

# TECHNICAL APPENDICES

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### Catalyzing Equitable College Completion through Dual Enrollment

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# Introduction

As the learning and evaluation partner to *Dual Enrollment for Equitable Completion* (see Sidebar 1.1), RDP Consulting conducted quantitative analyses of student outcomes—both during and after participation in equity-minded dual enrollment programs—compared to their peers who did not participate. We performed this research in the third and final year of our evaluation effort and summarized these results in two briefs found in our *Advancing Equitable Dual Enrollment Research Series*:

- [\*Brief 10: Catalyzing Equitable College Completion – How Dual Enrollment Supports First-Year Success\*](#)
- [\*Brief 11: Catalyzing Equitable College Completion – How Dual Enrollment Supports Progress and Achievement\*](#)

The following technical appendices provide additional background on the data sources and methods we used to complete these analyses and a full account of our findings by outcome type: prior to matriculation, during participants' first year in college after high school graduation, and longer term.

This quantitative research extends baseline findings on *DE4EC* released by RDP Consulting in 2023, specifically (1) how many high school students participated in dual enrollment programs through a *DE4EC* college, and (2) how they performed academically in the five-year period before the initiative's start (2015–2020). Find detailed findings in [\*Ready, Set, Launch – Baseline Academic Outcomes for Students Participating in Dual Enrollment for Equitable Completion Partnerships Compared to Their Peers, 2015–2020\*](#).

## For More Information

Find more information and all *DE4EC* publications and resources at <https://www.r-d-p-consulting.com/de4ec>.

## Acknowledgments

Special thanks to the California Community Colleges Chancellor's Office for providing the data analyzed to complete this brief and The Research and Planning Group for California Community Colleges (The RP Group) for their partnership in the overall *DE4EC* learning and evaluation effort.

### Sidebar 1.1 *Dual Enrollment for Equitable Completion (DE4EC)*

*DE4EC* is a multi-year collaborative initiative among the Gates Foundation, College Futures Foundation, and Tipping Point Community, carried out with research support from RDP Consulting. *DE4EC* supports 10 California community colleges and their high school partners in advancing equitable dual enrollment.

Between 2021–2024, these partnerships developed programs to increase access and completion outcomes for students underrepresented in higher education, particularly Black, Latine, and first-generation students and those experiencing economic disadvantage.

# Appendix A. Data and Methods

## Research Question

The primary research question for these quantitative analyses is:

- How do the postsecondary outcomes of students with dual enrollment (DE) experience compare to those of similar groups of California community college students, disaggregated by student demographic characteristics (i.e., gender, first generation in college status, income level, and race/ethnicity)?

We grouped the outcomes measured into three parts of the dual enrollment student journey: prior to matriculation, first year in college, and longer term. Specific metrics included:

### Part 1 – Prior to Matriculation

- Types of dual enrollment courses taken at *DE4EC* partner community colleges
- Dual enrollment course success rates
- Number of college credits earned through dual enrollment coursework

### Part 2 – First Year in College

- Representation of formerly dual enrolled students in the overall first-year student population
- Types of college courses taken
- Course success rates
- Fall-to-spring retention rates
- Achievement of key performance indicators: full-time enrollment and completion of transfer-level math and English

### Part 3 – Longer Term

- Fall-to-fall retention
- Overall course success rates
- Overall completion of transfer-level math and English
- Likelihood of achieving transfer requirements
- Time to complete first associate's degree

## Data Source

RDP Consulting worked with learning and evaluation partner, The RP Group, to secure student-level longitudinal data from the California Community Colleges Chancellor's Office Management Information System (COMIS). The dataset included students enrolled in one of the 10 *DE4EC* colleges and contained:

- Demographic information: gender, age, race/ethnicity, parent education (first-generation status), and income status
- Educational background: high school graduation year
- Transcript data: course ID, course grade, and units attempted and completed
- Course elements: transferability status, and academic division (e.g., humanities, social sciences, math)

## Sample

The sample included students who took dual enrollment courses through a *DE4EC* college and/or who subsequently matriculated to a *DE4EC* college after high school graduation from the 2015–2016 through 2022–2023 academic years. The sample varies by stage of the student journey:

- Prior to Matriculation: students who enrolled in dual enrollment course(s) through a *DE4EC* college from 2015–2016 through 2022–2023.
- First Year in College and Longer Term: students who enrolled in a *DE4EC* college from 2015–2016 through 2022–2023, grouped into first-year cohorts based on their high school graduation year; formerly dual enrolled students identified based on prior participation in dual enrollment coursework through a *DE4EC* college.

## Caveats and Limitations

1. As with all secondary data, this research relies on the accuracy of data submitted to COMIS by the 10 California community colleges included in the study. It is, therefore, possible that data discrepancies may exist.
2. Some system- and project-derived variables had areas of missing data:
  - a. The low-income identifier is a system-derived variable available in the “Special Population Data Elements” of COMIS. The California Community Colleges implemented this variable in 2018. Given that our sample begins in the 2015–2016 academic year, there was about 27% missing data for the low-income identifier for students who began before the 2018–2019 cohort.
  - b. Since we did not collect high school records for this research, we used students’ recorded high school graduation as the filter for creating DE cohorts and comparison groups. It is possible that if students’ high school graduation year was not recorded, we filtered them out.
  - c. We only analyzed data from the 10 *DE4EC* colleges. It is possible that some students identified as non-dual-enrollment students could have participated in a dual enrollment program at a non-*DE4EC* college.

## Appendix B. Dual Enrollment Outcomes Prior to Matriculation at DE4EC Colleges

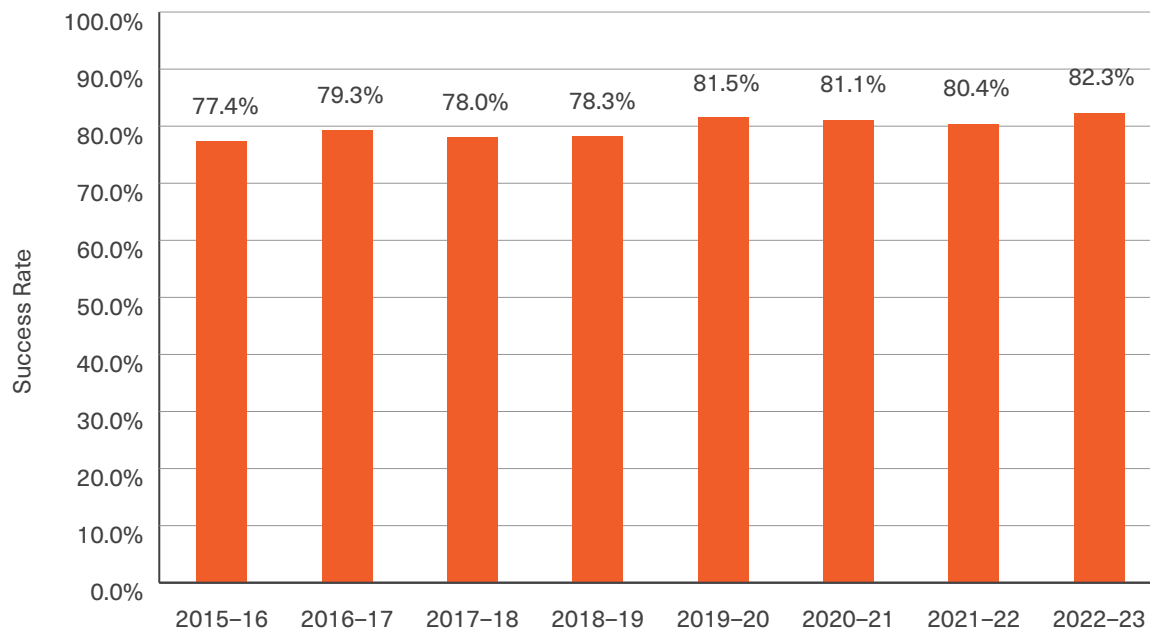
The analyses examined academic outcomes for students who participated in college coursework at a DE4EC partner college before high school graduation, 2015–2016 through 2022–2023. In some cases, we disaggregated outcomes by student group (i.e., race/ethnicity, gender, first-generation status, income status). These pre-matriculation indicators are captured as follows:

- Table B1: Dual Enrollment Course Enrollments by Academic Division in Descending Order (2015–2016 through 2022–2023 Combined)
- Figure B1: Dual Enrollment Course Success (2015–2016 through 2022–2023)
- Table B2: Dual Enrollment Course Success by Student Group (2015–2016 through 2022–2023)
- Table B3: Average Number of College Units Earned in Dual Enrollment by Student Group (2015–2016 through 2022–2023 Combined)

**Table B1. Dual Enrollment Course Enrollments by Academic Division in Descending Order (2015–2016 through 2022–2023 Combined)**

Academic Division	%
Humanities	13.1%
Social Sciences	11.7%
Mathematics	10.5%
Interdisciplinary Studies	9.4%
Education	8.2%
Fine and Applied Arts	8.0%
Engineering and Industrial Technologies	6.0%
Psychology	4.4%
Health	4.0%
Family and Consumer Sciences	3.7%
Biological Sciences	3.7%
Foreign Language	3.5%
Business and Management	3.1%
Public and Protective Services	2.9%
Physical Sciences	2.7%
Media and Communications	2.6%
Information Technology	1.9%
Environmental Sciences and Technologies	0.3%
Architecture and Related Technologies	0.2%
Agriculture and Natural Resources	0.2%
Library Science	0.1%
Law	0.1%
Commercial Services	0.0%
Military Studies	0.0%
<b>Total</b>	<b>100.0%</b>

**Figure B1. Dual Enrollment Course Success (2015–2016 through 2022–2023)**



Note: Course success is based on earning a grade of C or better.

**Table B2. Dual Enrollment Course Success by Student Group (2015–2016 through 2022–2023)**

Student Group	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
<b>Race/Ethnicity</b>								
Asian	85.6%	87.3%	86.7%	86.6%	90.4%	91.2%	90.2%	90.3%
Black	69.6%	67.1%	64.7%	68.5%	74.1%	73.2%	72.2%	74.6%
Hispanic/Latine*	75.3%	77.9%	75.9%	76.3%	78.8%	77.1%	76.6%	79.4%
Native American	53.1%	80.4%	61.5%	69.1%	74.5%	65.8%	68.1%	80.4%
Pacific Islander	81.1%	76.7%	60.6%	71.4%	78.0%	77.0%	77.8%	75.2%
Two or More Races	76.6%	76.7%	81.7%	80.7%	84.4%	83.6%	83.6%	84.0%
White	83.3%	83.0%	84.1%	85.1%	87.5%	87.4%	87.1%	87.7%
Unknown	74.9%	76.7%	79.0%	79.3%	79.7%	79.8%	80.9%	85.7%
<b>Gender</b>								
Female	79.3%	81.1%	79.2%	79.5%	82.7%	81.8%	80.2%	82.2%
Male	75.2%	77.1%	76.4%	76.8%	80.0%	80.1%	80.7%	82.5%
Non-Binary					71.0%	84.6%	76.0%	80.1%
Unknown	72.6%	77.5%	76.4%	80.3%	79.7%	76.5%	78.9%	79.0%
<b>First-Generation Status</b>								
Non-First Generation	78.4%	80.4%	79.4%	80.0%	83.5%	84.7%	83.4%	84.8%
First Generation	75.1%	77.0%	75.9%	76.3%	79.3%	76.9%	76.9%	79.3%
<b>Income Status</b>								
Non-Low Income				85.7%	86.9%	82.0%	80.7%	83.6%
Low Income				70.3%	76.5%	76.8%	74.8%	70.3%

\*"Latine" used as the gender-neutral alternative to "Latina" or "Latino."

Notes: Empty cells have  $n < 15$ . Course success is based on earning a grade of C or better.

**Table B3. Average Number of College Units Earned in Dual Enrollment by Student Group (2015–2016 through 2022–2023 Combined)**

Student Group	# of Units	Difference Above or Below the Average
<b>Total Average</b>	<b>18.77</b>	<b>--</b>
<b>Race/Ethnicity</b>		
Asian	22.05	3.28
Black	17.68	-1.09
Hispanic/Latine*	17.89	-0.88
Native American	14.18	-4.59
Pacific Islander	18.44	-0.33
Two or More Races	20.90	2.13
White	20.43	1.66
Unknown	13.00	-5.77
<b>Gender</b>		
Female	19.24	0.47
Male	18.21	-0.56
Non-Binary	11.40	-7.37
Unknown	17.29	-1.48
<b>First-Generation Status</b>		
First Generation	19.39	0.62
Non-First Generation	18.29	-0.48
<b>Income Status</b>		
Non-Low Income	26.52	7.75
Low Income	25.16	6.39

\*"Latine" used as the gender-neutral alternative to "Latina" or "Latino."



## Appendix C. First-Year Outcomes for Students with Prior Dual Enrollment Experience at *DE4EC* Colleges

The analyses also examined first year in college outcomes for cohorts whose first year in college was 2015–2016 through 2022–2023 and who both participated in dual enrollment through a *DE4EC* partner college and subsequently matriculated to a *DE4EC* partner college. We compared DE students to a matched group of non-dual-enrolled (non-DE) peers attending the same *DE4EC* institution who started at the college in the same year. Again, in some cases, we disaggregated outcomes by student group. These first year in college indicators are captured as follows:

- Table C1: Proportion of Students Enrolling Full Time in Their First Year by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Table C2: Proportion of Students Enrolling Full Time in Their First Year by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Table C3: Representation among First-Year Student Population by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023 Combined)
- Table C4: First-Year Course Enrollments by Prior Dual Enrollment Participation and Division in Descending Order (First Year in College Cohorts, 2015–2016 through 2022–2023 Combined)
- Figure C1: First-Year Course Success by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Table C5: First-Year Course Success by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Table C6: Fall-to-Spring Retention in First Year by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Table C7: Fall-to-Spring Retention in First Year by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Figure C2: Transfer-Level Math Completion in First Year by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Table C8: Transfer-Level Math Completion in First Year by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Figure C3: Transfer-Level English Completion in First Year by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Table C9: Transfer-Level English Completion in First Year by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)

**Table C1. Proportion of Students Enrolling Full Time in Their First Year by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)**

First Year	Non-DE	DE	Difference
2015–16	57.3%	52.8%	–4.5%
2016–17	50.0%	59.2%	9.2%
2017–18	45.0%	31.9%	–13.1%
2018–19	41.2%	56.9%	15.7%
2019–20	42.8%	61.3%	18.5%
2020–21	30.6%	60.6%	30.0%
2021–22	33.6%	56.7%	23.1%
2022–23	38.5%	51.6%	13.1%

Note: Full-time enrollment is based on whether a student attempted ≥ 12 units in either their first fall or spring term.

**Table C2. Proportion of Students Enrolling Full Time in Their First Year by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)**

Student Group	2015–16		2016–17		2017–18		2018–19		2019–20		2020–21		2021–22		2022–23	
	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE
<b>Race/Ethnicity</b>																
Asian	56.1%	52.6%	42.9%	53.9%	41.5%	51.1%	34.8%	47.7%	35.3%	57.1%	22.5%	48.5%	25.7%	64.4%	33.4%	52.3%
Black	51.2%	49.0%	47.5%	65.6%	40.5%	47.1%	35.8%	58.1%	39.8%	51.7%	24.4%	57.4%	28.5%	58.7%	33.5%	52.1%
Hispanic/Latine*	60.7%	54.8%	54.4%	60.5%	48.7%	28.9%	45.8%	59.8%	47.7%	63.2%	34.6%	64.8%	39.1%	56.4%	42.5%	52.7%
Native American	34.8%		47.8%		48.6%		41.2%		40.9%		36.2%		46.3%		34.5%	36.4%
Pacific Islander	48.1%		45.1%		35.7%		45.2%		43.2%		20.5%		29.2%		35.2%	
Two or More Races	51.1%	70.0%	46.3%	57.1%	41.3%	59.4%	37.7%	50.0%	37.6%	55.7%	26.6%	51.0%	29.7%	59.1%	33.5%	53.5%
White	52.1%	45.5%	42.8%	57.1%	36.2%	50.5%	32.1%	54.6%	32.9%	61.2%	23.2%	55.5%	24.3%	51.9%	30.7%	45.8%
Unknown	50.7%	71.4%	30.7%		49.7%	11.8%	31.6%	38.6%	32.3%	59.1%	45.2%	45.5%	24.8%	41.4%	23.5%	32.6%
<b>Gender</b>																
Female	58.6%	52.5%	48.3%	60.7%	43.1%	27.7%	38.7%	55.6%	39.8%	60.4%	29.5%	57.9%	32.4%	56.8%	37.1%	52.3%
Male	56.2%	54.2%	51.6%	57.6%	47.0%	37.3%	43.8%	58.9%	45.9%	62.6%	32.2%	64.9%	35.0%	56.9%	40.2%	50.8%
Non-Binary											58.3%		44.7%		43.3%	62.5%
Unknown	50.7%	25.0%	51.6%		44.2%	70.0%	40.7%	23.1%	44.1%	40.0%	22.1%	38.5%	30.6%	46.7%	33.6%	31.0%
<b>First-Generation Status</b>																
Non-First Generation	51.5%	52.4%	44.2%	57.5%	41.2%	31.3%	35.3%	52.9%	36.3%	58.8%	25.9%	54.3%	27.8%	52.6%	32.7%	48.2%
First Generation	66.3%	54.1%	57.1%	61.4%	50.2%	32.6%	46.8%	60.1%	48.3%	63.1%	35.4%	65.3%	39.0%	60.0%	44.2%	54.8%
<b>Income Status</b>																
Non-Low Income							62.7%	48.5%	62.3%	66.4%	46.5%	63.2%	50.9%	59.5%	40.4%	54.4%
Low Income							66.9%		57.4%	81.3%	29.3%	45.0%	31.1%	46.7%	29.1%	48.3%

\*“Latine” used as the gender-neutral alternative to “Latina” or “Latino.”

Notes: Empty cells have  $n < 15$ . Full-time enrollment is based on whether a student attempted ≥ 12 units in either their first fall or spring term.

**Table C3. Representation among First-Year Student Population by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023 Combined)**

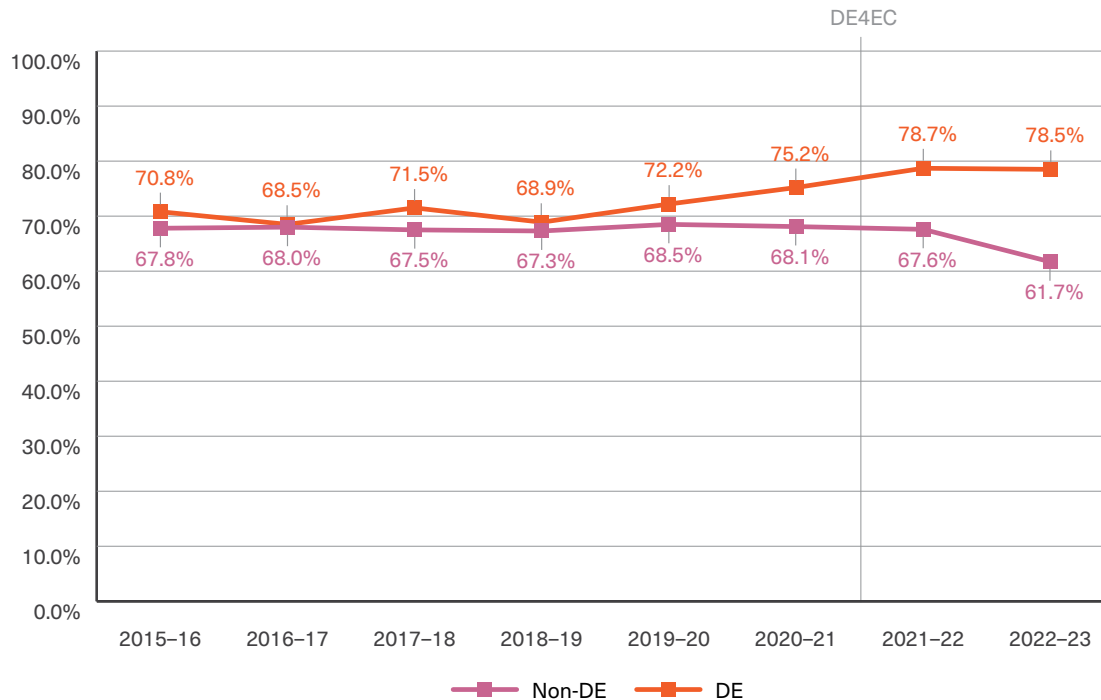
	Non-DE %	DE %
<b>Race/Ethnicity</b>		
Asian	12.9%	13.7%
Black	5.9%	3.8%
Hispanic/Latine*	59.6%	66.4%
Native American	0.2%	0.2%
Pacific Islander	0.4%	0.2%
Two or More Races	3.8%	3.0%
White	14.6%	10.2%
Unknown	2.7%	2.4%
<b>Gender</b>		
Female	51.9%	57.3%
Male	46.7%	41.8%
Non-Binary	0.2%	0.2%
Unknown	1.2%	0.7%
<b>First-Generation Status</b>		
Non-First Generation	50.7%	49.5%
First Generation	49.3%	50.5%
<b>Income Status</b>		
Non-Low Income	84.7%	96.6%
Low Income	15.3%	3.4%

\*"Latine" used as the gender-neutral alternative to "Latina" or "Latino."

**Table C4. First-Year Course Enrollments by Prior Dual Enrollment Participation and Division in Descending Order (First Year in College Cohorts, 2015–2016 through 2022–2023 Combined)**

Academic Division	Non-DE %	DE %
Humanities	19.7%	17.7%
Social Sciences	14.3%	14.2%
Mathematics	12.2%	11.6%
Education	8.0%	7.0%
Interdisciplinary Studies	7.9%	8.8%
Fine and Applied Arts	7.1%	7.2%
Psychology	4.6%	5.0%
Biological Sciences	4.2%	4.8%
Physical Sciences	4.0%	4.8%
Public and Protective Services	2.9%	2.7%
Business and Management	2.8%	3.0%
Family and Consumer Sciences	2.7%	2.4%
Engineering and Industrial Technologies	2.3%	2.8%
Health	2.0%	2.4%
Foreign Language	1.6%	1.7%
Information Technology	1.5%	1.7%
Media and Communications	1.1%	1.1%
Agriculture and Natural Resources	0.3%	0.4%
Law	0.2%	0.2%
Environmental Sciences and Technologies	0.2%	0.3%
Agriculture and Natural Resources	0.1%	0.1%
Library Science	0.1%	0.1%
Commercial Services	0.1%	0.2%
Military Studies	0.0%	0.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>

**Figure C1. First-Year Course Success by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)**



Notes: Course success is defined as the proportion of students in each cohort who earned a grade of C or better in their first-year courses. The vertical line marks the launch of the *DE4EC* initiative in fall 2021.

**Table C5. First-Year Course Success by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)**

Student Group	2015–16		2016–17		2017–18		2018–19		2019–20		2020–21		2021–22		2022–23	
	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE
<b>Race/Ethnicity</b>																
Asian	74.4%	82.6%	75.7%	72.1%	77.6%	82.6%	77.5%	80.0%	79.9%	83.2%	79.8%	84.9%	78.3%	84.8%	75.2%	87.7%
Black	58.1%	73.4%	58.9%	66.9%	58.8%	67.0%	59.7%	58.0%	61.8%	58.4%	61.6%	67.6%	60.0%	63.8%	55.9%	68.5%
Hispanic/Latine*	65.8%	68.0%	66.0%	66.7%	65.0%	67.2%	64.3%	65.7%	65.0%	68.7%	64.9%	72.0%	64.2%	76.4%	58.1%	75.2%
Native American	55.0%		66.5%	27.3%	48.5%	31.6%	54.5%	64.7%	67.6%	64.9%	64.1%	96.3%	49.1%	89.2%	64.2%	62.5%
Pacific Islander	64.5%		66.7%	38.0%	58.2%	48.1%	67.0%	65.2%	59.1%	55.9%	77.1%	79.5%	74.8%	75.9%	60.9%	70.0%
Two or More Races	67.9%	74.3%	69.1%	67.4%	70.9%	73.2%	71.7%	70.9%	71.5%	73.2%	71.9%	73.1%	71.4%	82.0%	66.8%	78.5%
White	75.7%	66.3%	75.1%	76.0%	75.8%	80.6%	76.4%	79.6%	79.9%	81.3%	79.2%	83.9%	78.6%	86.3%	74.0%	89.3%
Unknown	71.3%		65.3%	70.8%	65.0%	69.7%	65.8%	54.1%	72.4%	82.4%	62.9%	84.2%	70.9%	69.1%	72.5%	82.6%
<b>Gender</b>																
Female	68.9%	71.8%	68.7%	68.6%	68.3%	72.8%	67.9%	68.1%	69.2%	71.4%	68.3%	74.3%	67.7%	78.5%	61.2%	77.6%
Male	66.7%	71.0%	67.2%	68.4%	66.8%	70.2%	66.5%	69.8%	67.6%	73.3%	68.0%	76.7%	67.7%	78.9%	62.3%	79.7%
Non-Binary						71.4%			48.7%		56.3%	66.0%	73.2%	83.1%	54.4%	66.4%
Unknown	62.9%	39.4%	66.9%	66.3%	64.3%	69.3%	69.1%	73.6%	68.8%	74.0%	65.0%	54.2%	57.5%	91.9%	66.0%	85.1%
<b>First-Generation Status</b>																
Non-First Generation	69.3%	68.8%	69.5%	68.9%	68.9%	70.5%	70.3%	73.5%	72.4%	75.2%	72.0%	79.1%	71.1%	81.0%	64.5%	82.3%
First Generation	66.4%	73.5%	66.6%	68.0%	66.0%	72.7%	65.3%	65.4%	66.0%	70.0%	65.3%	72.3%	65.3%	76.8%	59.7%	75.1%

\*"Latine" used as the gender-neutral alternative to "Latina" or "Latino."

Notes: Empty cells have  $n < 15$ . Course success is defined as the proportion of students in each cohort who earned a grade of C or better in their first-year courses. Income status is not included due to the small number of students with income status information.

**Table C6. Fall-to-Spring Retention in First Year by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)**

Entering Cohort	Non-DE	DE	Difference
Fall 2015	48%	75%	27%
Fall 2016	45%	56%	11%
Fall 2017	41%	37%	–4%
Fall 2018	40%	50%	9%
Fall 2019	40%	62%	22%
Fall 2020	32%	54%	21%
Fall 2021	33%	51%	18%
Fall 2022	45%	61%	15%

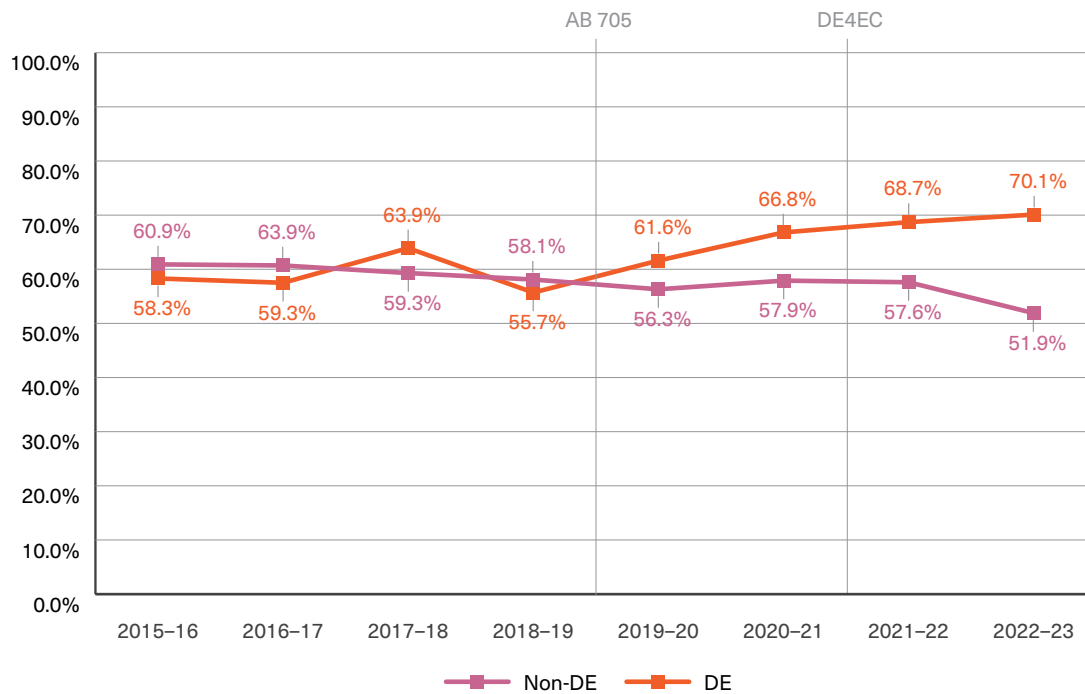
**Table C7. Fall-to-Spring Retention in First Year by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)**

Student Group	2015–16		2016–17		2017–18		2018–19		2019–20		2020–21		2021–22		2022–23	
	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE
<b>Race/Ethnicity</b>																
Asian	78.8%	78.1%	75.2%	82.6%	73.9%	69.5%	73.3%	81.0%	70.5%	83.7%	57.9%	71.0%	58.2%	79.7%	64.0%	76.9%
Black	58.6%	85.2%	58.6%	65.0%	52.0%	65.0%	52.4%	60.9%	49.9%	65.2%	39.7%	63.5%	45.4%	60.5%	45.4%	66.1%
Hispanic/Latine*	73.1%	81.5%	69.9%	72.2%	67.0%	57.8%	64.8%	71.3%	65.1%	75.5%	55.2%	73.5%	56.3%	69.7%	63.0%	73.9%
Native American	60.9%		52.0%		65.6%		46.2%		57.1%		52.3%		60.6%		66.7%	
Pacific Islander	54.3%		69.0%		48.9%		51.1%		43.2%		43.9%		33.3%		43.2%	
Two or More Races	69.2%	87.5%	60.0%	68.4%	59.1%	79.4%	61.0%	65.1%	61.9%	70.4%	50.6%	64.4%	51.1%	60.4%	54.6%	68.9%
White	70.5%	88.6%	68.5%	73.2%	61.3%	75.2%	60.5%	73.0%	58.8%	80.5%	51.1%	78.7%	53.6%	64.1%	57.2%	67.8%
Unknown	69.4%		69.4%		65.4%	50.0%	61.5%	60.6%	46.8%	81.5%	61.4%	66.7%	41.6%	63.6%	51.9%	80.0%
<b>Gender</b>																
Female	73.6%	81.3%	70.8%	71.4%	67.1%	56.9%	65.4%	74.0%	64.2%	76.7%	55.3%	74.1%	55.6%	71.2%	61.7%	73.2%
Male	70.7%	85.2%	67.6%	75.8%	64.5%	64.9%	63.0%	69.3%	62.3%	76.0%	53.1%	72.2%	54.3%	67.7%	60.0%	73.5%
Non-Binary													57.5%		64.7%	
Unknown	78.1%		67.6%		62.8%		68.8%		65.9%		47.9%		47.1%		57.5%	
<b>First-Generation Status</b>																
Non-First Generation	69.6%	88.4%	66.7%	69.2%	64.0%	56.7%	62.6%	70.7%	60.9%	75.8%	53.1%	73.2%	53.5%	67.7%	58.1%	73.2%
First Generation	75.6%	70.1%	71.9%	79.1%	67.8%	68.6%	65.6%	72.7%	65.0%	76.6%	55.1%	73.0%	55.9%	71.4%	63.2%	73.5%

\*"Latine" used as the gender-neutral alternative to "Latina" or "Latino."

Notes: Empty cells have  $n < 15$ . Income status is not included due to the small number of students with income status information.

**Figure C2. Transfer-Level Math Completion in First Year by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)**



Notes: The first vertical line marks the implementation of Assembly Bill (AB) 705 (2017) in fall 2019, which required all California community colleges to reform their approach to developmental education, specifically placing students in transfer-level math and English coursework and providing the necessary support to help ensure their success. Learn more at <https://www.cccco.edu/About-Us/Chancellors-Office/Divisions/Educational-Services-and-Support/equitable-placement>. The second vertical line marks the launch of the DE4EC initiative in fall 2021.

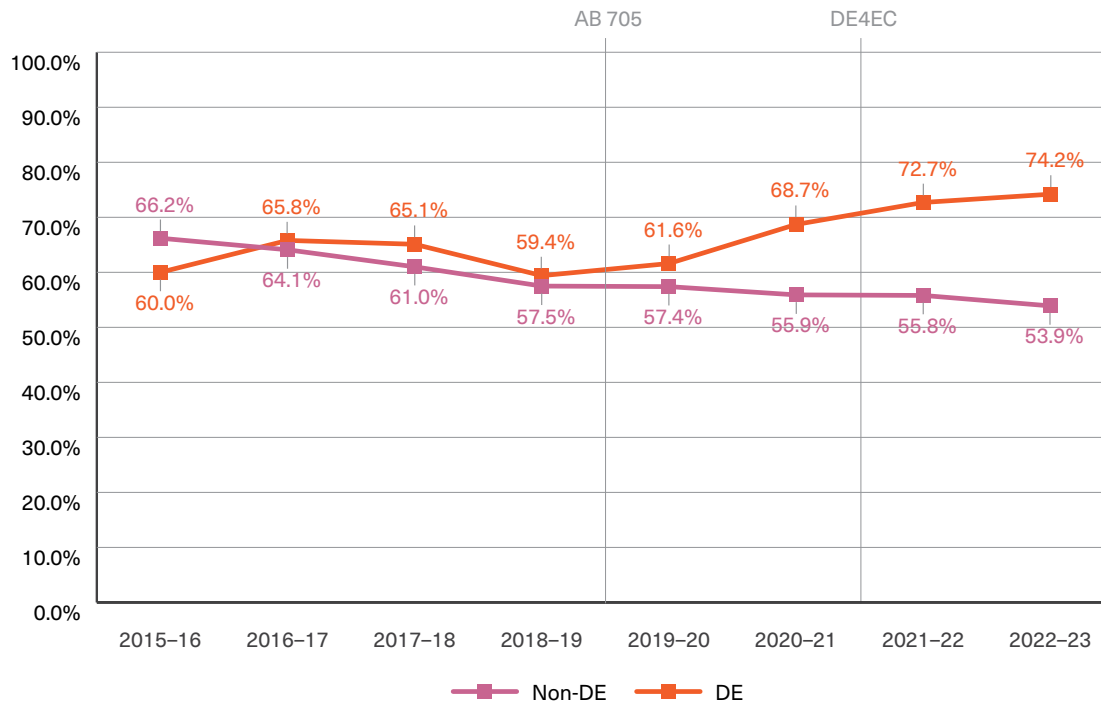
**Table C8. Transfer-Level Math Completion in First Year by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)**

Student Group	2015-16		2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23	
	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE
<b>Race/Ethnicity</b>																
Asian	67.1%	83.3%	68.8%	60.8%	70.8%	76.4%	71.4%	69.0%	74.1%	77.8%	73.9%	81.1%	70.0%	77.6%	71.3%	84.3%
Black	48.9%		51.0%		45.0%	43.5%	41.1%	42.9%	38.4%	45.5%	46.9%	68.0%	46.8%	50.0%	49.5%	56.5%
Hispanic/Latine*	56.8%	50.8%	57.0%	55.7%	54.4%	55.7%	52.5%	47.1%	49.8%	54.6%	51.4%	60.8%	51.8%	63.8%	45.2%	62.0%
Native American			31.3%		52.4%						61.1%				46.2%	
Pacific Islander	66.7%		35.3%		46.4%		66.7%		36.4%				62.5%			
Two or More Races	60.1%		57.0%		65.4%	60.5%	62.6%	63.2%	57.3%	58.8%	58.4%	54.4%	66.0%	82.2%	60.7%	77.1%
White	72.2%		71.0%	63.8%	69.0%	83.2%	71.4%	79.1%	73.5%	71.0%	76.1%	81.5%	71.9%	80.9%	69.2%	87.7%
Unknown	61.8%		46.5%		50.2%	62.1%	55.4%		62.3%	71.1%	51.3%	82.8%	58.4%	54.2%	54.2%	66.7%
<b>Gender</b>																
Female	61.5%	63.5%	60.8%	58.3%	59.7%	62.4%	58.6%	54.9%	55.7%	59.5%	56.8%	64.1%	56.6%	68.9%	52.6%	67.9%
Male	60.6%	52.7%	60.7%	57.1%	59.0%	64.9%	57.7%	56.5%	56.7%	63.6%	59.0%	69.8%	58.4%	68.2%	51.1%	72.3%
Non-Binary															61.1%	
Unknown	55.3%		59.2%		59.0%		53.1%		59.8%	76.2%	61.8%		61.5%	86.7%	50.8%	
<b>First-Generation Status</b>																
Non-First Generation	61.7%	62.5%	62.6%	57.6%	60.8%	63.8%	61.0%	62.6%	61.6%	64.0%	62.5%	71.1%	62.3%	71.2%	56.4%	77.6%
First Generation	60.1%	50.0%	58.7%	57.4%	57.8%	64.0%	56.1%	49.0%	52.9%	59.6%	54.4%	63.7%	54.3%	66.4%	48.6%	63.0%

\*"Latine" used as the gender-neutral alternative to "Latina" or "Latino."

Notes: Empty cells have  $n < 15$ . Income status is not included due to the small number of students with income status information.

**Figure C3. Transfer-Level English Completion in First Year by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)**



Notes: The first vertical line marks the implementation of Assembly Bill (AB) 705 (2017) in fall 2019, which required all California community colleges to reform their approach to developmental education, specifically placing students in transfer-level math and English coursework and providing the necessary support to help ensure their success. Learn more at <https://www.cccco.edu/About-Us/Chancellors-Office/Divisions/Educational-Services-and-Support/equitable-placement>. The second vertical line marks the launch of the DE4EC initiative in fall 2021.

**Table C9. Transfer-Level English Completion in First Year by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)**

Student Group	2015–16		2016–17		2017–18		2018–19		2019–20		2020–21		2021–22		2022–23	
	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE
<b>Race/Ethnicity</b>																
Asian	66.9%	82.6%	67.9%	64.4%	69.8%	74.8%	71.8%	67.5%	75.0%	75.3%	76.5%	82.4%	72.0%	81.3%	76.0%	85.0%
Black	61.8%	66.7%	62.9%	81.5%	61.6%	56.7%	58.4%	41.5%	56.3%	48.6%	59.9%	77.1%	55.2%	62.5%	68.0%	70.6%
Hispanic/Latine*	66.7%	62.0%	66.3%	66.9%	66.2%	62.4%	64.6%	59.6%	63.1%	65.7%	65.4%	68.4%	66.4%	75.2%	63.3%	74.8%
Native American			47.6%		60.0%		50.0%		54.5%		63.2%		52.4%		61.1%	
Pacific Islander	80.0%		64.5%	45.5%	60.5%		62.5%		48.8%		77.8%		60.0%		57.1%	
Two or More Races	69.3%		66.3%	62.5%	70.1%	65.3%	72.5%	67.4%	66.0%	61.6%	71.4%	63.4%	72.5%	86.0%	71.4%	81.7%
White	72.7%	50.0%	72.3%	70.2%	71.0%	77.2%	72.8%	72.6%	74.6%	70.7%	77.7%	80.5%	73.9%	81.0%	74.9%	84.1%
Unknown	67.1%		63.4%	60.0%	68.0%	57.7%	64.1%		68.4%	72.9%	62.6%	78.3%	64.8%	57.7%	70.3%	70.8%
<b>Gender</b>																
Female	71.5%	71.2%	70.3%	70.4%	70.8%	68.7%	69.5%	64.2%	67.7%	68.4%	68.8%	72.8%	69.5%	78.9%	68.1%	77.2%
Male	63.0%	61.2%	63.5%	62.8%	63.7%	63.0%	63.2%	58.8%	63.1%	65.8%	66.6%	70.4%	65.6%	73.3%	64.4%	77.0%
Non-Binary											73.7%		87.5%	76.9%	67.7%	73.7%
Unknown	62.8%		66.0%		62.7%		68.8%		68.5%	66.7%	66.7%		74.1%	86.7%	69.5%	
<b>First-Generation Status</b>																
Non-First Generation	67.6%	70.0%	67.7%	66.8%	68.5%	65.2%	68.2%	63.6%	69.0%	67.9%	70.0%	75.6%	69.6%	76.9%	68.6%	81.1%
First Generation	67.3%	60.0%	66.4%	66.3%	65.8%	66.9%	65.3%	59.9%	63.5%	66.8%	66.2%	69.0%	66.6%	76.4%	64.6%	74.0%

\*"Latine" used as the gender-neutral alternative to "Latina" or "Latino."

Notes: Empty cells have  $n < 15$ . Income status is not included due to the small number of students with income status information.



## Appendix D. Longer-Term Outcomes for Students with Prior Dual Enrollment Experience at *DE4EC* Colleges

The analyses additionally examined longer-term outcomes for cohorts whose first year in college was 2015–2016 through 2022–2023 and who both participated in dual enrollment through a *DE4EC* partner college and subsequently matriculated to a *DE4EC* partner college. We compared them to a matched group of non-dual-enrolled (non-DE) peers attending the same *DE4EC* institution. Again, in some cases, we disaggregated outcomes by student group. These longer-term indicators are captured as follows:

- Table D1: Fall-to-Fall Retention from First Fall Term by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2021–2022)
- Table D2: Fall-to-Fall Retention from First Fall Term by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2021–2022)
- Figure D1: Overall Course Success by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Table D3: Overall Course Success by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Figure D2: Overall Transfer-Level Math Completion by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Table D4: Overall Transfer-Level Math Completion by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Figure D3: Overall Transfer-Level English Completion by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Table D5: Overall Transfer-Level English Completion by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)
- Table D6: Proportion of Students Completing Transfer Requirements and Achieving “At-the-Gate” Status<sup>1</sup> by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023 Combined)
- Figure D4: Average Years to Completion of First Associate’s Degree by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2018–2019)
- Table D7: Average Years to Completion of First Associate’s Degree by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2018–2019)

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<sup>1</sup> “At-the-gate” (ATG) status is based on The RP Group’s [Through the Gate Transfer Initiative](#); the criteria for students to achieve this status are completion of 60+ transferable units, a minimum 2.0 GPA, and completion of transfer-level math and English, OR earning an Associate Degree for Transfer (ADT). For this analysis, depending on when they began their first year of college, some cohorts had more time to reach the transfer gate. Note that students in more recent cohorts had less time to complete these milestones and, therefore, are less likely to have reached ATG status.

**Table D1. Fall-to-Fall Retention from First Fall Term by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2021–2022)**

Entering Cohort	Non-DE	DE	Difference
Fall 2015	57.3%	77.1%	19.8%
Fall 2016	55.0%	62.8%	7.8%
Fall 2017	51.6%	44.2%	–7.5%
Fall 2018	49.1%	58.7%	9.6%
Fall 2019	44.6%	56.9%	12.4%
Fall 2020	39.8%	61.7%	21.9%
Fall 2021	44.2%	59.4%	15.2%

Note: Monitoring fall-to-fall retention requires a full academic year. Given these time limitations, the first year in college cohort entering in the 2022–2023 academic year is not included in the analysis.

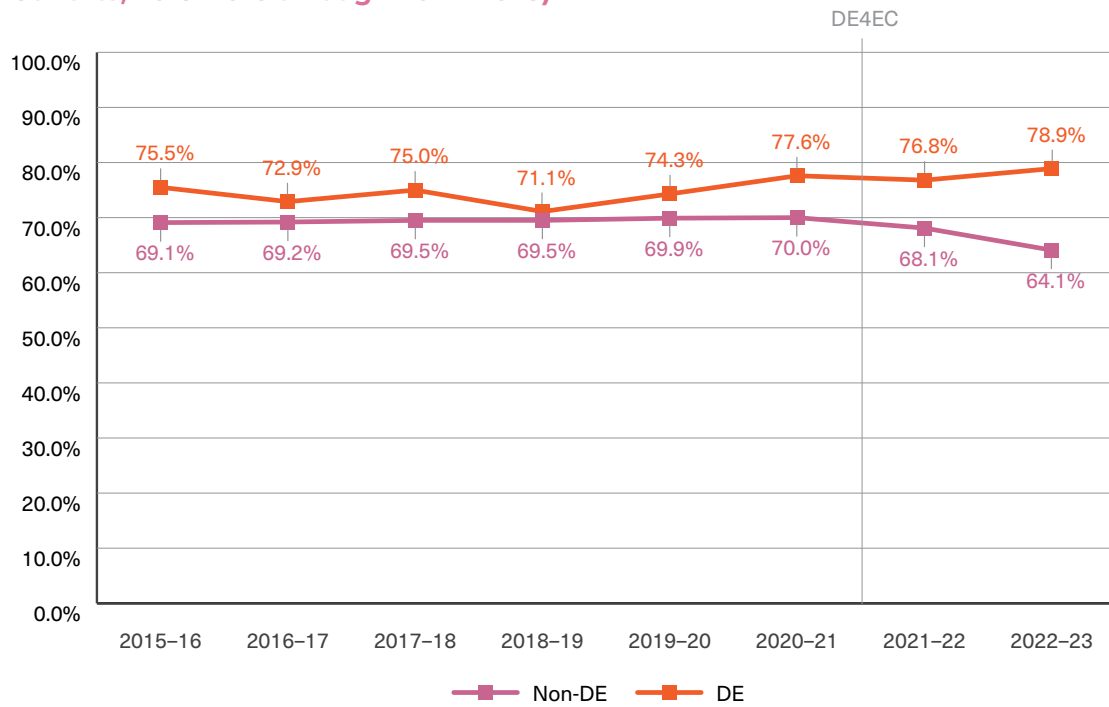
**Table D2. Fall-to-Fall Retention from First Fall Term by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2021–2022)**

Student Group	2015–16		2016–17		2017–18		2018–19		2019–20		2020–21		2021–22	
	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE
<b>Race/Ethnicity</b>														
Asian	64.2%	71.9%	61.0%	75.0%	60.6%	49.2%	56.8%	70.8%	55.5%	63.1%	44.1%	65.1%	48.0%	69.0%
Black	40.7%	79.6%	38.5%	63.3%	37.6%	37.5%	34.7%	39.1%	31.9%	39.1%	28.9%	42.9%	33.8%	50.0%
Hispanic/Latine*	58.6%	77.5%	56.4%	61.1%	53.3%	43.1%	49.9%	57.6%	45.2%	58.0%	40.9%	61.8%	46.0%	58.7%
Native American	34.8%		36.0%		46.9%		30.8%		35.7%		29.5%		36.4%	
Pacific Islander	37.1%		42.9%		31.9%		40.0%		40.9%		41.5%		33.3%	
Two or More Races	54.3%	87.5%	49.1%	57.9%	45.3%	73.5%	45.0%	67.4%	41.5%	48.1%	32.7%	57.8%	35.1%	52.8%
White	55.4%	71.4%	52.3%	53.5%	45.7%	61.9%	46.3%	57.4%	41.2%	58.1%	35.5%	65.6%	42.9%	57.5%
Unknown	58.1%		62.7%		47.2%	30.4%	50.0%	54.5%	33.4%	51.9%	47.6%	62.5%	30.9%	
<b>Gender</b>														
Female	59.0%	78.3%	57.3%	62.8%	52.9%	41.9%	50.3%	59.2%	48.5%	60.8%	41.1%	63.7%	44.6%	60.1%
Male	55.6%	76.1%	53.0%	62.7%	50.6%	47.9%	47.9%	58.4%	40.4%	52.5%	38.5%	60.1%	44.0%	59.0%
Non-Binary											34.8%		42.5%	
Unknown	57.9%		49.4%		44.5%		50.7%		47.0%		33.3%		39.3%	
<b>First-Generation Status</b>														
Non-First Generation	54.7%	82.9%	54.1%	60.9%	50.4%	40.5%	46.4%	59.0%	42.8%	58.5%	37.6%	63.1%	42.3%	60.4%
First Generation	60.7%	63.6%	56.0%	65.6%	53.0%	54.4%	51.3%	58.5%	45.8%	55.9%	41.6%	60.8%	45.8%	58.7%

\*"Latine" used as the gender-neutral alternative to "Latina" or "Latino."

Notes: Empty cells have  $n < 15$ . Income status is not included due to the small number of students with income status information. Monitoring fall-to-fall retention requires a full academic year. Given these time limitations, the first year in college cohort entering in the 2022–2023 academic year is not included in the analysis.

**Figure D1. Overall Course Success by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)**



Notes: Overall course success is based on all courses taken by students in the cohort and calculated by dividing the number of courses completed successfully with a grade C or better by the total number of courses taken. The vertical line marks the launch of the *DE4EC* initiative in fall 2021.

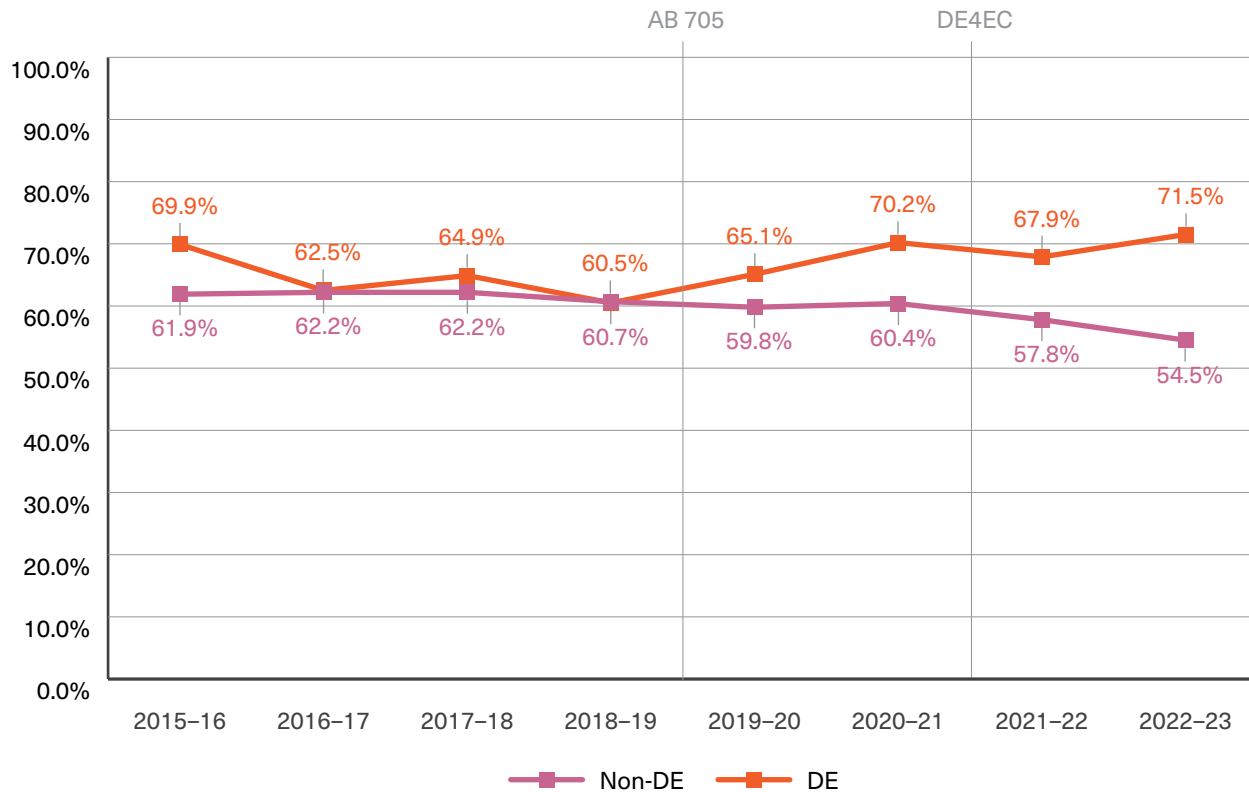
**Table D3. Overall Course Success by Prior Dual Enrollment Participation and Student Group  
(First Year in College Cohorts, 2015–2016 through 2022–2023)**

Student Group	2015–16		2016–17		2017–18		2018–19		2019–20		2020–21		2021–22		2022–23	
	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE
<b>Race/Ethnicity</b>																
Asian	75.2%	81.7%	76.8%	75.5%	78.8%	84.8%	79.4%	80.8%	81.3%	84.1%	81.4%	86.2%	78.9%	84.8%	77.1%	87.7%
Black	58.8%	70.7%	60.0%	64.1%	60.5%	66.6%	61.2%	60.3%	62.6%	64.7%	62.8%	73.9%	62.5%	66.5%	56.0%	70.4%
Hispanic/ Latine*	67.3%	74.4%	67.4%	71.2%	67.0%	72.6%	66.4%	69.0%	66.5%	71.5%	66.4%	74.9%	64.6%	74.1%	60.4%	76.2%
Native American	57.5%		71.5%	54.9%	54.4%	61.5%	54.4%	55.0%	68.2%	62.5%	64.3%	87.0%	54.3%	70.4%	64.0%	57.1%
Pacific Islander	64.5%	58.8%	62.2%	45.2%	63.5%	54.2%	69.1%	65.2%	61.4%	68.6%	74.4%	74.4%	68.6%	82.7%	57.2%	78.1%
Two or More Races	68.0%	73.0%	69.1%	72.8%	72.6%	76.7%	72.5%	72.3%	72.7%	75.5%	72.4%	77.3%	70.3%	81.4%	67.6%	79.4%
White	76.2%	74.8%	75.7%	82.8%	76.7%	82.3%	78.0%	80.8%	79.7%	82.0%	79.1%	84.3%	78.4%	83.5%	75.0%	86.9%
Unknown	75.0%	82.2%	66.7%	65.0%	67.2%	74.4%	71.7%	65.0%	72.3%	83.3%	69.2%	83.6%	67.7%	74.4%	74.1%	78.5%
<b>Gender</b>																
Female	70.1%	76.0%	70.1%	73.9%	70.5%	75.8%	70.3%	72.0%	70.7%	74.3%	70.6%	77.4%	68.1%	76.9%	64.0%	78.6%
Male	68.0%	75.1%	68.2%	71.7%	68.5%	73.7%	68.5%	70.0%	68.9%	74.1%	69.4%	78.0%	68.3%	76.6%	64.4%	79.6%
Non-Binary			55.6%			73.9%			50.9%		58.3%	70.0%	70.2%	76.7%	58.8%	69.3%
Unknown	64.1%	60.2%	68.0%	69.7%	66.4%	81.8%	71.3%	79.8%	70.8%	79.3%	68.1%	71.8%	63.7%	81.6%	63.3%	81.7%
<b>First-Generation Status</b>																
Non-First Generation	70.2%	76.9%	70.3%	72.9%	70.9%	75.5%	72.7%	73.7%	73.8%	76.8%	73.9%	81.0%	71.8%	79.8%	67.6%	81.9%
First Generation	68.0%	72.1%	68.1%	72.9%	67.9%	74.3%	67.1%	69.0%	67.2%	72.4%	67.0%	75.0%	65.4%	74.4%	61.4%	76.2%
<b>Income Status</b>																
Non-Low Income							70.1%	75.5%	69.8%	75.4%	70.4%	78.5%	70.0%	77.3%	67.0%	79.8%
Low Income							73.0%	76.8%	75.1%	67.1%	69.8%	80.1%	63.9%	73.6%	60.9%	64.7%

\*"Latine" used as the gender-neutral alternative to "Latina" or "Latino."

Notes: Empty cells have  $n < 15$ . Overall course success is based on all courses taken by students in the cohort and calculated by dividing the number of courses completed successfully with a grade C or better by the total number of courses taken.

**Figure D2. Overall Transfer-Level Math Completion by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)**



Notes: The first vertical line marks the implementation of Assembly Bill (AB) 705 (2017) in fall 2019, which required all California community colleges to reform their approach to developmental education, specifically placing students in transfer-level math and English coursework and providing the necessary support to help ensure their success. Learn more at <https://www.cccco.edu/About-Us/Chancellors-Office/Divisions/Educational-Services-and-Support/Equitable-placement>. The second vertical line marks the launch of the DE4EC initiative in fall 2021.

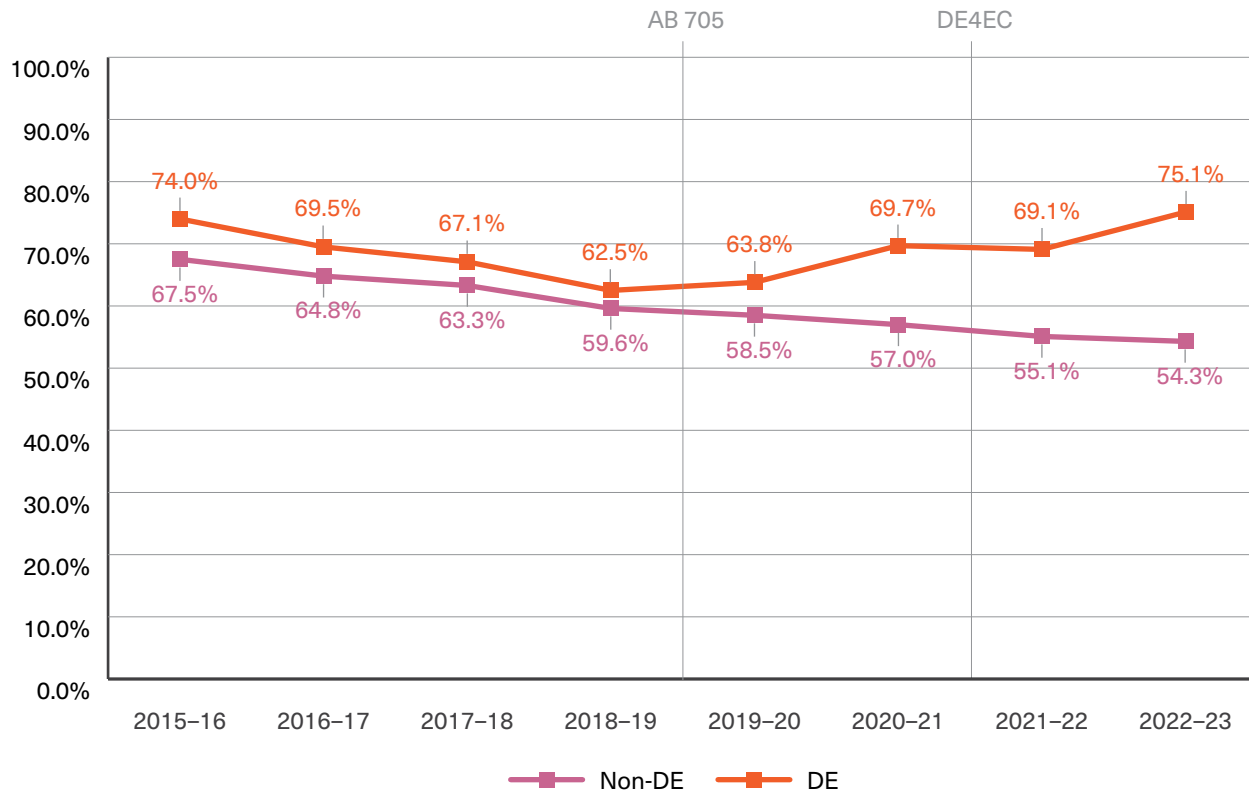
**Table D4. Overall Transfer-Level Math Completion by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)**

Student Group	2015–16		2016–17		2017–18		2018–19		2019–20		2020–21		2021–22		2022–23	
	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE
<b>Race/Ethnicity</b>																
Asian	67.9%	74.8%	70.5%	63.3%	73.2%	78.3%	74.7%	72.1%	76.2%	79.3%	77.5%	84.0%	71.2%	79.0%	73.3%	85.1%
Black	50.4%	70.3%	49.5%	54.1%	53.9%	57.9%	47.1%	53.7%	47.7%	55.5%	52.6%	76.3%	48.6%	63.5%	47.1%	70.8%
Hispanic/ Latine*	58.3%	69.0%	58.4%	59.4%	56.9%	58.8%	54.8%	54.6%	53.2%	59.4%	52.9%	64.4%	51.4%	61.8%	47.0%	64.2%
Native American			42.3%		60.0%		40.0%		39.3%		51.7%		26.7%		46.7%	
Pacific Islander	60.9%		44.1%		56.4%		61.5%		46.2%		66.7%		63.3%		35.3%	81.3%
Two or More Races	60.3%	65.5%	59.2%	46.0%	66.8%	70.9%	63.4%	66.2%	63.0%	67.9%	61.6%	61.8%	66.0%	82.8%	63.3%	75.7%
White	70.6%	64.8%	71.6%	75.8%	69.8%	79.0%	72.1%	78.5%	74.3%	73.7%	74.0%	81.0%	71.4%	78.2%	69.4%	84.3%
Unknown	67.5%	70.3%	59.2%	63.9%	54.7%	56.0%	58.8%	59.1%	64.9%	77.8%	58.9%	83.9%	58.4%	63.6%	67.4%	70.6%
<b>Gender</b>																
Female	62.4%	71.4%	62.4%	65.2%	63.2%	62.9%	61.6%	61.3%	59.7%	64.2%	59.9%	68.7%	56.6%	54.2%	54.2%	69.9%
Male	61.5%	68.4%	62.2%	60.3%	61.3%	66.8%	59.9%	59.4%	59.7%	65.7%	60.9%	72.2%	58.8%	54.7%	54.7%	73.5%
Non-Binary											69.6%		66.7%	59.7%	59.7%	52.9%
Unknown	58.9%		58.4%	50.0%	64.0%	81.5%	56.6%	66.7%	64.2%	83.3%	57.7%	70.0%	58.9%	53.3%	53.3%	82.6%
<b>First-Generation Status</b>																
Non-First Generation	62.5%	71.9%	63.8%	62.4%	63.9%	66.8%	64.2%	66.1%	65.3%	67.1%	64.8%	74.7%	62.9%	71.6%	60.7%	76.7%
First Generation	61.2%	64.2%	60.5%	62.5%	60.2%	62.6%	57.8%	55.2%	55.6%	63.5%	56.6%	66.6%	53.7%	64.6%	49.4%	66.2%
<b>Income Status</b>																
Non-Low Income							56.7%	64.6%	56.2%	66.0%	56.6%	71.9%	57.0%	66.8%	56.7%	70.7%
Low Income							66.6%	57.1%	71.8%	67.8%	71.4%	75.8%	60.8%	70.0%	59.9%	76.2%

\*"Latine" used as the gender-neutral alternative to "Latina" or "Latino."

Note: Empty cells have  $n < 15$ .

**Figure D3. Overall Transfer-Level English Completion by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023)**



Notes: The first vertical line marks the implementation of Assembly Bill (AB) 705 (2017) in fall 2019, which required all California community colleges to reform their approach to developmental education, specifically placing students in transfer-level math and English coursework and providing the necessary support to help ensure their success. Learn more at <https://www.cccco.edu/About-Us/Chancellors-Office/Divisions/Educational-Services-and-Support/equitable-placement>. The second vertical line marks the launch of the DE4EC initiative in fall 2021.

**Table D5. Overall Transfer-Level English Completion by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2022–2023)**

Student Group	2015–16		2016–17		2017–18		2018–19		2019–20		2020–21		2021–22		2022–23	
	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE
<b>Race/Ethnicity</b>																
Asian	66.8%	68.1%	67.6%	64.7%	69.3%	75.8%	72.3%	70.0%	75.5%	76.2%	77.9%	82.6%	72.3%	78.9%	74.9%	85.2%
Black	62.3%	62.9%	62.3%	66.3%	64.7%	63.6%	56.9%	46.2%	55.7%	52.6%	58.4%	75.3%	56.6%	66.3%	55.3%	75.3%
Hispanic/Latine*	66.8%	62.1%	66.1%	65.0%	65.3%	63.9%	64.3%	64.2%	62.9%	67.3%	63.9%	71.4%	64.4%	72.4%	62.4%	75.8%
Native American	52.6%		51.6%		68.4%		55.6%		56.4%		58.8%		57.7%		69.2%	
Pacific Islander	69.0%		62.7%	53.8%	63.0%		65.5%	71.4%	56.9%		68.8%		66.7%		50.0%	76.9%
Two or More Races	68.0%	62.0%	66.1%	64.9%	68.2%	71.2%	69.6%	69.6%	67.2%	66.4%	66.1%	68.5%	70.1%	83.2%	67.0%	77.4%
White	71.1%	60.7%	71.3%	71.6%	70.1%	74.3%	71.7%	73.5%	73.9%	74.0%	74.1%	80.7%	72.3%	78.9%	72.0%	83.5%
Unknown	68.8%	57.7%	64.7%	71.7%	66.7%	62.6%	64.7%	64.7%	67.8%	77.8%	67.7%	78.3%	61.5%	60.0%	73.3%	73.7%
<b>Gender</b>																
Female	71.0%	66.6%	69.9%	71.9%	70.4%	68.4%	69.6%	68.0%	68.0%	70.7%	68.7%	75.0%	67.4%	76.5%	66.3%	79.0%
Male	62.9%	59.5%	63.2%	60.0%	62.6%	64.4%	62.4%	61.9%	62.8%	66.2%	65.2%	72.6%	64.5%	70.8%	63.4%	76.4%
Non-Binary												74.1%		83.7%	71.4%	77.1%
Unknown	63.8%		64.9%	60.0%	67.3%	73.7%	69.6%	71.4%	69.2%	76.2%	65.3%	64.7%	68.6%	83.3%	67.3%	77.8%
<b>First-Generation Status</b>																
Non-First Generation	66.9%	64.4%	67.3%	66.0%	67.4%	68.1%	67.7%	66.9%	68.6%	69.3%	68.9%	76.6%	68.0%	75.5%	68.0%	80.2%
First Generation	67.6%	60.3%	66.2%	66.2%	65.7%	65.2%	65.0%	64.2%	63.6%	68.5%	65.7%	72.0%	64.8%	73.0%	62.7%	76.0%
<b>Income Status</b>																
Non-Low Income							63.1%	65.4%	65.0%	67.0%	67.0%	75.0%	68.7%	74.9%	69.7%	79.2%
Low Income							68.6%	65.1%	72.3%	68.3%	73.1%	82.2%	64.0%	76.9%	61.1%	64.3%

\*"Latine" used as the gender-neutral alternative to "Latina" or "Latino."

Note: Empty cells have  $n < 15$ .



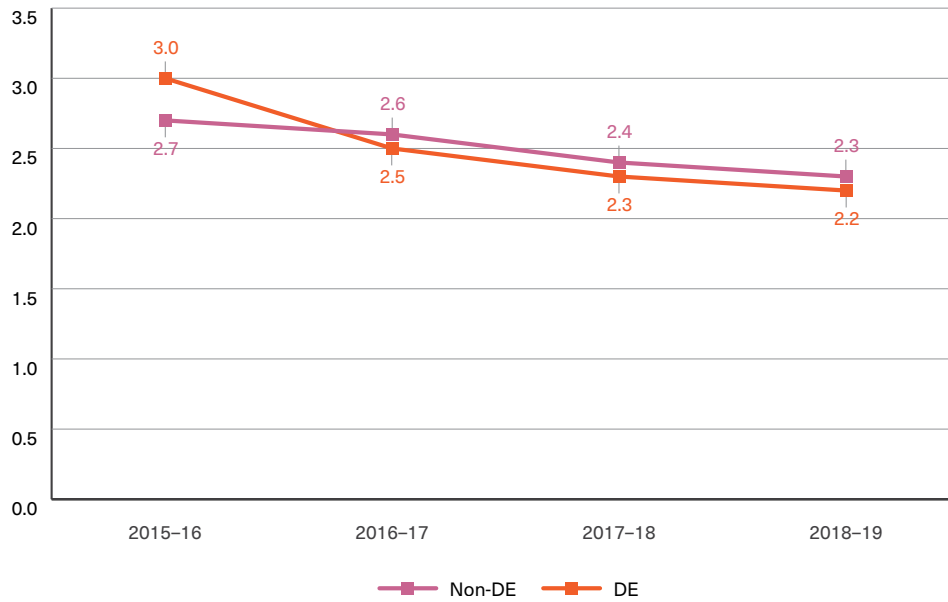
**Table D6. Proportion of Students Completing Transfer Requirements and Achieving “At-the-Gate” Status by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2022–2023 Combined)**

Student Group	Non-DE	DE	Difference
<b>Race/Ethnicity</b>			
Asian	56.5%	67.1%	10.6%
Black	40.3%	50.2%	9.9%
Hispanic/Latine*	38.5%	52.5%	14.0%
Native American	41.9%	49.8%	7.9%
Pacific Islander	35.3%	25.7%	-9.6%
Two or More Races	31.3%	43.3%	12.0%
White	45.5%	50.6%	5.1%
Unknown	47.9%	51.7%	3.8%
<b>Gender</b>			
Female	47.1%	53.0%	5.9%
Male	44.4%	52.3%	7.9%
Non-Binary	20.5%	37.4%	16.9%
Unknown	38.4%	56.8%	18.4%
<b>First-Generation Status</b>			
Non-First Generation	45.5%	53.3%	7.8%
First Generation	45.9%	52.2%	6.2%
<b>Income Status</b>			
Non-Low Income	56.0%	61.1%	5.1%
Low Income	39.0%	51.8%	12.8%
<b>Total</b>	<b>15.8%</b>	<b>26.2%</b>	<b>10.4%</b>

\*“Latine” used as the gender-neutral alternative to “Latina” or “Latino.”

Note: “At-the-Gate” status is based on The RP Group’s Through the Gate Transfer Initiative criteria, including completion of 60+ transferable units, a minimum 2.0 GPA, and completion of transfer-level math and English, or earning an Associate’s Degree for Transfer (ATD).

**Figure D4. Average Number of Years to Complete an Associate's Degree by Prior Dual Enrollment Participation (First Year in College Cohorts, 2015–2016 through 2018–2019)**



Notes: Time to degree is restricted to four years. Given these time limitations, cohorts after 2018–2019 academic year are not included in the analysis.

**Table D7. Average Number of Years to Complete an Associate's Degree by Prior Dual Enrollment Participation and Student Group (First Year in College Cohorts, 2015–2016 through 2018–2019)**

Student Group	2015–16		2016–17		2017–18		2018–19	
	Non-DE	DE	Non-DE	DE	Non-DE	DE	Non-DE	DE
<b>Race/Ethnicity</b>								
Asian	2.6	3.0	2.6	2.7	2.4	2.0	2.3	1.8
Black	2.2	3.0	2.3	2.4	2.1	1.6	2.1	1.7
Hispanic/Latine*	2.9	3.1	2.6	2.5	2.5	2.5	2.4	2.3
Native American	3.0		3.4		3.3		3.3	
Pacific Islander	3.2		2.9		2.2		1.5	
Two or More Races	2.2	3.0	2.4	2.1	2.3	2.4	2.1	2.1
White	2.4	3.2	2.4	2.3	2.2	2.2	2.1	1.8
Unknown	3.2	2.5	2.7	2.7	2.6	2.9	2.2	2.4
<b>Gender</b>								
Female	2.7	2.9	2.6	2.5	2.5	2.4	2.3	2.1
Male	2.7	3.1	2.5	2.5	2.3	2.3	2.3	2.3
Unknown	2.5		2.4	1.8	2.4	1.7	2.1	4.0
<b>First-Generation Status</b>								
Non-First Generation	2.6	3.0	2.6	2.5	2.4	2.4	2.2	2.1
First Generation	2.8	3.0	2.6	2.4	2.5	2.3	2.4	2.2

\*"Latine" used as the gender-neutral alternative to "Latina" or "Latino."

Notes: Empty cells have  $n < 15$ . Income status is not included due to the small number of students with income status information.