



# A Foot in the Door

## Growth in Participation and Equity in Dual Enrollment in California

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**DUAL ENROLLMENT ALLOWS HIGH SCHOOL STUDENTS** to take college courses and earn college credits that can provide a valuable head start toward a college degree. The practice has multiple benefits for students in both systems, improving college preparation and increasing efficiency toward completion of degrees and certificates.<sup>1</sup> Many states—including California—have capitalized on these benefits by increasing high school student access to community college courses,<sup>2</sup> though not all students have benefited equally.

This brief builds on previous Wheelhouse research by providing a closer examination of dual enrollment growth in California. We present data about which students are participating in different types of dual enrollment in the California Community Colleges (CCC)—the primary provider of dual enrollment statewide. Matching the most recently available K–12 and CCC data, we also document how participation differs across high schools and course subjects pursued.

There is cause in our findings for optimism, in that one type of dual enrollment—courses taught exclusively to high school students—is growing and appears to be increasing equity in participation. However, dual enrollment opportunities remain scarce or non-existent for many students and largely depend on the high schools they attend.

### California’s Recent Path to Dual Enrollment

In California, state policy was at times considered a barrier to dual enrollment. Legislation in 2003 restricted student eligibility and participation, and applied rules on the conditions under which high schools and colleges could claim funding for dually enrolled students. An audit of the community college system that year left education institutions cautious about partnering to offer dual enrollment.<sup>3</sup>

In 2016, the California State Legislature enacted Assembly Bill 288, the *College and Career Pathways Partnerships Act*. The law authorized community college districts to enter into a College and Career Access Pathways (CCAP) partnership with a school district for the purpose of creating or expanding dual enrollment, with an emphasis on “students who may not already be college bound or who are underrepresented in higher education, with the goal of developing seamless pathways from high school to community college for career technical education or preparation for transfer, improving high school graduation rates, or helping high school pupils achieve college and career readiness.”<sup>4</sup>

#### TOPLINES

- > High school students represent an increasing share of community college enrollment; they are present in nearly 14% of all CCC courses.
- > The number of community college courses that enroll only high school students has grown substantially—representing nearly 5% of all courses with high school students participating—in the past several years.
- > Dual enrollment equity gaps among racial/ethnic subgroups are smaller in courses that enroll only high school students, and have narrowed over time, when compared to gaps in overall dual enrollment participation.
- > Despite increases in dual enrollment in recent years, student opportunity to take community college courses often depends on the high school they attend.



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Previously, although many high school students enrolled in community colleges independently, participation was often limited to students with resources and knowledge about the benefits of getting a head start on college. AB 288 provided a framework through which more structured opportunities for dual enrollment could be embedded in high school students' regular coursetaking. In particular, it created a path to offer community college courses exclusively to high school students, often delivered on high school campuses. This model facilitated access to an important means of college preparation and acceleration for more students, but particularly for those who may not have had the resources to seek these opportunities independently.

## Prior Research on Participation in California

The California Community Colleges Chancellor's Office (CCCCO) recently reported that enrollment through CCAP agreements is increasing as a share of all dual enrollment. In 2016–17, 35 colleges had such agreements, but by 2019–20 that number increased to 52. A more recent PPIC report finds that 83 colleges offered dual enrollment as part of an established CCAP.<sup>5</sup> The CCCCCO estimates that in 2019–20, 37.5% of high school students concurrently enrolled in community college were participating via CCAP partnerships. But many questions remain regarding the implementation of CCAP agreements across the state and whether AB 288 is meeting its intended goal of increasing educational opportunities for historically underserved groups. The CCCCCO report concludes that, thus far, Black and Latinx students comprise a higher share of CCAP versus non-CCAP dual enrollment, but Black students in particular are still underrepresented.

## The Case for Dual Enrollment

Numerous studies have shown benefits for participants of dual enrollment relative to nonparticipants. These studies found that dual enrollees have higher rates of high school graduation, college enrollment, credit accumulation, persistence, and completion.<sup>6</sup> The overall body of literature includes different methodological approaches and student samples. Five of these studies meet the most rigorous research design standards of the Institute for Education Sciences' What Works Clearinghouse,<sup>7</sup> providing greater assurance that the positive outcomes participants experience can be attributed to dual enrollment and not to other factors.

Given the acknowledged benefits of dual enrollment and its potential as a strategy to increase college access and attainment, broad availability and equitable access are essential. A recent Community College Research Center analysis of access to college credit opportunities across U.S. school districts, including those in California, found considerable inequity in access to dual enrollment in districts with larger proportions of Black and Latinx students.<sup>8</sup>

In addition to access, it is important to ensure that all student groups are able to gain the full advantages of their dual enrollment experience. While one Texas study found positive benefits of dual enrollment on college degree attainment for all racial groups and students from low-income families, an Illinois study found smaller positive effects for students of color and low-income students. In the Illinois case, dual enrollment was not succeeding as a strategy to reduce equity gaps in college attainment.<sup>9</sup> A study of career-focused dual enrollment programs in California underscored the importance of providing both academic and nonacademic support to the underrepresented and low-income students the programs targeted.<sup>10</sup>

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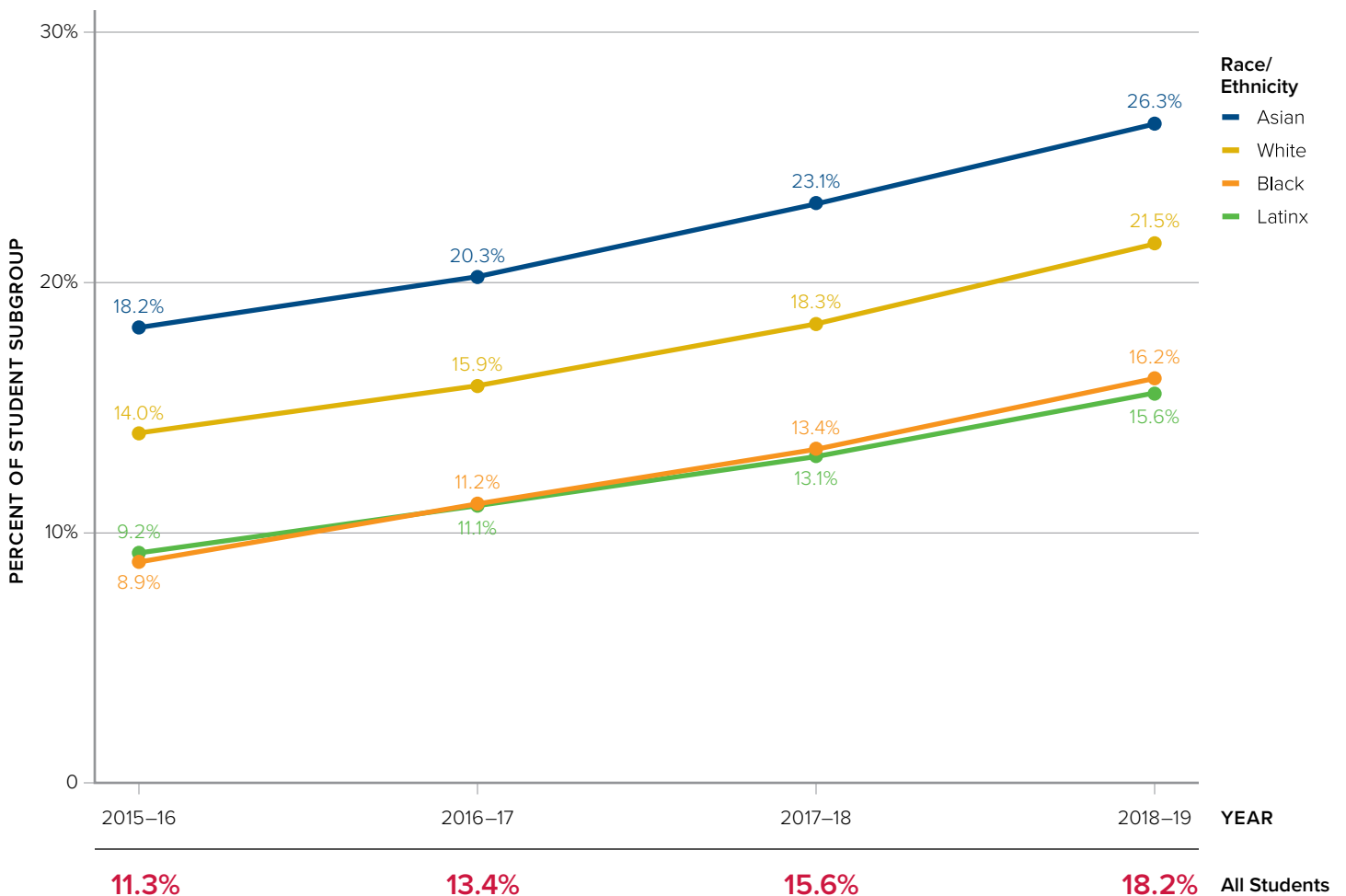
In a prior report, *A Leg Up on College*, we presented data showing that dual enrollment participation among California high school students was higher than commonly understood, and slightly higher than the national average. The overall rate, approximately 13% for the high school graduates of 2016–17, included enrollment in any community college course prior to high school graduation, whether through formal dual enrollment programs (such as CCAP or other partnership agreement) or standalone courses taken independently.

A subsequent analysis, *A Rising Tide*, provided updated data showing substantial recent growth in dual enrollment participation across student subgroups. The rate of community college participation among high school graduates increased dramatically from 11.3% for the 2015–16 cohort (pre-AB 288) to 18.2% for the 2018–19 cohort. This growth provides some evidence suggesting that AB 288 may be contributing to greater opportunity and participation.<sup>11</sup>

However, while the growth is evident across all student groups, disparities in participation levels across different racial/ethnic and other subgroups persist. As shown in Figure 1, Asian and White students are more likely to take part in dual enrollment than Black or Latinx students.

While growth is evident across all student groups, disparities in participation levels across different racial/ethnic and other subgroups persist.

Figure 1. Dual Enrollment Participation by Student Race/Ethnicity and Over Time



Notes: Figure from *A Rising Tide* (2020). Statistics calculated by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCO. Years limited to those for which CCI data was available.

## DATA, METHODS AND LIMITATIONS

This brief draws on data from two sources:

- First, we used data from the CCCCCO, which comprise the population of community college students, including high school students who are enrolled as “special admit” students. These data include information on course enrollments and fields of study, as well as credits attempted and earned through 2019–20.
- Second, we employed statewide student-level data from the California Department of Education’s (CDE) College/Career Indicator (CCI) for the 2015–16 through the 2018–19 public high school graduating cohorts, focusing primarily on the most recent cohort. We limited our sample to students in the four-year cohort who entered a California public high school as 9th graders and were expected to graduate in four years.<sup>12</sup> The CCI data include information on high school graduation and student demographic characteristics.

This analysis is made possible by linking administrative data from these two education sectors, a rare opportunity given the absence of a statewide longitudinal data system.<sup>13</sup> Specifically, we merged community college and K–12 data to examine high school students’ college course taking patterns statewide. We linked these four high school cohorts to community college data that span the duration of students’ four normative high school years. To identify different types of dual enrollment

participation, we leveraged detailed student-level and course-level information to isolate the courses that had only high school students enrolled; we refer to these as HS-Only courses. By contrast, when courses contained a mix of special admits and regular community college students, we categorized them as HS-CC Mixed.

Enrollment rates reported here may undercount the full population of dual enrollment students for several reasons. First, we limited the sample of high school students to those included in the four-year graduating cohort, excluding some students such as those who take longer to graduate. Second, our match between the CCI and community college data used unique and non-missing first and last names and date of birth in each dataset, resulting in the removal of some high school students and community college special admits with missing data points. In addition, the matched sample may differ from the full special admit population at the CCC because the full special admit population also includes students enrolled in private high schools or participating in homeschooling. We may also have missed some students if they were not accurately classified as special admits in the CCCCCO data. Finally, it is important to note that while the bulk of dual enrollment in California happens through community colleges, some high school students may also enroll in courses at four-year institutions, such as at the California State University, and this enrollment is not captured in our analysis.

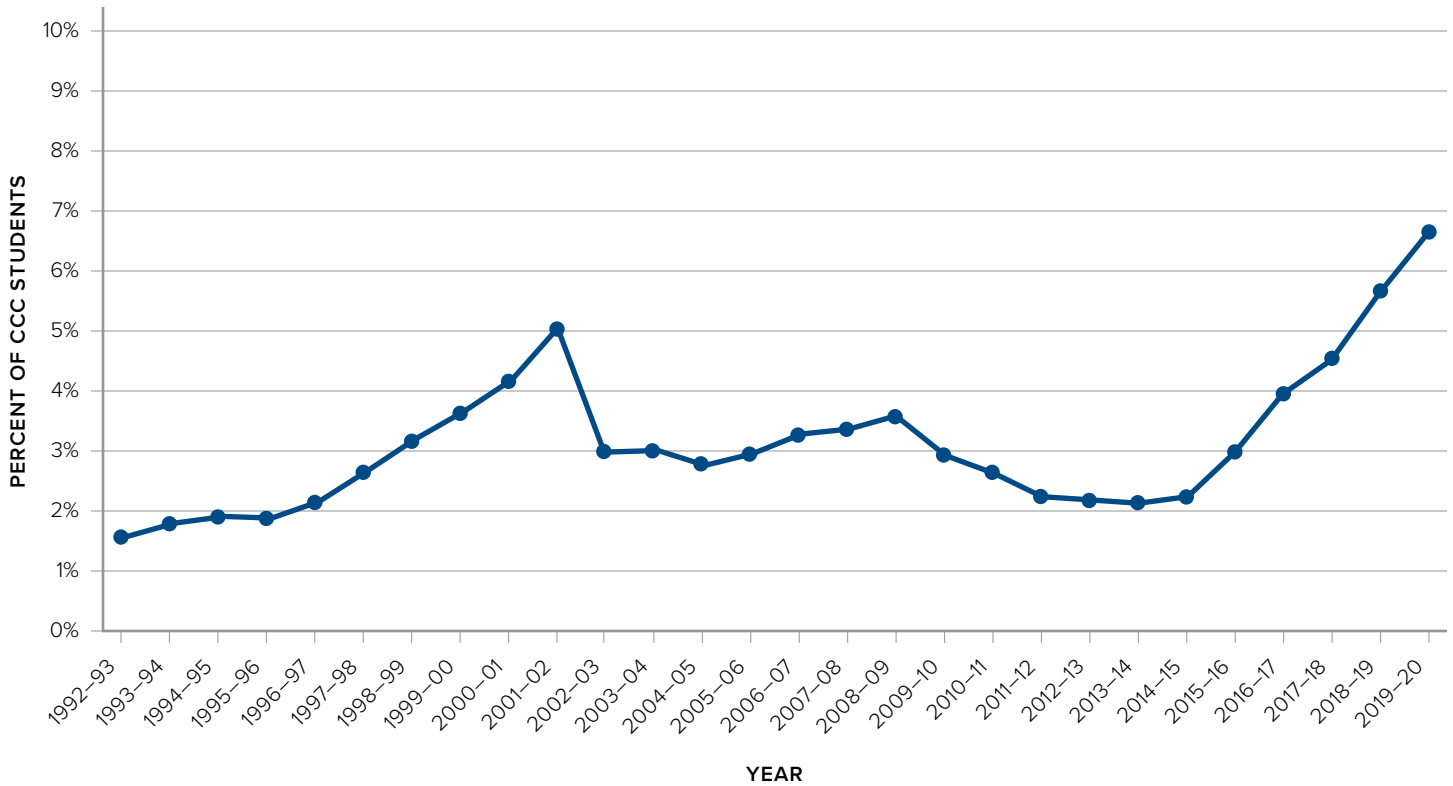
## California Community Colleges Serve an Increasing Number of High School Students

Our match of K–12 and CCC data allowed us to distinguish between two different types of dual enrollment participation: students enrolled in community college courses that only enroll high school students, and students enrolled in community college courses that include a mix of high school students and regular community college students. We examined changes in student participation by these enrollment types among different student subgroups to show which type of dual enrollment participation is growing, in which high schools and colleges, and for which students.

Since 2014, the percentage of special admit students in CCC has steadily and rapidly increased to almost 7% of total CCC enrollment in the 2019–20 academic year (Figure 2). These students enrolled in many community college courses. In 2019–20, 13.9% of community college courses had at least one high school student enrolled. Considering the distribution of special admits across community college courses (Figure 3), we note that approximately 2,600 courses (or 4.8% of all courses with high school students enrolled) have *only* high school students enrolled in them. It is these courses that we term “HS-Only” dual enrollment courses—those exclusively serving high school students.<sup>14</sup>

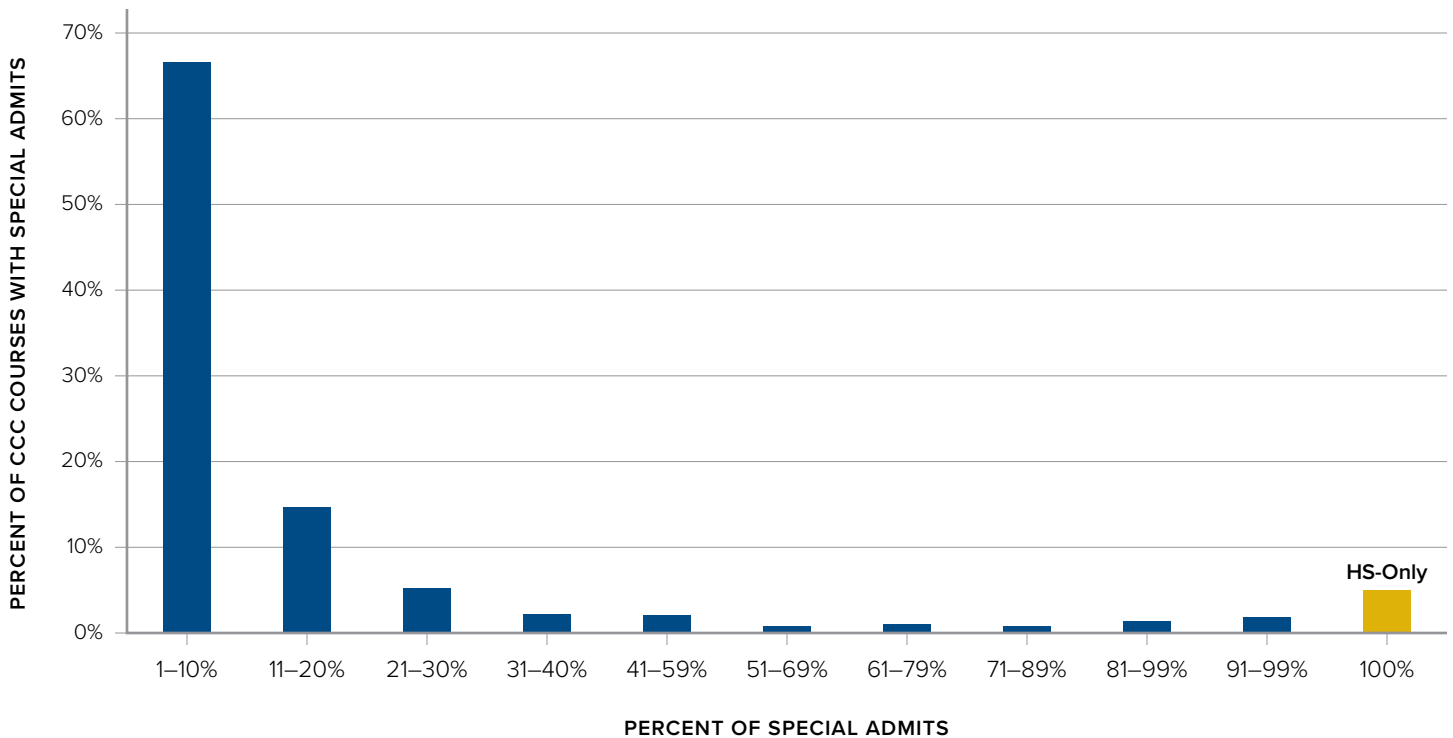
In 2019–20, 13.9% of community college courses had at least one high school student enrolled.

Figure 2. Percent of CCC Students Who Are High School Students



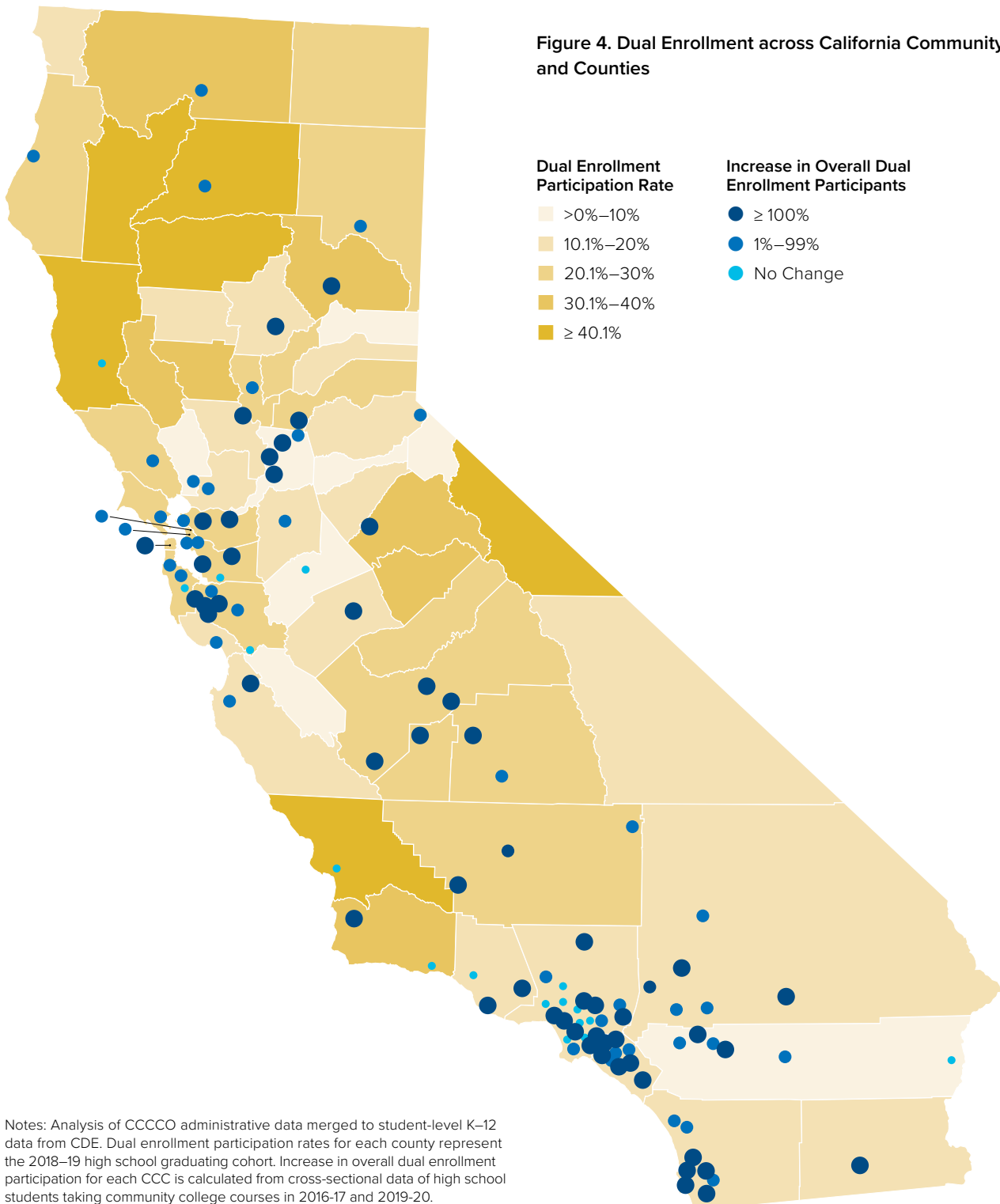
Notes: Analysis of data from CCCCO Datamart. High school students defined as special admits in the CCCCO data.

Figure 3. Distribution of CCC Courses with Any High School Students



Notes: Cross-sectional analysis of CCCCO administrative data based on special admits in the 2019-20 academic year. Graph includes only the 13.9% of CCC courses that have any special admits enrolled; 86.1% of CCC courses have no special admit students.

With this growth, the dual enrollment population is shifting, and in some colleges and regions quite rapidly. Figure 4 shows a map of the state’s community colleges highlighting the colleges with the largest changes in dual enrollment in recent years. The colleges represented by the largest markers more than doubled their dual enrollment population since 2016–17; colleges with the smallest markers experienced no change in dual enrollment participation in recent years. The shading on the map illustrates dual enrollment participation for the 2018–19 graduate cohort across California’s 58 counties. While some counties have dual enrollment participation rates over 50% (e.g., Mendocino, Shasta, San Luis Obispo, Trinity), others show less than 10% of high school graduates participating.

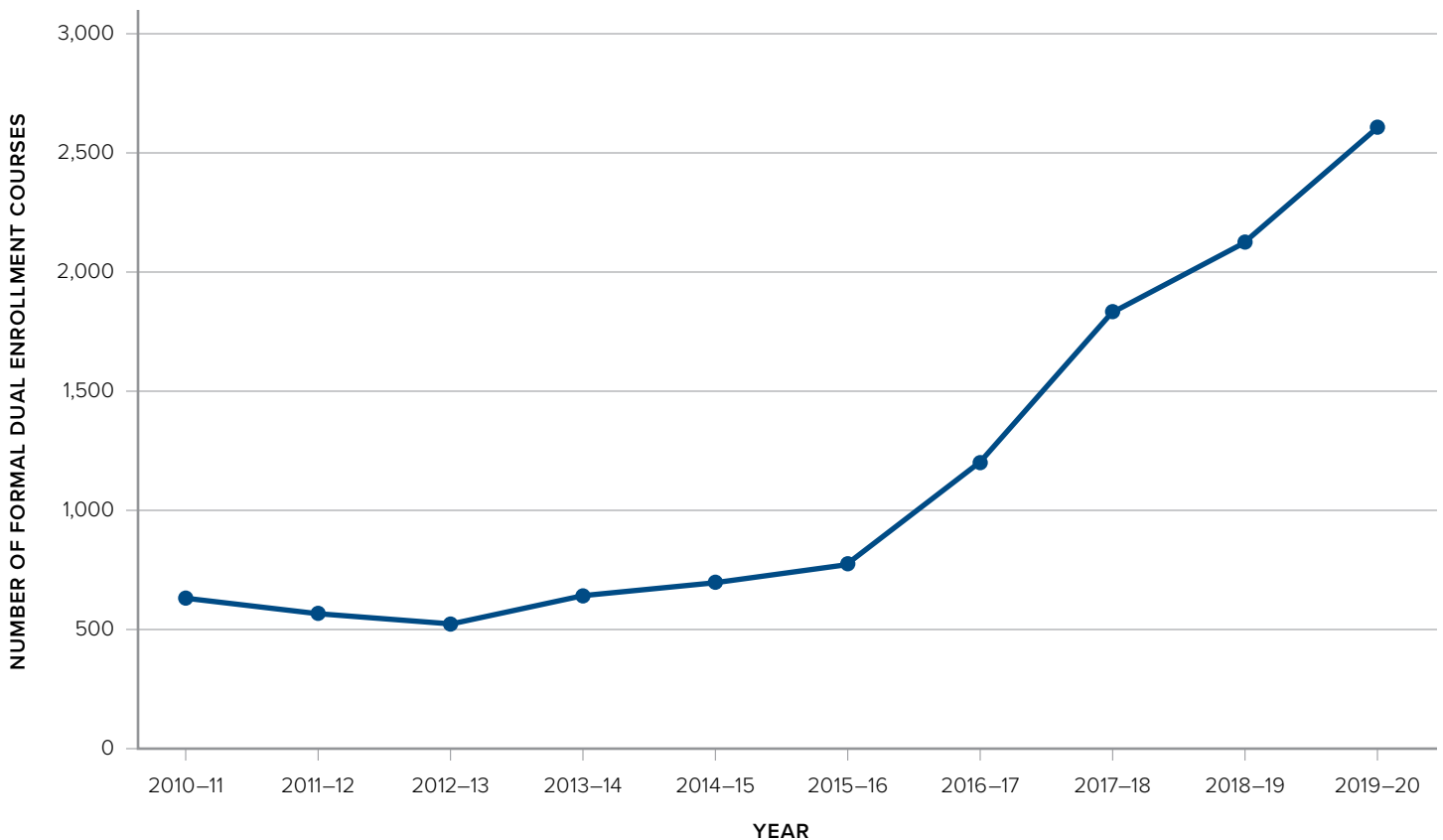


Notes: Analysis of CCCCO administrative data merged to student-level K–12 data from CDE. Dual enrollment participation rates for each county represent the 2018–19 high school graduating cohort. Increase in overall dual enrollment participation for each CCC is calculated from cross-sectional data of high school students taking community college courses in 2016–17 and 2019–20.

## A Growing Number of CCC Courses Enroll Only High School Students

Although a small share of all community college courses exclusively enroll high school students, these HS-Only dual enrollment courses have seen substantial growth over time. In 2010, there were 624 HS-Only dual enrollment courses across the CCCs; 10 years later, that number had more than quadrupled to 2,601 courses (Figure 5).

Figure 5. Growth in Number of CCC HS-Only Courses Over Time



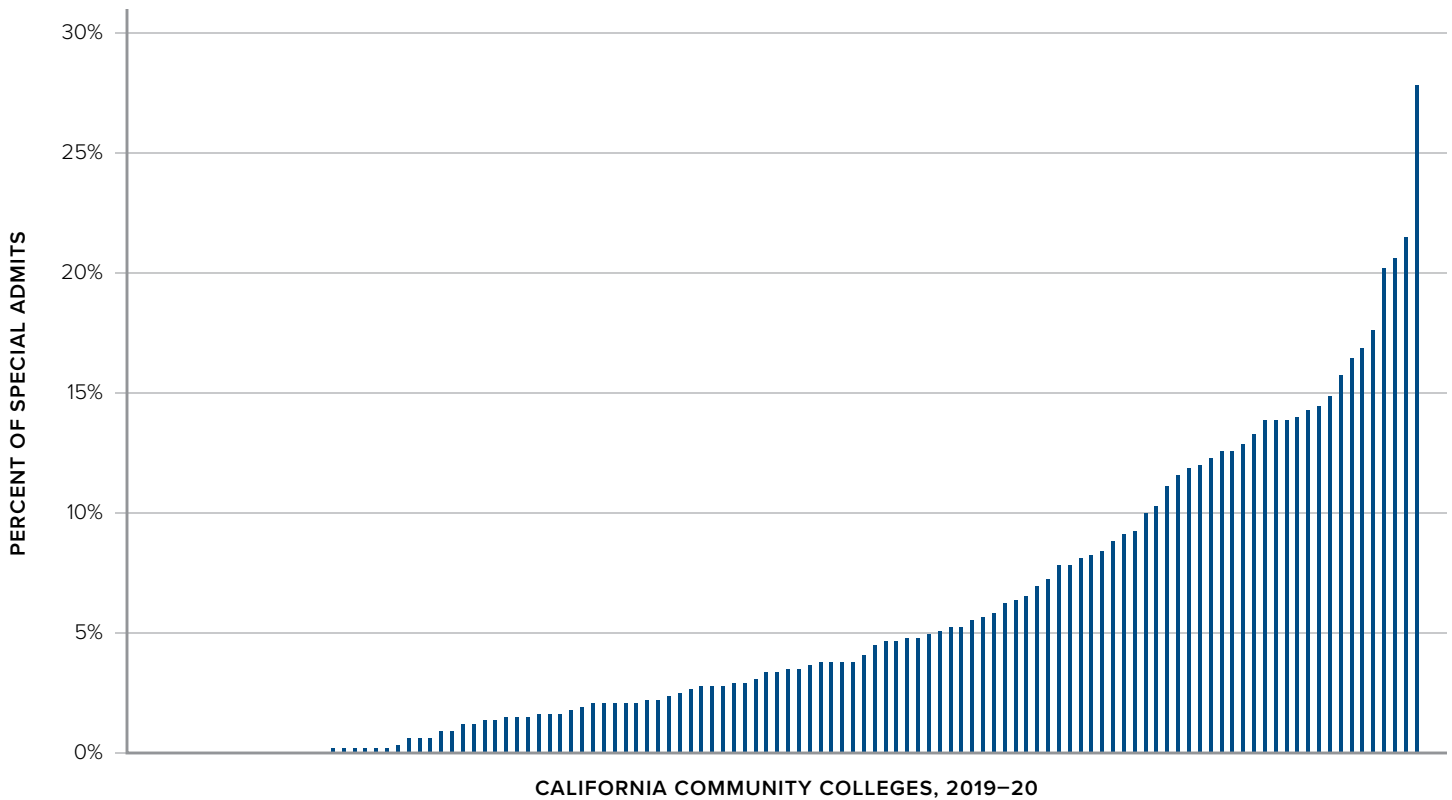
Note: Cross-sectional analysis of CCCCO administrative data based on special admits in respective years.

Participation in HS-Only dual enrollment is unevenly distributed across California's community colleges.<sup>15</sup> There is considerable variation among the colleges in the share of the dual enrollment population in these HS-Only courses versus more typical HS-CC Mixed courses. Figure 6 displays the distribution of HS-Only community college enrollment as a share of overall dual enrollment across the state's colleges. There are four colleges where HS-Only represents more than one-fifth of the total special admit enrollment. In contrast, there are 21 colleges with no HS-Only dual enrollment.

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Figure 6. Percent of Special Admits Enrolled in HS-Only Dual Enrollment Courses, by College



Notes: Cross-sectional analysis of CCCCO administrative data based on special admits in the 2019–20 academic year. Each bar represents a community college in California. Twenty-one colleges have no students enrolled in HS-Only courses.

## High School Students Participate at Increasing Rates

High school students enroll in different types of dual enrollment. Figure 7 shows the combination of student enrollment types—students who enroll in HS-Only courses, students who enroll in HS-CC Mixed courses (meaning their dual enrollment takes place in classes that include community college students), and those who enroll in a combination of the two. We present these by raw numbers (Figure 7a) and by percent of dual enrollment participants in the cohort (Figure 7b). Several trends are worth noting. First, the number of students participating in dual enrollment is growing with each cohort, and significant growth is coming from participation in HS-Only courses (Figure 7a). The large majority (87.6%) of students from the high school class of 2015–16 who took community college courses enrolled in courses that included a mix of high school students and regular community college students (Figure 7b). Yet, this type of enrollment is a decreasing share of dual enrollment overall. For the 2019-20 cohort, less than 75% of dual enrollment participants enrolled in this type of course. Increased proportions of students took a combination of types of dual enrollment or participated solely in HS-Only community college courses.

The number of students participating in dual enrollment is growing with each cohort, and significant growth is coming from participation in HS-Only courses.



Figure 7a. Number of Students by Dual Enrollment Type and Graduation Cohort

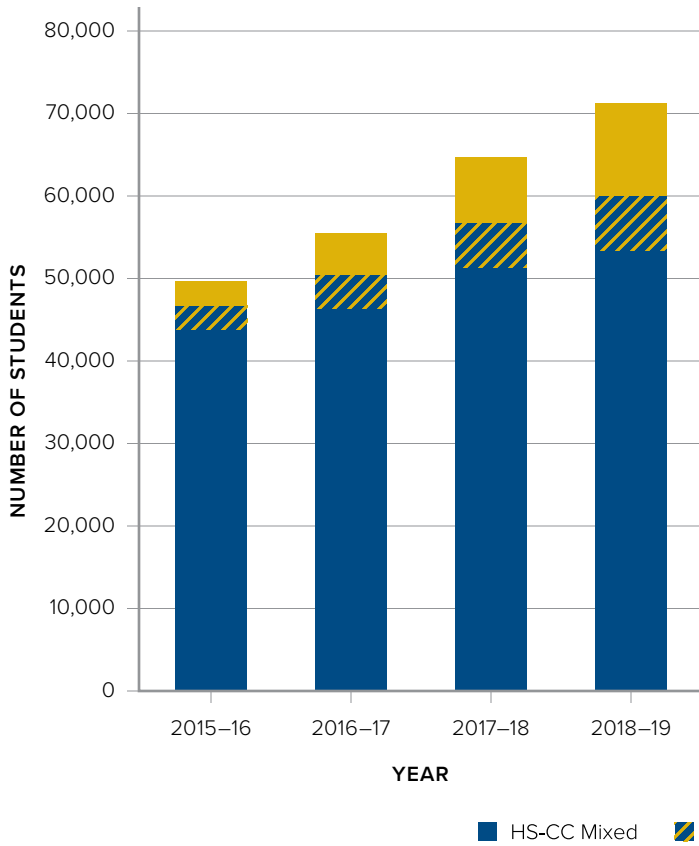
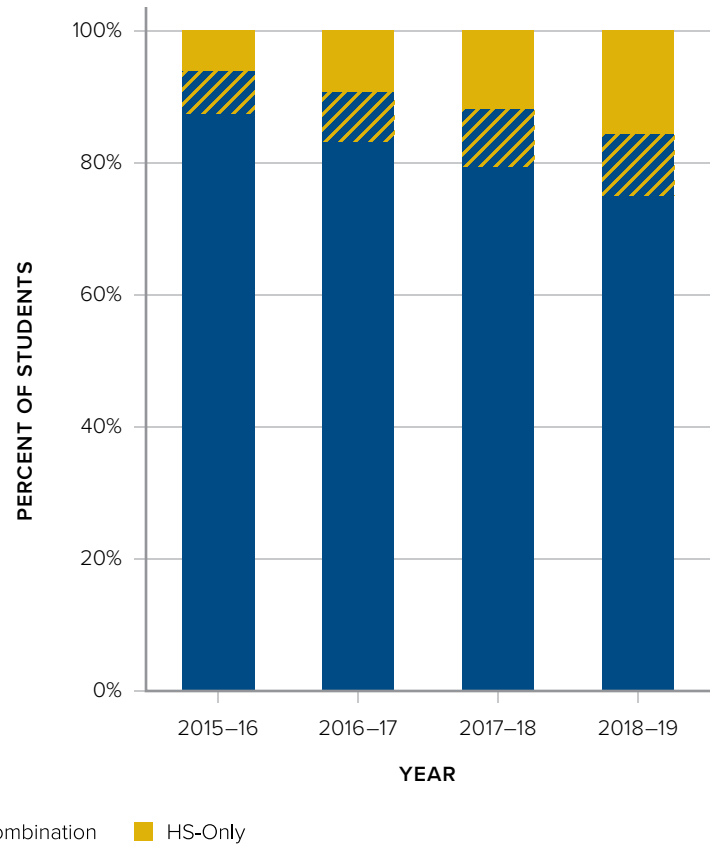


Figure 7b. Percent of Students by Dual Enrollment Type and Graduation Cohort



Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCO. Each bar represents a public 4-year high school graduating cohort and their course-taking during the four normative years of high school. Cohorts limited to those for which CCI data was available.

Importantly, dual enrollment patterns vary substantially by racial/ethnic subgroups (Figure 8). Far more Latinx students participate in dual enrollment than students in any other racial/ethnic subgroup, partly due to the fact that they make up the majority (52%) of the 2018-19 cohort. A larger share of Latinx dual enrollees (over 30%) participate in HS-Only courses or a combination of HS-Only and HS-CC Mixed courses, while the great majority of Asian (81%) and White (78%) dual enrollment participants enroll only in HS-CC Mixed courses. In fact, Latinx students have the highest participation rate in HS-Only courses at 18.6%. The rate of participation in HS-Only or a combination of HS-Only and HS-CC Mixed courses among Black students is higher than Asian or White students.

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Figure 8a. Number of Racial/Ethnic Subgroup by Dual Enrollment Type, 2018–19 Cohort

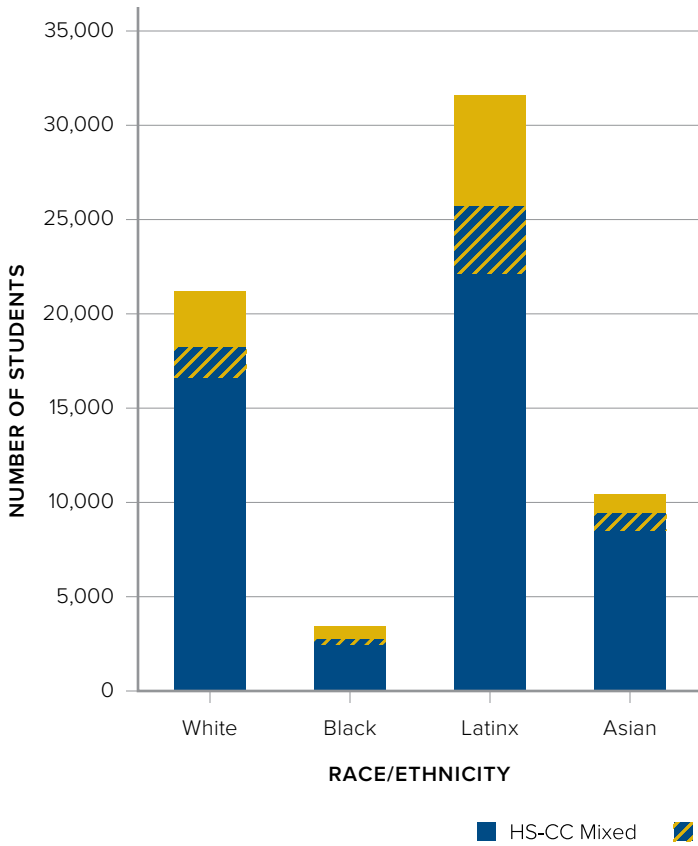
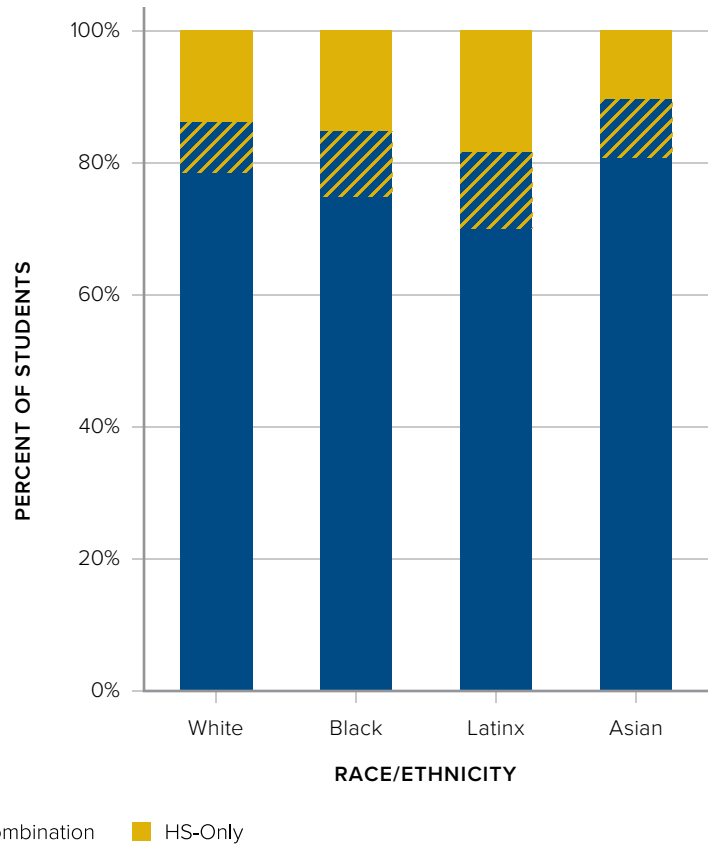


Figure 8b. Percent of Racial/Ethnic Subgroup by Dual Enrollment Type, 2018–19 Cohort



Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCO. Each bar represents a student subgroup from the 2018–19 public 4-year high school graduating cohort (the most recently available) and their course-taking during the four normative years of high school. Statistics calculated by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCO.

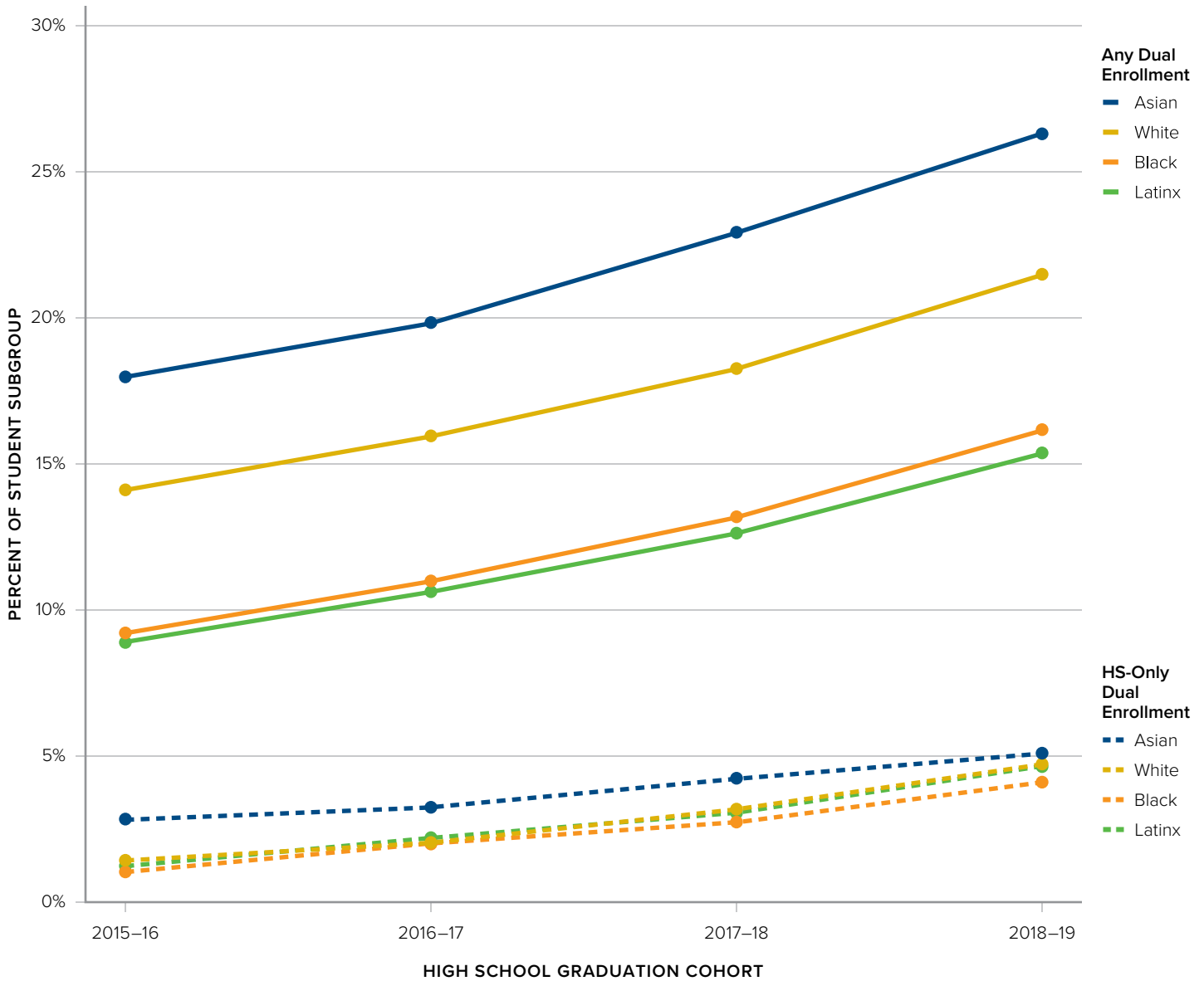
Figure 9 shows that participation in any dual enrollment has increased across all racial and ethnic groups, with roughly parallel patterns of growth and thus participation gaps for subgroups. We also note increases in HS-Only enrollment for all racial and ethnic groups. Unlike the patterns observed in overall dual enrollment and reported in *A Rising Tide*, however, the gaps in HS-Only dual enrollment participation by racial and ethnic subgroups are smaller and closing over time. Only 1.5% of the 2015–16 graduating cohort participated in HS-Only dual enrollment, but this rate increased to 4.5% for the 2018-19 cohort. About 3% of Asian 2015-16 graduates participated in HS-Only courses, compared to 1% of Black, Latinx and White students. By 2018–19, Asian, Latinx, and White students were participating at nearly equal rates of about 5%. Though Black students also experienced a growth in participation over the same time period, there are still some disparities—albeit smaller—between Black students and other racial subgroups.

Community college courses that are designed for high school dual enrollment are clearly on the rise. And, greater equity in this type of enrollment across student subgroups offers promise that policies such as AB 288 may improve access to important college readiness opportunities for historically marginalized high school students.

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Figure 9. Participation Rates in Any Dual Enrollment and HS-Only Dual Enrollment, by Racial/Ethnic Subgroup



Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCC. Each year on the horizontal axis represents a public 4-year high school graduating cohort and their dual enrollment participation during the four normative years of high school. Cohorts limited to those for which CCI data was available.

## Course Subjects Vary Greatly

Dual enrollment participants enroll in a wide variety of community college courses. Table 1 provides a comprehensive picture of the courses in which the 2018-19 cohort enrolled over their four years of high school. About one-third (33%) of all dual enrollment participants took a Career Technical Education (CTE) course and 11% took courses categorized as Basic Skills by the community college. Rates of enrollment in CTE were slightly higher (nearly 40%) among students who only enroll in HS-Only courses, and slightly lower in Basic Skills (8%). Courses in the Social Sciences and Humanities have the highest rates of overall participation, followed by courses in Fine & Applied Arts, Mathematics, Interdisciplinary Studies and Education. These patterns of enrollment by fields of study are similar among the students who only participated in HS-Only dual enrollment courses. The dual enrollment type and subject area reveal some differences in course taking patterns by student race/ethnicity (see Appendix).

Table 1. Dual Enrollment Participation Across Fields of Study Types, 2018–19 Cohort

	Dual Enrollment Type			
	Any DE	HS-Only	Combination	HS-CC Mixed
<b>Number of Students</b>	<b>71,610</b>	<b>11,111</b>	<b>6,959</b>	<b>53,540</b>
<b>Agriculture &amp; Natural Resources</b>	2.2%	3.1%	4.7%	1.7%
<b>Architecture</b>	0.1%	0.0%	0.1%	0.2%
<b>Biological Sciences</b>	4.3%	1.2%	8.0%	4.4%
<b>Business &amp; Management</b>	7.8%	8.5%	14.7%	6.8%
<b>Commercial Services</b>	0.1%	0.0%	0.2%	0.1%
<b>Education</b>	15.4%	8.5%	28.7%	15.1%
<b>Engineering &amp; Industrial Arts</b>	4.4%	7.0%	8.5%	3.3%
<b>Environmental Sciences</b>	0.5%	0.3%	1.2%	0.5%
<b>Family &amp; Consumer Sciences</b>	6.6%	5.9%	11.4%	6.2%
<b>Fine &amp; Applied Arts</b>	18.1%	12.3%	34.5%	17.1%
<b>Foreign Language</b>	9.9%	5.9%	22.7%	9.0%
<b>Health</b>	4.7%	6.8%	7.7%	3.8%
<b>Humanities</b>	22.1%	19.3%	45.7%	19.6%
<b>Information Technology</b>	5.8%	4.1%	12.3%	5.3%
<b>Interdisciplinary</b>	16.9%	20.4%	25.1%	15.1%
<b>Law</b>	0.1%	0.2%	0.2%	0.1%
<b>Library Science</b>	0.6%	0.1%	0.9%	0.6%
<b>Mathematics</b>	15.0%	6.8%	25.9%	15.3%
<b>Media &amp; Communications</b>	5.2%	4.2%	8.4%	5.0%
<b>Military Studies</b>	0.0%	0.0%	0.0%	0.0%
<b>Physical Sciences</b>	5.7%	1.7%	12.8%	5.7%
<b>Psychology</b>	12.4%	6.7%	24.2%	12.1%
<b>Public &amp; Protective Services</b>	6.0%	6.2%	9.1%	5.6%
<b>Social Sciences</b>	24.3%	19.6%	47.5%	22.3%
<b>Took Any CTE</b>	33.0%	39.8%	51.4%	29.1%
<b>Took any Basic Skills</b>	10.6%	7.8%	27.3%	9.0%

Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCC. Each cell represents the percent of students from the subgroup of dual enrollment participants named at the top of the column (and from the 2018–19 public 4-year high school graduating cohort) who took a course in that particular field of study during the four normative years of high school. HS-Only refers to dual enrollment participants that took community college courses in which only high school students were enrolled. HS-CC Mixed refers to dual enrollment participants that took community college courses that included high school students and traditional community college students. Combination refers to dual enrollment participants that took a combination of HS-Only and HS-CC Mixed courses. Percentages in each column total more than 100% as students often take more than one course. Shaded rows indicate the most popular courses in dual enrollment overall.

## Dual Enrollment Students Accumulate College Credits

Enrollment in CCC courses results in meaningful college credit accumulation for high school graduates (Table 2). On average, participating students earn 7.6 units by the time they graduate high school, equivalent to approximately two and a half courses or slightly more than half of a full-time semester of college. Importantly, most of these units (6.8, on average) are transferable to a four-year university. Students who take HS-CC Mixed courses accumulate more units on average than students who exclusively take HS-Only dual enrollment courses. This suggests room for growth in partnerships between high schools and community colleges in their course offerings.<sup>16</sup>

**Table 2. Units Attempted and Earned by Dual Enrollment Participants, 2018–19 Cohort**

	Dual Enrollment Type			
	Any DE	HS-Only	Combination	HS-CC Mixed
<b>Number of Students</b>	71,610	11,111	6,959	53,540
<b>Average Units Attempted</b>	8.8	6.3	19.9	7.9
<b>Average Units Earned</b>	7.6	5.5	17.8	6.7
<b>Average Transfer Units Earned</b>	6.8	4.7	16.1	6.1
<b>Average CTE Units Earned</b>	1.6	1.6	3.4	1.3

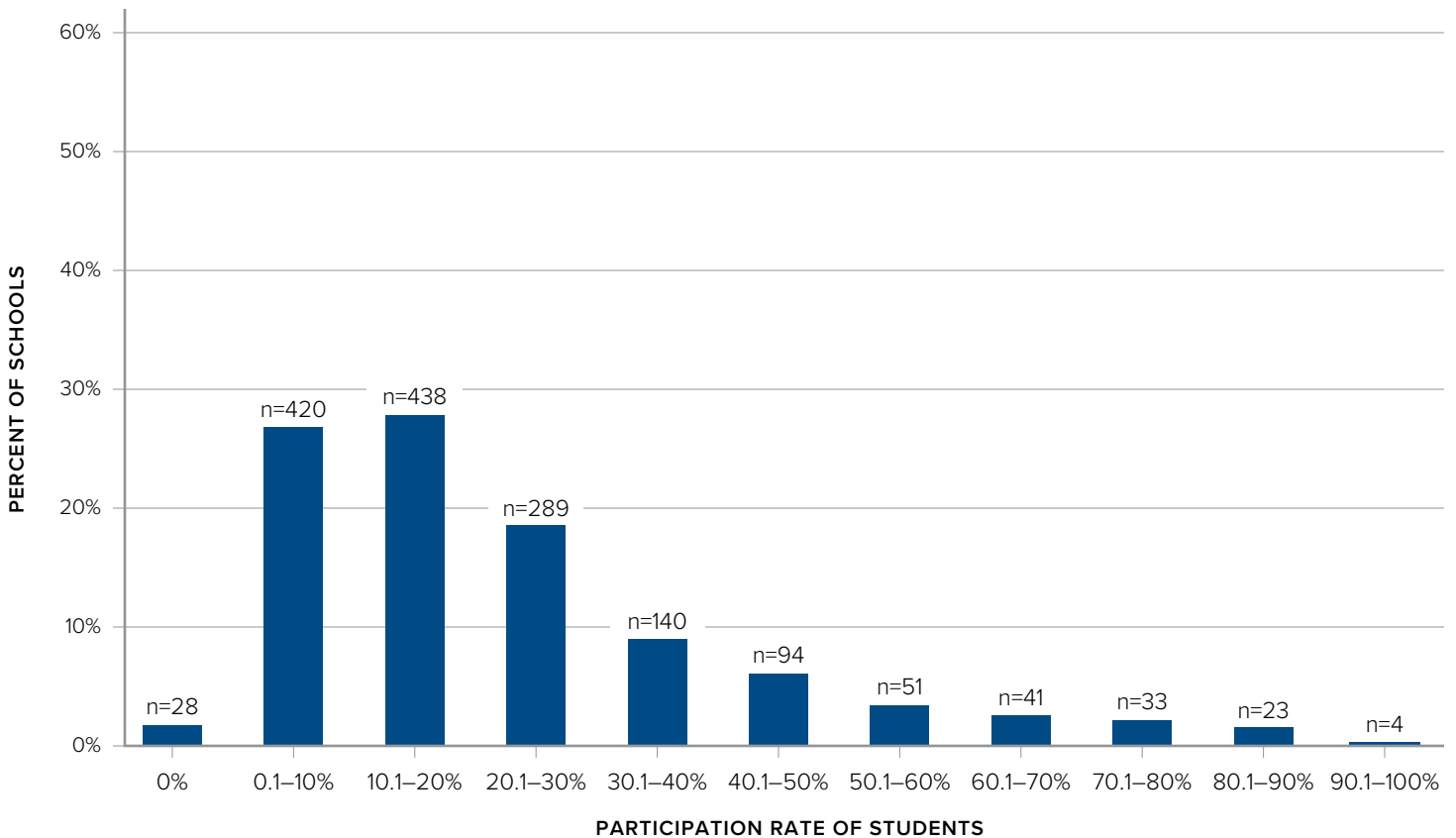
Notes: Cohort-level analysis conducted by merging student-level College/Career Indicator (CCI) data from the CDE and special admit data from the CCCCCO. Each cell represents the percent of students from the subgroup of dual enrollment participants named at the top of the column (and from the 2018-19 public 4-year high school graduating cohort) and the number of units attempted or earned during the four normative years of high school. HS-Only refers to dual enrollment participants that took community college courses in which only special admits were enrolled. HS-CC Mixed refers to dual enrollment participants that took community college courses that included high school students and traditional community college students. Combination refers to dual enrollment participants that took a combination of HS-Only and HS-CC Mixed courses.

## Participation is Uneven Across CA High Schools

Although dual enrollment rates have risen in recent years, our analysis shows that the opportunity to participate is not equally distributed. Students’ opportunities to take community college courses are often determined by the high schools they attend. Nearly all California public high schools (98%) have at least one student participating in dual enrollment, but participation rates vary greatly by school, from less than one percent to 95% of students.<sup>17</sup> Figure 10 shows the distribution of California high schools by their dual enrollment participation rates. Nearly three-quarters of all schools in California have dual enrollment participation rates below 30%, including one-quarter of schools with fewer than 10% of the graduating cohort participating. Very few schools have high participation; only 152 schools statewide have more than half of their students participating, and only four schools have nearly all students (90% or more) taking community college courses in high school.

Students’ opportunities to take community college courses are often determined by the high schools they attend.

Figure 10. Distribution of Schools by Overall Dual Enrollment Participation Rates, 2018–19 Cohort



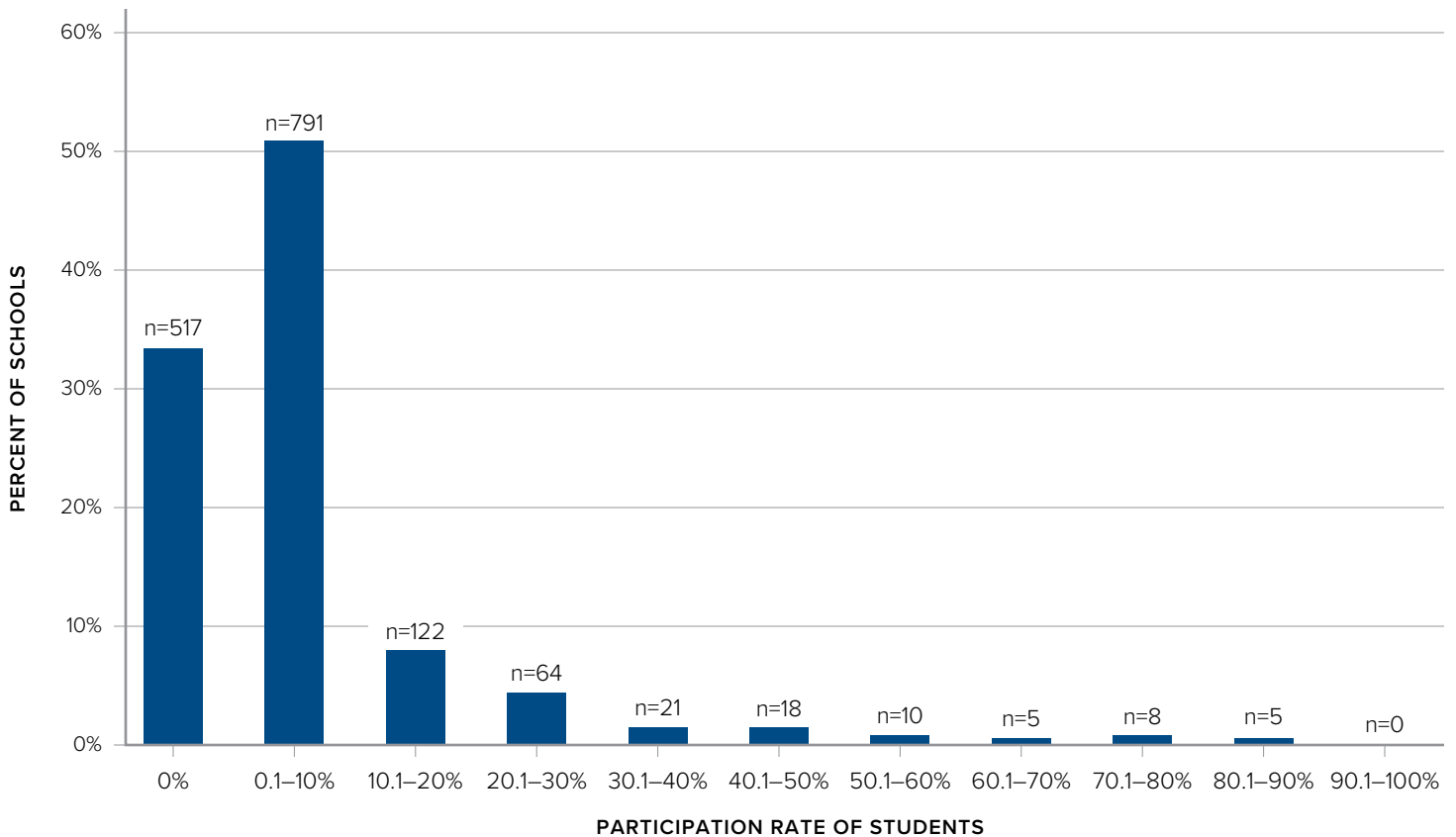
Notes: Graph includes 1,561 California public high schools with 15 or more graduates in the 2018–19 4-year cohort. Graph excludes 426 small schools, 319 of which did not have any dual enrollment participation. The vertical axis represents the percent of the 1,561 schools in each category of student participation rate and the numbers above the bars represent the number of schools in each category.

## Student Access to HS-Only Dual Enrollment

While almost all schools have some students participating in dual enrollment, students do not necessarily have equitable access to these opportunities. Figure 11 depicts the distribution of California high schools by their participation rates in HS-Only courses and Table 3 shows how students are distributed across schools with varying HS-Only dual enrollment rates. Slightly less than 70% of schools provide HS-Only dual enrollment opportunities for at least some students; yet, the great majority of public high school graduates in California (74%) attended schools where 5% or fewer students in the cohort participated in HS-Only community college courses, including 22% of high school graduates who attended schools with no HS-Only dual enrollment participation at all. Only five percent of the 2018–19 graduating cohort attended schools in which at least a fifth of students participated in HS-Only dual enrollment courses.

The great majority of public high school graduates in California (74%) attended schools where 5% or fewer students in the cohort participated in HS-Only community college courses.

Figure 11. Distribution of Schools by HS-Only Dual Enrollment Participation Rates, 2018–19 Cohort



Notes: Graph includes 1,561 California public high schools with 15 or more graduates in the 2018–19 4-year cohort. Graph excludes 426 small schools, 319 of which did not have any dual enrollment participation. The vertical axis represents the percent of the 1,561 schools in each category of student participation rate and the numbers above the bars represent the number of schools in each category.

## Characteristics of Schools with Varying Rates of HS-Only Dual Enrollment Participation

We sought to understand differences across schools that provide HS-Only dual enrollment opportunities. Table 3 provides information about key characteristics of schools and the students they serve by varying rates of HS-Only dual enrollment participation. For this description, we collapsed HS-Only dual enrollment participation rates into six levels: 1) no HS-Only dual enrollment; 2) greater than zero to 2%; 3) greater than 2% to 5%; 4) greater than 5% to 10%; 5) greater than 10% to 20%; and 6) more than 20%.

Schools with no HS-Only dual enrollment participation and those with higher participation rates (20% and above) share some key characteristics. They tend to be smaller in size and are more likely to be charter or alternative/continuation schools. This suggests that small schools, charter schools and alternative/continuation schools are either engaging deeply with dual enrollment programming or avoiding it altogether.

Schools with no participation in HS-Only dual enrollment have the largest share of rural students and below average shares of suburban and urban students, possibly indicating difficulty in developing dual enrollment partnerships in rural areas where distances between high schools and community colleges may be substantial. However, schools with greater than 20% HS-Only dual enrollment rates have the second highest share of rural students, so some rural schools have clearly overcome this obstacle. Students in schools with HS-Only dual enrollment participation rates 10% and higher have the highest likelihood of attending schools in small towns and are less likely to attend suburban (~35–38%) schools than students in other groups. This evidence, along with the student characteristics of these schools, may point to a more concerted effort to establish more formalized dual enrollment programs in small towns or rural areas.

There are few substantial differences in the demographic characteristics of students across schools with varying rates of HS-Only dual enrollment participation. White students are slightly overrepresented in schools with the highest HS-Only dual enrollment participation rates; Latinx students are overrepresented among schools with greater than 10% participation rates, relative to the overall cohort.

The evidence on HS-Only dual enrollment programs offers a promising picture of access to this important opportunity for historically marginalized high school students. Unfortunately, only about 12% of the 2018–19 graduating cohort attended schools with 10% or more participation, highlighting the limited access to more formalized dual enrollment opportunities. Of course, these descriptive characteristics only explain the differences across schools of varying participation levels, not within schools, which could also reveal differential access.

The evidence on HS-Only dual enrollment programs offers a promising picture of access to this important opportunity for historically marginalized high school students.

**Table 3. Characteristics of Schools by Varying Rates of HS-Only Dual Enrollment Participation, 2018–19 Cohort**

	Schoolwide Participation Rates in HS-Only Dual Enrollment Courses						
	2018–19 Total	None	>0%–2%	2.1%–5%	5.1%–10%	10.1%–20%	≥20%
<b>Number of Schools</b>	1,561	517	360	245	186	122	131
<b>Number of Students</b>	393,930	86,275	134,416	73,375	52,109	27,480	20,275
<b>Average Grad Cohort Size</b>	418	362	482	431	415	359	276
<b>Share of the Cohort</b>	99.5%	22%	34%	19%	13%	7%	5%
<b>SED</b>	66%	64%	64%	66%	70%	75%	66%
<b>English Learners</b>	11%	11%	11%	12%	12%	13%	11%
<b>Asian</b>	10%	9%	10%	10%	12%	7%	9%
<b>Black</b>	5%	5%	5%	5%	5%	6%	4%
<b>Latinx</b>	52%	48%	50%	54%	55%	62%	54%
<b>White</b>	25%	28%	26%	22%	21%	20%	27%
<b>Other</b>	7%	8%	8%	7%	6%	5%	6%
<b>Charter School</b>	10%	16%	8%	5%	8%	9%	16%
<b>Alternative/Continuation</b>	2%	4%	1%	1%	1%	4%	4%
<b>Traditional</b>	98%	96%	99%	99%	99%	96%	96%
<b>Rural Locale</b>	6%	13%	3%	4%	4%	5%	10%
<b>Town Locale</b>	6%	5%	3%	6%	3%	18%	18%
<b>Suburb Locale</b>	46%	47%	55%	35%	44%	35%	38%
<b>Urban Locale</b>	42%	34%	39%	54%	48%	42%	34%

Notes: Table includes 1,561 California public high schools with 15 or more graduates in the 2018–19 the 4-year cohort. Table excludes 426 small schools, 319 of which did not have any dual enrollment participation. SED refers to students who are socioeconomically disadvantaged as defined by CDE.



## Conclusion

Our findings suggest reason for cautious optimism that California may be on a path toward realizing the promise of dual enrollment. This analysis of matched data from two systems offers educators and policymakers a better understanding of growth across types of dual enrollment and the variability in course taking statewide. It also hints at the particular promise, from an equity perspective, of HS-Only dual enrollment to provide greater opportunity for college preparedness and acceleration among students historically underserved in their paths to and through college.

Through dual enrollment, California Community Colleges play an increasingly important role as an onramp from high school to college. The CCCCO's Vision for Success<sup>18</sup> puts forth a bold set of commitments to address equity gaps across the colleges, and dual enrollment can contribute to achieving this vision if it is implemented with equity at the forefront. Student participation in HS-Only community college courses is still only a fraction of total dual enrollment in California, but the expansion of recent years shown by our data reflects an important partnership across segments that is reaching students historically underserved by dual enrollment and underrepresented in college.

Qualitative research, like that found in the Public Policy Institute of California's recent report, *Dual Enrollment in California: Examining Student Access, Success and Equity*,<sup>19</sup> helps us better understand how CCAP agreements are playing out locally. Future Wheelhouse research will consider critical, broader questions about the longer-term relationship between different types of dual enrollment participation and students' educational trajectories, how high schools expand opportunities for dual enrollment, and the impact of state policy on both dual enrollment expansion and, ultimately, college enrollment and completion outcomes.

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The expansion of HS-Only courses in the California Community Colleges embodies an important partnership across segments to reach students historically underserved by dual enrollment and underrepresented in college.

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## Author Biographies and Acknowledgements

*Michal Kurlaender is Professor and Chair of Education at University of California, Davis. Sherrie Reed is Executive Director of the California Education Lab at the University of California, Davis. Michel Grosz is an economist at the Federal Trade Commission. Joanna Mathias is a doctoral student in the School of Education at the University of California, Davis. Katherine Hughes is principal at EdWordian LLC and a principal researcher with the American Institutes for Research.*

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- <sup>12</sup> Additional data by county are available in the [Appendix of County Level Stats](#).
- <sup>13</sup> This sample restriction excludes 12th grade students who were not part of the 4-year cohort for a variety of reasons including, but not limited to, completing a 5th year (or more) of high school or receiving special education services until age 21.
- <sup>14</sup> California's planned Cradle to Career (C2C) Data System is designed to facilitate such analyses, enabling researchers, educators, and policymakers to explore important questions about students' educational trajectories across systems.
- <sup>15</sup> One might ask whether these classes, which exclusively enroll high school students, are being taught at high school campuses or perhaps in middle or early college high schools located on community college campuses. Unfortunately, the data used for this analysis do not permit us to answer this question.
- <sup>16</sup> This analysis does not include Calbright College, established in 2018.
- <sup>17</sup> Not surprisingly, those who enroll in a combination of HS-Only or HS-CC Mixed courses earn the most credits, largely a function of simply taking more than one course.
- <sup>18</sup> Due to data reporting restrictions, our school sample excludes California public high schools with fewer than 15 students in a graduating cohort. As such 426 high schools, or 21% of the 1987 schools in California with students in the 2018–19 4-year graduating cohort, are excluded. A total of 1,955 graduates from the 2018–19 cohort attend these schools, representing less than 0.5% of the overall cohort. Of the excluded students, only 301 participated in dual enrollment.
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