

What is California's High School Graduation Rate?

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Executive Summary

High school graduation is an important determinant for individuals' future social and economic well-being. Unsurprisingly, policymakers and school leaders look to high school graduation rates as an important indicator of overall school effectiveness. While previous federal legislation provided states with substantial latitude to determine the manner in which their graduation rates were calculated, the U.S. Department of Education now mandates that states institute a uniform, cohort-based graduation metric, the Adjusted Cohort Graduation Rate (ACGR). And while calculating this metric would seem to be a rather straightforward task, there are many complications with the ACGR both in terms of how it is derived and how it is applied. California is not immune to these complications; a recent report published by the Office of Inspector General within the Department of Education raised a series of questions about the methodology used to calculate California's ACGR.

This report examines high school graduation rates in California. More specifically, this report covers the various approaches to calculating high school graduation rates but focuses largely on the challenges and limitations with the ACGR in California. The report also explores the high school diploma and how, for many students, it is a "moving target" of varying requirements over time and across institutions. Ultimately, the purpose of the report is to provide a number of policy recommendations related to the state's high school graduation rate that address the external critiques of the Office of Inspector General and seek to improve the degree to which schools and students in the state can be considered successful by using multiple indicators of high school graduation. These policy recommendations are:

- California must be a national leader in designing and implementing sound, evidence-based education policy.
- Because there are many "delayed graduates" in the state and because the ACGR only factors in 4-year graduates, we recommend the state publish 5- and 6-year graduation rates and use these extended graduation measures for school accountability.
- Because the ACGR incentivizes schools to push delayed students into nearby alternative schools, we argue that graduation rates should not just be ascribed to the last school attended but rather to all schools that students attend.
- Requirements for the California "regular high school diploma" need to be compared to requirements for Adult High School Diploma programs in the state in order to address the critiques of the OIG.
- We recommend that California report graduation rates for student subgroups and for various types of diplomas.

Introduction

One of the most widely used indicators of educational performance is the high school graduation rate. In 1989 the nation's governors adopted an ambitious set of goals for the nation's schools, including a high school graduation rate of 90 percent. The federal No Child Left Behind Act of 2002 required states to set a graduation rate goal for all schools and districts in the state and to report annual progress for reaching the goal. The 2015 federal Every Student Succeeds Act (ESSA) also requires states to set long-term graduation rate goals and to report progress in reducing gaps in graduation rates among sub-groups of students. It further requires states to use a common and more accurate measure of calculating high school graduation rates that is comparable across states, the Adjusted Cohort Graduation Rate or ACGR.

The focus on improving high school graduation rates has been accompanied by notable and steady improvements in the rates themselves. Yet improvement in graduation rates has also been accompanied by reports of easing requirements for graduation and cheating or gaming the system. For example, West Virginia is planning to reduce the number of credits to receive a high school diploma from 24 to 21 next year (Gewertz, 2017, November 9). Other states provide alternative pathways to earn a single diploma or multiple diploma options (Center on Standards & Assessment Implementation, 2016). In Pennsylvania, for instance, students concentrating on career and technical education in high school can skip the state's exit exam (Gewertz, 2017, June 26). Schools and districts are increasingly using online, credit-recovery recovery programs to boost graduation rates, raising questions of whether students are mastering the curriculum (Tyner & Munyan-Penny, 2018). And a recent NPR report found that half of the graduates from a DC high school had missed more than three months of school, or 60 days (Gewertz, 2018, February 1).

California is not immune to these same issues. In 2015, the state eliminated the requirement that students pass the state's high school exam in order to earn a diploma. It further allowed students beginning in the 2003–04 school year to receive a diploma retroactively if they met all the graduation requirements except for passing the exam. Los Angeles Unified School District reportedly granted more than 1400 additional diplomas in one year (Guzman-Lopez, 2015, November 17). A recent news report found widespread cheating among students in San Diego taking online credit-recovery courses that enable those students who fail classes to make up credits and graduate (Koran, 2017, May 17). Finally, in early 2018 the Office of the Inspector General (OIG) of the U.S. Department of Education issued an audit that raised a series of questions about the methodology used to calculate California's ACGR (U.S. Department of Education, 2018).

In light of the recent OIG report and the continued use of graduation rates as a metric for school accountability, this policy brief will examine the high school graduation rate in California. First, we discuss the ways in which the graduation rate is calculated, how

the various rate calculations address different policy goals, and the relative strengths and limitations of each method. Second, we explore the high school diploma and how it is both defined and undefined. Third, we focus our attention on California and, in particular, trends in California's graduate rate. Finally, we make recommendations on what the state should do to ensure accurate and useful graduation rates.

What is the High School Graduation Rate?

Calculating the rate at which students graduate from high school would seem to be a rather straightforward task. Basically, it is the percentage of a population of students (denominator) who graduate or complete high school (numerator). The complication arises in determining the specific population and what counts as a graduate. Differences in those two factors lead to a number of different indicators of high school graduation rates.

These differences arise, in part, because graduation rates serve at least two different policy goals. One goal is simply to serve as an indicator of the well-being of a given population (along with other indicators such as income and health). Another goal is to serve as an indicator of school performance and educational system accountability.

The oldest and most commonly reported indicator is the Status Completion Rate, calculated and reported by the US Bureau of the Census and serving the first policy goal. It is based on data from the Current Population Survey (CPS) and the more recent American Community Survey (ACS). It represents the percentage of 18- to 24-year-olds who are not enrolled in school and who hold a high school diploma or alternative credential. It is referred to as a status rate because it is calculated at one point in time. One advantage of this indicator is that it can be calculated for very small geographic areas due to the widespread coverage and frequency of data collected by the Census. One disadvantage is that it does not distinguish between high school "graduates" and "completers"—the former successfully earn a traditional high school diploma while the latter may earn a traditional diploma or a high school equivalency certificate by passing one of several equivalency tests such as the General Educational Development (GED) exam (see <https://www.cde.ca.gov/ta/tg/gd/>). This distinction is important because research finds that GED-based diploma holders do not enjoy the same benefits as graduates with diplomas (Heckman, Humphries, & Mader, 2010). As a result, the CPS-based graduation rate estimates are biased upward because CPS-based estimates were based on completion rather than graduation. In 2015, the national Status Completion Rate of 18- to 24-year-olds not enrolled in school was 93 percent (Snyder, de Brey, & Dillow, 2018, Table 219.65).

While the status completion rate is useful in describing the educational status of a geographically defined population, it is not useful for purposes of assessing school performance and educational accountability. What is useful is a graduation rate based

on the population of incoming ninth graders who graduate within four years. One such indicator is the Averaged Freshman Graduation Rate (AFGR), which represents an estimated percentage of public high school students who graduate with a regular diploma four years after starting ninth grade. This indicator is computed by the U.S. Department of Education using Common Core data collected and reported by states. One advantage of the AFGR is that it represents a cohort or longitudinal graduation rate measured over four years. Another advantage is that because the AFGR is based on collected aggregate student enrollment data it can be calculated far back into the past. That said, one disadvantage with the AFGR is that it is not a true cohort rate because the numerator and denominator are not based on the same population of students. An insignificant proportion of ninth graders is retained each year, so the denominator of first-time ninth graders is estimated by averaging the enrollment of eighth grade in the preceding year, the enrollment in ninth grade the next year, and enrollment in 10th grade the year after. The numerator is simply the number of reported graduates four years later than the first-time ninth-grade cohort. The national estimated AFGR in 2012–13 was 81.9 percent (Snyder, de Brey, & Dillow, 2018, Table 219.35).

The most recent and arguably best high school graduation indicator, at least for accountability purposes, is the Adjusted Cohort Graduation Rate (ACGR). This indicator grew out of a U.S. Department of Education mandate that all states comply with a uniform, nationwide cohort-based graduation rate metric. The “4-year adjusted cohort rate” (ACGR) thus represents the measure of “the number of students who graduate in 4 years with a regular high school diploma divided by the number of students who form the adjusted cohort for that graduating class,” with the adjusted cohort being “the students who enter Grade 9 plus any students who transfer into the cohort in Grades 9 through 12 minus any students who are removed from the cohort because they transferred out, moved out of the country, or were deceased” (Stetser & Stillwell, 2014, p. 1). There are several clear advantages of the ACGR over the Status Completion Rate and the AFGR. First, because the ACGR is a cohort-based measure (unlike the Status Completion Rate), it can be used as a convenient accountability metric as well as a tool to track on-time progress toward earning a diploma, enabling targeted interventions to help students remain “on-track” (Allensworth & Easton, 2005). Second, the ACGR does not rely on estimates of an incoming freshman class (like the AFGR), making it more accurate. Third, because the ACGR only has the number of students who earned a high school diploma four years after beginning high school in its numerator, it represents a true, on-time graduation rate. This is in contrast to the Status Completion Rate, which is not at all cohort-based, and the AFGR, which places all students earning a high school diploma within a certain year—regardless of how long it took them to earn it—in its numerator.

There are several disadvantages with the ACGR, however. First, student mobility (e.g., transfer, retention, and migration) makes accurate and honest data reporting a difficult task for school administrators (Murnane, 2013). Furthermore, because the ACGR is cohort-based

and the size of the cohort influences the calculated rate, there is a perverse incentive for regular high schools to push at-risk or delayed students into nearby continuation or other alternative schools, thereby removing them from the cohort in the regular school and adding them to the cohort of the receiving school (Murnane, 2013). This lets the regular school “off the hook” for the eventual success or failure of the transferring student no matter how long the student spent in that school. Conversely, it holds the receiving school completely responsible for the success or failure no matter how little time the student spent in the that school. For example, if a student attended a regular high school for three years, earning only half the credits required for graduation, and then transferred to an alternative high school for one year, earning a year’s worth of credits yet dropping out, the original high school would have no responsibility for that student’s outcome, while the receiving school would shoulder all of the responsibility for that student’s outcome.

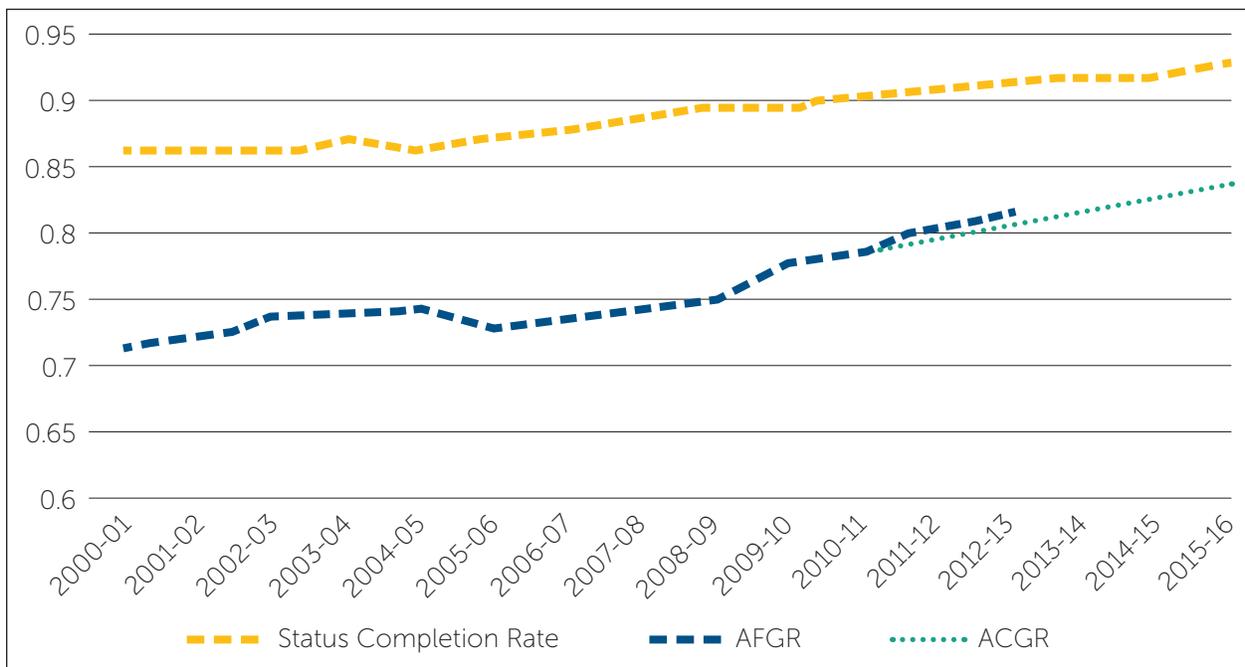
A second disadvantage related to the first is that the ACGR does not take into account the academic background and preparation of students walking in the door. Schools are held accountable for achieving a 4-year graduation rate no matter how well their entering students are prepared for the rigors of high school. While it may be reasonable for students who have grade-level reading and math skills to graduate in four years, some high school students require more than four years to graduate. The need for more time could come not only as a consequence of entering high school with low math or reading skills or needing to learn English as a second language, but also from experiencing a dropout event during high school, or simply failing to earn sufficient credits in a 4-year time frame. Regardless of the reason for delay, these students often do graduate. Yet the ACGR does not necessarily account for these successes (i.e., diplomas) because they graduate outside of the 4-year window. And because alternative and charter schools serve “delayed graduates” in greater numbers, these schools fare quite poorly on prevailing ACGR-based accountability measures. The ESSA does allow states to calculate and use an extended-year high school graduation rate to establish long-term education goals (ESEA section 1111[4]) and to evaluate programs (ESEA section 1431[1]). Consequently, a number of states compute 5-year and 6-year graduation rates for accountability purposes (Arizona Department of Education, 2017; Boston Public Schools, 2016; Colorado Department of Education, 2013; Oregon Department of Education, 2015). Oregon—and soon California—uses a 1-year graduation rate to assess alternative school effectiveness. This rate calculation is the fraction of “graduation-eligible” students who successfully graduate at the end of the year (Deeds & Malter, 2016) and because the denominator in the 1-year rate is not cohort-dependent, alternative schools fare much better on this metric.

A final disadvantage with a straightforward reading of the ACGR is that, like the AFGR, the statistic homogenizes substantial between-group variation. Ethnic minorities, English language learners, students with disabilities, and socioeconomically disadvantaged students often do not graduate high school at the reported 4-year ACGR. And while

extending the graduation timeframe slightly mitigates these disparities, between-group variation remains present when comparing 4- and 5-year graduation rates as well (Murnane, 2013). For example, looking at data reported by the state of Arizona, while the difference between the 4- and 5-year graduation rates for all students was 4.4 percentage points, the 4- and 5-year rate differential was much larger—over 13 percentage points—for English language learners. Roughly 63 percent of students with disabilities graduated from Arizona high schools in four years. However, 72.5 percent of students with disabilities graduated in five, a jump of nearly 10 percentage points. Last year, migrant, socioeconomically disadvantaged, African American, and Latinx students in Arizona all had 4- and 5-year graduation rate differentials greater than 6 percentage points (Arizona Department of Education, 2017).

Figure 1 presents the national Status Completion Rate, AFGR, and ACGR from 2000–01 through 2015–16, the most recent year for which national statistics are available.

Figure 1. National Rates of High School Graduation 2000-01 through 2015-16



Data from National Center for Education Statistics: <https://nces.ed.gov/programs/dropout/index.asp>

What is a Regular High School Diploma?

Equally important to determining the rate of high school diplomas awarded is determining what counts as a high school diploma. In effect, there is no universally recognized high school diploma in the nation. States have ultimate authority over what and how many courses students are required to complete in order to earn a diploma.

Districts have the option of adopting these state minimums, but districts often have more stringent requirements for students. Many states have adopted course requirements aligned with the entrance requirements for 4-year universities, although some also grant waivers for students who are unable to meet them (Almond, 2017; Jimenez & Sargrad, 2018). More than half of school districts in California now require high school graduates to meet the eligibility requirements of the state university system (Goa, Lopes, & Lee, 2017).

A comparison of graduation requirements across the 50 states reveals tremendous inter- and intra-state variation (Achieve, 2015; Almond, 2017; Jimenez & Sargrad, 2018). Further compounding complexity is the fact that many states offer more than one high school diploma (Almond, 2017; Center on Standards & Assessment Implementation, 2016). For example, students in Florida have four options to earn a standard degree, including a 3-year as well as a 4-year option (Achieve, 2015).

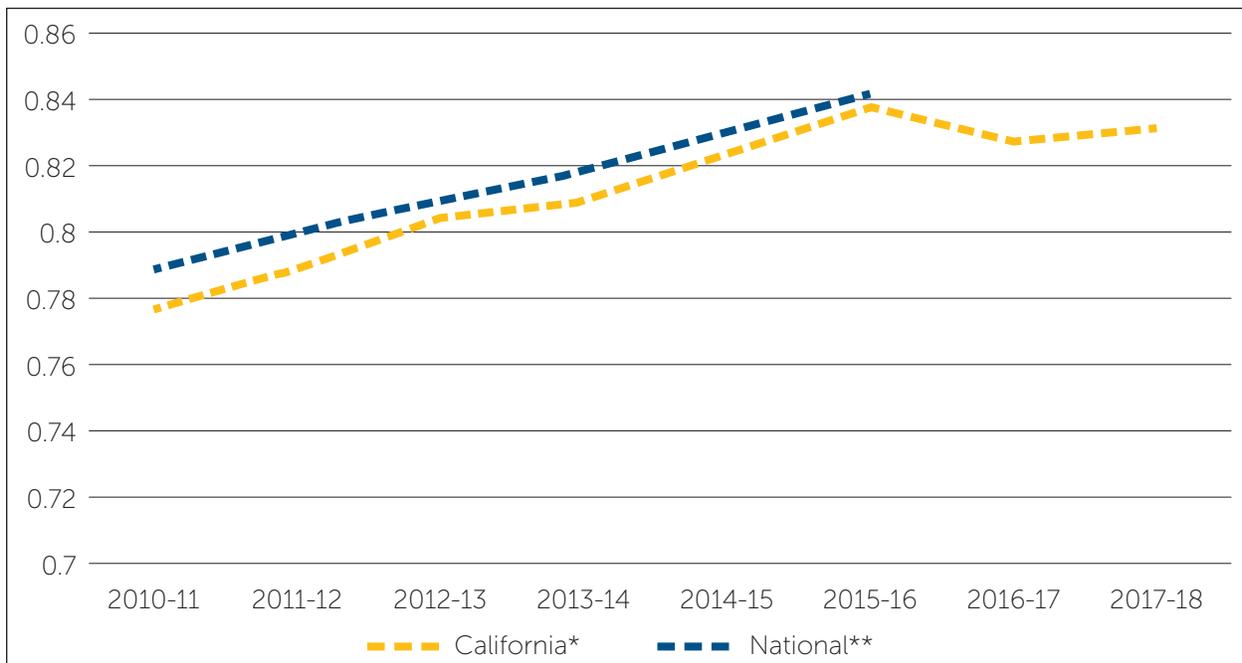
In concert with required coursework, some states have elected to impose mandatory exit exams as graduation requirements. The precise role and importance of exit exams are muddled by variation between and even within exit-exam states. For example, some states allow students to appeal or to have their exam scores weighed with other metrics (e.g., GPA, coursework) or even substituted all together (Darling-Hammond, Rustique-Forrester, Pecheone, & Andree, 2005). This all said, research pointing to detrimental effects on graduation rates (Jacob, 2001; Marchant & Paulson, 2005), combined with changes in national accountability policies and a growing emphasis on college and career readiness, has led to a considerable decrease in the number of states requiring these exams over the past decade. And while the move away from exit exams may reflect sound policy, the implementation and subsequent removal of exit exams have placed some states in the awkward position of having to retroactively award high school diplomas to students who completed the required coursework but failed to pass the exit exam. According Gewertz (2016, January 26), Georgia granted more than 17,000 diplomas in 2016 to students who had previously been denied a diploma for failing the state exit exam. Texas and South Carolina retroactively issued thousands more. Unsurprisingly, the apparent arbitrariness around coursework and imposition and removal of exit exams has led many to view earning a high school diploma as a moving target (Kamenetz, 2016).

Indeed, it seems as if an operational definition of a “regular high school diploma” remains elusive. Is earning a diploma a matter of completing a set number or sequence of courses? Is earning a diploma a matter of demonstrating an established set of competencies, which may be satisfied through a combination of coursework, exit examinations, or other assessment (Allensworth, Ngaoka, & Johnson, 2018)? Of course, this all assumes the existence of a single diploma, yet students in many states—including California—can earn standard, specialized, or merit-based diplomas.

The High School Graduation Rate in California

The California state ACGR has—until recently—climbed steadily since 2009–10. More specifically, California Department of Education (CDE) data listed in Table 1 show that 74.7 percent of students graduated with a traditional high school diploma in a 4-year time frame in 2009–10. This rate climbed to 77.1 percent in 2010–11, 78.9 percent in 2011–12, 80.4 percent in 2012–13, 82.3 percent in 2014–15, and 83.8 percent in 2015–16. The state ACGR declined in 2016–17 to 82.7 percent. However, this decline is the direct consequence of changes to the ACGR calculation that CDE implemented in response to the OIG report.¹ The most recent CDE data show that the state’s ACGR rebounded slightly in 2017–18, to 83 percent. Excluding the 2016–17 and 2017–18 academic years—years for which CDE amended the ACGR calculation—Figure 2 illustrates that the California high school graduate rate has closely tracked the U.S. national rate since the adoption of the ACGR.

Figure 2. California and National Rates of High School Graduation 2010-11 through 2017-18



Note: The CDE changed the method for calculating the ACGR beginning in 2016-17.

*Data from California Department of Education Dataquest: <http://data1.cde.ca.gov/dataquest/>

**Data from National Center for Education Statistics: <https://nces.ed.gov/programs/dropout/index.asp>

¹ In response to the OIG audit, the CDE decided to calculate a revised ACGR that keeps students who transfer to adult schools or community colleges in the cohort and to label adult education diplomas as “non-graduate completers” (California Department of Education, 2018c). The CDE released the revised ACGR for 2016–17 on July 28, 2018. The revised ACGR was 82.7 percent, a decline of 1.1 percentage points from the 2015–16 rate of 83.8 percent (but a likely larger decline from an 2016–17 ACGR based on the old method).

Table 1. California Adjusted Cohort Graduation Rates

	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Cohort students¹	507,209	503,273	500,974	495,316	492,971	488,612	486,126	493,795	504,073
Cohort graduates ¹	378,976	388,236	395,098	398,442	399,041	401,957	407,208	408,124	418,205
Cohort still enrolled ¹	39,881	37,323	36,507	36,470	33,422	30,775	27,559	27,023	24,981
Non-cohort graduates¹	26,111	22,240	23,500	23,735	22,595	24,993	22,115	21,436	--
Total graduates¹	405,087	410,476	418,598	422,177	421,636	426,950	429,323	429,560	--
4-year cohort graduation rate ¹	74.7%	77.1%	78.9%	80.4%	81.0%	82.3%	83.8%	82.7%	83.0%
5-year cohort graduation rate ²	--	80.3%	82.4%	83.7%	--	--	--	--	--
6-year cohort graduation rate ²	--	81.4%	82.9%	--	--	--	--	--	--
*Expanded 4-year cohort graduation rate method 1 ¹	79.1%	81.8%	83.6%	85.0%	86.0%	86.8%	88.2%	--	--
**Expanded 4-year cohort graduation rate method 2 ¹	78.6%	80.9%	82.5%	84.1%	84.3%	85.4%	86.6%	85.4%	--
Averaged Freshman Graduation Rate (AFGR) ¹	78.2%	79.7%	81.7%	83.6%	--	--	--	--	--

Note: The CDE changed the method for calculating the ACGR beginning in 2016-17.

¹ Data from California Department of Education Dataquest: <http://data1.cde.ca.gov/dataquest/>

² Data from California Department of Education <https://www.cde.ca.gov/ta/ta/ac/ar/cogdatafiles.asp>

³ Data from National Center for Education Statistics: <https://nces.ed.gov/ipeds/data/ipedsreport/dataset/ipedsreport.asp>

*Expanded rate methodology: (Cohort Graduates + Non-cohort Graduates₅₊₁)/Cohort

**Expanded rate methodology: (Cohort Graduates + Still Enrolled₂)/Cohort

Table 2. California Adjusted Cohort Graduation Rates by Ethnicity

	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
California State	74.7%	77.1%	78.9%	80.4%	80.9%	82.3%	83.8%	82.7%	83.0%
White	83.5%	85.7%	86.6%	87.7%	87.6%	88.0%	88.9%	87.3%	87.0%
Black	60.5%	62.8%	66.0%	68.1%	68.2%	70.8%	72.9%	73.1%	73.3%
Asian	89.0%	90.3%	91.1%	91.6%	92.4%	92.6%	93.7%	93.1%	93.6%
Latino	68.1%	71.4%	73.7%	75.7%	76.6%	78.5%	80.5%	80.3%	80.6%
English learners	56.4%	61.5%	62.0%	63.1%	65.4%	69.4%	72.6%	67.1%	67.9%
Students with disabilities	56.7%	59.5%	61.1%	61.9%	62.3%	64.5%	66.1%	65.0%	66.3%
Socioeconomically disadvantaged	68.0%	71.1%	73.0%	74.8%	75.6%	77.7%	79.8%	78.8%	79.6%

Note: The CDE changed the method for calculating the ACGR beginning in 2016-17.

Data from California Department of Education Dataquest: <http://data1.cde.ca.gov/dataquest/>

As we would predict, disaggregating the state's ACGR by student group reveals tremendous nuance to the story. Like Arizona and elsewhere, there are vast disparities in the rates of high school graduation among different student populations in the state, though fortunately these disparities have narrowed over time. For instance, Table 2 lists the ACGRs for White, African American, Asian, and Latinx students in California. In 2009–10 the state ACGR was 74.7 percent. The graduation rate was 89 percent for Asian students, 83.5 percent for White students, 68.1 percent for Latinx students, and 60.5 percent for African American students. Eight years later, in 2017–18, these disparities closed noticeably. Asian students in the state graduated high school at a rate of 93.6 percent. The rates for White, Latinx, and African American students were 87.0, 80.6, and 73.3 percent, respectively. As the data in Table 2 indicate, the between-group variation in graduation rates present in 2009–10 steadily diminished over time. Still, however, in 2017–18, African American students graduated high school at a rate nearly 10 percentage points below the state average. Disparities in the graduation rate can be found elsewhere, too. Data in Table 2 illustrate that students with disabilities, English language learners, and socioeconomically disadvantaged students all graduated high school at rates well below the overall state average.

The 2018 audit issued by the Office of the Inspector General of the U.S. Department of Education found two major shortcomings in the calculation of the state's graduation rates. First, CDE did not provide sufficient control over the calculation and reporting of graduation rates by local authorities to ensure they were accurate and complete. Based on a small sample of reported graduates from Los Angeles County, Los Angeles Unified School District, and a single high school, Baldwin Park, the audit found that a small percentage of students were erroneously classified as graduates even though they had not completed all the requirements for a diploma or they had completed their coursework after the cohort cutoff date of August 15. The audit further found that some students were removed from the cohort erroneously because they transferred to a private school or a school in another state without written confirmation that the student had actually enrolled. In response to this finding, the CDE has agreed to provide more guidance to districts in collecting and verifying data on graduates and transfers.

The second major shortcoming found in the audit is that the state is not calculating its ACGR in accordance with federal requirements. In particular, the audit found that the CDE was removing students from the cohort if they transferred to an adult school or community college and counting graduates who earned their diploma at an adult school. The ACGR is supposed to include only graduates who earn a "regular high school diploma," which the federal government now defines under ESSA as:

...the standard high school diploma awarded to the preponderance of students in a State that is fully aligned with the State's standards and does not include a general equivalency diploma, certificate of completion, certificate of attendance, or any

other similar or lesser credential, such as a diploma based on meeting Individualized Education Program goals. (U.S. Department of Education, 2018, p. 16)

The audit estimated that correcting for the errors would have reduced the state's reported 2013–14 ACGR by 2 percentage points.

In their guidelines for calculating the ACGR, the federal government is taking a notably narrow view of what counts as a “regular” high school diploma. In particular, diplomas awarded by adult schools are excluded because adult education diplomas typically have fewer course requirements than diplomas awarded by regular high schools. To investigate this issue further, we compared the graduation requirements for two districts in California, Glendale and Pasadena (both in the OIG's audit region), with the graduation requirements for adult schools run by their local community college and with the state's graduation requirements (Table 3). The comparisons reveal that all of the school district and adult school graduation requirements exceed the state requirements in the core academic subjects (English, math, science, and social science). Although the total credits for the district diplomas exceed those of the adult school diplomas, the adult school diplomas still exceed the total number of credits required by the state and meet all of the state requirements except for two years of physical education, which could be earned through confirmed activities such as club sports outside of school. In contrast to the OIG conclusions, these data, if representative of other adult school graduation requirements, support the CDE's prior procedure of counting adult school diplomas as “regular” diplomas.

Another argument for including adult high school graduates in the ACGR numerator is to give a more complete picture of the number and proportion of high school graduates in the state regardless of whether they received their diploma from a regular high school, an adult school, or a community college. This also means considering students who earn high school diplomas beyond the 4-year window. The CDE released estimates of 5-year and 6-year graduation rates for 2010–11 and 2011–12 on its website, but the estimates were not true cohort rates (see Table 1). The department plans to release 5-year cohort rates in the near future.

In the absence of clear and more recent data, we explored two methods for generating estimates of how the state's ACGR would change if the number of delayed graduates were factored in for a given year. The first was to add the non-cohort graduates to the cohort graduates from the previous year. This approach assumed that these graduates were delayed and rolled over from the previous year's cohort. The second method was to take a number of the still enrolled students and, based on the safe assumption that some of them will eventually earn a diploma, add them to the cohort graduates total for that given year. This latter approach is grounded in research that

Table 3. Selected California Graduation Requirements

	California State ¹	Glendale Unified School District ²	Glendale Community College ³	Pasadena Unified School District ⁴	Pasadena City College ⁵
English	3 years	4 years	4 years	4 years	3 years
Math	2 years including algebra	2 years including algebra and geometry	2 years including algebra and geometry	3 years	2.5 years
Science	2 years including biological and physical sciences	2 years including biological and physical sciences	2 years including biological and physical sciences	3 years	2 years
Social Science/ Studies	3 years including 1 year of U.S. history and geography; 1 year of world history, culture, and geography; 1 semester of American government and civics, and 1 semester of economics	3 years including 1 year of world history; 1 year of U.S. history; 1 semester of American government and 1 semester of economics	3 years including 1 year of world history; 1 year of U.S. history; 1 semester of American government and 1 semester of economics	3 years	3 years
Foreign Language	1 year of either visual and performing arts, foreign language, or career and technical education	--	1 year of either art, music or language	1 year	--
Visual and Performing Arts	1 year of either visual and performing arts, foreign language, or career and technical education	1 year including visual and performing arts	Visual/performing art	1 year	--
Career Preparation	--	1 semester	1 semester	--	--
Health	--	1 semester	1 semester	1 semester	--
Physical Education	2 years	2 years	2 years	2 years	--
Computer Technology	--	--	1 semester	--	--
CTE	--	--	--	1 semester	--
Humanities	--	--	--	--	1 year
Electives	--	14 semesters	--	4 years	4.5 years
Total Units	150	220	185	220	160

¹ Data from <https://www.cde.ca.gov/ci/gc/hs/hsgrgen.asp>² Data from <https://www.gusd.net/Page/890>³ Data from <https://www.glendale.edu/academics/continuing-education-garfield/programs/student-success-center/adult-high-school-diploma-program/course-requirements>⁴ Data from <https://www.pusd.us/Page/2961>⁵ Data from <https://pasadena.edu/academics/divisions/noncredit/our-programs/adult-high-school-diploma.php>

suggests up to two thirds of recovered dropout students earn a high school diploma or equivalency (Center for Promise, 2014). To be conservative, we assumed 50 percent of the still enrolled students for a given year would eventually succeed in earning a high school diploma. Table 1 contains the estimates produced by these two methods along with the state's reported AFGR because all graduates in a given year are included in its numerator. As we would expect, the data in the table provide convincing evidence that the ACGR underestimates the success rate of California high school students in earning high school diplomas. For example, the ACGR in 2015–16 (the last year before the revised method was introduced), was 83.8 percent, whereas the expanded ACGR was 88.2 percent based on method 1 and 86.6 percent based on method 2 (see Table 1).

Of course, proponents of the ACGR will assert that the primary function of the ACGR is to gauge the number of on-time graduates rather than the total number of diplomas conferred. Proponents will assert that the effectiveness of schools should be measured not on the total number of students who earn a diploma but how efficiently students graduate from them. These are valid points. However, many California students experience circumstances at home and in their communities that obstruct and delay their educational pathways (Rumberger, 2011). Furthermore, these students tend to concentrate in certain schools due to the demography and economic profiles of the areas in which they are located. And, as we previously discussed, some schools and school systems actively choose to serve a disproportionate number of these students. For delayed students, who have dropped out or are at high risk of dropping out, we would contend that eventual completion is at least as important as efficient completion. Additionally, the ACGR can especially mischaracterize the effectiveness of schools that serve greater numbers of recovered dropouts or at-risk students.

Table 4 provides two ways of measuring the rate at which students attending comprehensive, charter, and alternative schools succeed in earning a high school diploma. Notice that, in addition, we include a separate category of schools that we call adult serving schools. We operationalize adult serving schools as those in which at least 50 percent of the student body is over 18 years of age. The first measure of graduation rate presented in Table 4 is the ACGR, which is the rate at which students complete high school in a 4-year window. We include a second measure that mirrors the 1-year graduation rate used in Oregon, which is the ratio of successful graduates to graduation-eligible 12th graders (Ruiz de Velasco & Gonzales, 2017). We refer to this second method of calculating the state's graduation rate the "Grade 12 rate."

As one might expect, data in Table 4 confirm the ACGR is highest in comprehensive schools and lowest in alternative schools. However, if we look at the Grade 12 rate, we see that, when compared to the cohort graduation rate, charter and alternative schools appear to be more effective than their respective ACGRs would suggest. While the ACGR for

alternative schools was 41.9, 42.4, and 40.9 percent for the 2011–12, 2012–13, and 2013–14 academic years, the Grade 12 rate was 47.8, 54.2, and 59.6 percent during the same period. This averages out to a difference of 12 percentage points over three years. For charters, the average difference between the reported ACGR for 2011–12 through 2013–14 was just over 16 percentage points.

Table 4. Comparison of California Graduation Rates by Types of High Schools 2011-12 through 2013-14

California State	2011-12	2012-13	2013-14
Total graduates	418,598	422,177	422,177
Cohort graduation rate	78.9%	80.4%	80.9%
Grade 12 graduation rate	82.8%	83.8%	84.7%
Comprehensive	2011-12	2012-13	2013-14
Total graduates	342,070	344,260	343,529
Cohort graduation rate	89.6%	90.8%	91.5%
Grade 12 graduation rate	90.8%	90.9%	91.1%
Charter	2011-12	2012-13	2013-14
Total graduates	29,081	30,162	32,780
Cohort graduation rate	57.9%	60.4%	62.5%
Grade 12 graduation rate	78.4%	76.6%	74.1%
Alternative	2011-12	2012-13	2013-14
Total graduates	47,447	47,755	45,868
Cohort graduation rate	41.9%	42.4%	40.9%
Grade 12 graduation rate	47.8%	54.2%	59.6%
Adult-serving	2011-12	2012-13	2013-14
Total graduates	3,453	4,024	5,110
Grade 12 graduation rate	39.3%	42.3%	47.4%

Data from California Department of Education Dataquest: <http://data1.cde.ca.gov/dataquest/>

Why might the Grade 12 graduation rate reflect more favorably on alternative and charter schools? We posit two reasons. First, charter and alternative schools have greater proportions of 12th-grade students. In the 2011–12 school year 44 percent of all students enrolled in alternative high schools were in the 12th grade, whereas 24 percent of students enrolled in charter high schools were seniors and 23 percent of students in comprehensive high schools were seniors. A second reason is that charter and alternative schools produce greater numbers of non-cohort graduates relative to cohort graduates. For these same reasons there is very little difference in the cohort and Grade 12 rates for comprehensive schools in the state.

Conclusion

The purpose of this policy brief has been to examine the high school graduation rate in California in light of a recent U.S. Department of Education's Office of the Inspector General (OIG) audit report that was critical of California Department of Education (CDE) practices regarding the collection of educational data and the methods used to calculate the state's Adjusted Cohort Graduation Rate (ACGR). While touching on issues related to the state's ACGR discussed in the OIG audit report, we have argued there are a number of additional issues and complexities related to the reporting and calculation of the graduation rate not considered in the OIG report. Taken together, we would make the following conclusions and policy recommendations.

First, while CDE disagreed with aspects of the OIG conclusion that CDE's system of internal controls did not ensure that accurate graduate rates were reported by local entities, we would echo the warning expressed in the OIG audit report that the use of inaccurate or incomplete data calls into question the purported improvements in the state's graduation rate and compromises accountability systems. This is not necessarily a California-specific policy recommendation; the same admonition could likely be applied to all state education systems. However, we feel that California must lead the way in designing and implementing sound, evidence-based education policy. For this reason, we were encouraged to learn that the CDE has implemented the OIG recommendations to improve data reporting in the state. This said, it must be acknowledged that student mobility will continue to complicate the task of reporting accurate cohort data at least for students who leave the public school system (Murnane, 2013).

Second, it is clear from our analyses that there are a number of important limitations that put into question the usefulness of the ACGR as a monolithic or one-size-fits-all measure of school effectiveness. To begin with, it does not account for how long a student is enrolled in a particular school. The last school a student attends is given all the credit if students graduate on time and all the blame if they do not. Furthermore, it does not account for the background and preparation of students that walk in the door. There are vast differences in the background characteristics of students that make it easier or harder for some students to graduate on time. Finally, and related, the ACGR does not factor in delayed high school completion. This would not be a problem if all students graduated on time. But this is clearly not the case. The fact is that some students leave school before graduating for a variety of reasons (Rumberger, 2011). More important for our purposes here than the reasons why students drop out from school, however, is the fact that a number of them will eventually re-enroll and a non-inconsequential number of them will successfully earn a high school diploma. Yet, these delayed graduates are not counted in the state's 4-year cohort graduation rate, an exclusion that results in an artificially deflated effectiveness assessment, particularly for alternative and charter

schools. As we illustrated, something as simple as extending the time frame in which students successfully complete high school by another one or two years makes a marked impact in the graduation rate. This is consistent with language in the Every Child Succeeds Act that supports states' use of extended-year graduation rates to set long-term education goals and to evaluate education programs (ESEA sections 1111[4] and 1411[1]).

We are heartened to learn that the CDE is planning to release 5-year cohort graduation rates soon as well as a 1-year graduation rate for alternative schools that will include a broader array of high school completion certificates beyond the regular diploma. The CDE has also revamped its website so that all graduation statistics can be disaggregated by student subgroups (gender, ethnicity, disability, English learner status, socioeconomic disadvantage, migrancy, and homelessness).

We also need to be concerned that the ACGR and its priority towards on-time completion may be providing an unintended incentive for schools to push delayed students into nearby alternative schools (Murnane, 2013). A recent study found that nearly two thirds of the students enrolled in schools operated by one California county transferred into the schools since the 10th grade and only 45 percent of those students graduated on time (Rumberger & Losen, 2017). Similar patterns were observed statewide. Consequently, because the ACGR does not factor in delayed graduates, it unfairly penalizes schools and school systems in the state that serve a disproportionate number of adult students. We identified 87 high schools in the state in which over 50 percent of their students were 18 years of age or older. Earlier we referred to these schools as adult-serving schools. For these schools, the ACGR is a particularly punitive accountability measure because these schools do not serve traditional, on-time students. The Alternative Schools Accountability Model (ASAM) framework was developed by CDE to address this disparity, yet the Governor's budget essentially defunded the program in 2010 and the CDE completely stopped administering ASAM in 2017. For this reason, we are pleased to see that CDE has recently replaced ASAM with the Dashboard Alternative School Status (DASS) program. We are also pleased to see that CDE will now report 1-year graduate rate data for the state's alternative schools. This all said, we echo the call of others (e.g., Ruiz de Velasco & Gonzales, 2017; Warren, 2016) that much more accountability is needed for the state's alternative schools in the post-ASAM era. School accountability systems should be incentivized to successfully educate all incoming ninth graders. This could be accomplished by making schools responsible for the outcomes of its students even after transferring to an alternative school (Ruiz de Velasco & Gonzales, 2017; Warren, 2016). Indeed, we argue that graduation rates should not just be ascribed to the last school attended but rather to all schools that students attend, perhaps based on the amount of time and the number of credits the students spent in each school.

Third, we would argue that it is time to reexamine the California “regular high school diploma.” The OIG audit report accused the CDE of artificially inflating the state’s ACGR by including students who earned diplomas from adult high school education programs in the ACGR numerator and by excluding students who transferred to adult school programs from the denominator. According to the OIG audit report, such diplomas fall outside of the “Federal definition of a regular high school diploma.” Yet, CDE responded to the OIG that California state regards such students as graduates. It appears, therefore, that there is a wide discrepancy between federal and California state definitions of a regular high school diploma. Clearly this discrepancy must be attenuated. It is logical to not count students earning high school equivalencies as on par with diploma earners. However, the OIG critiques against counting students who earn diplomas from adult high school programs are less credible in light of our findings that at least two adult high school programs in the same geographical region OIG examined for its audit had graduation requirements similar to the ones established by its proximal school district. We would encourage CDE to collect data on the requirements of all adult high school programs in the state along with data on graduates. This would be a challenge for adult education programs not run by local education authorities, such as community colleges. In the meantime, the CDE does now report alternative certificates of completion, including adult education diplomas (reported by local education authorities) and GED completers.

Fourth, we recommend that California report state-level graduation rates not only for various student subgroups but also for various types of diplomas. Currently, the state reports overall 4-year cohort graduation rates and an indicator of college readiness based on the percentage of all graduates (both cohort and non-cohort) who have completed the 15 A–G units and grades required for admission to the California State University (2.0 GPA) and the University of California (3.0 GPA). This indicator is an inadequate measure of college readiness given that more than a third of all freshmen enrolled in the CSU system are now required to take remedial classes (Jackson & Johnson, 2018). The state recently introduced a college/career indicator into its new accountability model and school Dashboard that identifies students in the graduating cohort who have earned a diploma and meet at least one of five different measures of postsecondary preparedness based on performance levels on various types of coursework (e.g., college prep, dual enrollment, CTE) and test scores (Smarter Balance, AP, IB) (California Department of Education, 2018a). Next year the state will add more measures to the college/career indicator based on two additional seals currently awarded by the State Superintendent of Public Instruction (SSPI): (a) a State Seal of Biliteracy based on demonstrated proficiency in speaking, reading, and writing one or more languages in addition to English (California Department of Education, 2018d); and (b) the Golden State Seal Merit Diploma based on demonstrated mastery in English, mathematics, science, and U.S. history along with two additional subject areas of the student’s choosing (California Department of Education, 2018b). The state should report statistics on these various types of diplomas not just for 4-year cohort students but

for all diploma recipients attending all California high schools. At the same time, it should study whether these various indicators are predictive of future success in college and the labor market and revise them accordingly. Existing research already finds that a 2.0 GPA is not sufficient to ensure success in completing college (Bahr et al., 2017; Bowen, Chingos, & McPherson, 2009).

In summary, the high school graduation rate is an important indicator of student achievement and school effectiveness and one that is increasingly used for accountability. Yet it is also a complex measure that requires a more in-depth understanding of how it is calculated and what it both does and does not tell California policymakers and school leaders about the efficacy of our high schools.

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