REPORT APPENDICES A AND B | OCTOBER 2025

Promising Combinations of Dual Enrollment, AP/IB, and CTE

The College and Earnings Trajectories of Texas High School Students Who Take Accelerated Coursework

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APPENDICES A AND B

Table of Contents

Appendix A. Supplementary Tables and Figures

Table A1.

Percentage of Students in the 2015 and 2016 High School Completion Cohorts Who Completed High School Within Six Years

Coursetaking profile	Percentage who completed high school within six years
DE-only takers	13%
DE takers with CTE focus	1%
DE and AP/IB takers	1%
AP/IB takers, no DE	4%
CTE focus only	4%
No acceleration	38%
All students	**17%**

Note. Results based on whether students graduated from high school or earned an associate or bachelor's degree within six years from their expected high school completion.

Table A2.

Accelerated Coursework by High School Completion Cohort

	High school completion cohort		
	2015 and 2016 (combined)	2019	2022
Dual enrollment			
None	81%	78%	78%
1 to 8 credits	7%	7%	7%
9 to 14 credits	5%	5%	4%
15 or more credits	8%	10%	11%
AP/IB courses			
None	60%	57%	57%
At least one course	40%	43%	43%
High school CTE courses			
0 to 4 courses	32%	26%	24%
5 to 9 courses	38%	34%	32%
10 or more courses	30%	40%	44%
Total number of students	**661,558**	**362,273**	**374,515**

Table A3.

Student and School Characteristics by Accelerated Coursework Enrollment, 2015 & 2016 and 2022 High School Completion Cohorts

Characteristic	High school completion cohort								
	2015 and 2016 (combined)				2019				
	All students	Dual enrollment	AP/IB	High school CTE	**All students**	Dual enrollment	AP/IB	High school CTE	ECHS track
Gender									
Men	**51%**	43%	46%	51%	**51%**	43%	45%	51%	47%
Women	**49%**	57%	54%	49%	**49%**	57%	55%	49%	53%
Race									
Asian	**3%**	4%	6%	3%	**4%**	5%	7%	4%	1%
Black	**13%**	7%	10%	13%	**13%**	8%	10%	13%	6%
Hispanic	**47%**	41%	45%	47%	**50%**	46%	49%	50%	82%
White	**33%**	45%	36%	33%	**30%**	39%	31%	30%	10%
Other	**3%**	3%	3%	3%	**3%**	3%	3%	3%	1%
Low-income									
No	**46%**	62%	58%	46%	**46%**	58%	55%	45%	25%
Yes	**54%**	38%	42%	54%	**54%**	42%	45%	55%	75%
Title I high school									
No	**33%**	38%	39%	33%	**33%**	37%	38%	33%	6%
Yes	**67%**	62%	61%	67%	**67%**	63%	62%	67%	94%
Rurality									
Urban	**38%**	32%	42%	37%	**39%**	34%	43%	38%	52%
Rural	**26%**	31%	22%	26%	**21%**	26%	17%	22%	15%
Suburb	**28%**	25%	31%	27%	**31%**	28%	34%	31%	23%
Town	**9%**	12%	6%	9%	**9%**	12%	6%	9%	10%
ECHS track	**NA**	NA	NA	NA	**5%**	12%	7%	5%	100%
Total number of students	**661,558**	**127,710**	**275,331**	**633,261**	**362,273**	**78,516**	**156,351**	**348,586**	**19,670**

Table A4.

Student and School Characteristics, 2022 High School Completion Cohort

Characteristic	Percentage
Gender	
Men	51%
Women	49%
Race	
Asian	4%
Black	13%
Hispanic	52%
White	28%
Other	3%
Low-income	
No	43%
Yes	57%
Title I high school	
No	32%
Yes	68%
Rurality	
Urban	38%
Rural	22%
Suburb	31%
Town	9%
ECHS track	5%
Took accelerated coursework	
Dual enrollment (DE)	22%
AP/IB	43%
High school CTE	95%
Total number of students	**374,515**

Table A5.

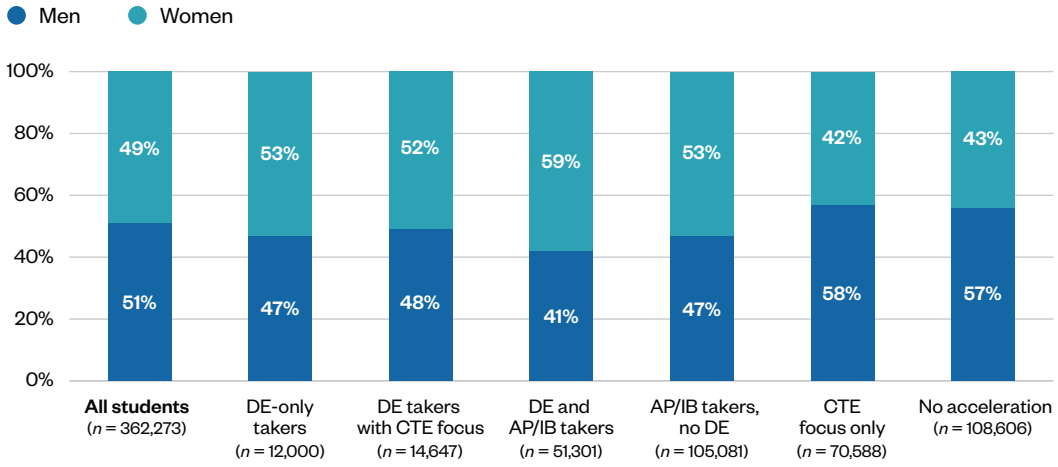
Student and School Characteristics by Accelerated Coursework Enrollment, 2022 High School Completion Cohort

Characteristic	Percentage			
	Dual enrollment	AP/IB	High school CTE	ECHS track
Gender				
Men	42%	45%	51%	44%
Women	58%	55%	49%	56%
Race				
Asian	6%	7%	4%	2%
Black	8%	9%	13%	11%
Hispanic	49%	51%	52%	77%
White	35%	29%	28%	9%
Other	3%	3%	3%	2%
Low-income				
No	56%	52%	43%	25%
Yes	44%	48%	57%	75%
Title I high school				
No	35%	37%	31%	8%
Yes	65%	63%	69%	92%
Rurality				
Urban	34%	43%	37%	46%
Rural	26%	18%	23%	13%
Suburb	29%	34%	31%	31%
Town	11%	5%	9%	9%
ECHS track	14%	7%	4%	100%
Total number of students	**83,000**	**162,296**	**357,176**	**18,166**

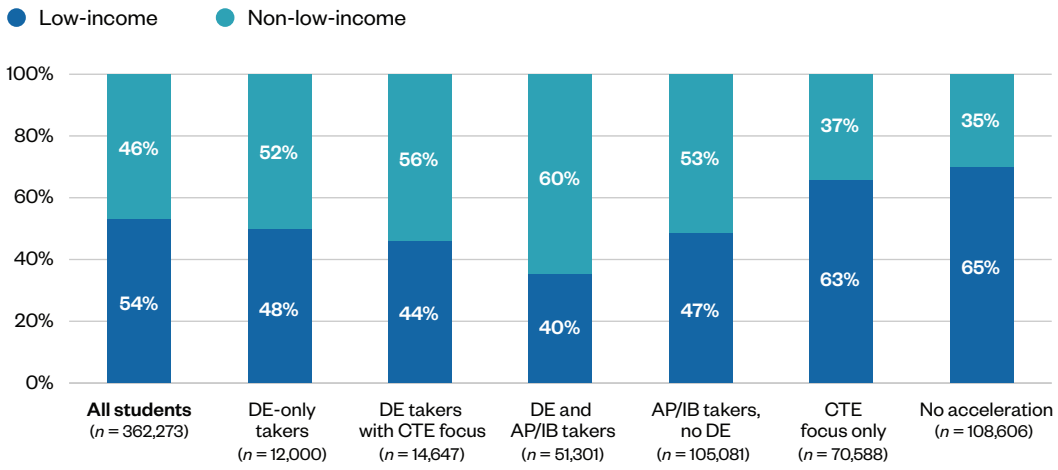
Figure A1.

Accelerated Coursetaking by Student Characteristics, 2019 High School Completion Cohort

A. Gender



B. Income



C. Race/ethnicity

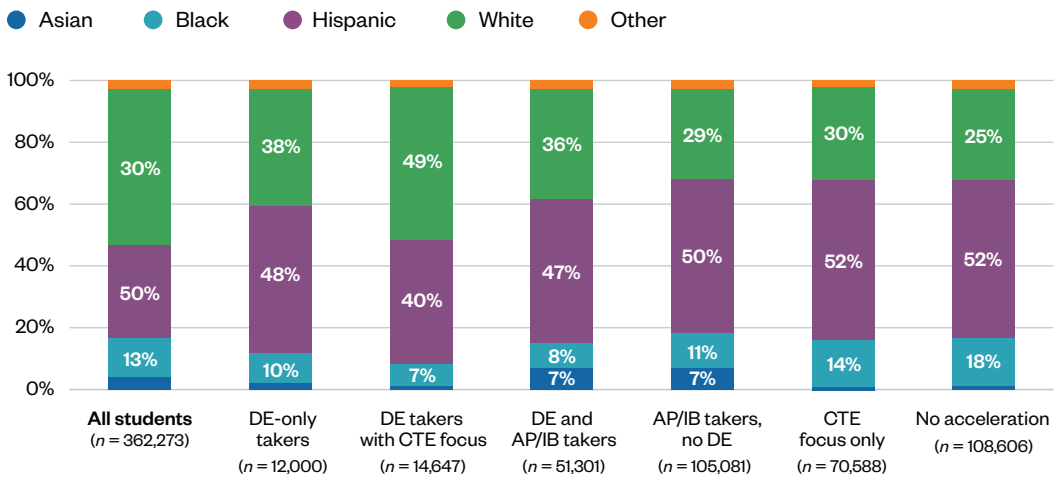
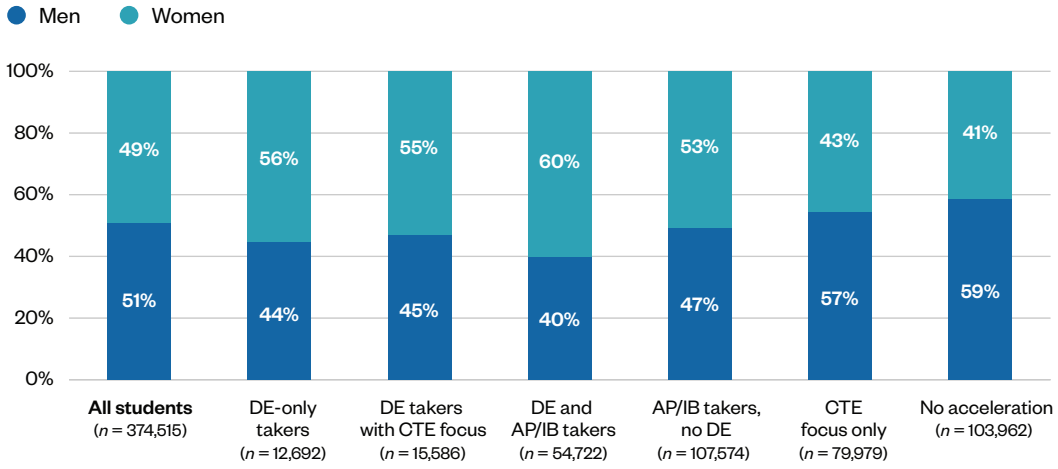


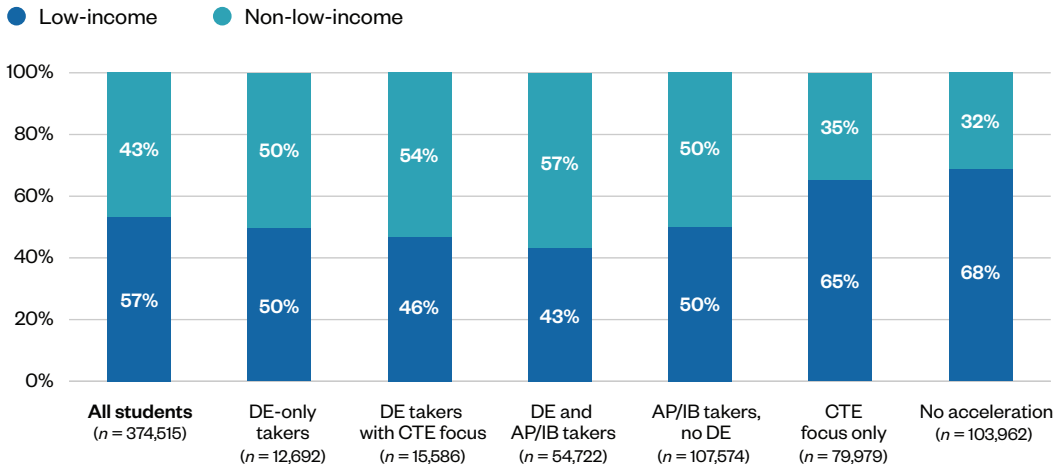
Figure A2.

Accelerated Coursetaking by Student Characteristics, 2022 High School Completion Cohort

A. Gender



B. Income



C. Race/ethnicity

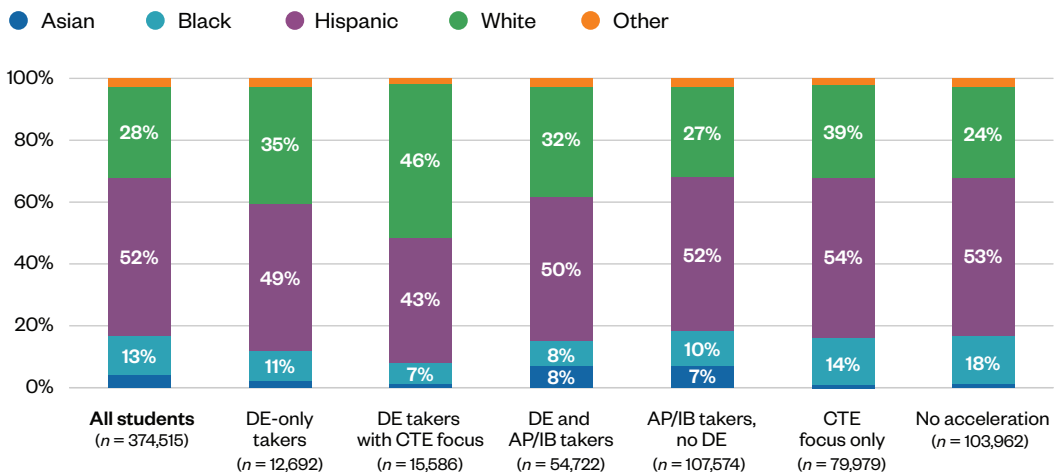


Figure A3.

Highest Postsecondary Attainment by Coursetaking Profile, 2019 and 2022 High School Completion Cohorts

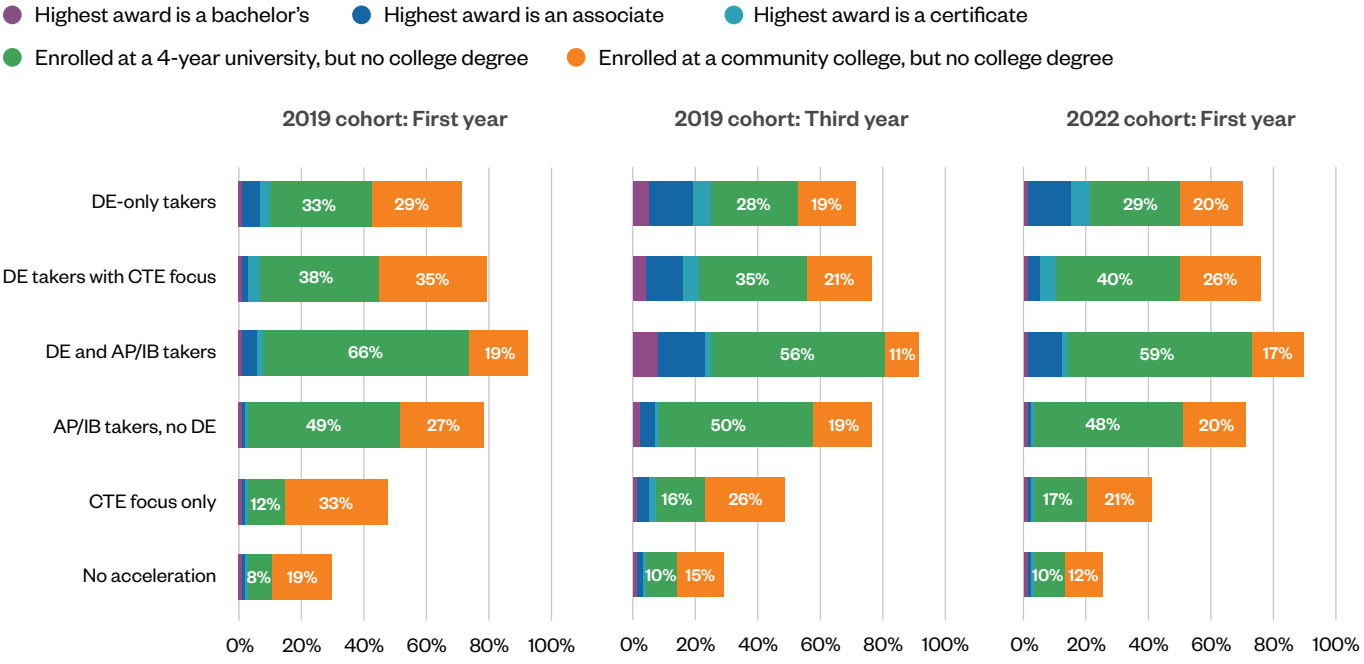


Figure A4.

Highest Postsecondary Attainment by Coursetaking Profile and Gender, 2019 and 2022 High School Completion Cohorts

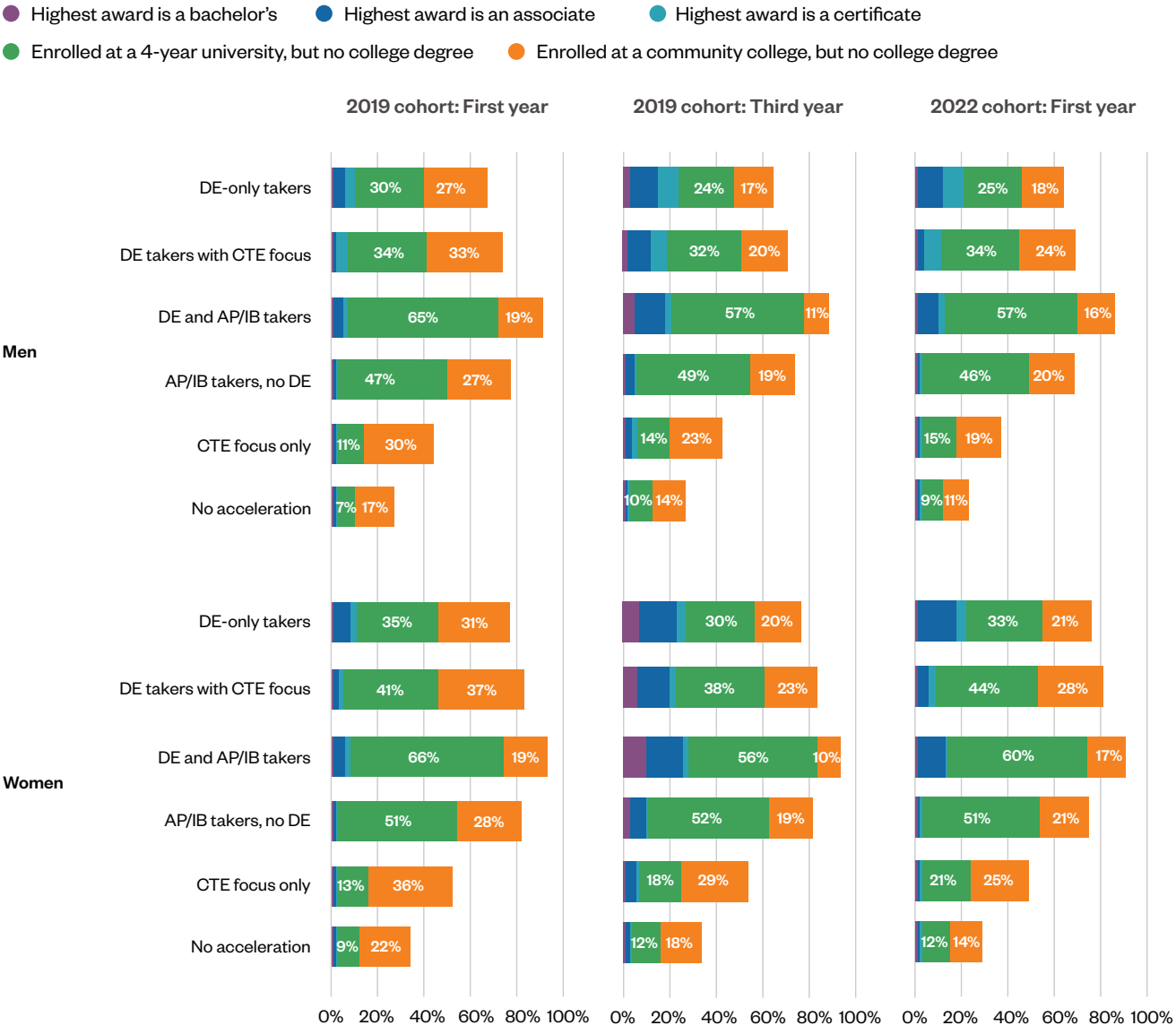


Figure A5.

Highest Postsecondary Attainment by Coursetaking Profile and Income Group, 2019 and 2022 High School Completion Cohorts

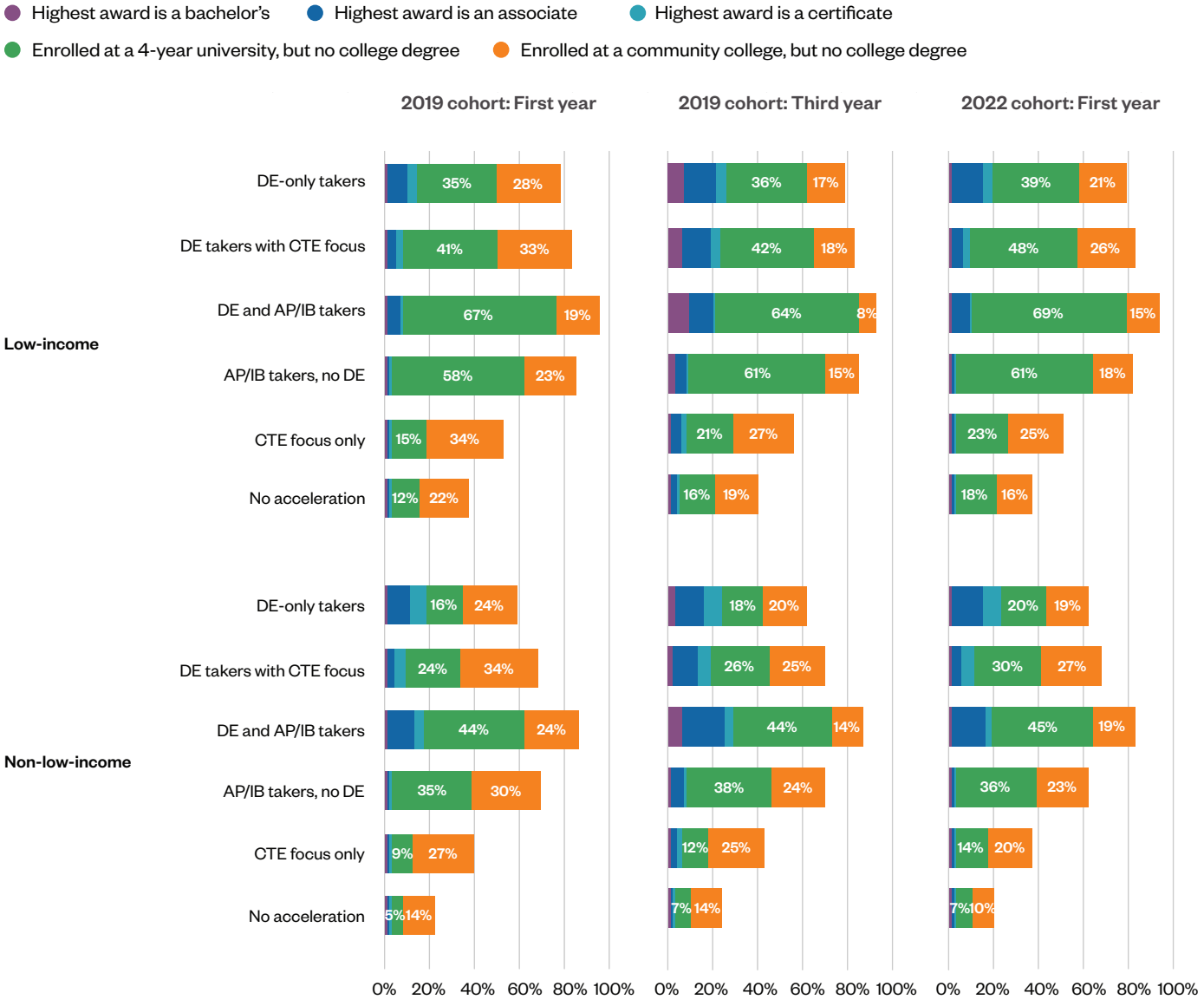


Figure A6.

Highest Postsecondary Attainment by Coursetaking Profile and Racial/Ethnic Group, 2019 and 2022 High School Completion Cohorts

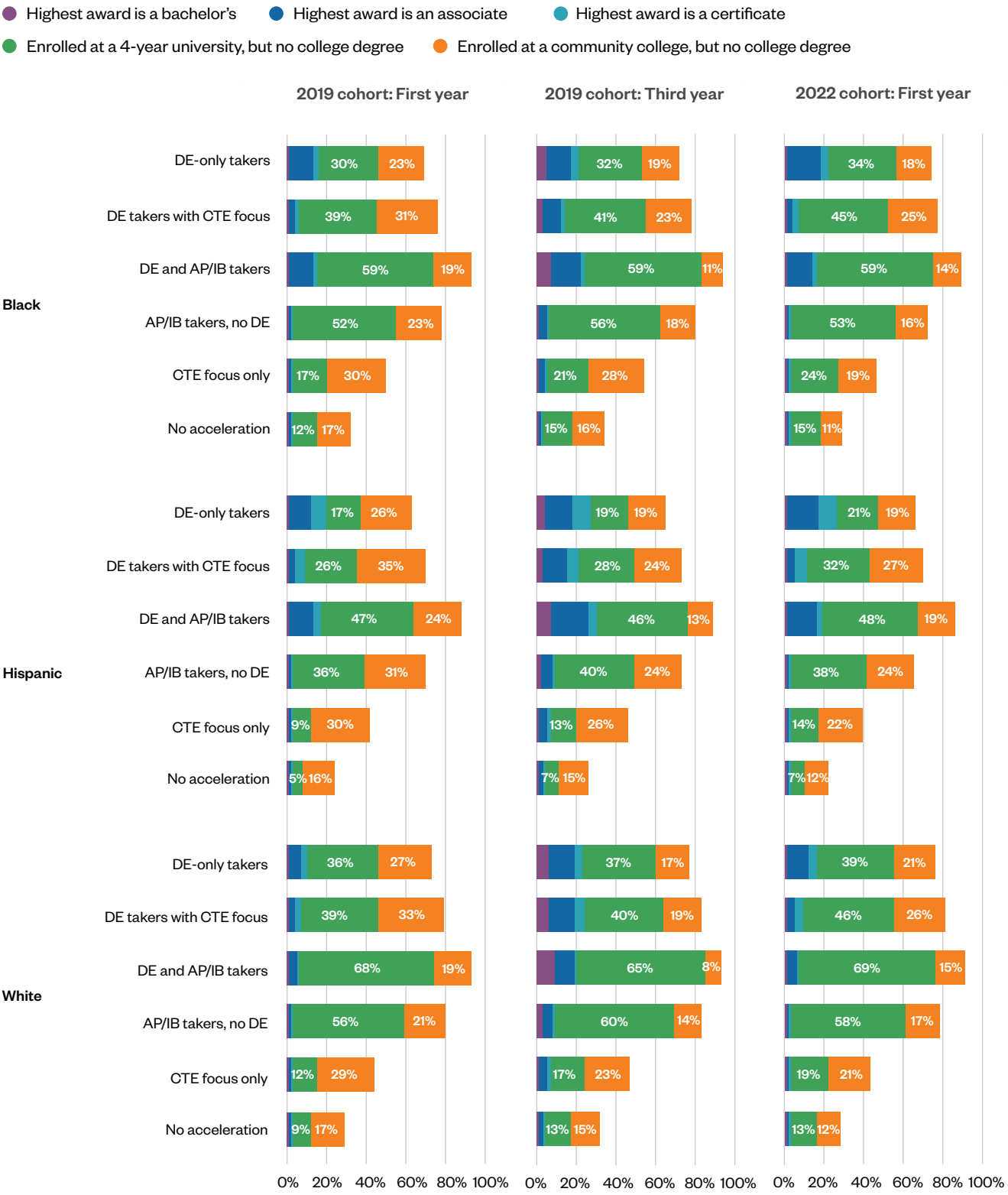
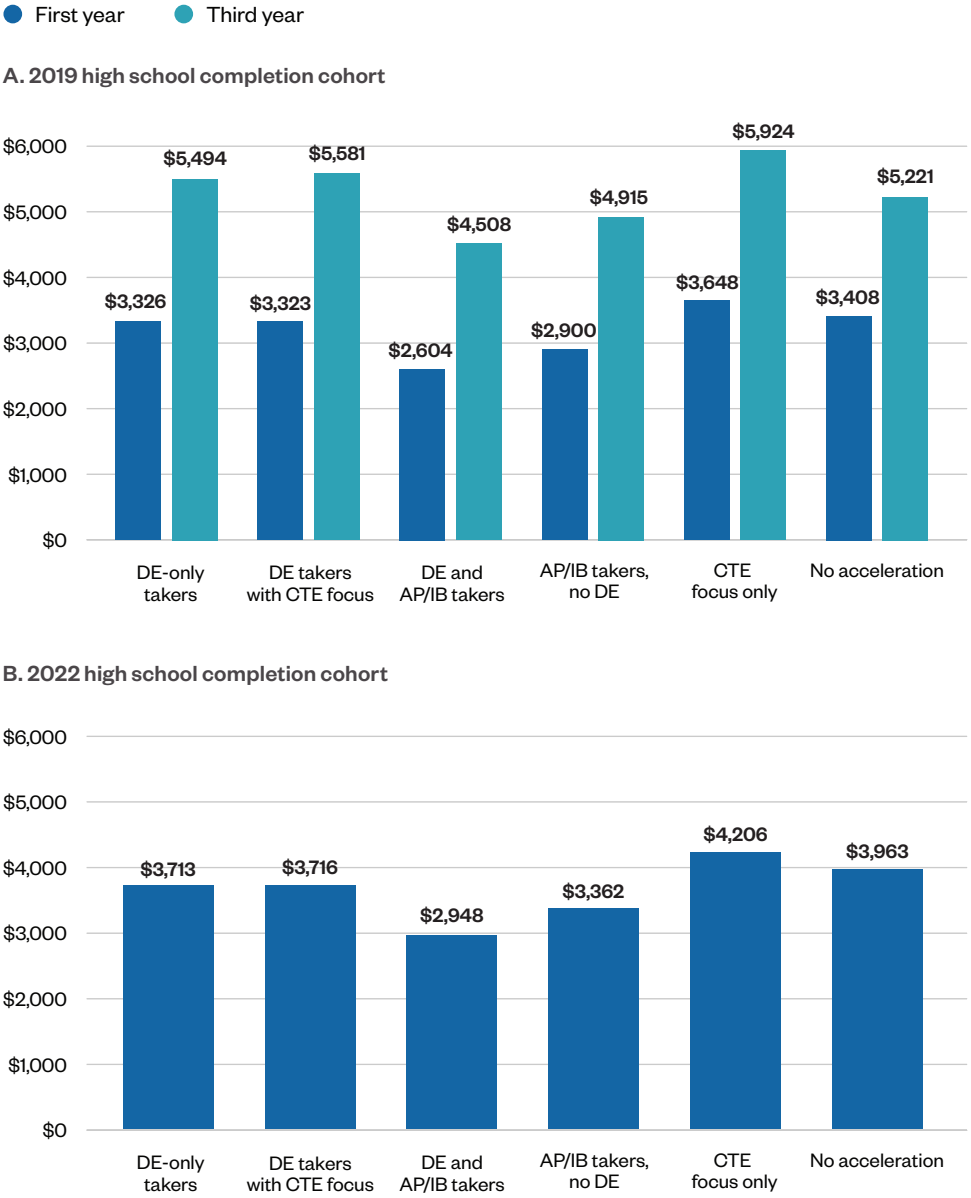


Figure A7.

Quarterly Earnings by Coursetaking Profile, 2019 and 2022 High School Completion Cohorts



Note. Average non-zero quarterly earnings in 2023 dollars.

Figure A8.

Quarterly Earnings by Coursetaking Profile and Gender, 2019 High School Completion Cohort

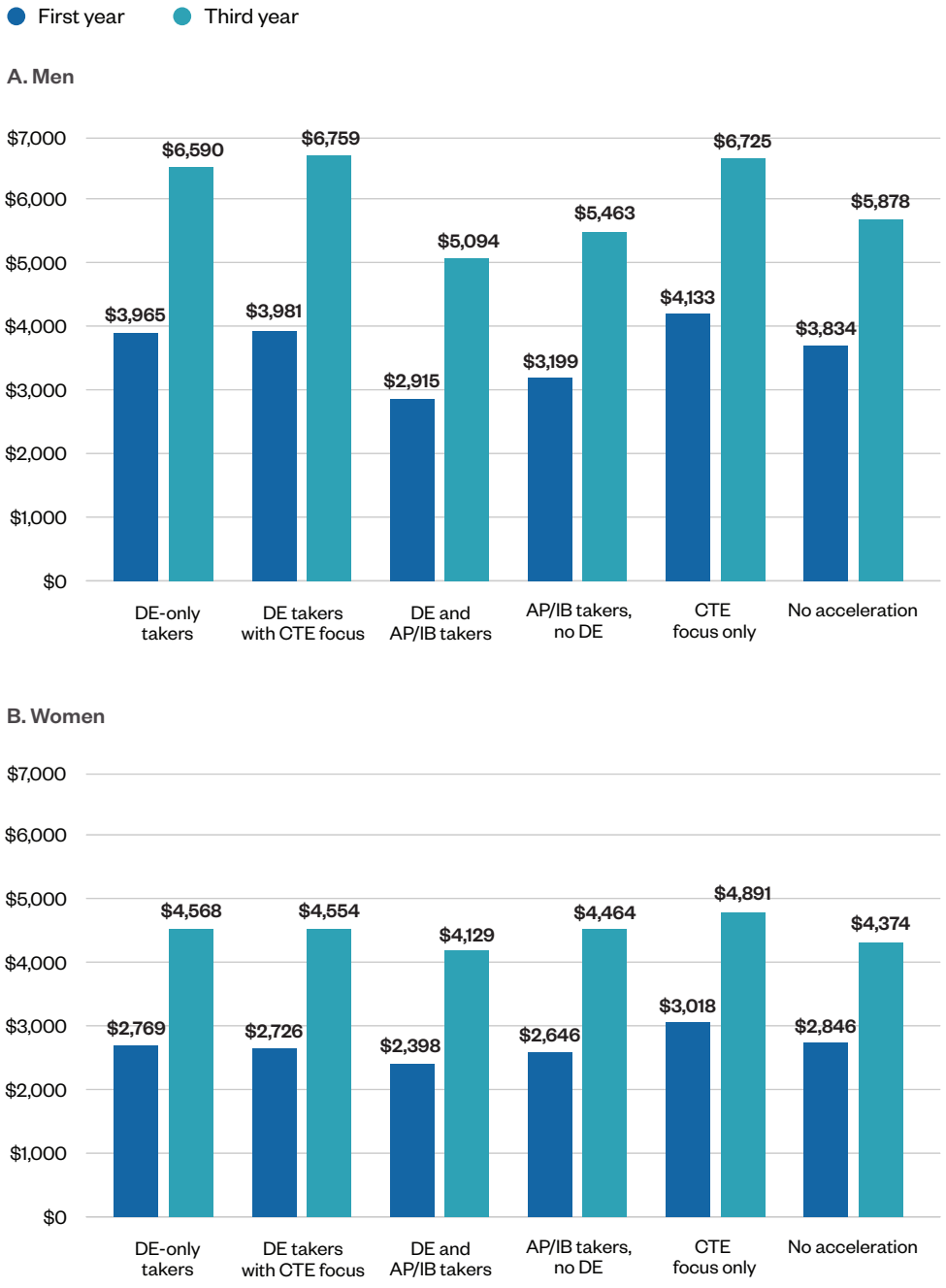
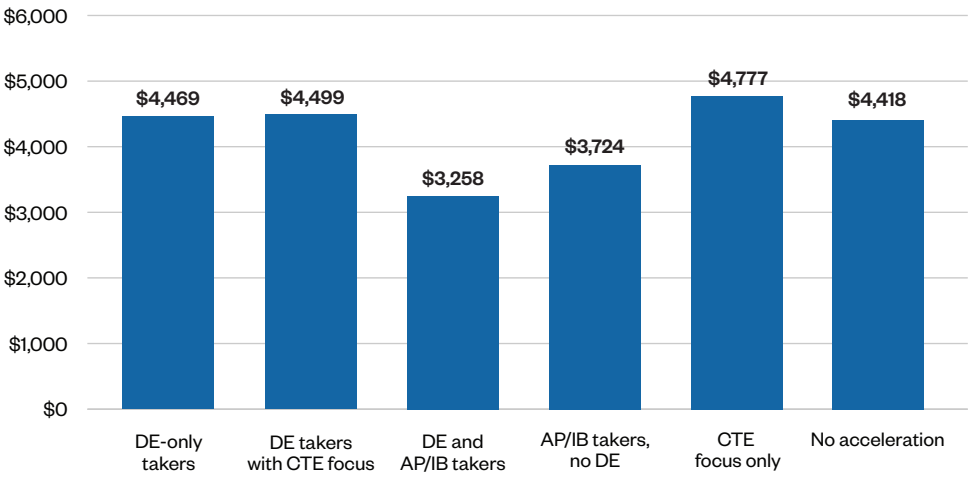


Figure A9.

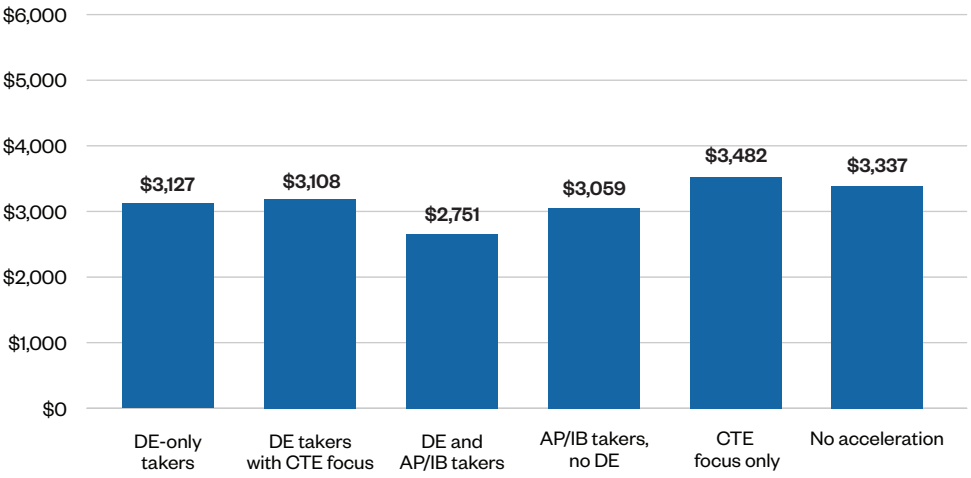
Quarterly Earnings by Coursetaking Profile and Gender, 2022 High School Completion Cohort

● First year

A. Men



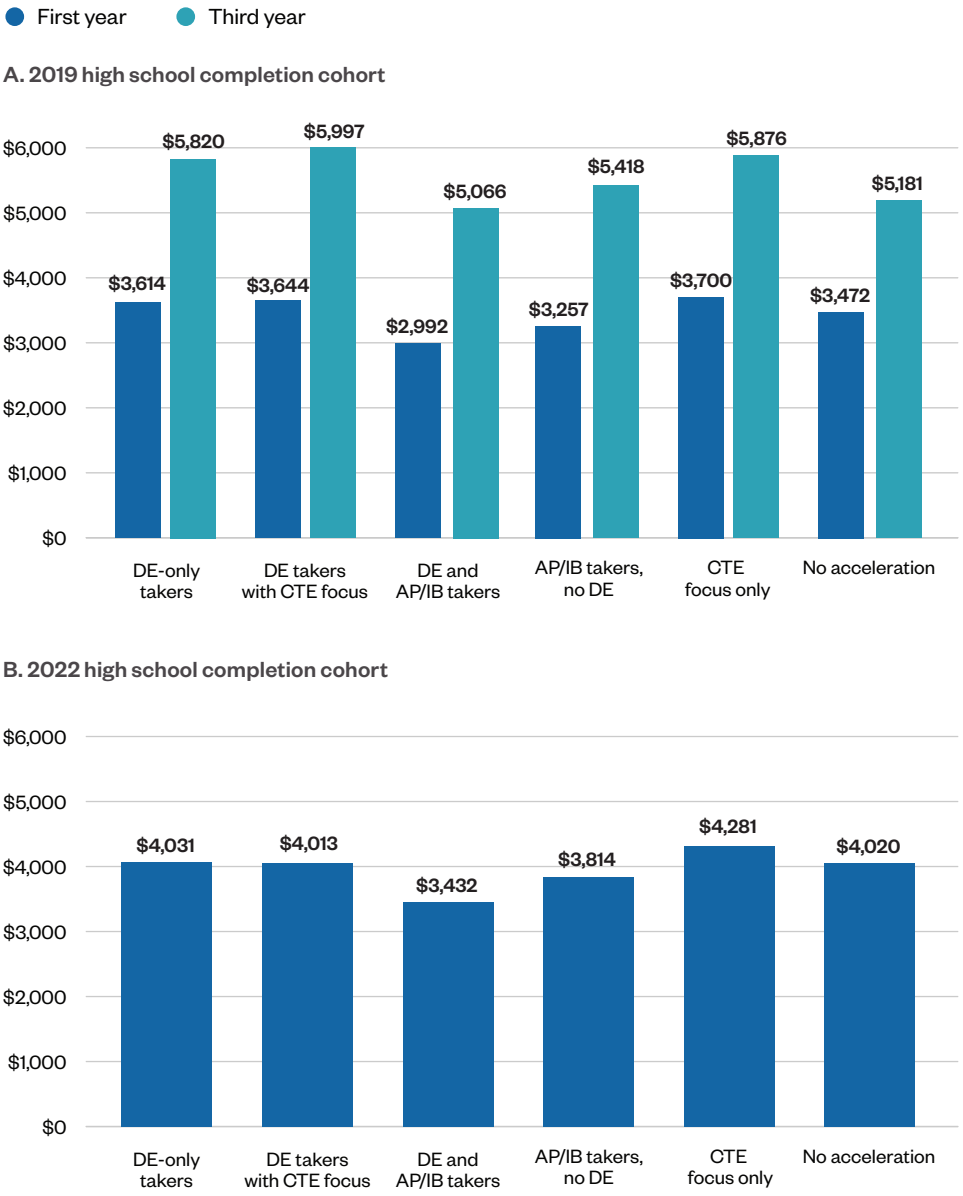
B. Women



Note. Average non-zero quarterly earnings in 2023 dollars.

Figure A10.

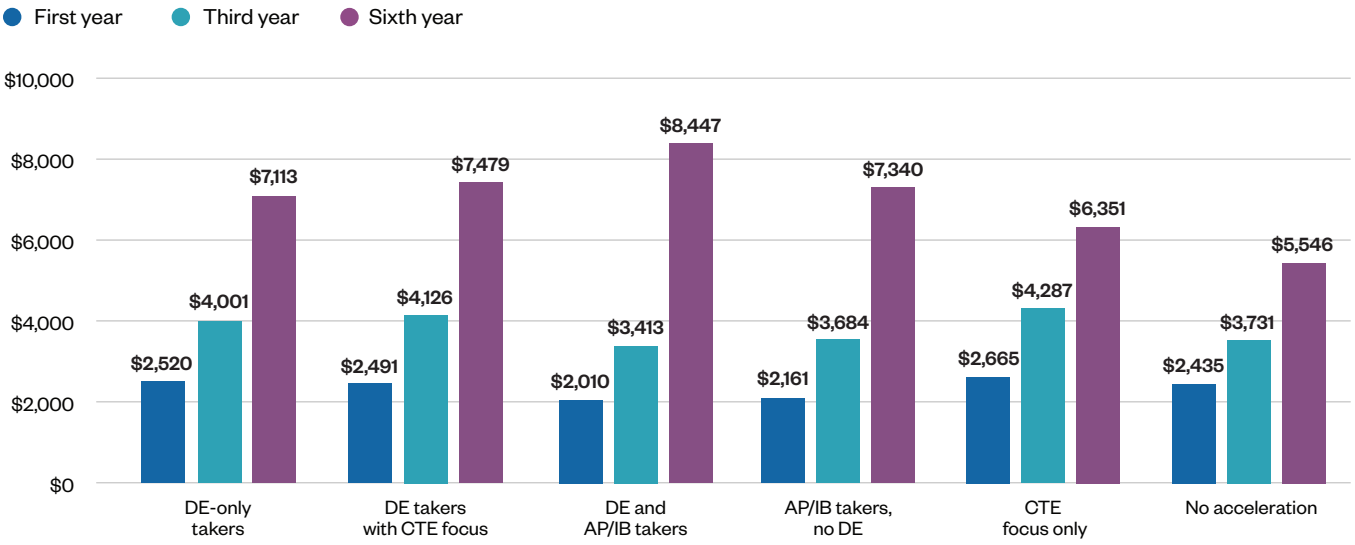
Quarterly Earnings by Coursetaking Profile Among Low-Income Students, 2019 and 2022 High School Completion Cohorts



Note. Average non-zero quarterly earnings in 2023 dollars.

Figure A11.

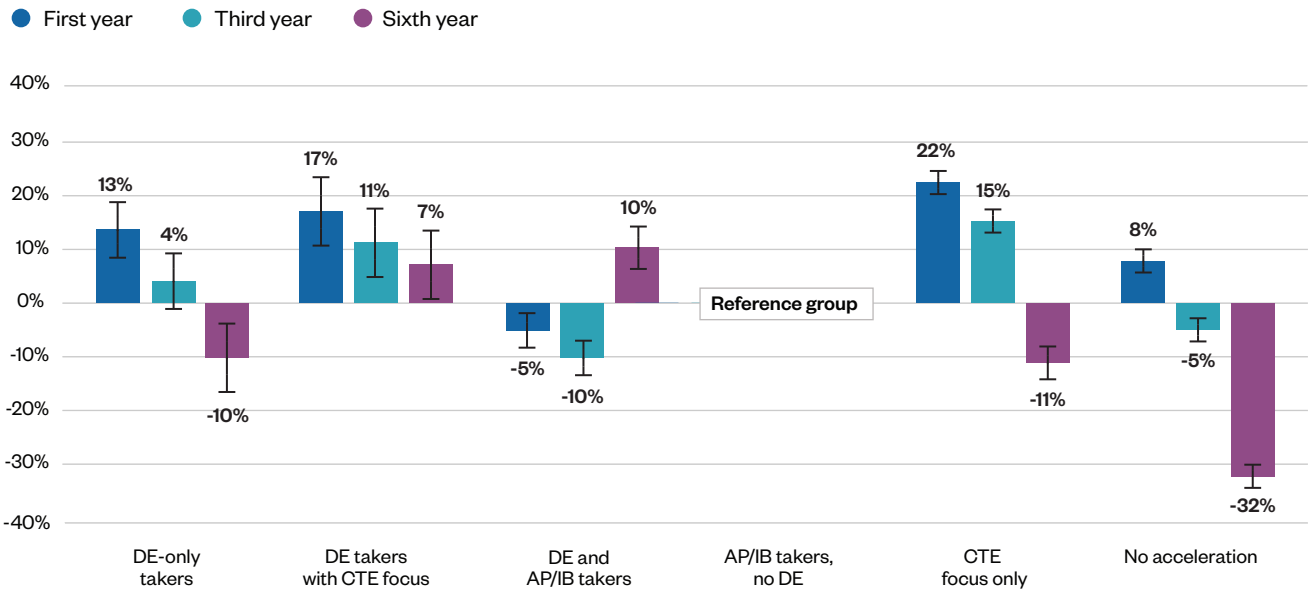
Quarterly Earnings by Coursetaking Profile Among Black Students, 2015 and 2016 High School Completion Cohorts (Combined)



Note. Average non-zero quarterly earnings in 2023 dollars.

Figure A12.

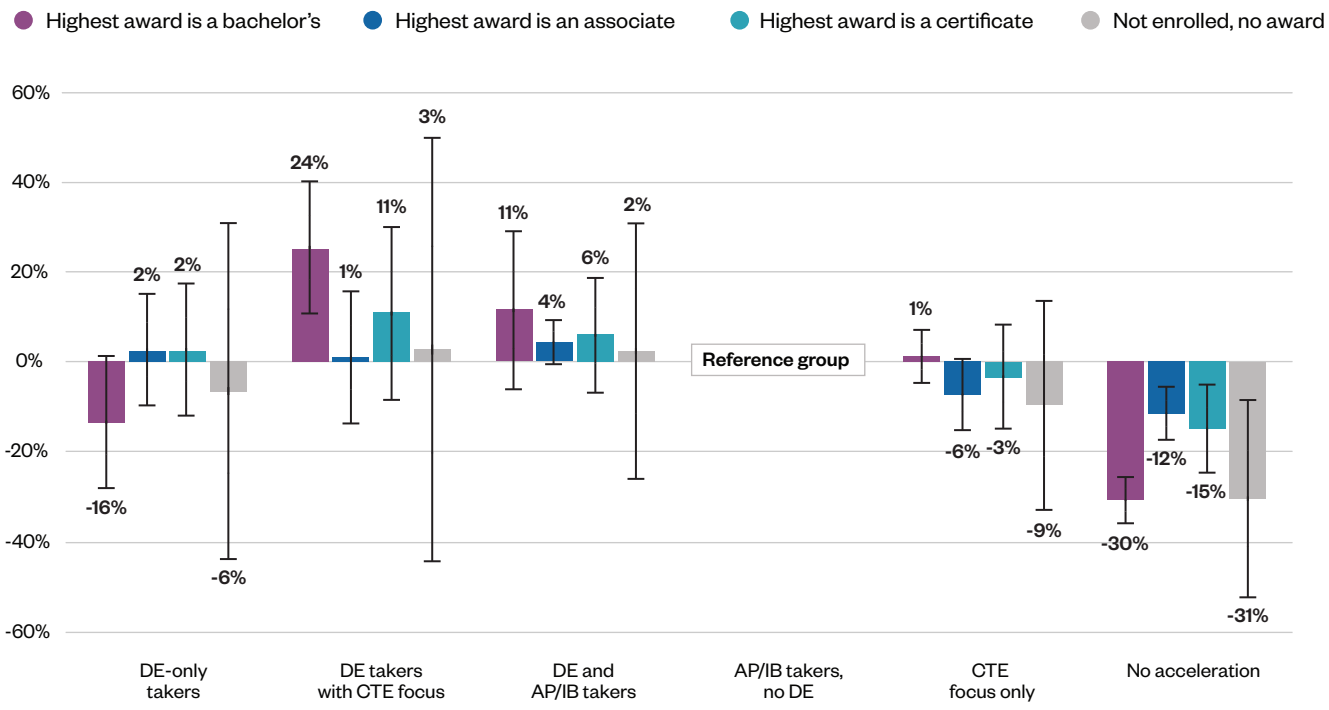
Regression-Adjusted Differences in Quarterly Earnings by Coursetaking Profile Among Black Students, 2015 and 2016 High School Completion Cohorts (Combined)



Note. Estimates show the percentage change in non-zero earnings relative to the reference group of AP/IB takers with no DE. Estimates conditional on student gender, low-income status, high school entry cohort, standardized TAKS reading and math test scores, student ranking in the high school based on TAKS (top 10% and top 11th to 30th percent), and high school fixed effects. Whiskers indicate 95% confidence intervals. A difference is statistically significant if its confidence interval does not overlap with zero percent.

Figure A13.

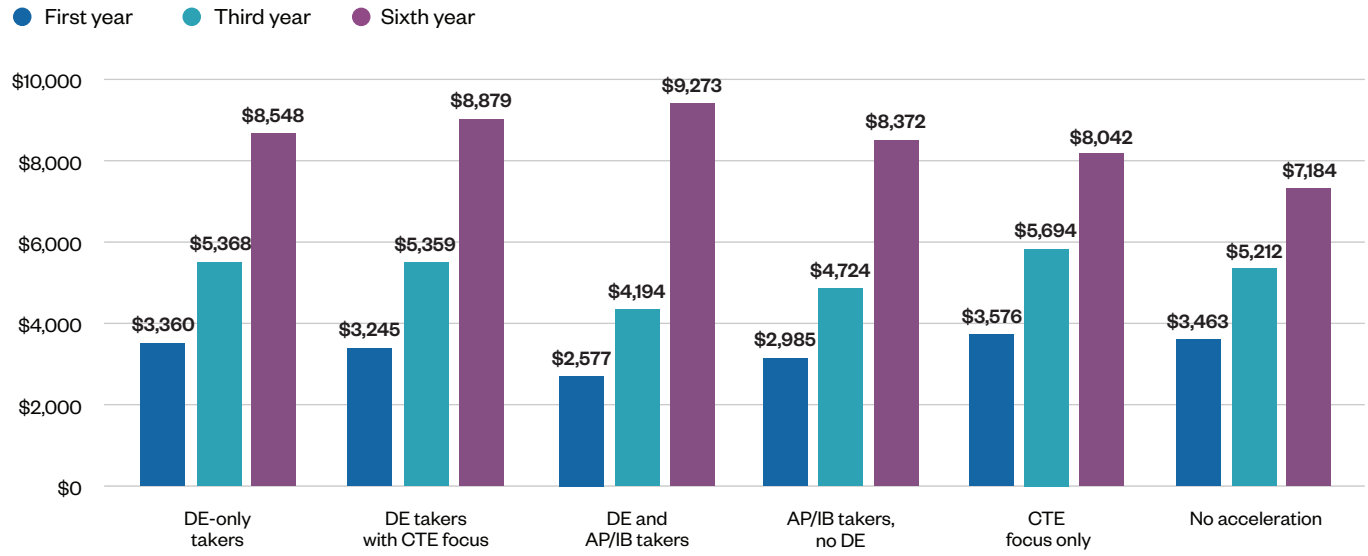
Regression-Adjusted Differences in Sixth-Year Quarterly Earnings by Coursetaking Profile and Highest Postsecondary Attainment Among Black Students, 2015 and 2016 High School Completion Cohorts (Combined)



Note. Estimates show the percentage change in non-zero earnings relative to the reference group of AP/IB takers with no DE with the same highest credential attained in the previous year. Estimates conditional on student gender, low-income status, high school entry cohort, standardized TAKS reading and math test scores, student ranking in the high school based on TAKS (top 10% and top 11th to 30th percent), and high school fixed effects. Whiskers indicate 95% confidence intervals. A difference is statistically significant if its confidence interval does not overlap with zero percent.

Figure A14.

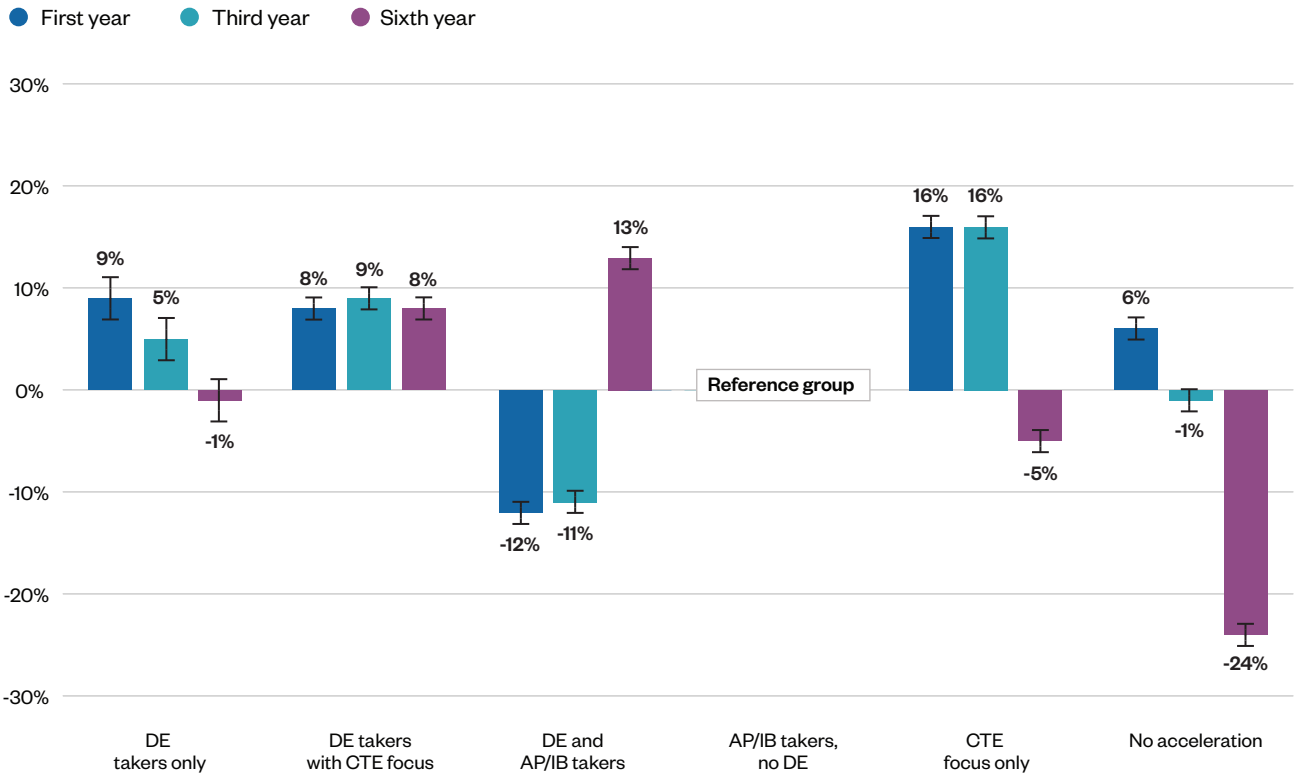
Quarterly Earnings by Coursetaking Profile Among Hispanic Students, 2015 and 2016 High School Completion Cohorts (Combined)



Note. Average non-zero quarterly earnings in 2023 dollars.

Figure A15.

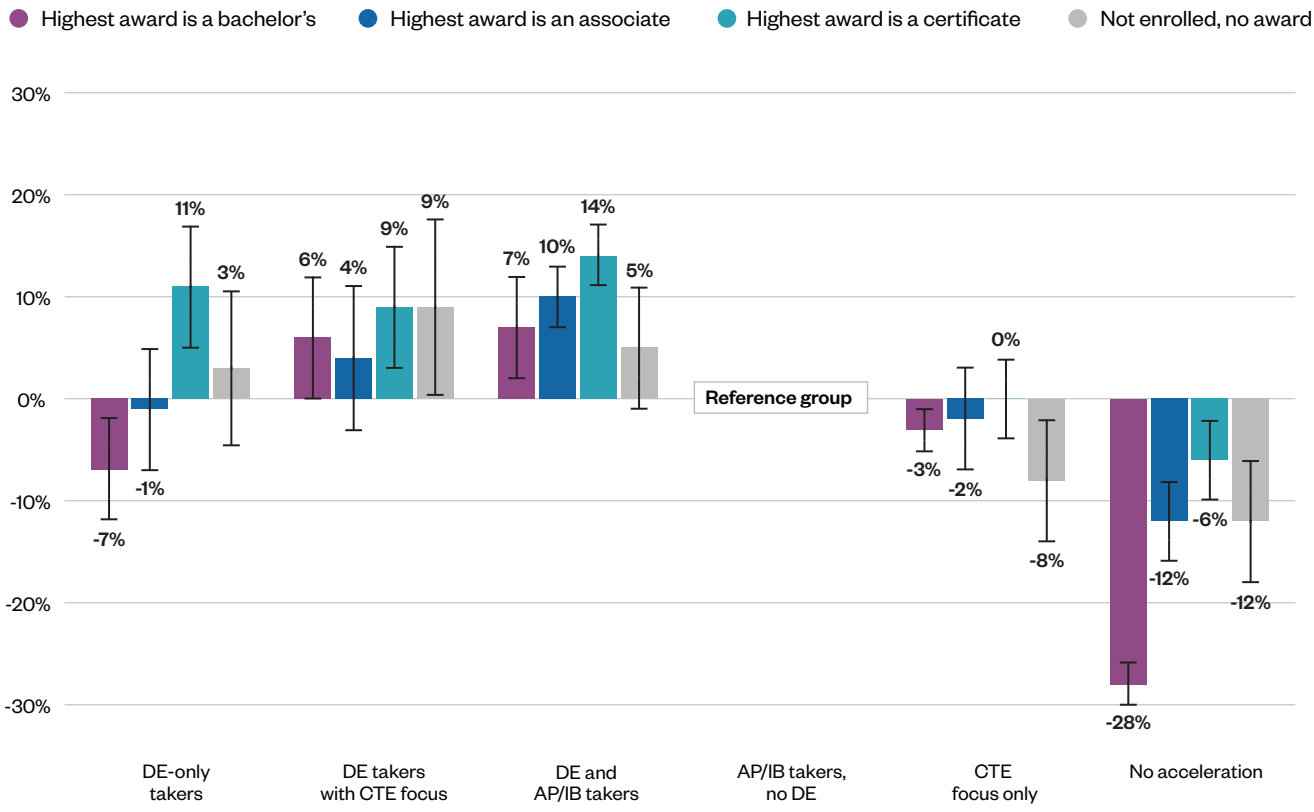
Regression-Adjusted Differences in Quarterly Earnings by Coursetaking Profile Among Hispanic Students, 2015 and 2016 High School Completion Cohorts (Combined)



Note. Estimates show the percentage change in non-zero earnings relative to the reference group of AP/IB takers with no DE. Estimates conditional on student gender, low-income status, high school entry cohort, standardized TAKS reading and math test scores, student ranking in the high school based on TAKS (top 10% and top 11th to 30th percent), and high school fixed effects. Whiskers indicate 95% confidence intervals. A difference is statistically significant if its confidence interval does not overlap with zero percent.

Figure A16.

Regression-Adjusted Percentage Differences in Sixth-Year Quarterly Earnings by Coursetaking Profile and Highest Postsecondary Attainment Among Hispanic Students, 2015 and 2016 High School Completion Cohorts (Combined)



Note. Estimates show the percentage change in non-zero earnings relative to the reference group of AP/IB takers with no DE with the same highest credential attained in the previous year. Estimates conditional on student gender, low-income status, high school entry cohort, standardized TAKS reading and math test scores, student ranking in the high school based on TAKS (top 10% and top 11th to 30th percent), and high school fixed effects. Whiskers indicate 95% confidence intervals. A difference is statistically significant if its confidence interval does not overlap with zero percent.

Figure A17.

Quarterly Earnings by Coursetaking Profile and Gender Among Low-Income Students, 2015 and 2016 High School Completion Cohorts (Combined)

Note. Average non-zero quarterly earnings in 2023 dollars.

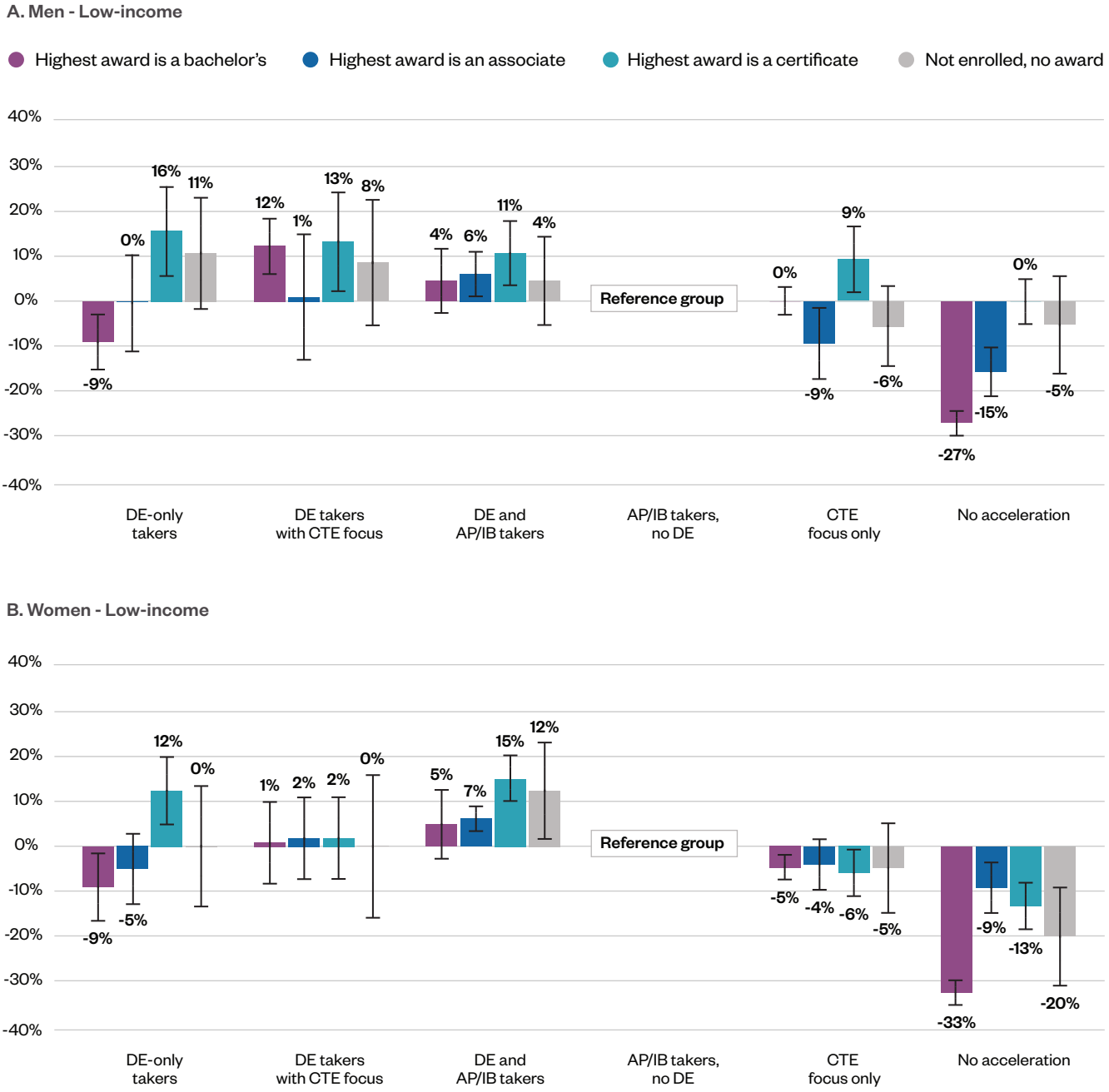
Figure A18.

Regression-Adjusted Percentage Differences in Quarterly Earnings by Coursetaking Profile and Gender Among Low-Income Students, 2015 and 2016 High School Completion Cohorts (Combined)

Note. Estimates show the percentage change in non-zero earnings relative to the reference group of AP/IB takers with no DE. Estimates conditional on student high school entry cohort, race/ethnicity, standardized TAKS reading and math test scores, student ranking in the high school based on TAKS (top 10% and top 11th to 30th percent), and high school fixed effects. Whiskers indicate 95% confidence intervals. A difference is statistically significant if its confidence interval does not overlap with zero percent.

Figure A19.

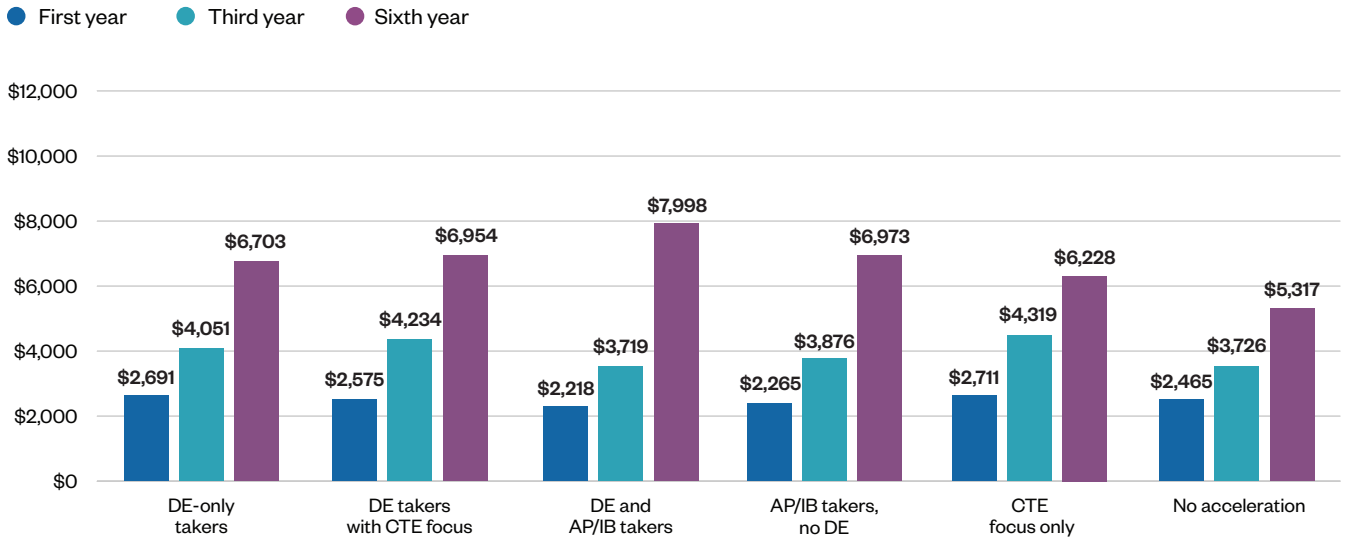
Regression-Adjusted Differences in Sixth-Year Quarterly Earnings by Coursetaking Profile and Highest Postsecondary Attainment by Gender Among Low-Income Students, 2015 and 2016 High School Completion Cohorts (Combined)



Note. Estimates show the percentage change in non-zero earnings relative to the reference group of AP/IB takers with no DE with the same highest credential attained in the previous year. Estimates conditional on student high school entry cohort, race/ethnicity, standardized TAKS reading and math test scores, student ranking in the high school based on TAKS (top 10% and top 11th to 30th percent), and high school fixed effects. Whiskers indicate 95% confidence intervals. A difference is statistically significant if its confidence interval does not overlap with zero percent.

Figure A20.

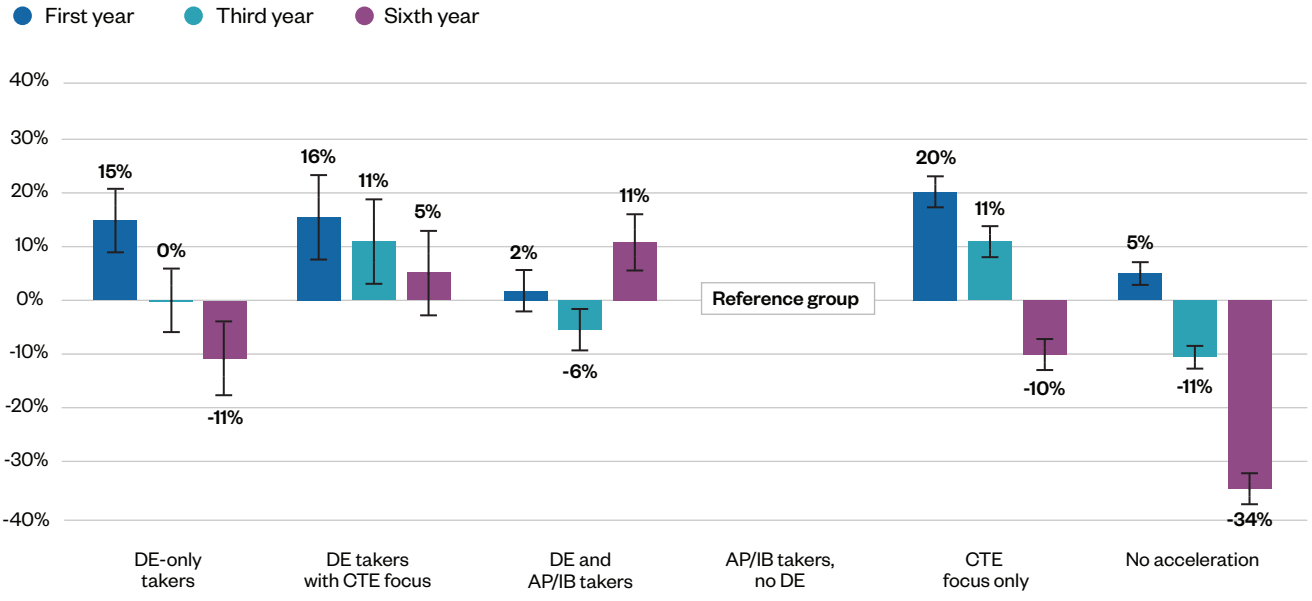
Quarterly Earnings by Coursetaking Profile Among Low-Income Black Students, 2015 and 2016 High School Completion Cohorts (Combined)



Note. Average non-zero quarterly earnings in 2023 dollars.

Figure A21.

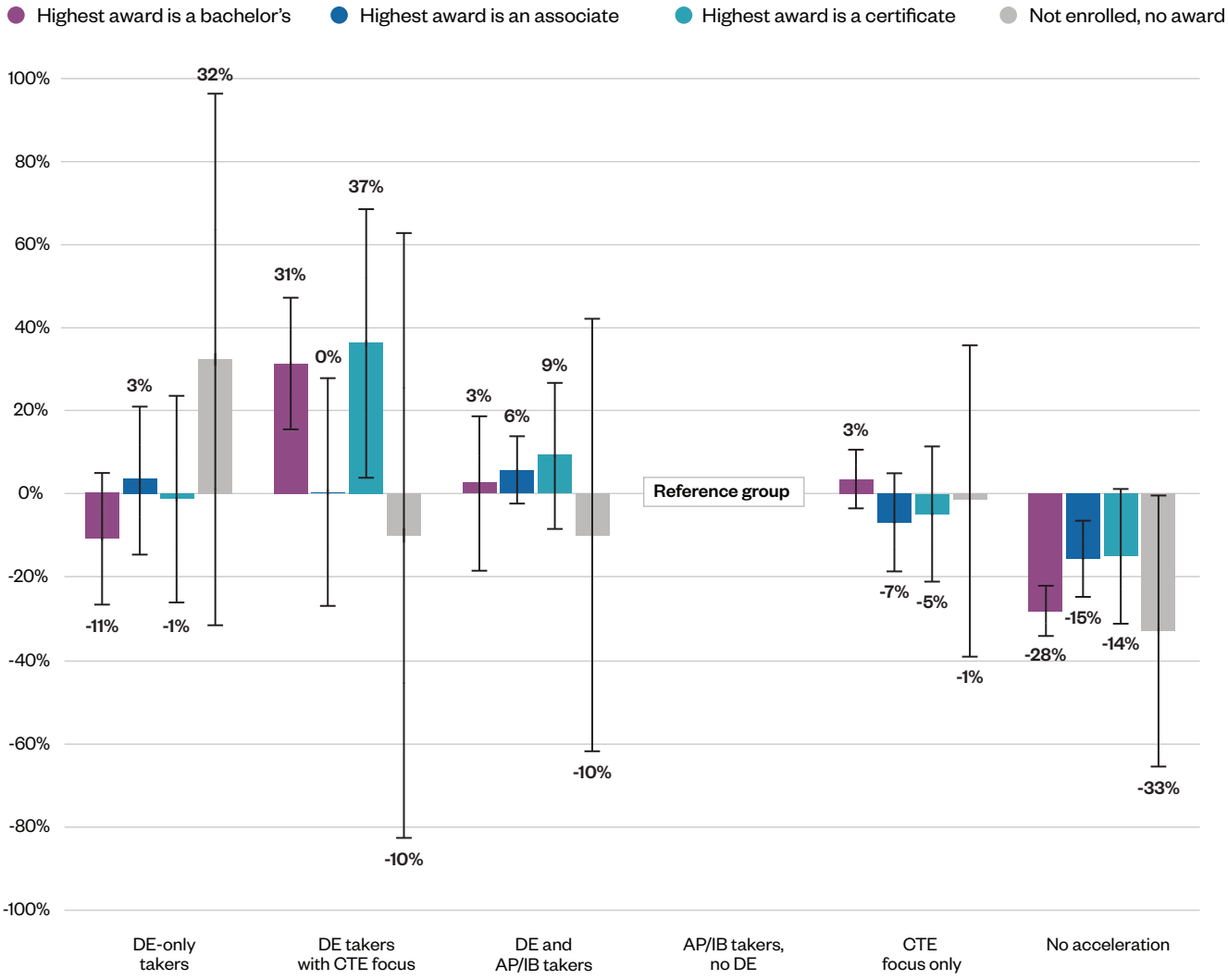
Regression-Adjusted Differences in Quarterly Earnings by Coursetaking Profile Among Low-Income Black Students, 2015 and 2016 High School Completion Cohorts (Combined)



Note. Estimates show the percentage change in non-zero earnings relative to the reference group of AP/IB takers with no DE. Estimates conditional on student gender, high school entry cohort, standardized TAKS reading and math test scores, student ranking in the high school based on TAKS (top 10% and top 11th to 30th percent), and high school fixed effects. Whiskers indicate 95% confidence intervals. A difference is statistically significant if its confidence interval does not overlap with zero percent.

Figure A22.

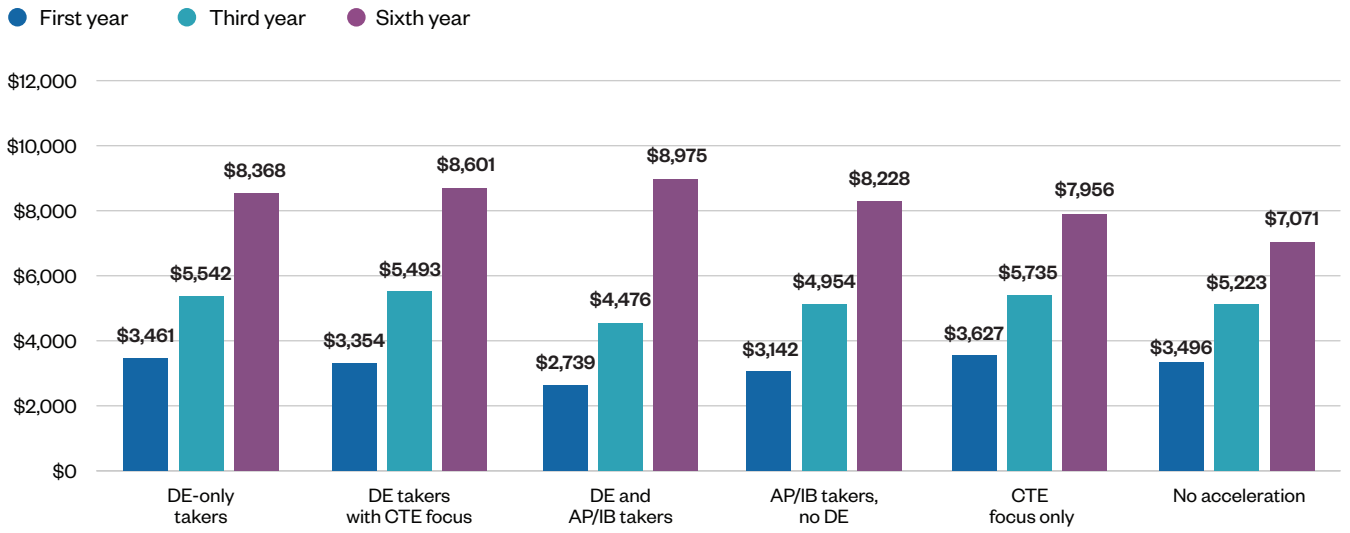
Regression-Adjusted Differences in Sixth-Year Quarterly Earnings by Coursetaking Profile and Highest Postsecondary Attainment Among Low-Income Black Students, 2015 and 2016 High School Completion Cohorts (Combined)



Note. Estimates show the percentage change in non-zero earnings relative to the reference group of AP/IB takers with no DE with the same highest credential attained in the previous year. Estimates conditional on student gender, high school entry cohort, standardized TAKS (top 10% and top 11th to 30th percent), and high school fixed effects. Whiskers indicate 95% confidence intervals. A difference is statistically significant if its confidence interval does not overlap with zero percent.

Figure A23.

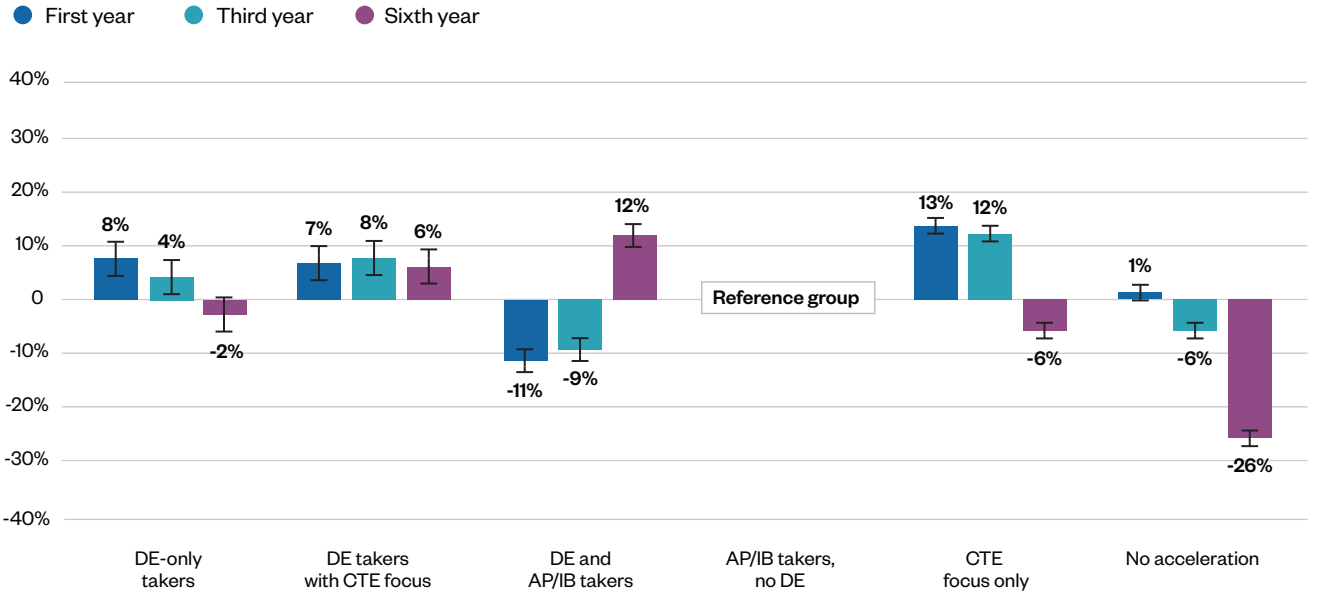
Quarterly Earnings by Coursetaking Profile Among Low-Income Hispanic Students, 2015 and 2016 High School Completion Cohorts (Combined)



Note. Average non-zero quarterly earnings in 2023 dollars.

Figure A24.

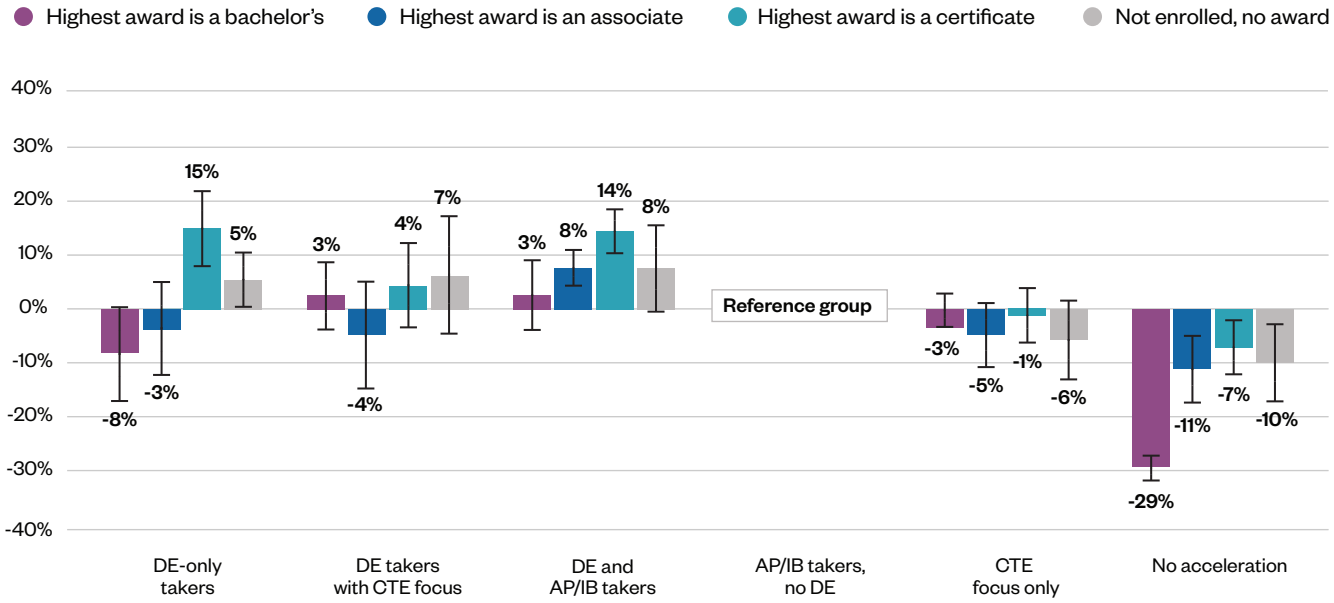
Regression-Adjusted Percentage Differences in Quarterly Earnings by Coursetaking Profiles Among Low-Income Hispanic Students, 2015 and 2016 High School Completion Cohorts.



Note. Estimates show the percentage change in non-zero earnings relative to the reference group of AP/IB takers with no DE. Estimates conditional on student gender, high school entry cohort, standardized TAKS (top 10% and top 11th to 30th percent), and high school fixed effects. Whiskers indicate 95% confidence intervals. A difference is statistically significant if its confidence interval does not overlap with zero percent.

Figure A25.

Regression-Adjusted Differences in Sixth-Year Quarterly Earnings by Coursetaking Profiles and Highest Postsecondary Attainment Among Low-Income Hispanic Students, 2015 and 2016 High School Completion Cohorts (Combined)



Note. Estimates show the percentage change in non-zero earnings relative to the reference group of AP/IB takers with no DE with the same highest credential attained in the previous year. Estimates conditional on student gender, high school entry cohort, standardized TAKS (top 10% and top 11th to 30th percent), and high school fixed effects. Whiskers indicate 95% confidence intervals. A difference is statistically significant if its confidence interval does not overlap with zero percent.

Appendix B. Regression-Adjusted Analyses: Methods, Estimates, and Limitations

For research questions focused on understanding the link between students' accelerated coursetaking profiles and their college and earnings outcomes, we use regression analysis to include a host of statistical controls. The regression analyses presented in the main report were performed as we describe below.

Regression Analysis Methodology

Using student-level data on Texas public high school students from the 2015 and 2016 completion cohorts, we estimate the following regression using Ordinary Least Squares (OLS):

$$Y_{ti} = \beta CourseProfile_i + \beta_1 X_i + \beta_2 TestScores_i + \alpha_{hs} + \upsilon_i \quad (1)$$

In this equation, Y_{ti} is the outcome of the student i in year t from expected high school completion; $CourseProfile_i$ represents a vector of dummies for each of the college-and-career-accelerated coursework categories, excluding AP/IB takers with no DE, and B represents the four-point estimates from each category. X_i represents a vector of student characteristics, namely student gender, low-income status, high school entry cohort, and race/ethnicity; $TestScores_i$ represents the student standardized TAKS math and reading test scores and the student ranking in the high school based on TAKS (top 10 percent and top 11th to 30th percent). When a test score was missing, we replaced it with the lowest test score in the student school and cohort and created a dummy equal to one when the missing test score value is imputed, which we included in the regression. We also control for high school fixed effects, α_{hs}, which capture time-invariant unobserved high school characteristics among the students in these two cohorts. υ_i captures estimated robust standard errors. The high school fixed effect effectively controls for high school rurality and high school Title I status, as these are also time-invariant features for the cohorts. For simplicity, we refer to the high school fixed effects as high school characteristics in the report.

We use equation (1) to estimate differences in students' highest postsecondary attainment and average quarterly earnings across college-and-career-accelerated coursework profiles. For the attainment analysis, we constructed a set of dummy variables as the outcome, each equal to one if the student's highest credential corresponded to a specific attainment level. For example, if a student's highest credential is an associate degree, the corresponding outcome variable equals one; otherwise, it equals zero. For the earnings analysis, the outcome variable is the natural logarithm of students' non-zero quarterly earnings.

Our regression-adjusted estimate allows us to capture differences in post-high-school outcomes associated with students' participation in specific accelerated coursework profiles. The controls in our regressions account for factors shared by students with the same gender, race/ethnicity, socioeconomic background, standardized test scores, and within-high-school rankings. Additionally, high school fixed effects capture time-invariant characteristics at the school level. However, unobserved self-selection may still exist among students who attend the same high school and have similar demographic and test score profiles but who differ in their choice of accelerated coursework due to factors not captured in the data—such as access to external information about the value

of accelerated coursework or differences in advising received by students with otherwise similar characteristics. This means we cannot isolate unobserved factors that may influence both selection into these profiles and students' post-high-school outcomes. As a result, our findings should not be interpreted as the causal effects of accelerated coursework or as the returns to specific coursetaking profiles.

Regression-Adjusted Postsecondary Attainment Estimates

Table B1 shows the OLS estimation results of highest postsecondary attainment. The point estimates should be multiplied by 100 and be interpreted as percentage point differences in the probability of degree attainment relative to AP/IB takers with no DE (the reference group). For a discussion about these results and their implications, see the main report.

Table B1.

Estimates of the Relationship Between Coursetaking Profile and Highest Postsecondary Attainment by Sixth Year Post High School, 2015 and 2016 High School Completion Cohorts (Combined)

	Never enrolled	Highest award is certificate	Highest award is associate	Highest award is bachelor's
Accelerated coursetaking profile (Ref. = AP/IB takers, no DE)				
DE-only takers	0.022*** (0.003)	0.028*** (0.001)	0.026*** (0.002)	-0.052*** (0.003)
DE takers with CTE focus	-0.044*** (0.003)	0.030*** (0.002)	0.046*** (0.003)	-0.029*** (0.003)
DE and AP/IB takers	-0.113*** (0.001)	0.003*** (0.001)	0.009*** (0.001)	0.215*** (0.002)
CTE focus only	0.213*** (0.002)	0.016*** (0.001)	-0.009*** (0.001)	-0.236*** (0.001)
No acceleration	0.404*** (0.001)	-0.001** (0.000)	-0.040*** (0.001)	-0.254*** (0.001)
Female	-0.064*** (0.001)	-0.005*** (0.000)	0.017*** (0.001)	0.060*** (0.001)
Low-income	0.104*** (0.001)	-0.001* (0.000)	-0.004*** (0.001)	-0.098*** (0.001)
2011 cohort	-0.016*** (0.001)	0.000 (0.000)	0.000 (0.000)	0.006*** (0.001)
Race/ethnicity (Ref. = White)				
Asian	-0.078*** (0.002)	-0.005*** (0.001)	0.004* (0.002)	0.139*** (0.003)
Black	-0.094*** (0.002)	-0.006*** (0.001)	-0.006*** (0.001)	-0.011*** (0.002)
Hispanic	-0.019*** (0.001)	0.004*** (0.000)	0.021*** (0.001)	-0.048*** (0.001)
Other	-0.010*** (0.003)	-0.002** (0.001)	0.000 (0.002)	-0.034*** (0.003)

Table B1 (continued).

Estimates of the Relationship Between Coursetaking Profile and Highest Postsecondary Attainment by Sixth Year Post High School, 2015 and 2016 High School Completion Cohorts (Combined)

	Never enrolled	Highest award is certificate	Highest award is associate	Highest award is bachelor's
TAKS reading standardized score	0.010*** (0.001)	0.001* (0.000)	-0.001 (0.001)	-0.009*** (0.001)
TAKS reading imputation control	0.060 (0.038)	0.001 (0.004)	-0.003 (0.008)	-0.028* (0.012)
TAKS math standardized score	0.012*** (0.001)	0.001 (0.000)	0.001* (0.000)	-0.005*** (0.001)
TAKS math imputation control	0.082* (0.038)	-0.004 (0.004)	-0.007 (0.008)	-0.008 (0.012)
Student is in the TAKS top 10 percentile in their school	0.038*** (0.003)	-0.008*** (0.001)	-0.033*** (0.002)	0.114*** (0.004)
Student is in the TAKS top 11–30 percentile in their school	-0.056*** (0.002)	-0.005*** (0.001)	-0.001 (0.001)	0.095*** (0.002)
Constant	0.194*** (0.002)	0.019*** (0.001)	0.062*** (0.001)	0.370*** (0.002)
Observations	661,558	661,558	661,558	661,558
R-squared	0.294	0.022	0.029	0.316
Adjusted R2	0.292	0.0186	0.0258	0.313
N schools	2,167	2,167	2,167	2,167

Note. Robust standard errors in parentheses.
***$p < 0.001$, **$p < 0.01$, *$p < 0.05$.

Regression-Adjusted Earnings Estimates

Table B2 shows the full OLS estimates using the natural logarithm of yearly non-zero average quarterly earnings as the outcome. We display the results for all students in the 2015 and 2016 cohorts used in Figure 8 of the main report for illustration purposes, as the same analyses are conducted for the student subgroup results. By taking the logarithm of the earnings, we interpret the point estimates as percentage changes relative to the change in the variable when multiplied by 100. For example, students who took advanced coursework had earnings in the first year post high school that were 10.6% higher than the earnings of AP/IB takers with no DE.

Table B2.

Estimates of the Relationship Between Coursetaking Profile and Non-Zero Average Quarterly Earnings, 2015 and 2016 High School Completion Cohorts (Combined)

	Non-zero quarterly earnings		
	First year	Third year	Sixth year
Accelerated coursetaking profile (Ref. = AP/IB takers, no DE)			
DE-only takers	0.083*** (0.008)	0.041*** (0.008)	0.006*** (0.008)
DE takers with CTE focus	0.107*** (0.009)	0.108*** (0.009)	0.101*** (0.009)
DE and AP/IB takers	-0.128*** (0.005)	-0.123*** (0.005)	0.143*** (0.005)
CTE focus only	0.228*** (0.004)	0.207*** (0.004)	-0.063*** (0.004)
No acceleration	0.106*** (0.004)	0.022*** (0.004)	-0.264*** (0.004)
Female	-0.176*** (0.003)	-0.263*** (0.003)	-0.227*** (0.003)
Low-income	0.117*** (0.003)	0.083*** (0.003)	-0.077*** (0.003)
2011 cohort	0.002 (0.003)	-0.019*** (0.003)	-0.049*** (0.003)
Race/ethnicity (Ref. = White)			
Asian	-0.148*** (0.010)	-0.145*** (0.010)	-0.024* (0.010)
Black	-0.239*** (0.005)	-0.205*** (0.005)	-0.279*** (0.006)
Hispanic	0.151*** (0.004)	0.144*** (0.004)	0.025*** (0.004)
Other	-0.023** (0.008)	-0.031*** (0.009)	-0.123*** (0.009)
TAKS reading standardized score	-0.014*** (0.003)	-0.017*** (0.003)	-0.029*** (0.003)
TAKS reading imputation control	-0.319 (0.212)	-0.309 (0.239)	-0.214 (0.201)
TAKS math standardized score	-0.012*** (0.003)	-0.014*** (0.003)	-0.024*** (0.003)
TAKS math imputation control	0.261 (0.212)	0.202 (0.239)	0.067 (0.201)
Student is in the TAKS top 10 percentile in their school	-0.119*** (0.010)	-0.137*** (0.010)	0.030** (0.011)
Student is in the TAKS top 11–30 percentile in their school	-0.055*** (0.005)	-0.038*** (0.005)	0.080*** (0.005)

Table B2 (continued).
Estimates of the Relationship Between Coursetaking Profile and Non-Zero Average Quarterly Earnings, 2015 and 2016 High School Completion Cohorts (Combined)

	Non-zero quarterly earnings		
	First year	Third year	Sixth year
Constant	7.569*** (0.004)	8.145*** (0.004)	8.985*** (0.004)
Observations	466,661	478,612	469,347
R-squared	0.081	0.079	0.075
Adjusted R2	0.0764	0.0752	0.0713
N schools	2,088	2,078	2,055

Note. Robust standard errors in parentheses.
***$p < 0.001$, **$p < 0.01$, *$p < 0.05$.

Limitations: Potential Attrition Bias in Earnings Difference Estimates

One important limitation of the earnings analysis is the attrition in earnings data due to unreported income. Unreported earnings appear as quarters without earnings, which may occur due to unemployment, earnings exempt from reporting, or working outside of the state of Texas. The data also exclude earnings from tips, military service, federal agency employment, and certain types of jobs not covered by unemployment insurance reporting, such as independent contracting or domestic work below specific earnings thresholds. As a result, we cannot distinguish between individuals who are unemployed, those who are employed but whose earnings are not reported, and those who are employed out of state.

Foote and Stange (2022) show that this type of attrition bias, particularly due to interstate migration, can affect estimates based on in-state administrative earnings data. However, both Foote and Stange (2022) and Andrews et al. (2016) find that this bias is relatively small in Texas compared with other states. Foote and Stange (2022) recommend that researchers mitigate this bias by conditioning analyses on non-zero earnings—an approach we adopt in this report.

However, attrition bias may look different across coursetaking profiles, which can have implications for our analysis. Table B3 shows the percentage of students in the 2015 and 2016 high school completion cohorts with non-zero reported earnings, both overall and by coursetaking profile. About 70% of students have reported earnings in the first, third, and sixth years after high school. However, students with no accelerated coursework are less likely than the other groups to have reported earnings—68%, 69%, and 65% have reported earnings in the first, third, and sixth years, respectively. In contrast, DE students with a CTE focus are more likely to have reported earnings—75%, 78%, and 78% in those same years.

To account for student and high school characteristics associated with this attrition bias, we use equation (1) to estimate the likelihood of having reported earnings, conditional on those characteristics. The outcome variables are indicators for the presence of reported earnings in years one, three, or six post expected high school completion. Results are shown in Table B4. Overall, DE students are between 1 and 3 percentage points more likely

to have non-zero earnings in the sixth year after high school than AP/IB students without DE. Students with a CTE focus only are similarly likely to have reported earnings as AP/IB students without DE (a 0.4-percentage-point difference). Students without any accelerated coursework exhibit the highest attrition, being 5.2 percentage points less likely to have reported earnings than AP/IB students without DE, and 8 percentage points less likely than students who took both DE and AP/IB courses.

Taken together, these results suggest that the earnings gaps among AP/IB students, DE takers, and CTE-focused students are subject to relatively small bias due to unreported earnings. However, students with no accelerated coursework are significantly less likely to have reported earnings than the other groups. If it is reasonable to assume that unreported earnings for these students are even lower than what is observed in the in-state reported earnings records, then the size of the gaps is likely underestimated. Conversely, if unreported earnings are higher—for example, if these students moved out of state to secure a high-paying job—then we could be overestimating the earnings gap for this group. Overall, this suggests that earnings results, particularly for students with no accelerated coursework, should be interpreted with caution.

Table B3.

Percentage of Students With Non-Zero Quarterly Earnings Reported by Coursetaking Profile, 2015 and 2016 High School Completion Cohorts (Combined)

Coursetaking profile	Non-zero quarterly earnings		
	First year	Third year	Sixth year
DE-only takers	75%	77%	75%
DE takers with CTE focus	75%	78%	78%
DE and AP/IB takers	70%	73%	76%
AP/IB takers, no DE	75%	78%	75%
CTE focus only	70%	72%	73%
No acceleration	68%	69%	65%
All students	**70%**	**72%**	**71%**

Table B4.

Estimates of the Relationship Between Coursetaking Profile and Non-Zero Earnings, 2015 and 2016 High School Completion Cohorts (Combined)

	Non-zero quarterly earnings		
	First year	Third year	Sixth year
Accelerated coursetaking profile (Ref. = AP/IB takers, no DE)			
DE-only takers	0.047*** (0.003)	0.031*** (0.002)	0.021*** (0.002)
DE takers with CTE focus	0.052*** (0.004)	0.037*** (0.003)	0.027*** (0.002)
DE and AP/IB takers	0.008*** (0.002)	0.021*** (0.002)	0.027*** (0.001)
CTE focus only	0.044*** (0.002)	0.023*** (0.001)	0.004*** (0.001)
No acceleration	-0.025*** (0.001)	-0.041*** (0.001)	-0.052*** (0.001)
Female	0.009*** (0.001)	0.011*** (0.001)	0.012*** (0.001)
Low-income	0.028*** (0.001)	0.015*** (0.001)	0.003*** (0.001)
2011 cohort	0.010*** (0.001)	0.006*** (0.001)	0.005*** (0.001)
Race/ethnicity (Ref. = White)			
Asian	-0.161*** (0.004)	-0.096*** (0.003)	-0.037*** (0.003)
Black	0.024*** (0.002)	0.030*** (0.002)	0.020*** (0.001)
Hispanic	0.036*** (0.002)	0.033*** (0.001)	0.026*** (0.001)
Other	-0.006 (0.003)	0.001 (0.003)	-0.002 (0.002)
TAKS reading standardized score	-0.008*** (0.001)	-0.007*** (0.001)	-0.006*** (0.001)
TAKS reading imputation control	-0.122 (0.068)	-0.178** (0.063)	-0.158** (0.059)
TAKS math standardized score	-0.014*** (0.001)	-0.010*** (0.001)	-0.007*** (0.001)
TAKS math imputation control	-0.078 (0.068)	-0.024 (0.063)	-0.033 (0.059)
Student is in the TAKS top 10 percentile in their school	-0.070*** (0.004)	-0.049*** (0.003)	-0.031*** (0.003)
Student is in the TAKS top 11–30 percentile in their school	-0.025*** (0.002)	-0.020*** (0.002)	-0.013*** (0.001)

Table B4 (continued).
Estimates of the Relationship Between Coursetaking Profile and Non-Zero Earnings, 2015 and 2016 High School Completion Cohorts (Combined)

	Non-zero quarterly earnings		
	First year	Third year	Sixth year
Observations	661,558	661,558	661,558
R-squared	0.049	0.051	0.061
Adjusted R2	0.0455	0.0479	0.0583
N schools	2,167	2,167	2,167

Note. Robust standard errors in parentheses. Values plotted in Figure 8 of the main report were taken from the coursetaking profile estimates in this table.
***$p < 0.001$, **$p < 0.01$, *$p < 0.05$.

Regression-Adjusted Earnings by Highest Postsecondary Attainment

One mechanism through which college-and-career-accelerated coursework can increase earnings is by increasing postsecondary credential attainment, which enables students to obtain higher paying jobs. But even among students with the same educational attainment, accelerated coursework may increase earnings by enabling them to complete college sooner and gain more years of workplace experience; this study shows that students who took dual enrollment alone or in combination with AP/IB and CTE were more likely to earn a credential within three years post high school, indicating a shortened time to degree. Accelerated courses may also increase earnings by increasing human capital; for example, DE students may learn valuable skills that non-DE students with the same degree attainment do not obtain. We build on the prior OLS regression analyses to explore these issues. We estimate regression models among separate subgroups of students with the same credential attainment by year five. These estimates are presented in the figures in the main report of regression-adjusted average quarterly earnings by highest postsecondary attainment in the sixth year after expected high school completion. Table B5 shows the full regression results, for each attainment group, among students in the 2015 and 2016 high school completion cohorts.

Table B5.

Estimates of the Relationship Between Coursetaking Profile and Non-Zero Quarterly Earnings Among Students With the Same Highest Postsecondary Attainment in the Previous Year, 2015 and 2016 High School Completion Cohorts (Combined)

	Never enrolled	Highest award is certificate	Highest award is associate	Highest award is bachelor's
Accelerated coursetaking profile (Ref. = AP/IB takers, no DE)				
DE-only takers	-0.084*** (0.019)	0.042 (0.03)	0.111*** (0.02)	0.044** (0.015)
DE takers with CTE focus	0.081*** (0.021)	0.100** (0.032)	0.141*** (0.021)	0.094*** (0.016)
DE and AP/IB takers	0.059** (0.021)	0.033 (0.023)	0.147*** (0.013)	0.081*** (0.007)
CTE focus only	-0.012 (0.009)	-0.067** (0.022)	0.015 (0.015)	-0.028* (0.014)
No acceleration	-0.281*** (0.008)	-0.129*** (0.022)	-0.064*** (0.014)	-0.091*** (0.012)
Female	-0.387*** (0.005)	-0.354*** (0.014)	-0.163*** (0.009)	-0.134*** (0.006)
Low-income	-0.082*** (0.006)	-0.038* (0.017)	-0.029** (0.01)	-0.004 (0.008)
2011 cohort	-0.058*** (0.005)	-0.004 (0.014)	-0.053*** (0.009)	-0.029*** (0.006)
Race/ethnicity (Ref. = White)				
Asian	0.117** (0.037)	-0.051 (0.046)	-0.115*** (0.027)	-0.075*** (0.014)
Black	-0.324*** (0.011)	-0.208*** (0.035)	-0.196*** (0.019)	-0.236*** (0.012)
Hispanic	0.113*** (0.008)	0.022 (0.021)	-0.030* (0.013)	-0.064*** (0.009)
Other	-0.096*** (0.017)	-0.07 (0.051)	-0.093** (0.03)	-0.076*** (0.017)
TAKS reading standardized score	-0.008*** (0.005)	-0.030* (0.014)	-0.023 (0.012)	-0.048*** (0.013)
TAKS reading imputation control	-0.154 (0.22)	-0.134*** (0.039)	-0.085** (0.028)	0.031 (0.028)
TAKS math standardized score	-0.018*** (0.004)	-0.045** (0.015)	-0.009 (0.013)	0.074*** (0.014)
Student is in the TAKS top 10 percentile in their school	-0.197*** (0.026)	0.095 (0.048)	0.064* (0.032)	0.048** (0.016)
Student is in the TAKS top 11–30 percentile in their school	0.071*** (0.013)	0.076** (0.024)	0.075*** (0.014)	0.040*** (0.008)
Constant	8.935*** (0.01)	9.210*** (0.022)	8.934*** (0.014)	9.194*** (0.008)

Table B5 (continued).

Estimates of the Relationship Between Coursetaking Profile and Non-Zero Quarterly Earnings Among Students With the Same Highest Postsecondary Attainment in the Previous Year, 2015 and 2016 High School Completion Cohorts (Combined)

	Never enrolled	Highest award is certificate	Highest award is associate	Highest award is bachelor's
Observations	154,350	18,161	46,208	99,488
R-squared	0.108	0.149	0.077	0.041
Adjusted R2	0.0962	0.0746	0.0445	0.0262
N schools	2,025	1,444	1,546	1,531

Note. Robust standard errors in parentheses. Values plotted in Figure 10 of the main report were taken from the coursetaking profile estimates in this table.
$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$.

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