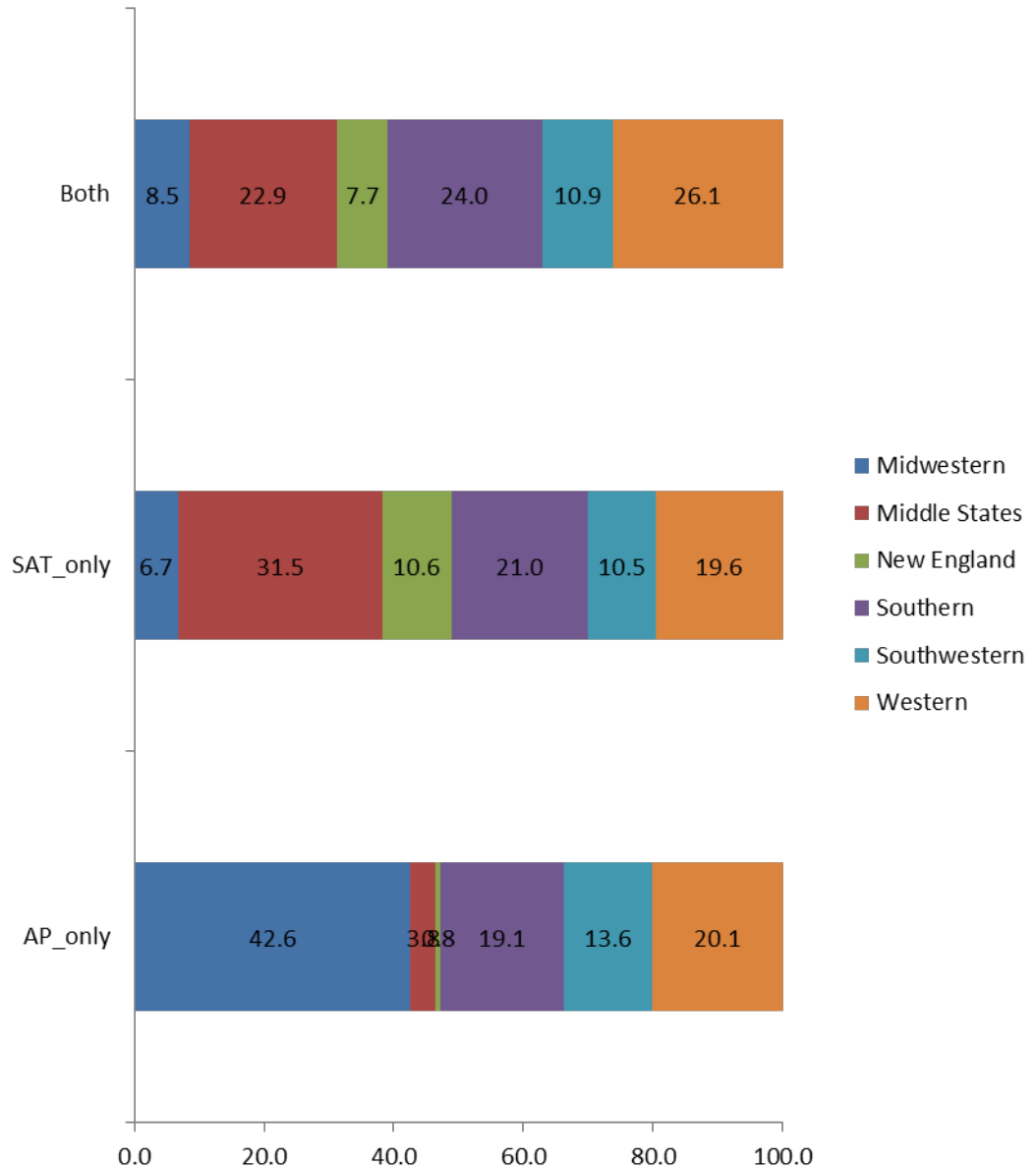
Test-takers from 2008 to 2012 cohort who took AP, SAT or both tests

Test-taking patterns by region: average percent of test-takers across five cohorts

Western(e.g., AZ, CA, OR, WA): a higher percentage of test-takers who took both AP and SAT across regions (26.1%)

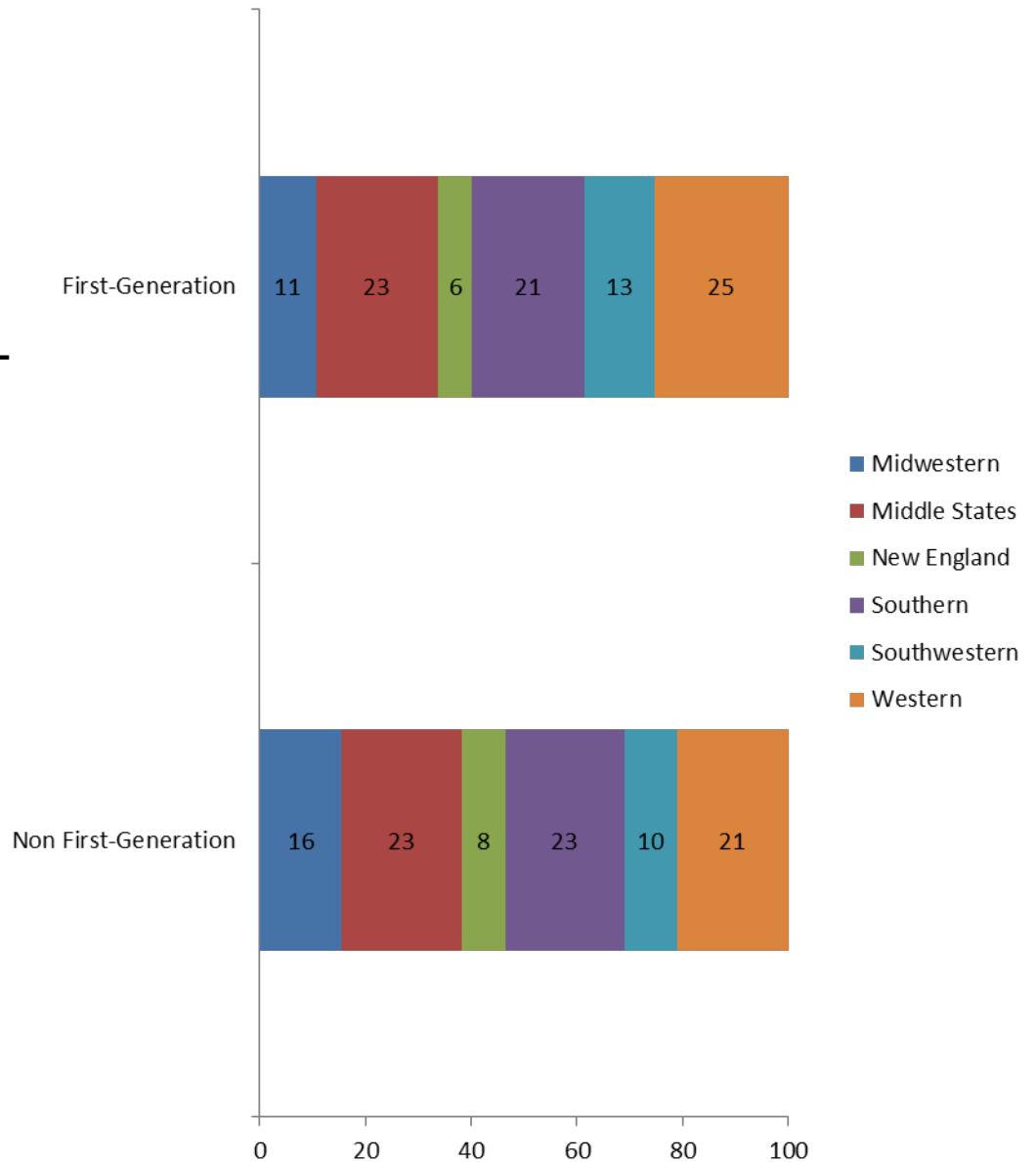
Middle States(e.g., DC, NY, NJ, PA): a higher percentage of test-takers who took SAT only across regions (31.5%)

Midwestern(e.g., IL, IN, IA): a higher percentage of test-takers who took AP only across regions (42.6%)



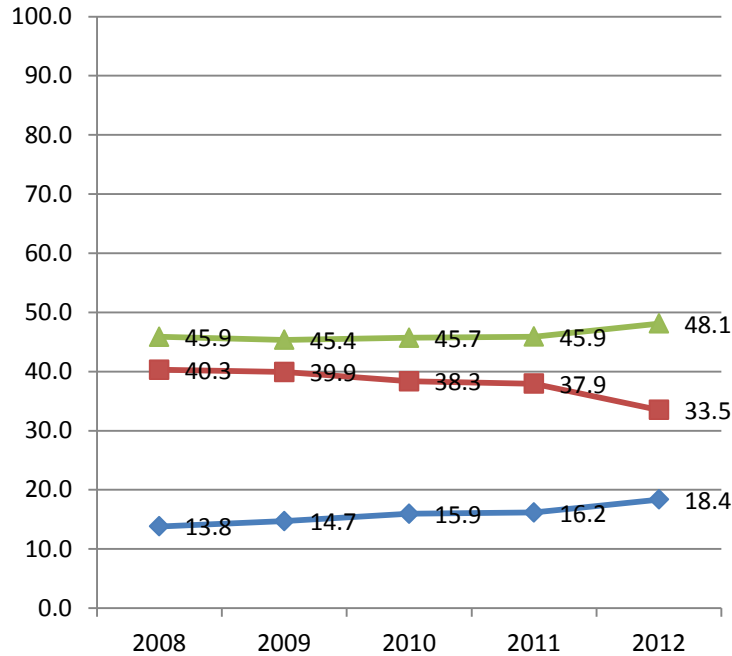
Average percent of test-takers by regions and first-generation status across five cohorts 2008-2012

- A higher percent of test-takers in our sample were located in **Middle States**, **Southern**, and **Western** regions regardless of first-generation status.

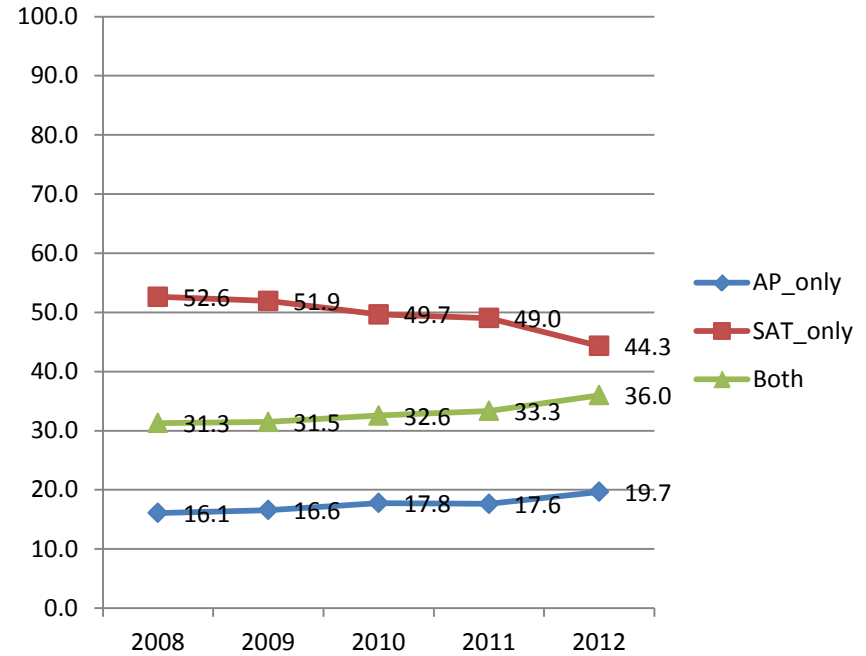


Percent of test-takers by test-taking patterns and first-generation status, 2008-2012 cohort

Non First-Generation



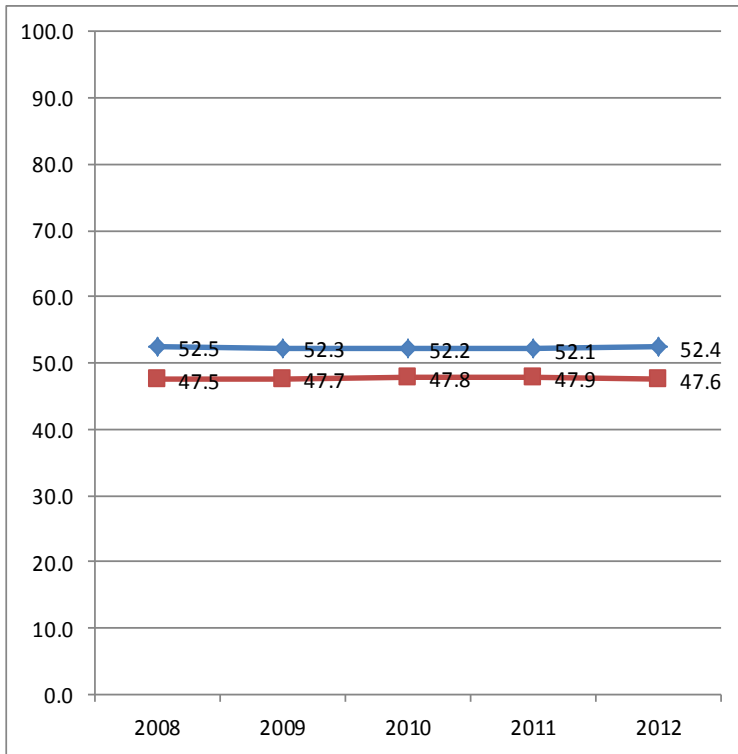
First-Generation



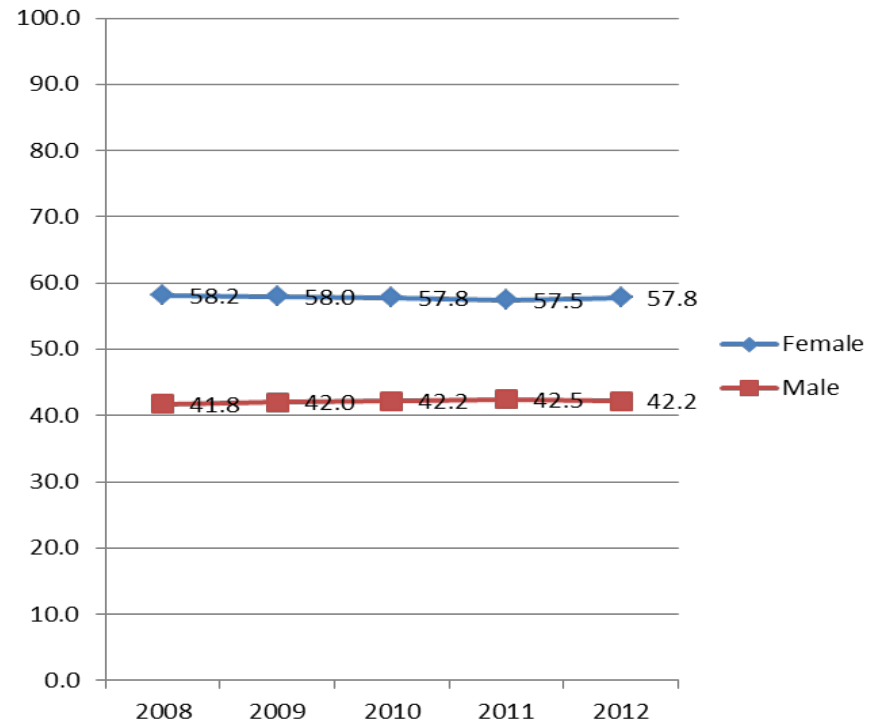
- Non First-Generation: a higher percent of students who took “both” exams
- First-Generation: a higher percent of students who took “SAT only”

Percent of test-takers by gender and first-generation status, 2008-2012 cohort

Non-First-Generation



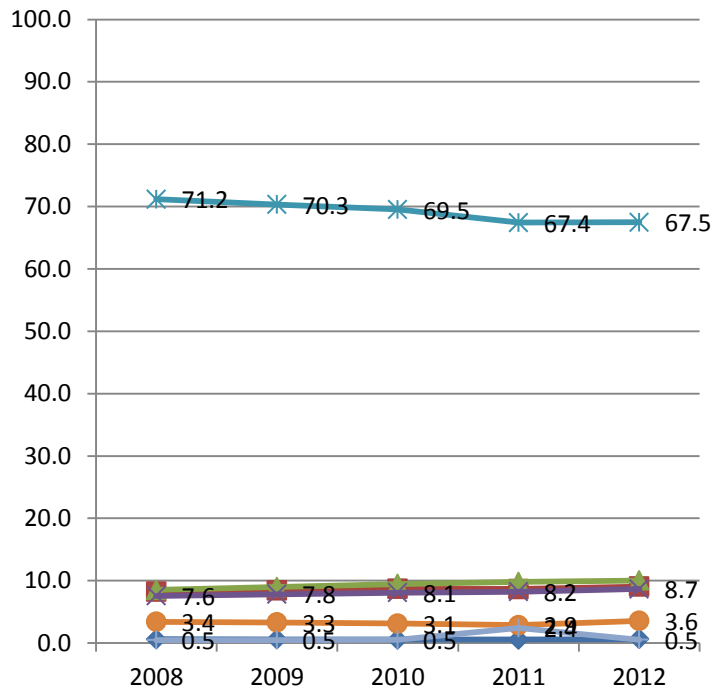
First-Generation



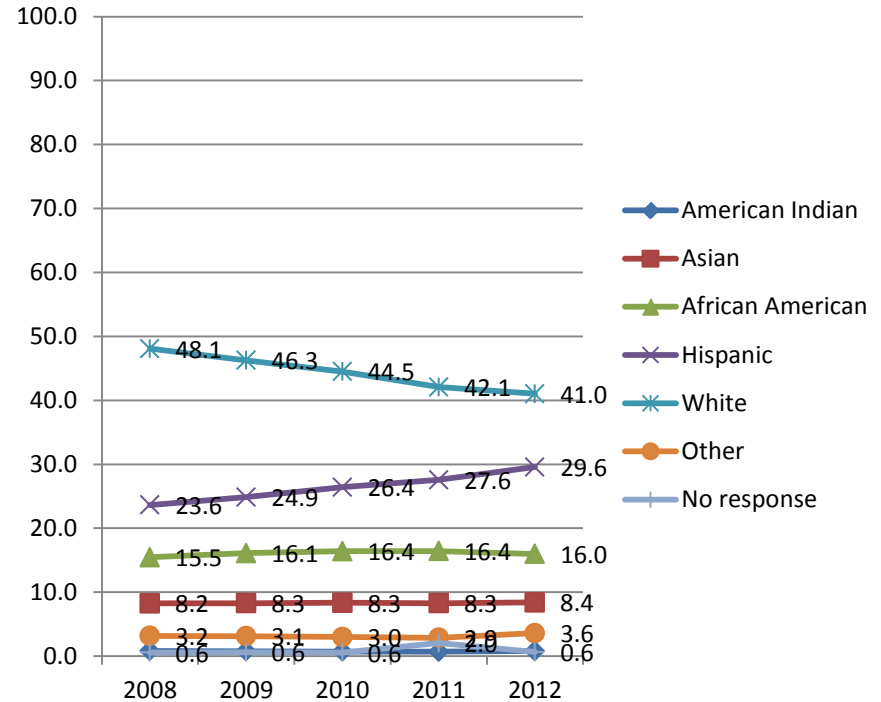
- A higher percent of test-takers were **female** regardless of first-generation status
- There was a larger gap between the percent of female and male test-takers among first-generation students than non-first-generation students.

Percent of test-takers by ethnicity and first-generation status, 2008-2012 cohort

Non-First-Generation

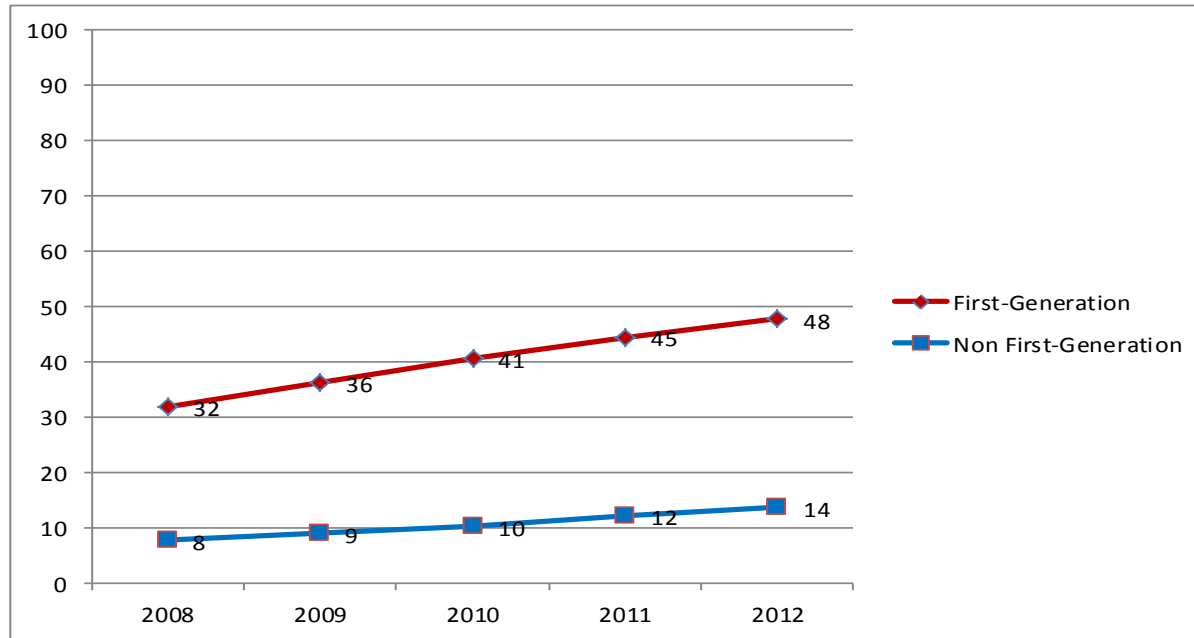


First-Generation



- The first-generation test-takers were more represented by minorities
- In 2012 cohort, Hispanic test-takers accounted for nearly 30 percent of first-generation test-takers.

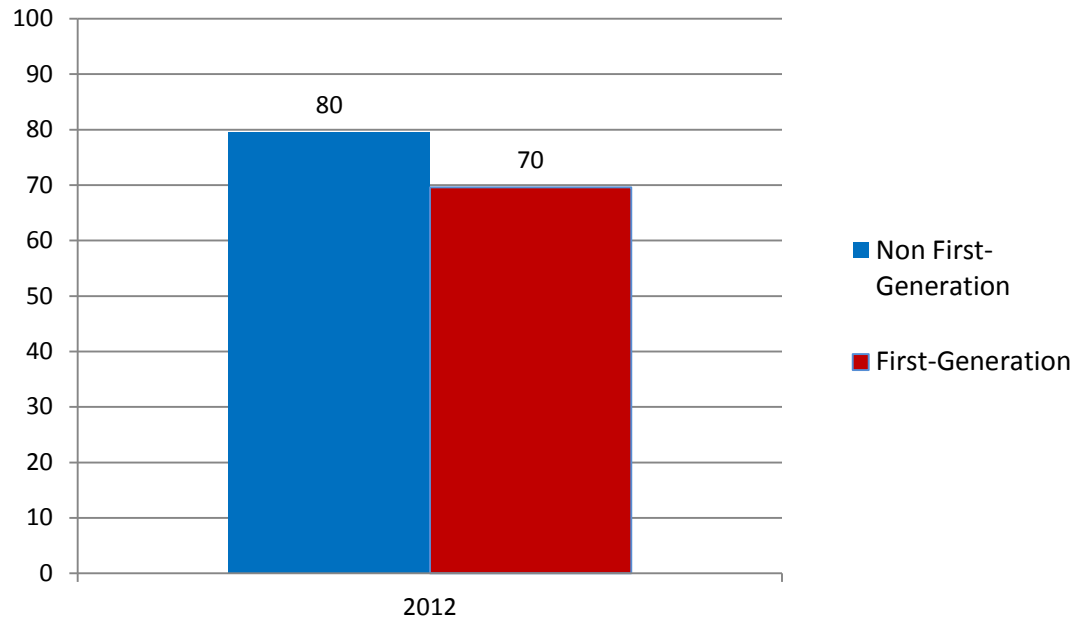
Percent of Test-Takers Using SAT or AP Fee Waivers, 2008-2012 Cohorts



- A significantly higher percent of first-generation test-takers used fee waivers than non first-generation test-takers
- Regardless of first-generation status, percent of test-takers using SAT or AP fee waivers has been increasing since 2008

IV. Academic Preparation and Exam Performance

Percent of Test-Takers with Core Academic Preparation, by First-Generation Status, 2012 Cohort

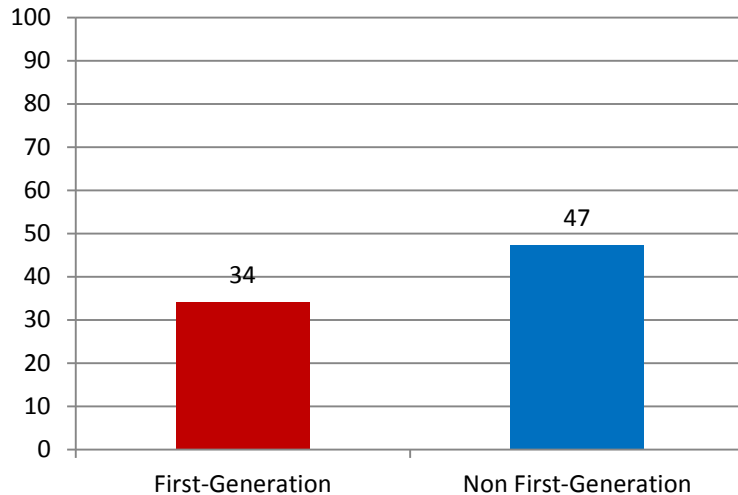


*Core includes test-takers who have taken four or more years of English, three or more years of mathematics, three or more years of natural sciences and three or more years of social sciences and history based on self-reported answers to the SATquestionnaire.

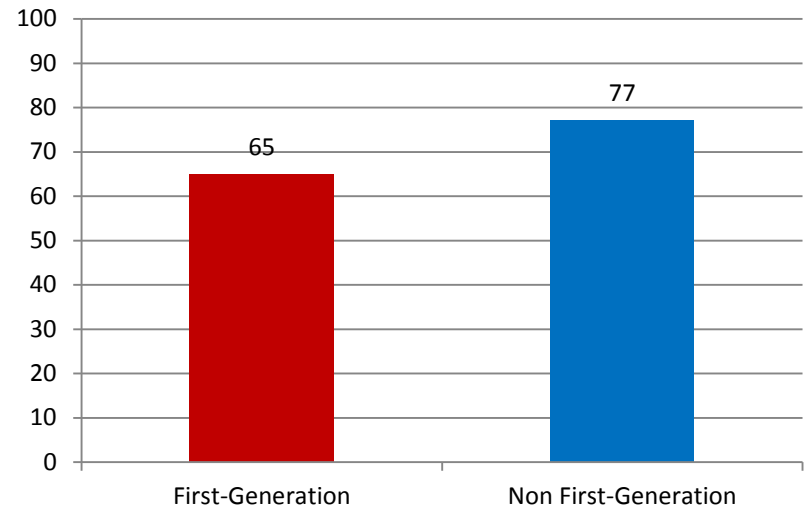
--First-generation test-takers tend to have less core academic preparation than non first-generation test-takers.

Participation in 8th Grade Algebra and Advanced Math Courses, 2012 Cohort

Percent of Test-Takers Taking Algebra I or Algebra II in 8th Grade



Percent of Test-Takers Taking Advanced Math* During High School

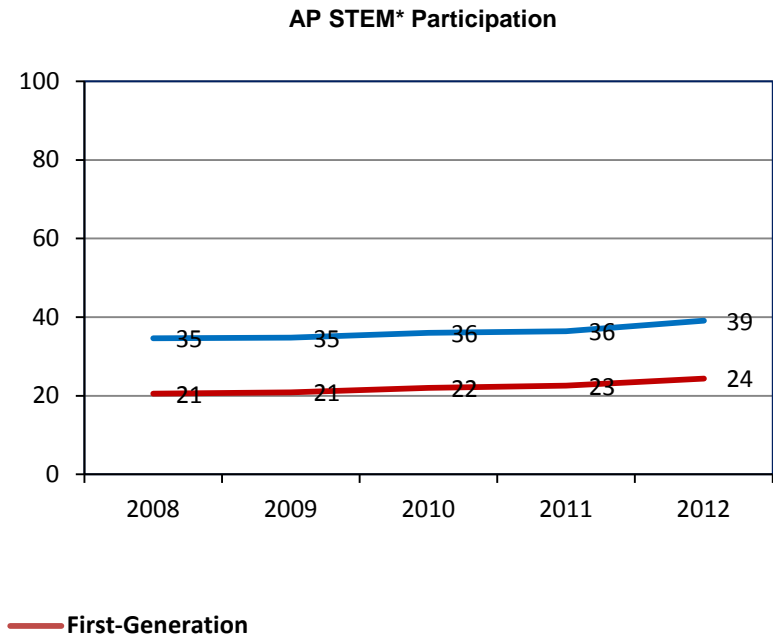
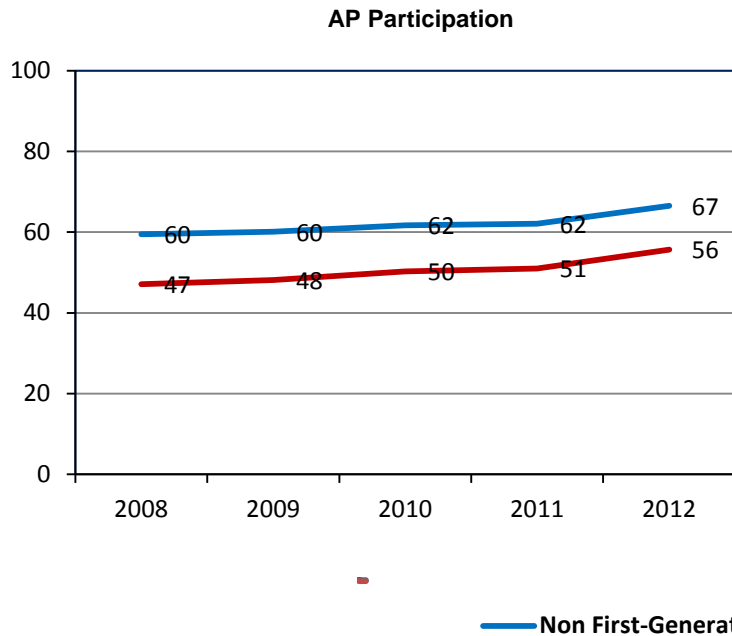


*Advanced math here includes: Pre-calculus, Calculus, Trigonometry, and Statistics, including AP, honors or dual enrollment courses.

--About 1/3 of first-generation test-takers reported taking Algebra in 8th grade compared to about 1/2 of non first-generation test-takers.

--About 2/3 of first-generation test-takers reported taking advanced math courses compared to about 3/4 of non first-generation test-takers

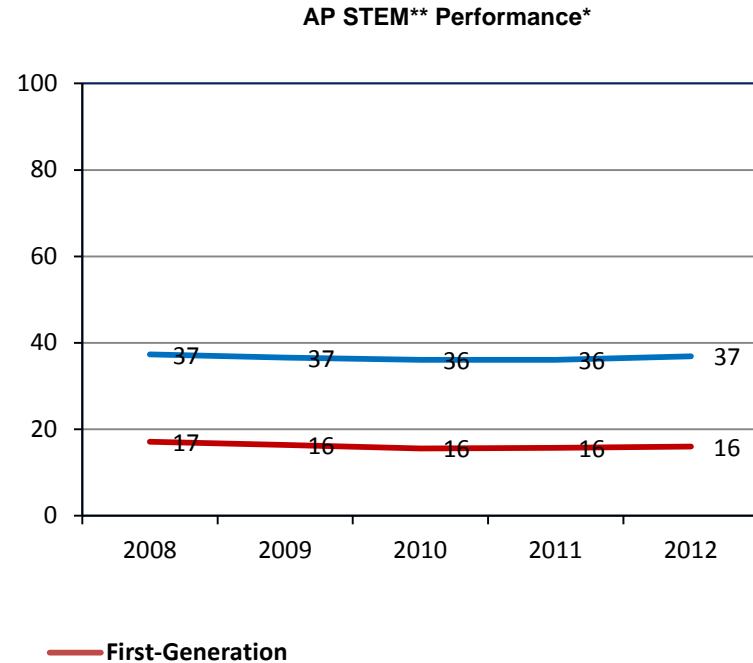
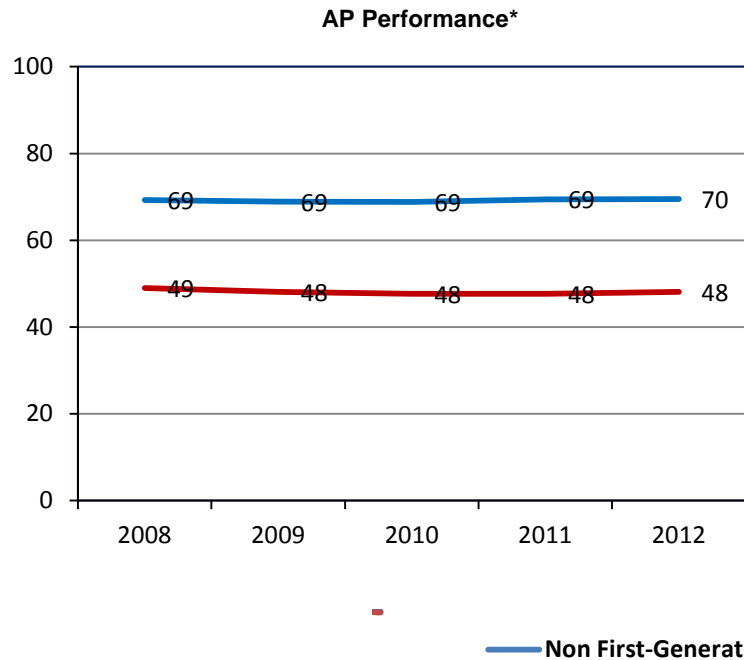
AP Participation, 2008-2012 Cohorts



*AP STEM courses include: Biology, Calculus AB, Calculus BC, Chemistry, Computer Science A, Environmental Science, Physics B, Physics C: Electricity and Magnetism, Physics C: Mechanics, and Statistics.

--While AP participation among first-generation test-takers has been increasing over time, participation gaps between them and non first-generation test-takers remain persistent.

AP Performance* Among AP Exam Takers, 2008-2012 Cohorts

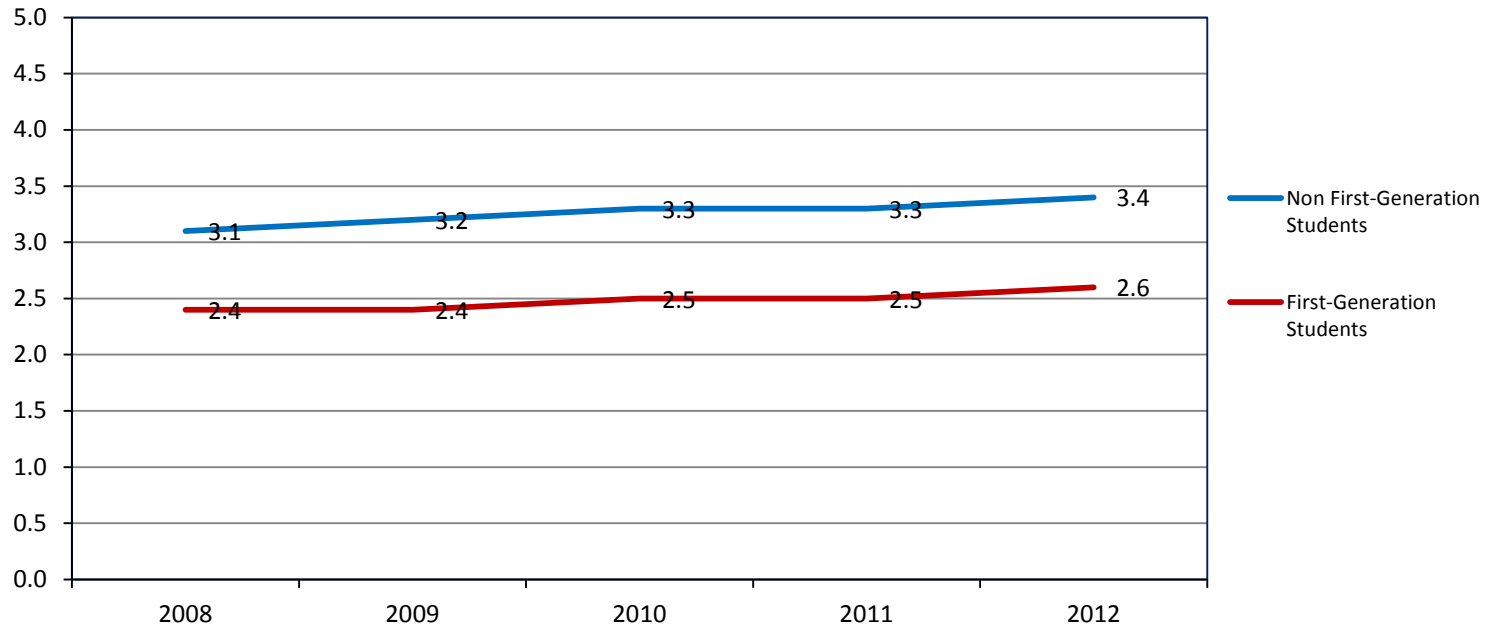


* Performance indicates the percent of AP exam takers scoring 3 or higher on at least one AP exam during their high school career.

**AP STEM courses include: Biology, Calculus AB, Calculus BC, Chemistry, Computer Science A, Environmental Science, Physics B, Physics C: Electricity and Magnetism, Physics C: Mechanics, and Statistics.

-- Performance gaps between first-generation and non first-generation test-takers have remained persistent over time.

Average Number of AP Exams Taken Per Test-Taker, 2008-2012 Cohorts



--While the average number of AP exams taken by first-generation test-takers has been increasing over time, non first-generation test-takers generally take more exams per student.

Average AP Scores Across Most Popular Exams, 2012 Cohort

Non First-Generation Students

Exam	Avg. Score
1. U.S. History	3.0
2. English Lang. & Comp.	3.2
3. English Lit. & Comp.	3.0
4. Calculus AB	3.1
5. U.S. Gov't & Politics	2.9
6. Psychology	3.4
7. Biology	3.0
8. World History	2.8
9. Statistics	3.0
10. Chemistry	3.0

First-Generation Students

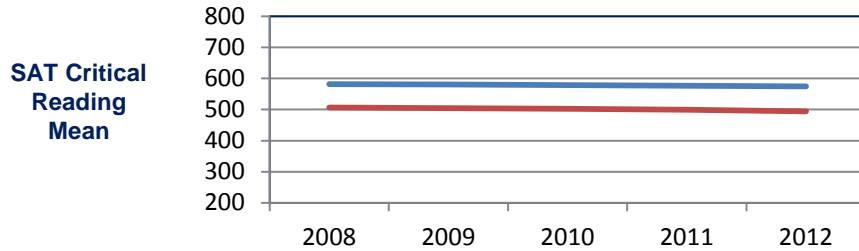
Exam	Avg. Score
1. English Lang & Comp.	2.4
2. U.S. History	2.2
3. English Lit & Comp.	2.3
4. Calculus AB	2.3
5. U.S. Gov't & Politics	2.1
6. Spanish Lang.	3.5
7. Psychology	2.6
8. World History	2.0
9. Biology	2.0
10. Statistics	2.2

--Average AP scores tend to be lower among first-generation test-takers.

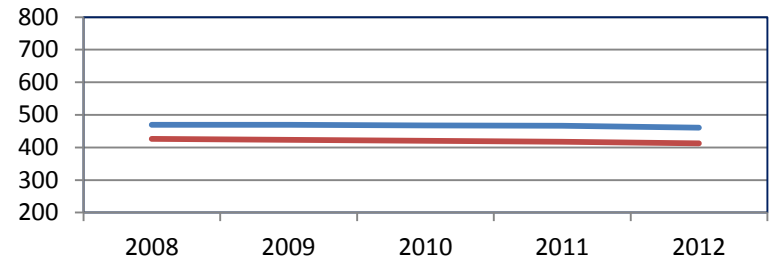
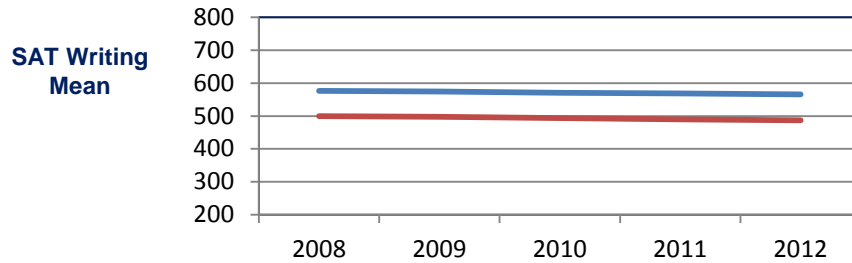
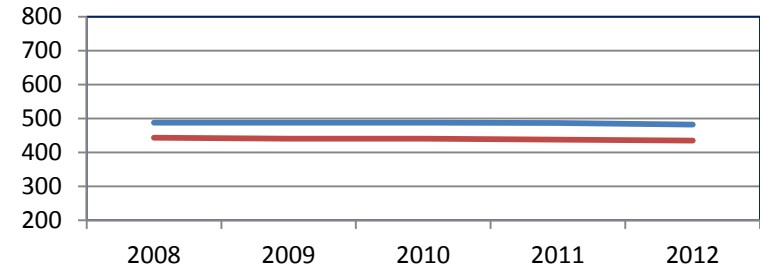
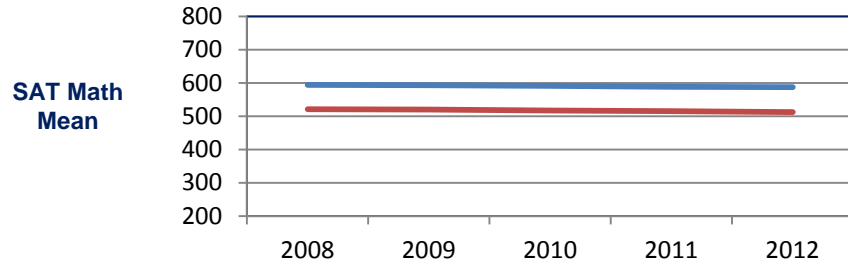
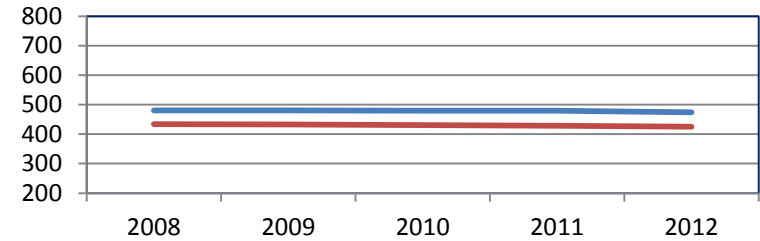
--Both groups take similar exams, with the exception of Spanish Language and Chemistry

SAT Scores by First-Generation Status, 2008-2012 Cohorts

Took Both AP & SAT



Took SAT Only



— Non First-Generation

— First-Generation

--While SAT scores for first-generation test-takers tend to be lower, scores among first-generation test-takers who took both AP and SAT scored higher than first-generation test-takers who the SAT only.

V. School Characteristics

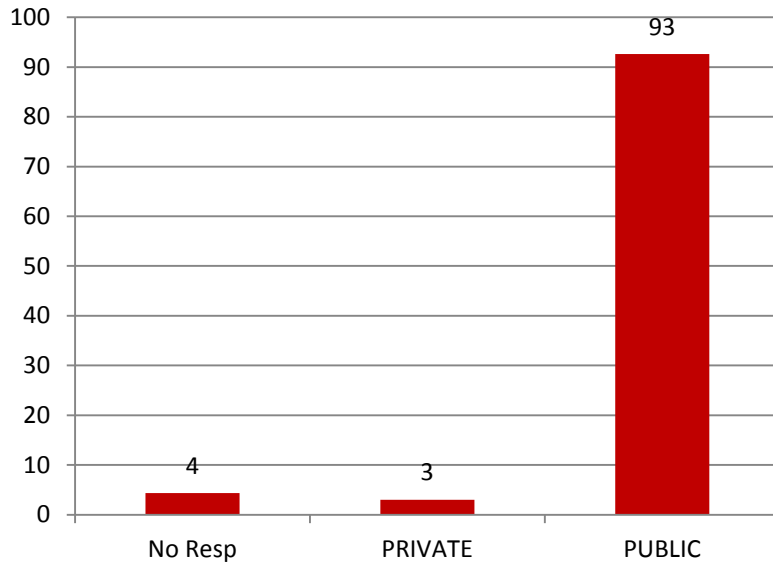
2011 Cohort only

Method Used for School Characteristics Analyses

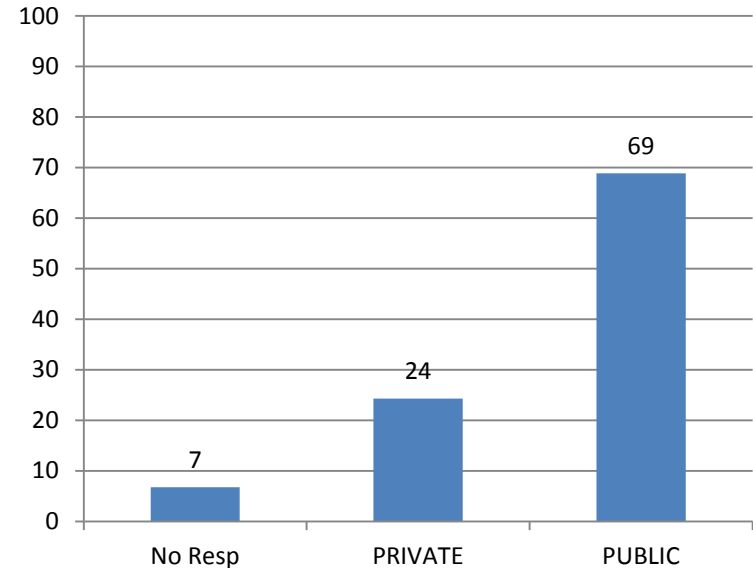
- * there are no first-generation and non first-generation schools per se
- * calculated count of AP and/or SAT test-takers by school
- * then calculated percent of these test-takers that were first and non first-generation
- * merged on school level NCES and AP course audit data
- * compared characteristics of majority (i.e., $\geq 50\%$) first-generation vs. majority non first-generation test-taker schools
- * only included Public schools with 10 or more AP and/or SAT test-takers with parental education responses
- * only included 2011 cohort to due the availability of data

School Type, 2011 Cohort

Percent of Schools with Majority First-Generation Test-Takers (N=5,291)



Percent of Schools with Majority Non First-Generation Test-Takers (N=10,458)



Source: NCES common core of data tables

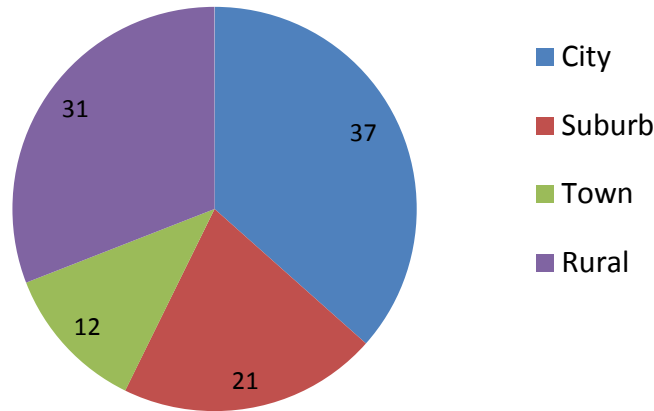
Note: Percents include only those schools with 10 or more SAT and/or AP test-takers.

--Most schools with majority first-generation test-takers were public

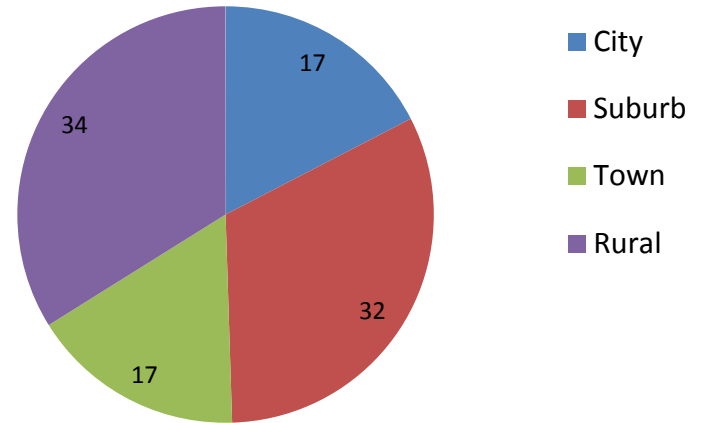
--Almost one-quarter of schools with majority non first-generation test-takers were private

School Locale, 2011 Cohort

Percent of Schools with Majority First-Generation Test-Takers (N=4,900)



Percent of Schools with Majority Non First-Generation Test-Takers (N=7,206)



Source: NCES common core of data tables

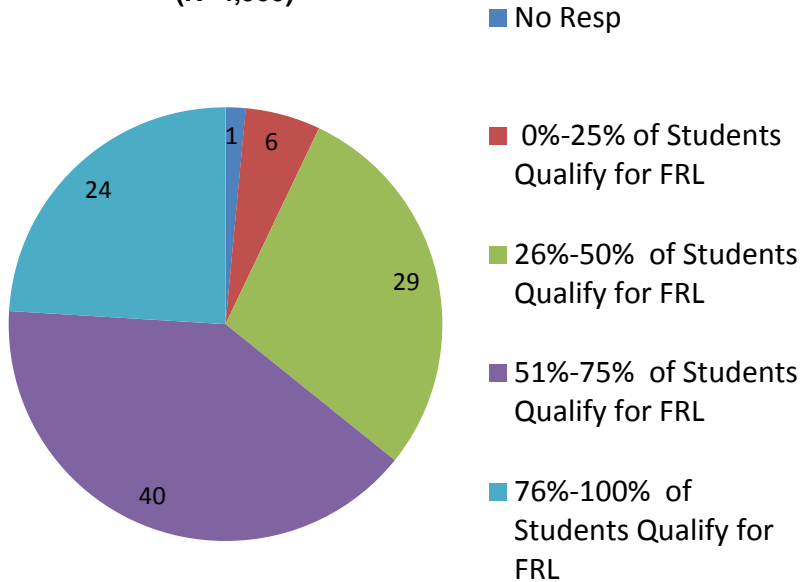
Note: percents include only public schools with 10 or more SAT and/or AP test-takers.

--A larger percent of schools with majority first-generation test-takers were located in cities

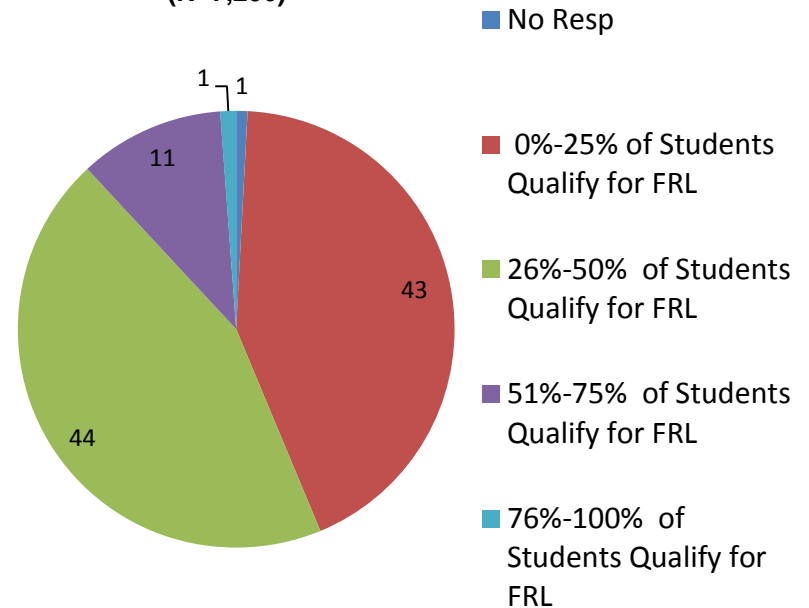
-- A larger percent of schools with majority non first-generation test-takers were located in suburban areas

Free and/or Reduced Lunch, 2011 Cohort

Percent of Schools with Majority First-Generation Test-Takers (N=4,900)



Percent of Schools with Majority Non First-Generation Test-Takers (N=7,206)



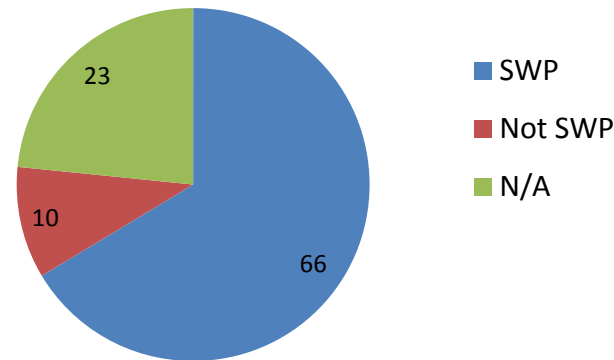
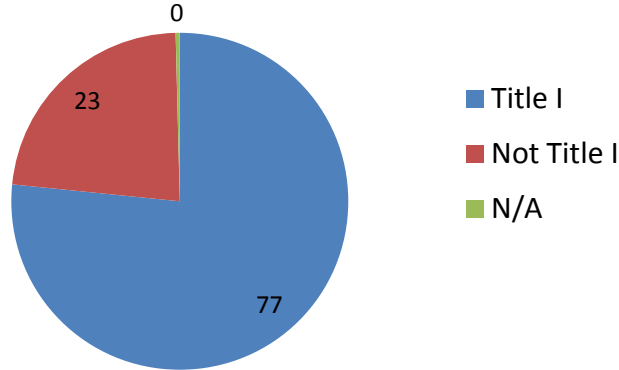
Source: NCES common core of data tables

Note: Percents include only public schools with 10 or more SAT and/or AP test-takers.

--Schools with majority first-generation test-takers had significantly larger percentages of students eligible for free and/or reduced lunch.

Title I and Schoolwide Project Status, 2011 Cohort

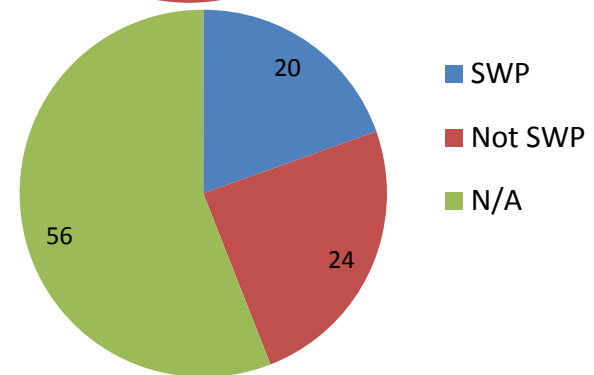
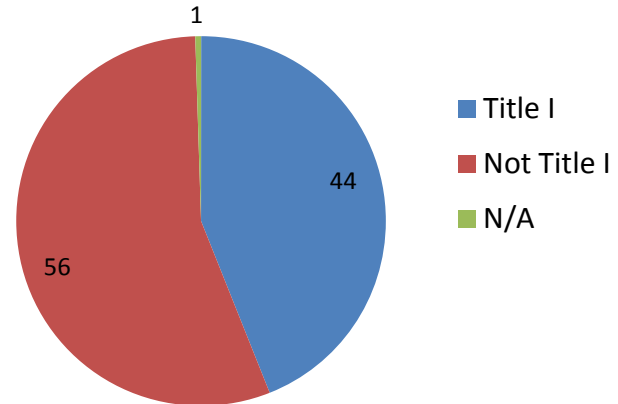
Percent of Schools with Majority First-Generation Test-Takers (N=4,900)



Source: NCES common core of data tables

Note: Percents include only public schools with 10 or more SAT and/or AP test-takers.

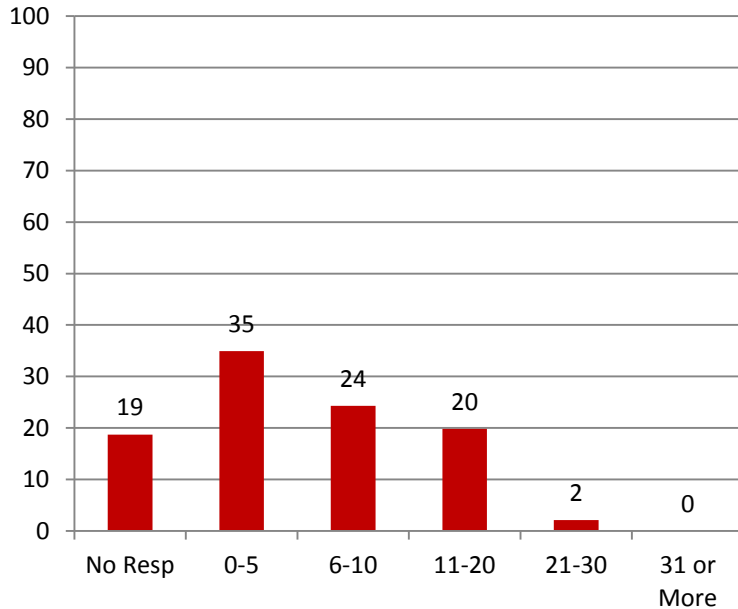
Percent of Schools with Majority Non First-Generation Test-Takers (N=7,206)



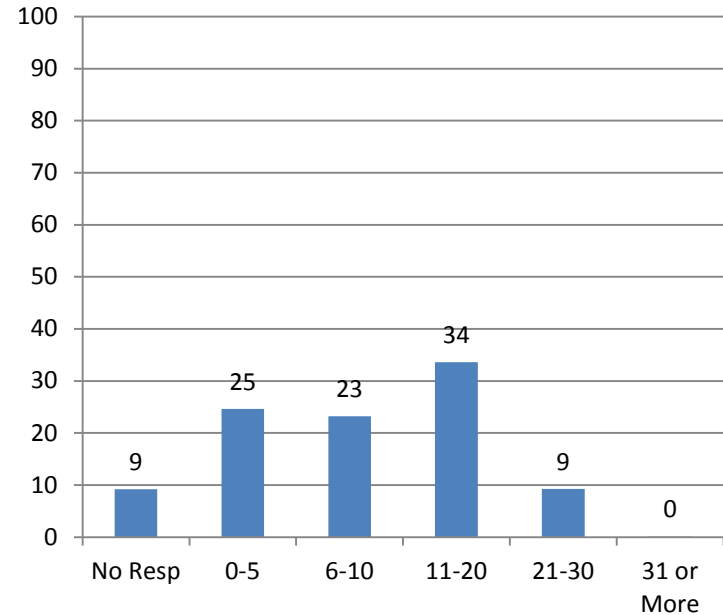
-- Larger percents of Title I and Schoolwide project schools among schools with majority first-generation test-takers, indicating student bodies with greater levels of economic and academic need.

Average Number of Approved AP Courses, 2011 Cohort

Percent of Schools with Majority First-Generation Test-Takers (N=4,900)



Percent of Schools with Majority Non First-Generation Test-Takers (N=7,206)

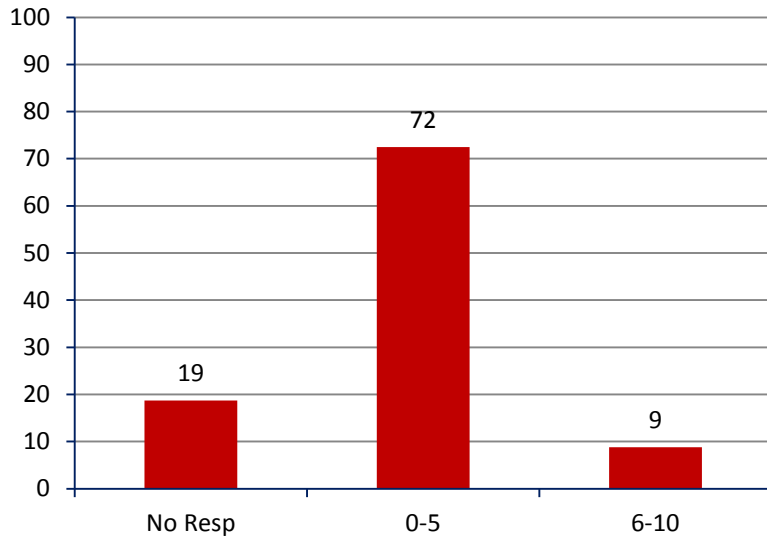


Note: Percents include only public schools with 10 or more SAT and/or AP test-takers.

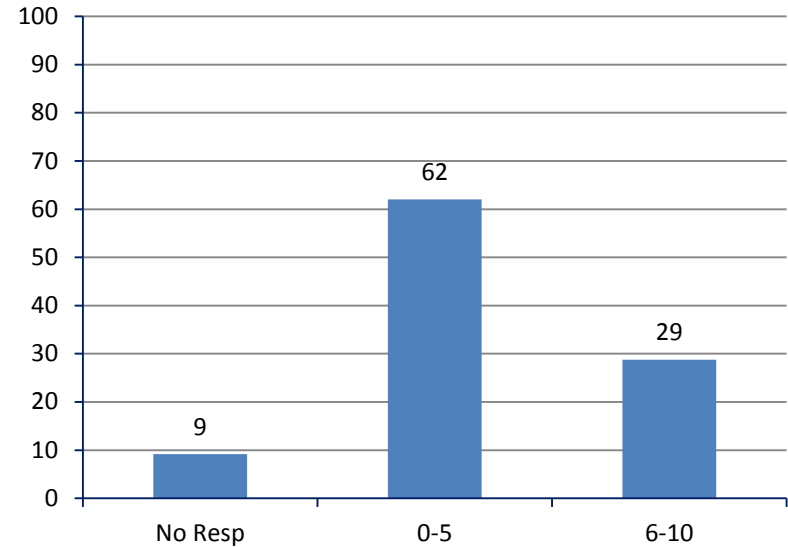
--Schools with higher proportions of first-generation test-takers reported lower numbers of approved AP courses

Average Number of Approved AP STEM Courses, 2011 Cohort

Percent of Schools with Majority First-Generation Test-Takers (N=4,900)



Percent of Schools with Majority Non First-Generation Test-Takers (N=7,206)

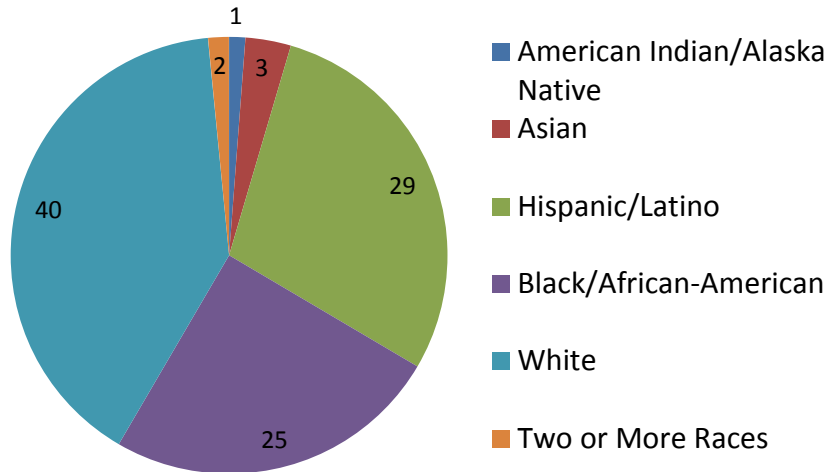


Note: percents include only public schools with 10 or more SAT and/or AP test-takers.

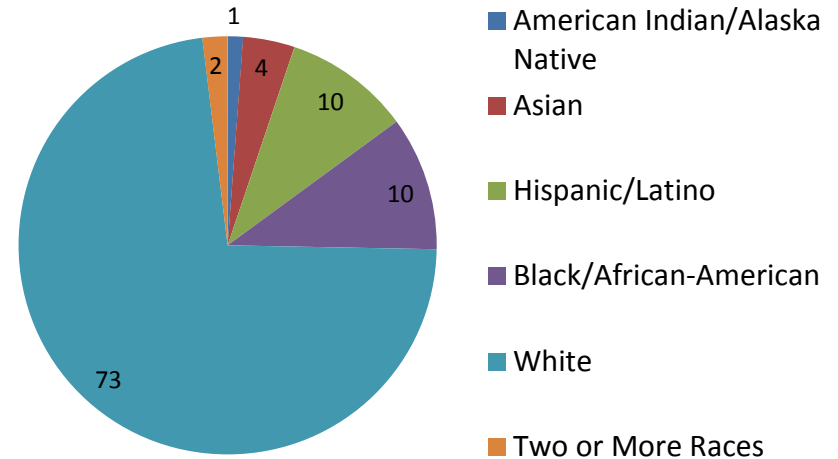
--Schools with higher proportions of first-generation test-takers had lower numbers of approved AP STEM courses

Race/Ethnicity, 2011 Cohort

Avg. Race/Ethnicity % Among Schools with Majority First-Generation Test-Takers (N=4,900)



Avg. Race/Ethnicity % Among Schools with Majority Non First-Generation Test-Takers (N=7,206)



Source: NCES common core of data tables

Note: Percents include only public schools with 10 or more SAT and/or AP test-takers.

--Schools with majority first-generation test-takers had higher proportions of Hispanic/Latino and Black/African-American students

VI. College Aspirations and Planning

**Test-takers in five cohorts (2008-2012) who took both
AP and SAT**

The following analysis will focus on...

Test-takers' responses to SAT questionnaire regarding

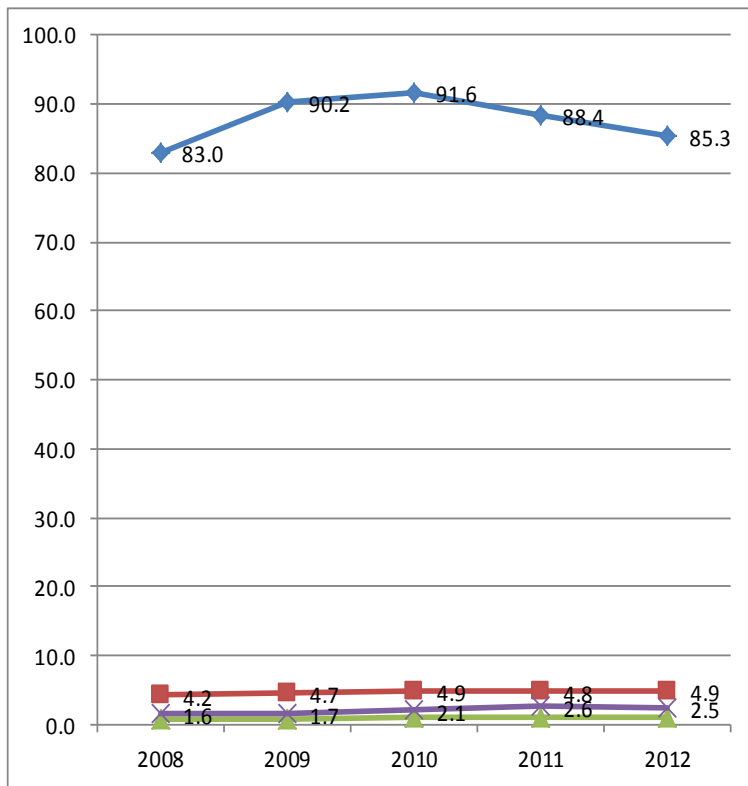
- College Types
- College Sectors
- College Size(s)
- College Setting(s)
- College location
- All women/men vs. Co-ed
- Degree goals
- Financial aid
- Part-time job in college
- First-year living in college

What types of institution are you interested in attending?

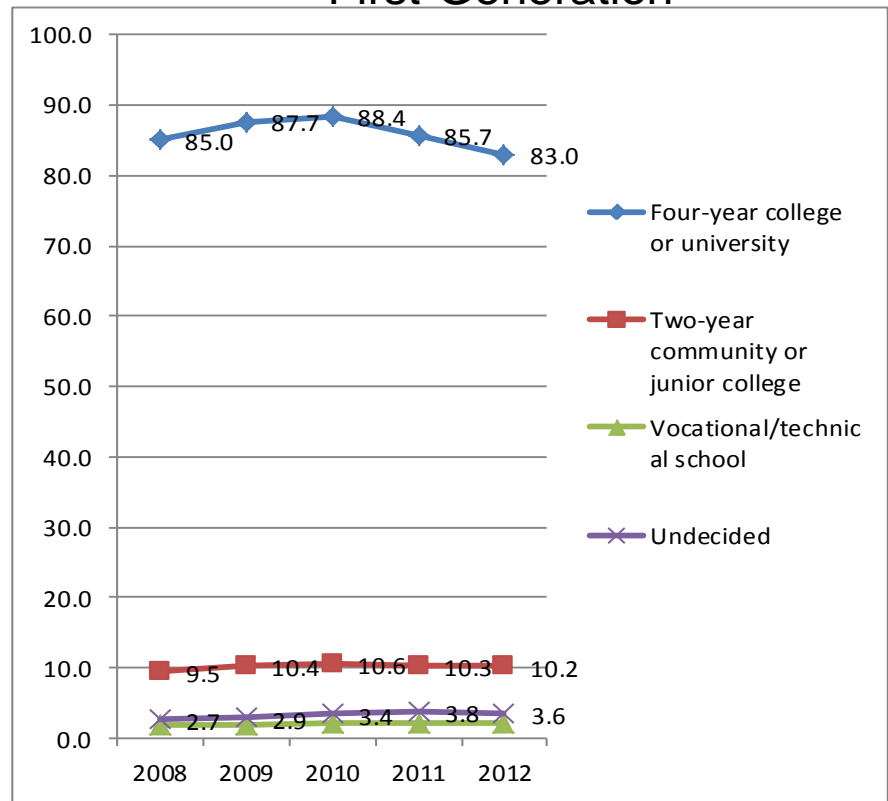
(check more than one response)

Percent of test-takers by first-generation status

Non First-Generation



First-Generation



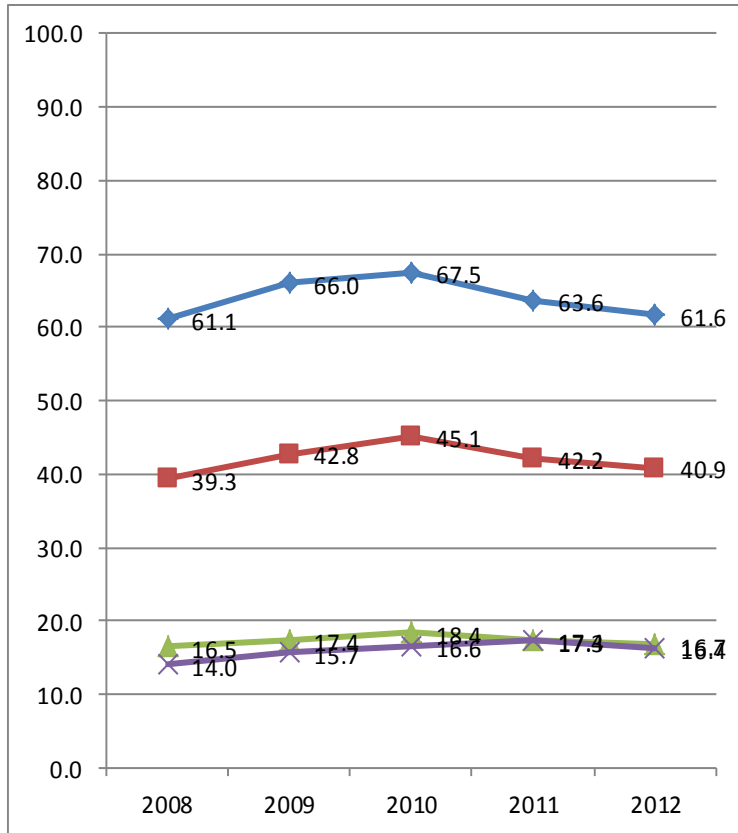
- There was a higher percent of test-takers planning to attend **two-year community college** among first-generation students than non-first-generation students.

Public vs. Private?

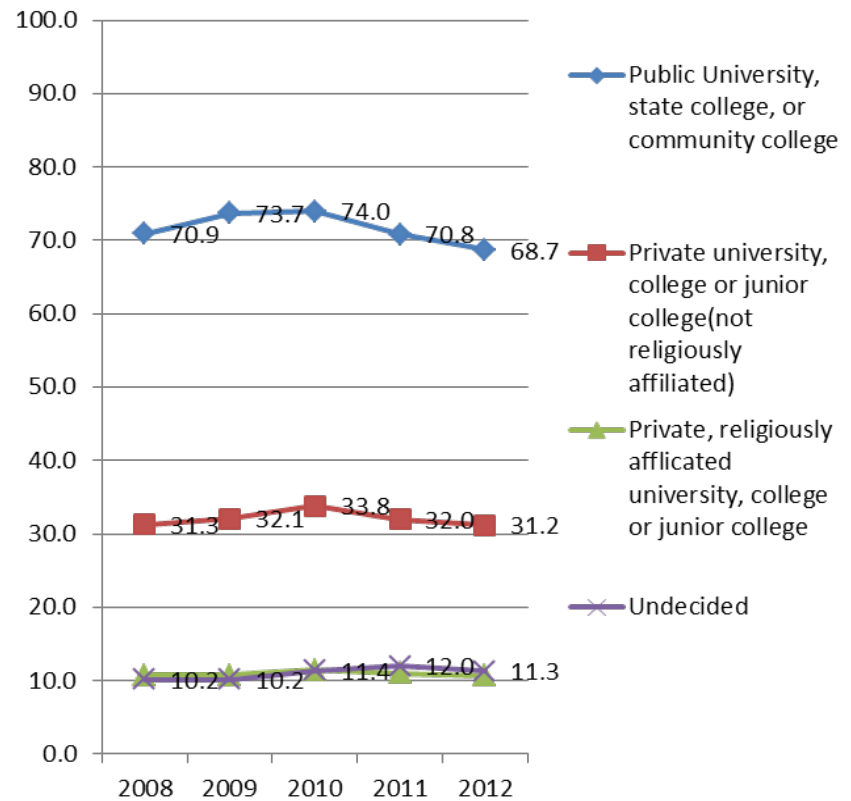
(check more than one response)

Percent of test-takers by first-generation status

Non First-Generation



First-Generation

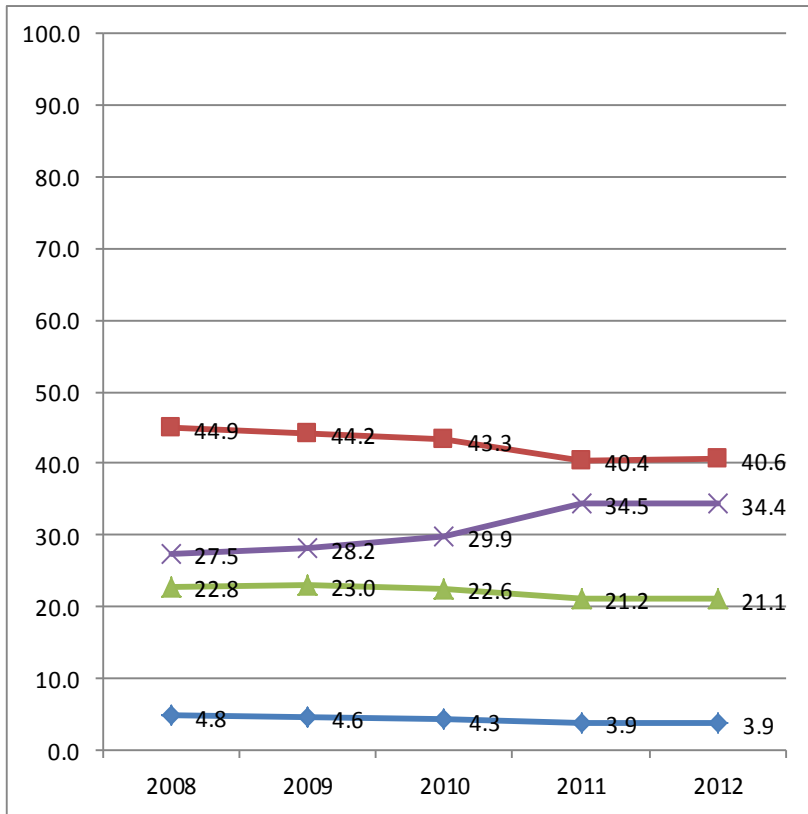


➤ A higher percent of non-first-generation test-takers plans to go to **private university/college** than first-generation test-takers.

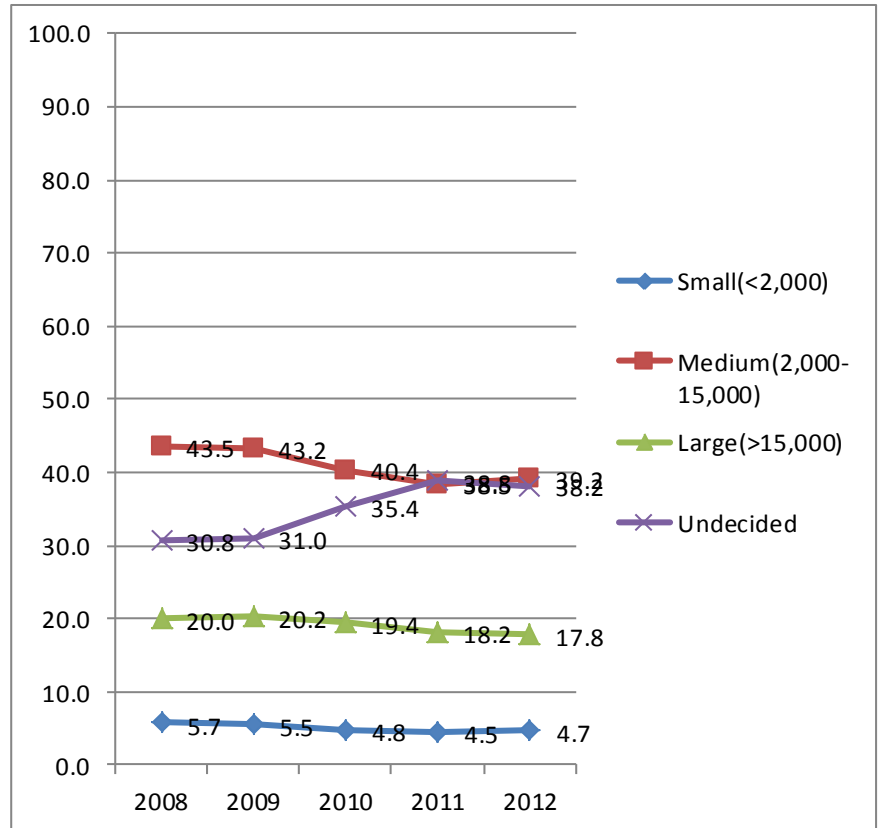
What size college(s) are you thinking of attending? (check more than one response)

Percent of responses by first-generation status

Non First-Generation



First-Generation



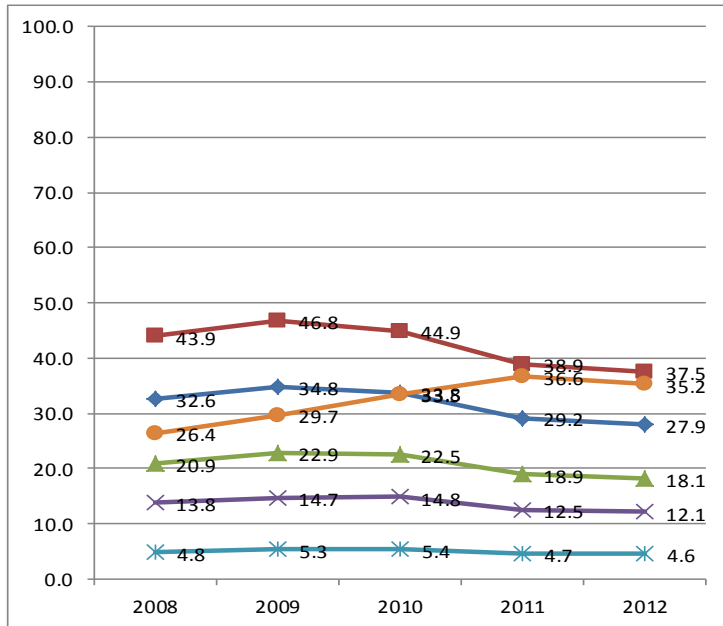
- Regardless of first-generation status, the larger percent of test-takers were thinking of attending an **medium size** college.

What college setting(s) do you prefer?

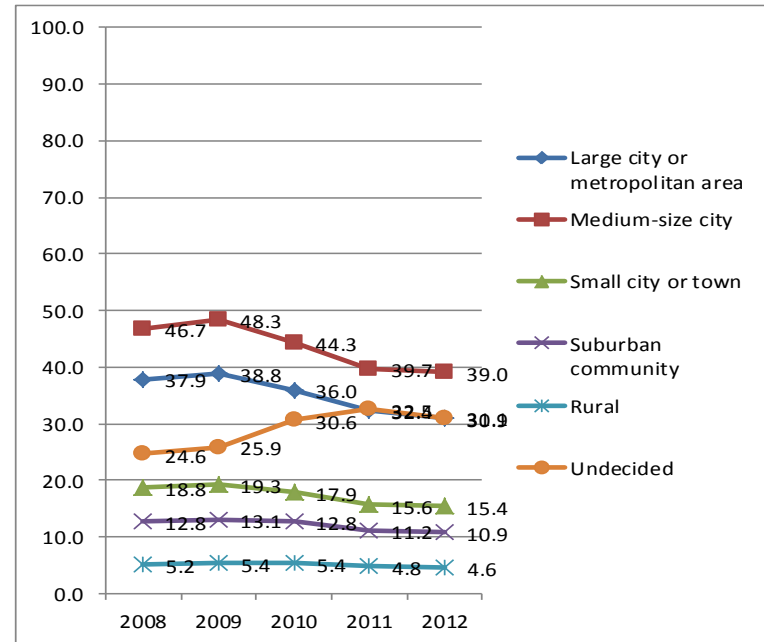
(check more than one response)

Percent of test-takers by first-generation status

Non First-Generation



First-Generation



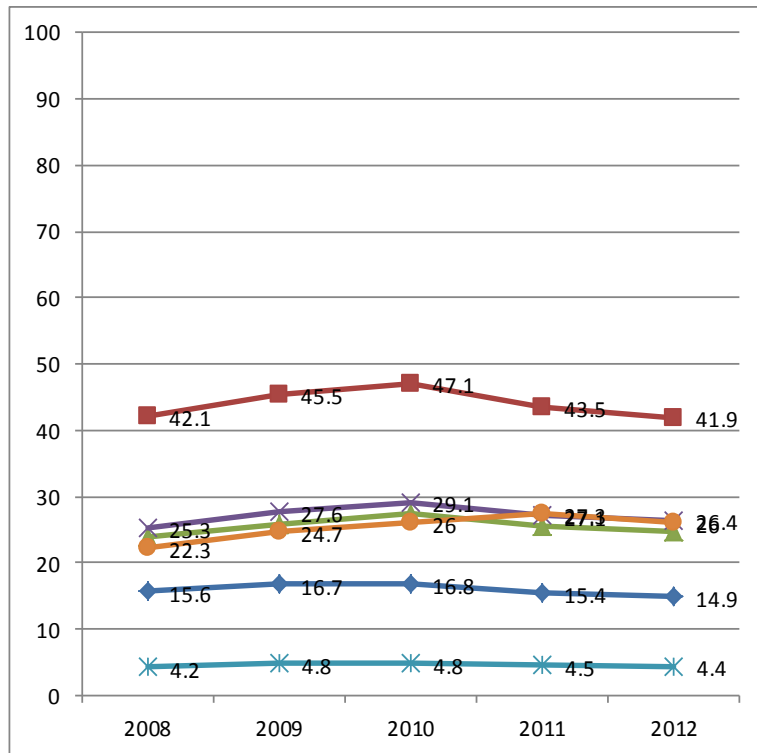
- Regardless of first-generation status, the larger percent of test-takers prefer **medium-size city**, followed by **large city**; however, the proportion of “**undecided**” group has been increasing throughout the five cohort years.
- A relatively larger portion of first-generation test-takers prefer to live in **large city** compared to their non-first-generation counterparts.

Where would you like to go to college?

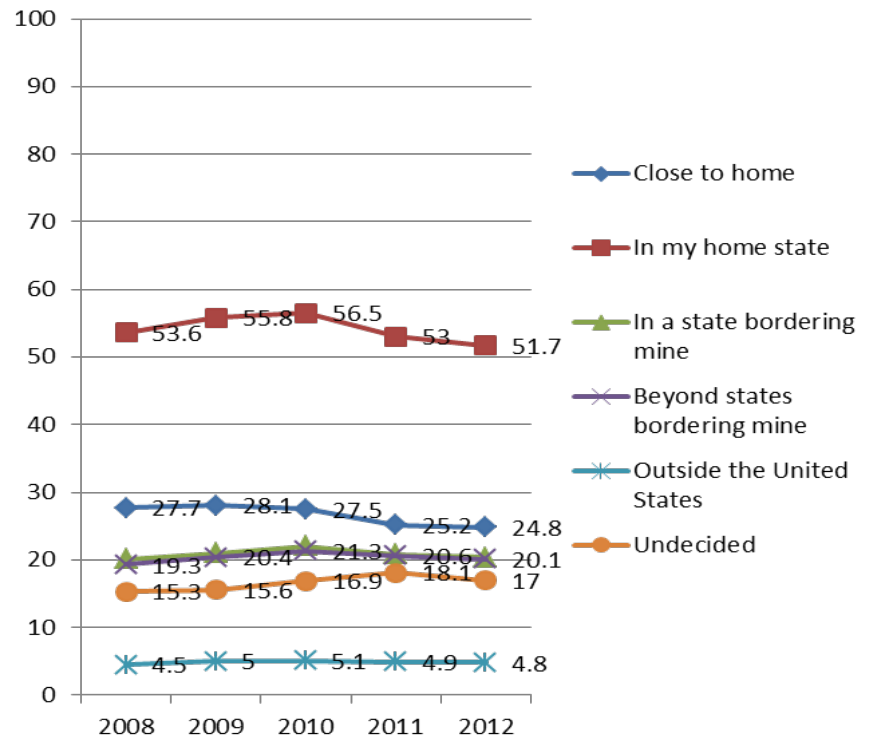
(check more than one response)

Percent of test-takers by first-generation status

Non First-Generation



First-Generation



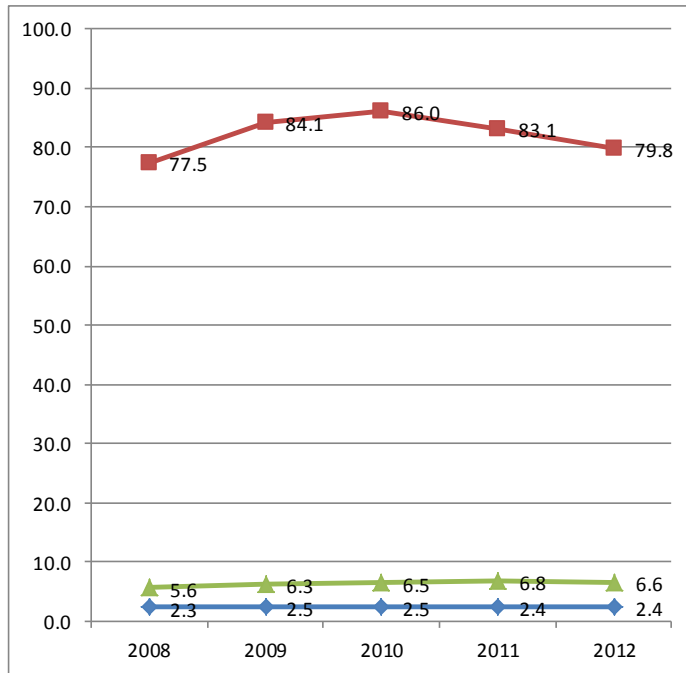
- A larger percent of first-generation test-takers would like to go to college “in my home state” or “close to home” than non first-generation test-takers.

What type(s) of college are you considering?

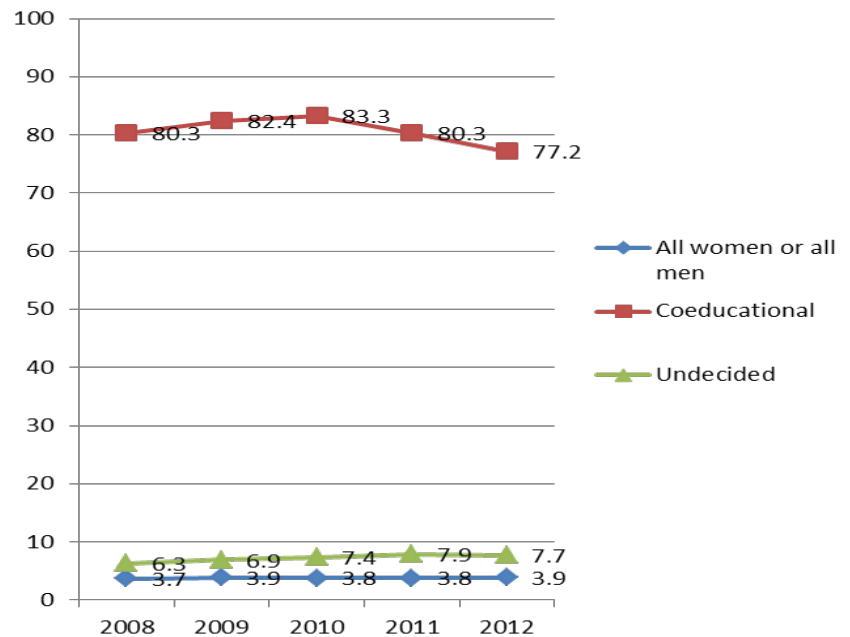
(check more than one response)

Percent of test-takers by first-generation status

Non First-Generation



First-Generation

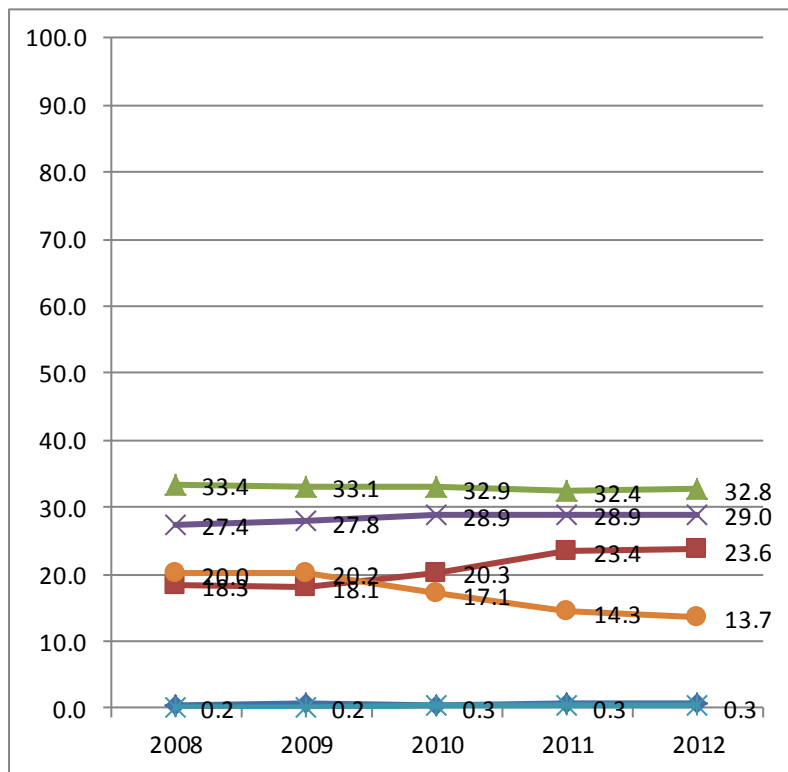


- Regardless of first-generation status, the majority of test-takers considered going to a **coeducational** college.

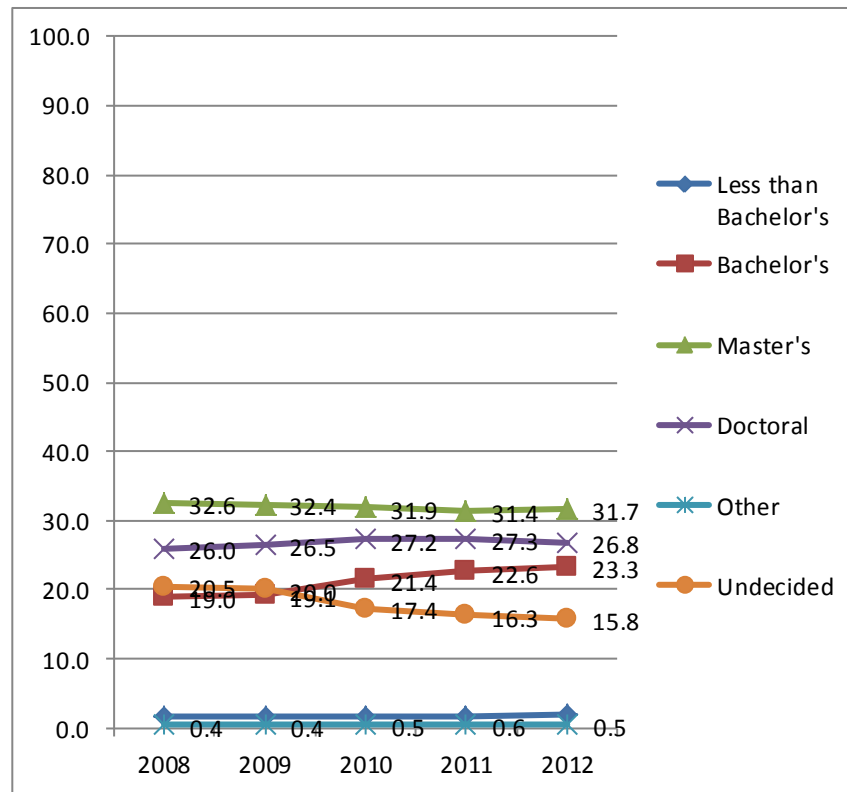
What is the highest level of education you plan to complete beyond high school?

Percent of test-takers by first-generation status

Non First-Generation



First-Generation

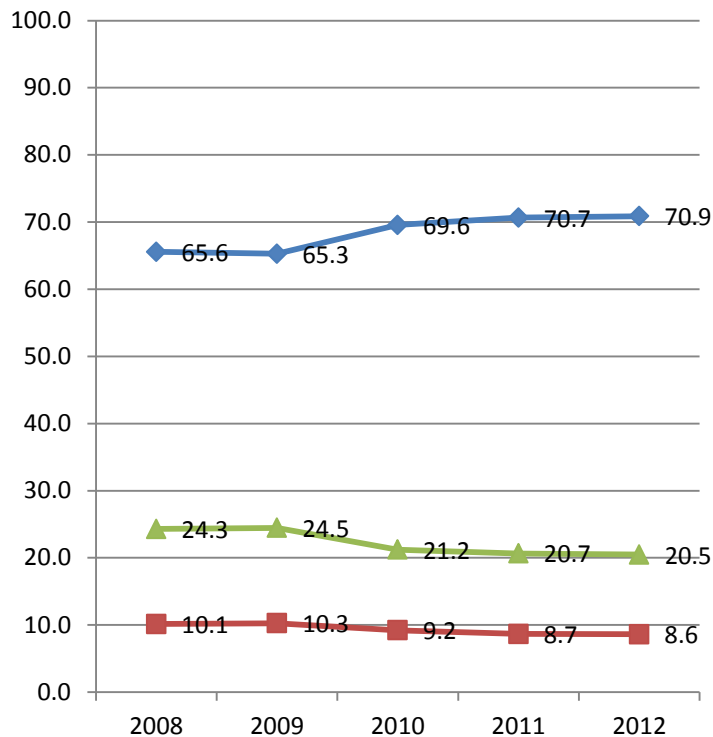


- Regardless of first-generation status, a higher percent of test-takers plan to complete **master** and **beyond** as the highest level of education.

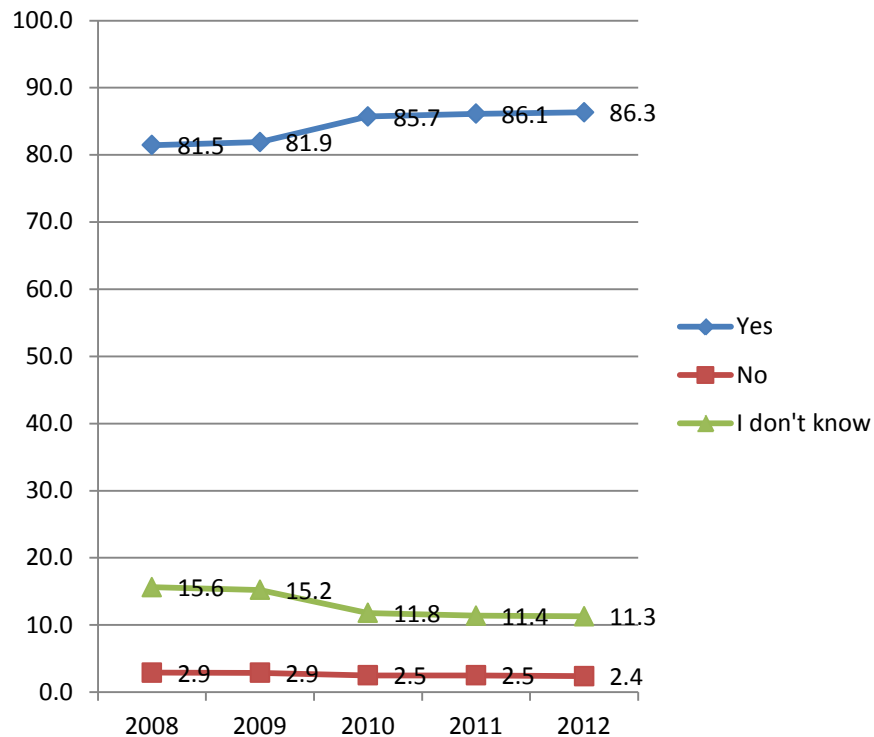
Do you plan to apply for financial aid at any college?

Percent of test-takers by first-generation status

Non First-Generation



First-Generation

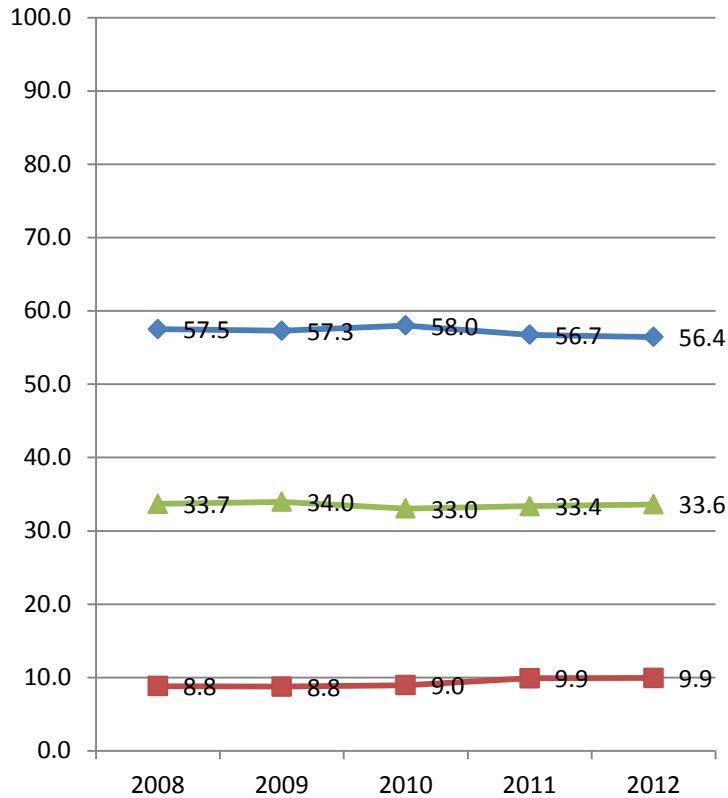


- A higher percent of first-generation test-takers plans to apply for financial aid in college than non-first-generation test-takers.

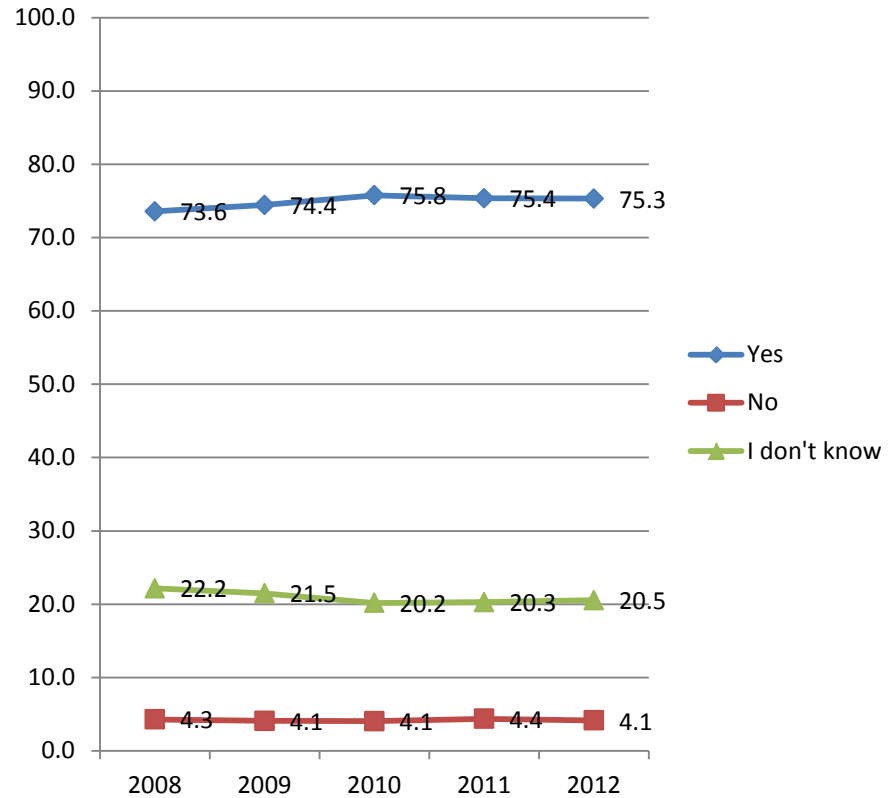
Do you plan to look for a part-time job while in college?

Percent of test-takers by first-generation status

Non First-Generation



First-Generation

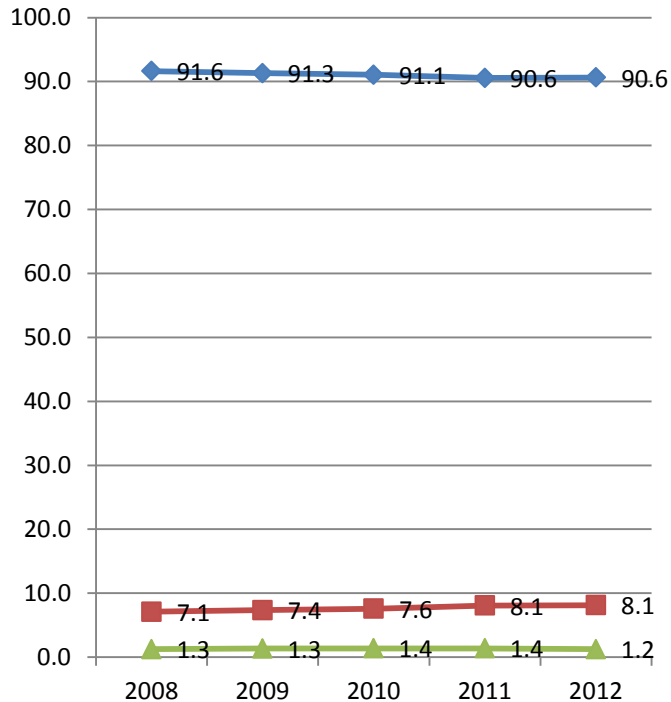


- A substantially larger percent of first-generation test-takers plan to look for a **part-time job** while in college than non-first-generation test-takers.

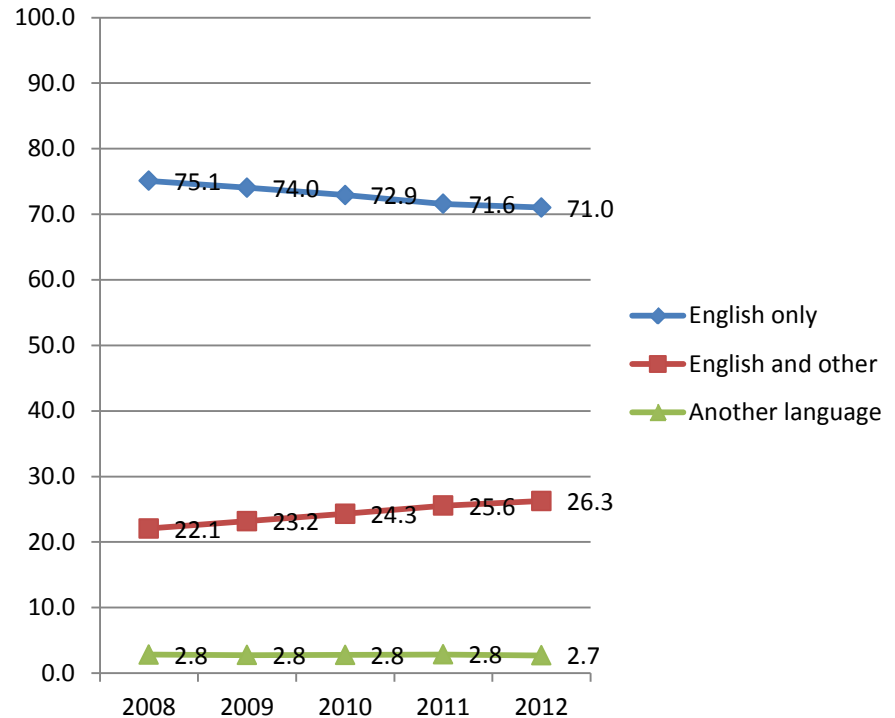
What language do you know best?

Average percent of test-takers by first-generation status

Non First-Generation



First-Generation



- A substantially larger percent of first-generation test-takers speak English and/or other languages than non-first-generation test-takers.

**Institutions that were listed among the top 10 places test takers sent their SAT scores to, across five cohorts
(Non First-Generation)
Comparison by institutions**

CA	MA	NY	NC	PA
UNIVERSITY OF CALIFORNIA LOS ANGELES	BOSTON UNIVERSITY	CORNELL UNIVERSITY	UNIVERSITY OF NORTH CAROLINA CHAPEL HILL	UNIVERSITY OF PENNSYLVANIA UNDERGRADUATE ADMISSION
UNIVERSITY OF CALIFORNIA BERKELEY	HARVARD UNDERGRADUATE ADMISSIONS	NEW YORK UNIVERSITY		PENNSYLVANIA STATE UNIVERSITY
UNIVERSITY OF CALIFORNIA SAN DIEGO		COLUMBIA UNIVERSITY UNDERGRADUATE ADMISSIONS		
STANFORD UNIVERSITY				
UNIVERSITY OF CALIFORNIA SANTA BARBARA				
UNIVERSITY OF CALIFORNIA DAVIS				
UNIVERSITY OF CALIFORNIA IRVINE				

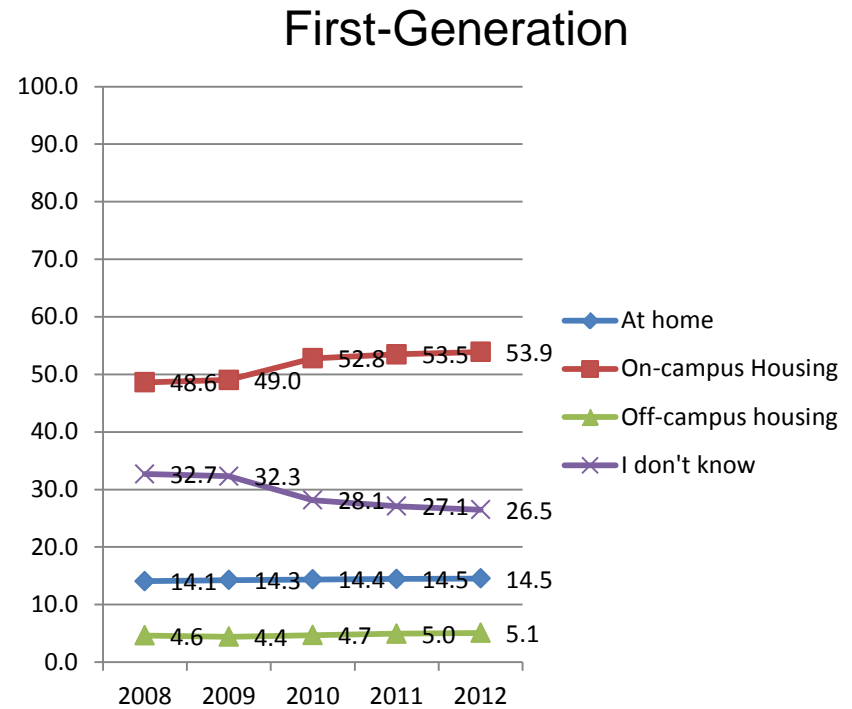
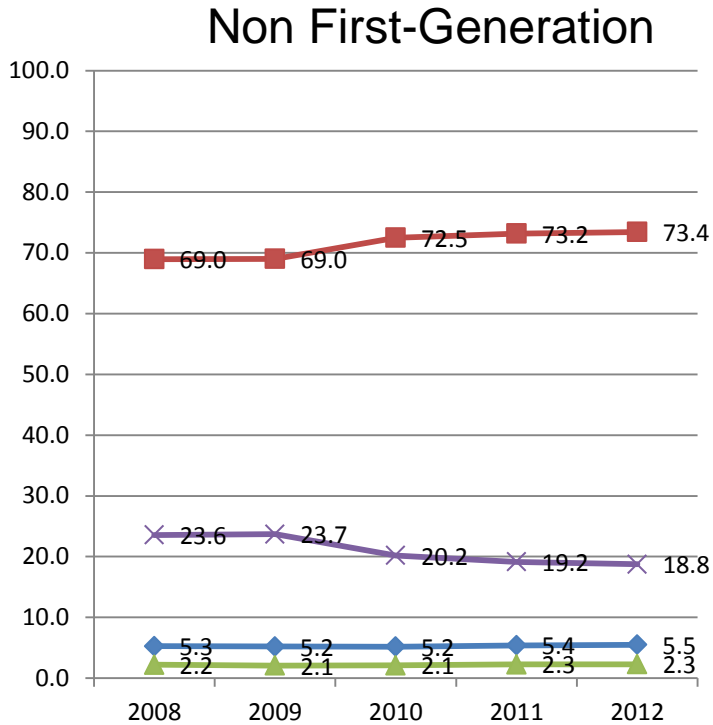
Institutions that were listed among the top 10 places test takers sent their SAT scores to, across five cohorts (First-Generation)

Comparison by institutions

CA	FL	NY	TX
UNIVERSITY OF CALIFORNIA LOS ANGELES	UNIVERSITY CENTRAL FLORIDA	NEW YORK UNIVERSITY	UNIVERSITY OF TEXAS AUSTIN
UNIVERSITY OF CALIFORNIA BERKELEY			
UNIVERSITY OF CALIFORNIA IRVINE			
UNIVERSITY OF CALIFORNIA SANTA BARBARA			
UNIVERSITY OF CALIFORNIA SAN DIEGO			
UNIVERSITY OF CALIFORNIA DAVIS			
UNIVERSITY OF SOUTHERN CALIFORNIA			
CALIFORNIA STATE UNIVERSITY LONG BEACH			
UNIVERSITY OF CALIFORNIA RIVERSIDE			
CALIFORNIA STATE UNIVERSITY MENTOR			

Where do you plan to live during your first year in college?

Percent of test-takers by first-generation status



- A larger percent of first-generation test-takers plan to live **at home** than their non first-generation counterparts.
- A substantially larger percent of non-first-generation test-takers plan to live **on campus** than their first-generation counterparts.

Top 10 Intended Majors, 2012 Cohort

Rank	Took Both AP & SAT, Non First-Generation	Took Both AP & SAT, First-Generation	Took SAT Only, Non First-Generation	Took SAT Only, First-Generation
1	Health Professions And Related Programs	Health Professions And Related Programs	Health Professions And Related Programs	Health Professions And Related Programs
2	Engineering	No Response	No Response	No Response
3	Business Management, Marketing, And Related Support Services	Business Management, Marketing, And Related Support Services	Business Management, Marketing, And Related Support Services	Business Management, Marketing, And Related Support Services
4	Biological And Biomedical Sciences	Engineering	Visual And Performing Arts	Visual And Performing Arts
5	Undecided	Biological And Biomedical Sciences	Engineering	Education
6	No Response	Visual And Performing Arts	Undecided	Psychology
7	Visual And Performing Arts	Psychology	Education	Engineering
8	Psychology	Undecided	Biological And Biomedical Sciences	Homeland Security, Law Enforcement, Firefighting And Related Protective Services
9	Education	Education	Psychology	Undecided
10	Communication, Journalism, And Related Programs	Legal Professions And Studies	Homeland Security, Law Enforcement, Firefighting And Related Protective Services	Biological And Biomedical Sciences

Note: Students who took AP only are not included because they did not complete the SAT questionnaire which captures intended major responses.

VII. Discussion

Areas of Intervention

- “While students whose parents have a college education tend to experience ‘college as a continuation’ of their academic and social experiences in high school, going to college often constitutes a ‘disjunction’ in the lives of first-generation students and their families,” (Engle, p.33)
- first-generation students “often lack important ‘college knowledge’ about the process of preparing, applying, and paying for college due to the lack of experience with postsecondary education in their families,”(Hossler et al., 1999).
- not being able to benefit from their parents’ experiences puts them at a distinct disadvantage (NCES, 2000)
- areas where we can make a difference (Engle, pp. 38-40)...
 - * improve pre-college preparation: help students plan a rigorous curriculum which includes advanced math and counseling on “gateway courses”
 - * help students form early aspirations and plans for college
 - * increase information about and access to financial aid resources to help reduce barriers to college enrollment
 - * ease the transition to college by increasing students’ exposure to the college environment

Intervention Programs for First-Generation Students

- * There are a growing number of college access and success programs across the country that target low-income, minority, and first-generation test-takers (Engle, p. 33)
- * the most well-known and long-standing are the federally-funded **TRIO** and **GEAR UP** programs (Engle, p. 33).
- * Other programs include the **Talent Search**, **Upward Bound**, **Student Support Services**, and **McNair Scholars** programs
- * these programs provide services that aim to increase college awareness and preparation, counseling, tutoring, mentoring, and information regarding the college admissions process
- * evaluation data of these programs have generally demonstrated a positive impact on the educational outcomes of low-income and first-generation test-takers (Engle, p. 33)

Net Price Calculator

Source: <http://studentnpc.collegeboard.org/what-is-a-net-price-calculator>

The net price calculator is a tool that you can use to estimate your “net price” to attend a particular college or university. Net price is the difference between the “sticker” price (full cost) to attend a specific college, minus any grants and scholarships for which you may be eligible. Sticker price includes direct charges (tuition and fees, room and board) and indirect costs (books and supplies, transportation and personal expenses).

How does it work?

1. First, the net price calculator looks at the sticker price.
2. Then, using the financial information you enter into the calculator, the net price calculator estimates the amount of money your family would be expected to contribute to pay for college.
3. Finally, the net price calculator evaluates your eligibility for financial aid at specific colleges by matching your financial and personal characteristics to the criteria that schools use to distribute financial aid (need-based grants as well as merit-based scholarships).

How can the net price calculator help me?

1. Net price is the key to understanding what a specific college is likely to cost, and allows you to better compare your out-of-pocket expenses from one college to another.
2. It can help you widen your college choices beyond those institutions that you think you can afford. It is possible that your net cost will be lower at a college with a high sticker price or higher at a college with a lower sticker price. You may find that some colleges you thought were financially out of your reach may be very affordable.
3. Remember, “financial fit” is just one of many factors you will want to consider in choosing a college.

College Board Links

- www.collegeboard.org/research
- <http://studentnpc.collegeboard.org/what-is-a-net-price-calculator>
- <https://bigfuture.collegeboard.org/>
- <http://professionals.collegeboard.com/guidance/prepare/first-generation>

Questions.....

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Thank You!