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College Prep for All

Will San Diego Students Meet Challenging
New Graduation Requirements?



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SUMMARY

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Major urban school districts—including those in Los Angeles, San Diego, San Francisco and Oakland—have recently changed their high school graduation requirements, making college preparatory coursework mandatory. These districts now require students to complete the a–g sequence, 30 semester-long courses in assigned subjects required for admission to the University of California (UC) and California State University (CSU) systems. This bold reform seeks to equalize access to college prep coursework, thus making college more possible for historically underserved students. But it also risks denying a high school diploma to many of the very students it is designed to help.

This report examines the benefits and potential pitfalls of the reform—as experienced in San Diego, San Francisco, and Los Angeles—with primary focus on the San Diego Unified School District (SDUSD). SDUSD is the second largest district in California. There, students in the class of 2016 will be the first required to complete the college prep coursework to obtain a diploma. While both public university systems in California require students to obtain grades of C or higher in these courses, SDUSD will allow those with grades of D or higher to graduate.

Comparing San Diego’s classes of 2016 through 2018 with classes that have already graduated, the report finds that students facing the new requirement have increased their a–g course-taking. By the end of grade 11, students in the class of 2016 had completed about 1.0 semester courses more than predicted by past trends. On a very positive note, students with the lowest likelihood of completing the requirement have shown the greatest improvement.

It also appears that the percentage of students in the class of 2016 who will complete the coursework with grades of C or higher—which would make them eligible to apply to the two state public university systems—may rise up to 10 percentage points. These students could gain meaningfully from the reform.

In spite of that good news, and despite supports such as expanded summer school offerings, many students in the class of 2016 are at risk of not graduating in June. We estimate up to 27 percent will have trouble completing their required a–g courses by then; over half of English Learners and those receiving special education services are unlikely to do so. Factoring in SDUSD’s longtime graduation requirement of a 2.0 cumulative GPA raises that estimate slightly from 27 to 28 percent. The overall projected June graduation rate of 72 percent would be far below June 2014’s 87.5 percent.

In sum, roughly 10 percent more San Diego students may become eligible to apply to the CSU and UC university systems, but 16 percent more may fail to graduate. For the class of 2016, the new graduation policy is likely to produce many students who will win, and many who will lose. The district has

implemented online credit recovery classes in 2015–16, and in addition has exempted students from UC’s two-year world language requirement if they can pass a written and oral exam. The intervention and a–g exemption could yet boost graduation rates closer to their historical level.

Separately, we note an unresolved question about how to institute a policy of college prep for all while accommodating stipulations in the state education code that allows students in good academic standing to take an alternative route to a high school diploma, such as one that places greater emphasis on Career and Technical Education (CTE).

How could the “college prep for all” policy be adjusted to become a win-win for both higher- and lower-achieving students? What lessons can districts considering its adoption derive from the preliminary experiences of LAUSD, SFUSD, and SDUSD? We offer three suggestions that could help districts ensure their new graduation requirement plans thrive in the long run. First, districts can increase on-time course completion by identifying at-risk students and providing supports for them not only in high school but as far back as the elementary grades, along with more opportunities to take relevant courses. SDUSD’s expansion of language course offerings in middle school and summer school for high school students represent steps in that direction. Second, districts ideally will ensure adequate funding to provide these added supports and services. Third, districts should consider how to reconcile college prep for all with certain stipulations in the state education code, including a career and technical education pathway to a high school diploma.

Introduction

Throughout his presidency, President Obama has repeatedly called for the nation’s high schools to prepare all students for success in both college and career. Currently, 23 states and the District of Columbia require all students to complete a college-prep and career-ready curriculum. This type of curriculum reduces tracking and ensures access to the relevant and rigorous instructional program that students need to gain entry to college and for jobs after high school.

In California, high school students must complete a set of college prep courses known as the a–g requirements, with grades of C or higher, in order to apply for admission to either of the state’s public university systems – the University of California (UC) or California State University (CSU). Although California is not one of the states requiring college prep for all, the American Civil Liberties Union (ACLU) has campaigned to ensure that all California students have access to college prep coursework. It has done so by encouraging districts to audit student access to a–g courses in high schools in San Diego and elsewhere, in some cases working together with Education Trust West, an organization seeking to identify and narrow achievement gaps in public schools.

The Education Trust West audits have shown large variations across schools. Partly in response to this information, several major California districts – including Los Angeles, Oakland, San Francisco, and San Diego – have adopted high school graduation policies requiring all students to complete the a–g course of study. However, because the new requirements are quite challenging, most of these districts allow grades of D or higher, rather than the C or higher grades required by the state university systems.

This reform has important implications for equality of opportunity among students, and for the districts that implement it. Theoretical and statistical evidence on the impact of raising graduation standards is mixed.¹ The policy could increase college access for historically underserved populations, which is its ultimate goal. On the other hand, it could inadvertently decrease equality of opportunity. Poorly prepared high school students may become discouraged by the more rigorous curriculum. Their attendance may start to lag. Their grades may drop. Ultimately, they may be more likely to drop out or to persist until grade 12 without earning a diploma.

Examining how key “early adopters” of these new graduation requirements are faring helps us to assess current wins and losses, and to plan for interventions that would ultimately improve outcomes for both at-risk students and the districts that serve them. This report provides timely data from the San Diego Unified School District (SDUSD), where students in the classes of 2016 and later will be required to complete the a–g coursework with grades of D or higher in order to graduate.

The report first investigates whether these students have increased the number of college prep classes taken—both with the D or higher grades required to graduate and with the C or higher grades required by the UC/CSU—and which students are gaining the most. It then compares course-taking by students who face the new requirements with that of a–g completers in cohorts that have already graduated. The analysis suggests how far off track current students might be. The study then takes a detailed look at the class of 2016 to estimate how many, and which populations, are unlikely to graduate in June 2016. Finally, it compares this San Diego data with data from two other large urban districts—Los Angeles Unified School District (LAUSD) and San Francisco Unified School District (SFUSD)—to create a broader picture of challenges and benefits from which to make recommendations for future implementations statewide.

¹ Theoretical work on graduation standards shows that a rise in standards, without any increase in school resources, will make some students better off, and others, who fail to meet the requirement, worse off. (Costrell 1994 and Betts 1998). A reform in Chicago Public Schools in the 1990s that set new course requirements for grade 9 students appears to have produced negative side effects. (See Allensworth, Nomi, Montgomery and Lee 2009 and Nomi and Allensworth 2009.)

San Diego's New and Former Graduation Requirements Compared

To be eligible for admission to either of California's public university systems, high school students must complete 30 semesters of college preparatory coursework known as the a–g requirements. In addition, San Diego Unified requires students to obtain a cumulative grade point average (GPA) of 2.0 (a C average) to graduate. Like most of the other districts that have adopted the a–g course sequence as a graduation requirement, SDUSD has decided to allow students to graduate if they earn letter grades of D or higher in a–g coursework, as long as their overall GPA is a C or higher. Although D grades would not allow students to attend either of the state's public university systems, proponents of the policy argue that it gives all students the opportunity to take all necessary college-preparatory coursework.

Table 1 compares San Diego's new graduation requirements (in the rightmost column), with its former requirements (in the middle column). In some cases the former requirements were quite similar to the new a–g requirements. One notable change is the world language requirement, which has increased from zero semesters of credit to four.

In order to assess how the new requirements might affect district graduation rates going forward, we can use recent graduating classes as a baseline for a–g completion. Looking at the SDUSD class of 2011—which was not affected by the new graduation policy—Betts, Zau, and Bachofer (2013) found that 61 percent of graduates met the a–g requirements with a D or higher (per the new policy) and 42 percent completed the requirements with a C or higher (as required by UC/CSU).

Even though a large share of recent graduates did not complete the a–g sequence, the graduation rate for the class of 2016 (and beyond) is unlikely to be as low as 61 percent. Had the new requirements been in place, many past students who fell just short of the mark would likely have adjusted their course-taking to meet the standard. In addition, the district has recently increased spending on summer school and put in place a range of online credit-recovery coursework to help high school students graduate on time. Nevertheless, given historical rates of a–g completion, maintaining SDUSD's most recent reported graduation rate of 89.7 for 2014 may present a challenge.

TABLE 1

SDUSD graduation requirements through the class of 2015, and the a–g subject area requirements

Subject (a–g subject code)	Former SDUSD graduation requirements	UC/CSU requirements for freshman admissions
Social sciences (a)	6 semester courses (including world history, US history, 1 semester of government, and 1 semester of economics)	4 semester courses (including US history or 1 semester of US history and 1 semester of civics or American government; and world history, cultures, and geography)
English (b)	8 semester courses	8 semester courses
Mathematics (c)	6 semester courses (including algebra, geometry, and intermediate algebra OR unifying algebra and geometry)	6 semester courses (including algebra, geometry, and intermediate algebra)
Science (d)	6 semester courses (including UC-approved life science ('d'), UC-approved physical science ('d'), and 1 additional UC-approved science)	4 semester courses (with lab required, chosen from biology, chemistry, and physics)
World language (e)	World languages and visual and performing arts combined: 3 semester courses (Option A: 1 year of world language and 1 semester of visual, performing, or practical arts or Option B: 1 year of visual and/or performing arts and 1 semester of practical arts)	4 semester courses (in the same language)
Visual and performing arts (f)		2 semester courses (of visual and performing arts chosen from dance, drama/theater, music, or visual art)
Physical education	4 semester courses	Not applicable
Electives (g)	Additional credits needed to complete required 44 semester credits	2 semester courses
Total (semester courses)	44	30 (14 in the last 2 years of high school)

SOURCES: SDUSD requirements up to the class of 2015: Betts, Zau and Bachofer Table 5 (2013). a–g requirements: The University of California Office of the President (<http://admission.universityofcalifornia.edu/counselors/freshman/minimum-requirements/index.html>).

NOTES: Students can meet some of the a–g requirements by taking certain college courses or scoring at certain levels on Advanced Placement (AP), International Baccalaureate (IB), or SAT subject area examinations. More information is available from the website listed above. For SDUSD requirements currently, see <http://www.sandi.net/cms/lib/CA01001235/Centricity/Domain/34/procedures/pp4770.pdf>.

Students Are Taking More College Prep Courses

Increased a–g course completion is one clear sign that the new requirements are having an impact. As of June 2015, students in the classes of 2016 through 2018 have on average completed 29.6, 19.6, and 10.8 a–g semester courses respectively, with grades of D or higher. To test for improvement over past cohorts, we estimated time trends for a–g course completion through grades 9, 10, and 11 and tested for a significant “break” from this trend for the classes of 2016 and later. All corresponding results can be found in the [technical appendices](#).²

We find that the classes of 2016 and later are completing more a–g courses, with grades of D or higher and C or higher. They are also attempting more courses. Figures 1–3 show a–g course attempts and completion by the ends of grades 9 through 11, graphed against the expected graduation year. In each case the top line shows the total number of a–g courses attempted (including failed courses). The middle line shows the average number of courses completed with grades of D or higher, and the bottom line shows the corresponding average for C or higher. The figures reveal a longstanding trend toward higher a–g course-taking and completion across cohorts. But for the classes of 2016 and later there has been improvement on top of these trends, shown to the right of the vertical line.

The exact magnitude of the break from trend varies by grade level and generally appears to be larger in later grades as students progress through high school. These breaks are statistically significant, except for the class of 2018 (in grade 9). We cannot say for certain if that class’s improvement is simply an extension of the pre-existing trend.³ Nevertheless, through grade 11, we estimate that the class of 2016 has increased its a–g completion by about 1.0 semester courses. Together, these three figures provide evidence, but not causal proof, that the new graduation requirement is boosting a–g course completion.

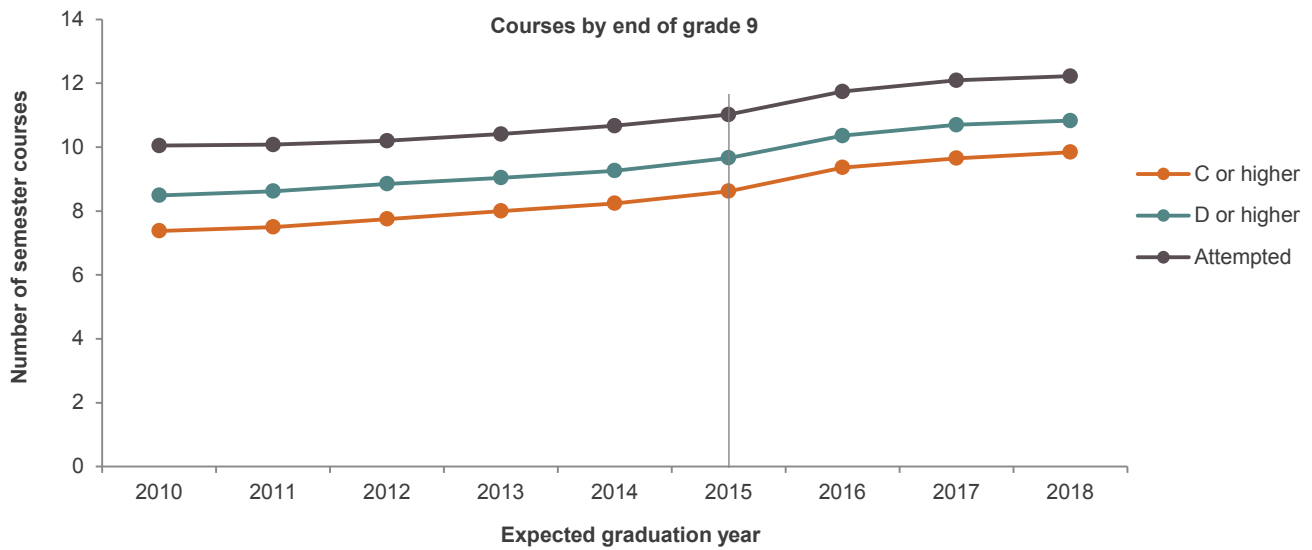
The lines in these figures showing the number of courses attempted provide indirect evidence on the question of whether *access* to a–g courses has improved. There has been a small but significant shift upwards in a–g course-taking for these cohorts. For instance, Figure 3 and models in the [technical appendices](#) show that by the end of grade 11 students in the class of 2016 had enrolled in about 1.2 more semester-long a–g courses than we would have predicted given historical trends, or about a 4 percent increase in the total number of a–g courses taken.

² Following district practice, we assign a student to a graduation “class of” based on the first time they enroll in grade 9. We then measure a–g course completion in that year, and label the next three years as grades 10, 11, and 12, which are really the grades we expect them to be in. [Technical Appendix A](#) describes the data. Detailed results for this and later sections can be found in [Technical Appendix B](#) under headings corresponding to the headings here in the main text.

³ The [technical appendices](#) show results of regression models that allow for statistical tests of whether there is a break from the preexisting trend. In the main text, when we refer to “significant” results we mean that there is less than a 5 percent chance that the stated effect is truly 0. The models take into account students’ predicted likelihood of completing the a–g coursework based on their grade 6 characteristics. The models assume that the change in the graduation requirement is the only other factor that could be producing a break from trend in the classes facing the new graduation requirement.

FIGURE 1

The classes of 2016 to 2018 are attempting and completing more a–g courses by the end of grade 9 than older cohorts

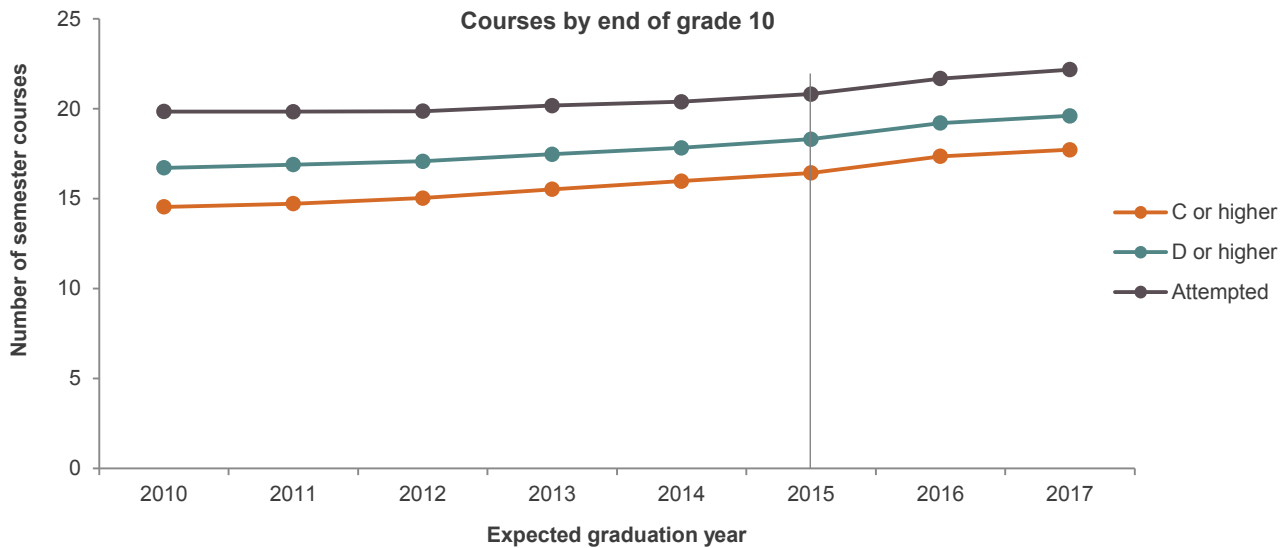


SOURCE: Authors' calculations based on student administrative records.

NOTE: Lines show the average number of a–g semester courses completed by students in each cohort with grades of D or higher or C or higher. Students were assigned to an expected year of graduation, or "class of," set to three years after the first school year in which they enrolled in grade 9. [Technical Appendix A](#) provides more details.

FIGURE 2

The classes of 2016 and 2017 are attempting and completing more a–g courses by the end of grade 10 than older cohorts



SOURCE: Authors' calculations based on student administrative records.

NOTE: See notes to Figure 1.

We also tested whether students in the affected classes have completed more a–g *subject areas* by the end of a given grade. We find no difference by the end of grade 9. But we do find positive breaks from trend by the end of grades 10 and 11, by about 0.2 additional subject areas each.

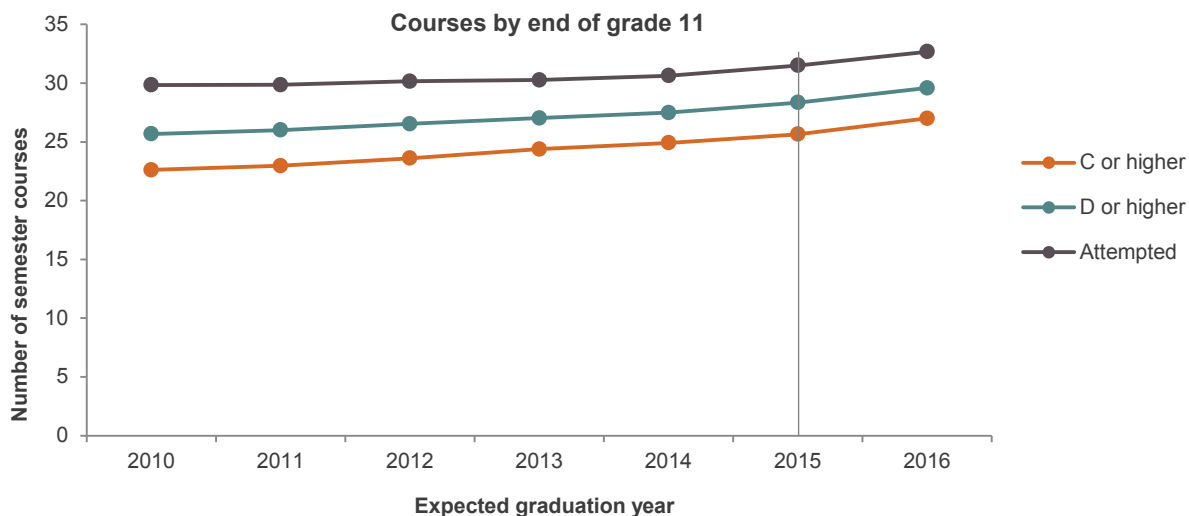
It is not surprising that the number of subject areas completed does not change noticeably by the end of grade 9, since most subject area requirements call for more than two semesters of high school coursework. One notable exception is world language coursework, which may be taken in middle school. To support student progress toward meeting the new a–g requirements, the district has taken steps to ensure that a–g world language coursework is now available in all middle schools. This is notable because, as seen in Table 1, world language is the subject area in which graduation requirements were raised the most.

An additional finding is that summer school—an area in which the school district has expanded its spending—appears to be helping students with a–g course completion, albeit to a modest extent. During summer school in 2015, each of the classes of 2016 through 2018 increased their a–g coursework by about 0.3 semester courses on average. These additional credits are largely concentrated in English, science, and math.

Finally, although it is encouraging to see evidence of increased a–g completion, it is important to note that the estimated improvements are small proportionally. For example, the estimated increase of 1.0 semester courses through grade 11 corresponds to about a 3 percent increase in the number of courses completed. Moreover, these improvements still may not ensure students are on track to meet the a–g requirements. Although the affected graduating classes appear to have increased their a–g course completion compared to overall past averages, they still lag behind the average pace of students *who successfully completed* the a–g sequence in the past. Through June 2015, students in the class of 2016 were about three semester courses behind the average pace of a–g completers in the classes of 2011–2013 through grade 11. This gap widens somewhat as students progress through high school. The classes of 2017 and 2018 also lag behind the historical average pace of a–g completers, but the gaps are slightly smaller than for the class of 2016. Additional details on this comparison can be found in the [technical appendices](#).

FIGURE 3

The class of 2016 is attempting and completing more a–g courses by the end of grade 11 than older cohorts



SOURCE: Authors' calculations based on student administrative records.

NOTE: See notes to Figure 1.

Historically Underachieving Students Are Responding Most Strongly

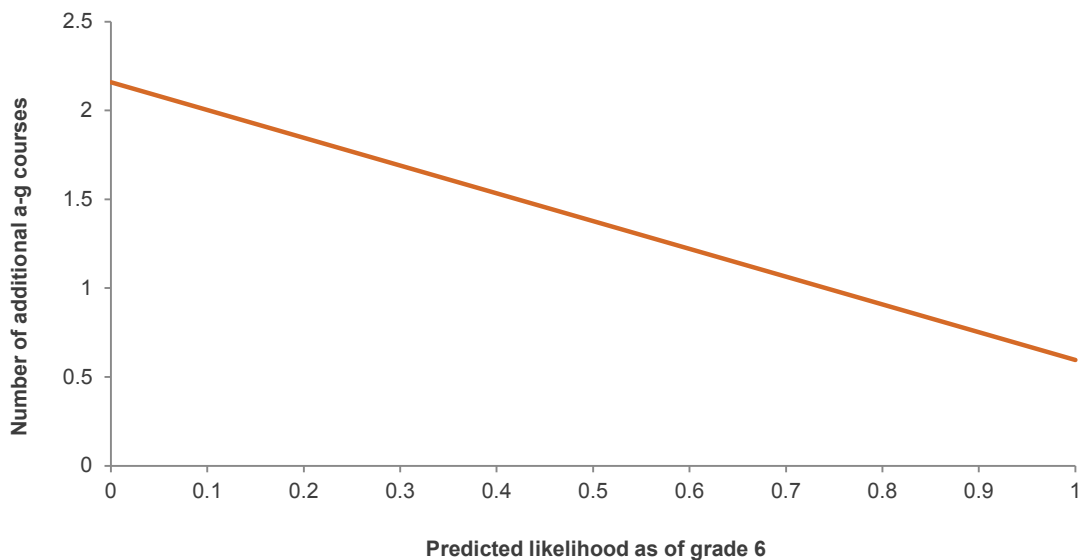
For the new graduation requirements to make college access more equal among student groups, students who historically have underachieved must increase their a–g course completion the most. We used several approaches to investigate whether this has been the case.

First, we predicted students’ baseline likelihood of completing the a–g sequence. Using the classes of 2011–2013 and applying individual students’ grade 6 characteristics, we estimated the likelihood that a given student completes the a–g sequence with grades of D or higher. We found that students with higher grades, higher math and reading test scores, and those who were not English Learners or in special education—all measured in grade 6—had markedly higher probabilities of completion. Applying these estimates to students in younger cohorts, we tested whether the break from trend in a–g courses completed varied with their baseline likelihood of completing the a–g sequence.

At the outset of high school (at the end of grade 9), we find relatively little difference in the increase in students’ a–g course completion by baseline likelihood of completion. But a pattern appears to emerge at later grade levels. By grade 11, we find that students who had lower baseline likelihood of completion have increased their a–g course-taking the most. Figure 4 shows this for the class of 2016. For instance, in the class of 2016 a student with a sixth grade likelihood of completing a–g coursework of 0.5 is predicted to have completed an additional 1.4 semester courses than we would predict based on past trends in the district. This compares to only an additional 0.6 course for a student with a sixth grade likelihood of 1.⁴

FIGURE 4

Students in the class of 2016 who had lower predicted likelihood of completing the a–g requirements have increased their a–g course completion by grade 11 to a greater extent than other students



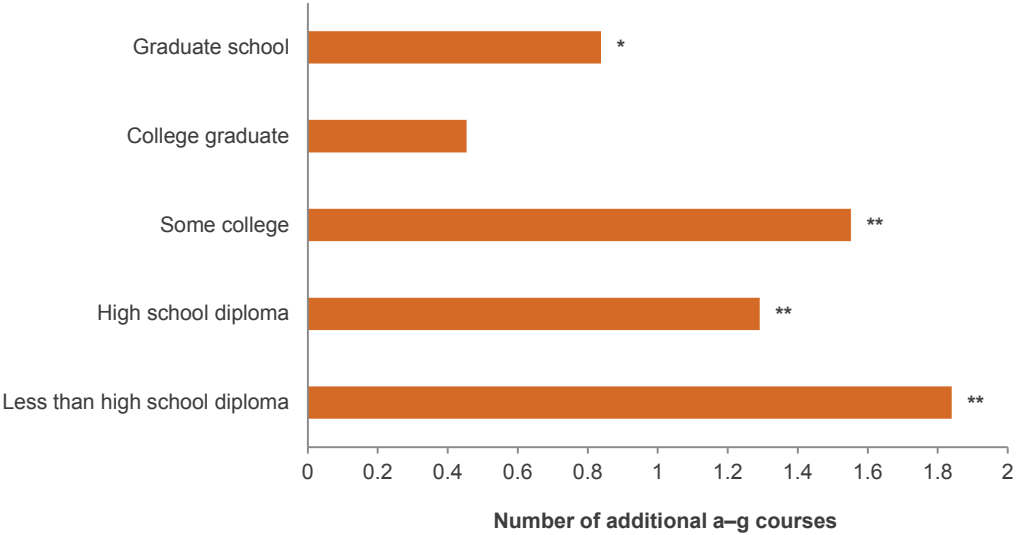
SOURCE: Authors’ calculations based on student administrative records.

NOTE: The line shows the break from the pre-existing trend in a–g courses completed with grades of D or higher by the end of grade 11 and how it varies by students’ predicted likelihood of completing the a–g coursework based on their characteristics in grade 6. See [Technical Appendix B](#) for the underlying model. The slope shown is significantly different from zero.

⁴ This figure does not mean that students with low predicted likelihood were completing more a-g courses in total than students with high predicted likelihood. It means that they were starting to catch up.

We also looked for variations by parental education, race/ethnicity, and English Learner and special education status. Consistent with earlier results, several groups showed a positive break from trend. But differences between groups were often not statistically significant, perhaps due to the small size of some groups. One exception is parental education, where models of courses completed for each of grades 9–11 uniformly pointed to differences in the response to the a–g policy. Figure 5 shows that, broadly speaking, students whose parents had lower levels of education showed a larger increase in course completion.

FIGURE 5
Students in the class of 2016 whose parents had lower levels of education increased their a–g course completion by grade 11 to a greater extent than other students



SOURCE: Authors’ calculations based on student administrative records.
NOTE: * and ** indicate that the break from the pre-existing trend in a–g courses completed with grades of D or higher for the class of 2016 was statistically significant at the 5% and 1% levels, respectively. The height of the bars indicates the increase in the number of a–g courses completed beyond what was expected based on preexisting trends.

The Graduation Rate for the Class of 2016 Is Likely to Fall Below Recent Rates

Since students in the class of 2016 have completed fewer a–g courses than students in older cohorts who ultimately did complete the coursework by the time they graduated, it becomes important to estimate how many of them will graduate on time. We project what share is likely to finish the a–g requirements by the intended graduation date. To do this, we classify students as either “on track” or “off track” based on how many a–g courses they still must complete (as of August 2015) and how many can feasibly be taken in one school year.

Typically, students in SDUSD take six courses in each of two semesters during the school year, and no more than one course in a given subject at a time (since one course usually serves as a prerequisite for the next course in the sequence). So if a student has 12 or fewer a–g semester courses to complete, and no more than two semester courses to complete in any subject, he or she has a realistic chance of completing the college prep requirements by June 2016. We refer to these students as “on track,” and students who do not meet one or both criteria as “off track.”

Using this approach, 73 percent of students in the class are on track and 27 percent are off track.⁵ In order to provide an overall estimate of the graduation rate in June 2016, we also need to consider the district’s cumulative 2.0 GPA requirement. Assuming student GPAs remain the same in 2015–16, overall we estimate that 72 percent of the class of 2016 is likely both to complete the college prep coursework and meet the cumulative GPA requirement. This projected graduation rate is well below the SDUSD June 2014 graduation rate of 87.5 percent.⁶ Put differently, 28 percent are unlikely to graduate in June 2016 at their current pace, compared with 12.5 percent in 2013–14.

Perhaps making matters worse, about half the students who are off track because of a–g coursework completion also have GPAs below 2.0. These students—about 13 percent of the class—face “double jeopardy.” They must take a large number of a–g courses while also improving their GPAs.

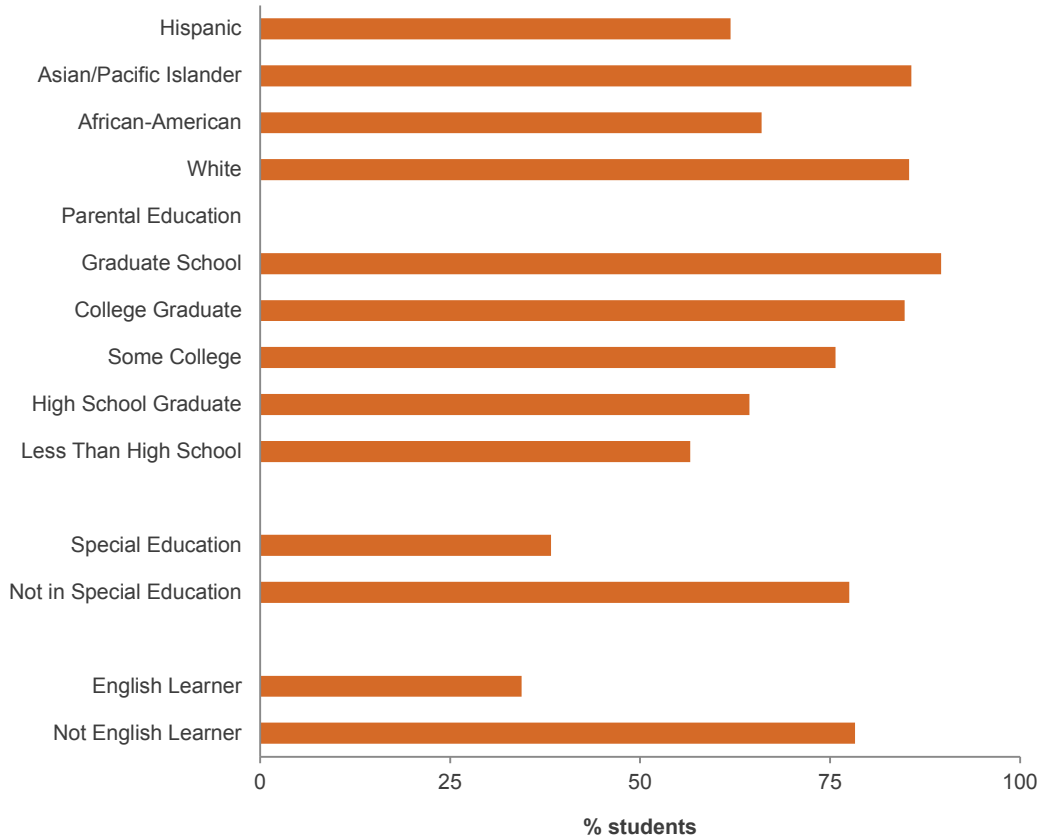
On-track status is not evenly distributed by language, racial/ethnic, or socioeconomic groupings. This can be seen for the class of 2016 in Figure 6. Only a minority of students in special education and those who are English Learners appear likely to graduate in June. Further, although students whose parents have less education increased their course-taking more, far fewer of them are on track to complete the requirements on time than are students whose parents have college educations.

⁵ As a robustness check, we also estimate a probit model of completing the a–g requirements on time based on coursework through grade 11, and found an average likelihood of completion of 72% for the class of 2016. This is similar to the 73% projection above.

⁶ The class of 2014 had an 87.5% graduation rate in June 2014. This rate later rose to 89.7% by the end of summer 2014. It is worth noting that this official 89.7% graduation rate includes students who entered SDUSD after grade 9, whereas our models focus exclusively on students already in the district in grade 9. This could be another factor contributing to the quite large gap between our forecast and recent history. The 2013–14 graduation numbers exclude charter school students, and focuses on district-managed schools, the same ones subject to the new graduation requirement.

FIGURE 6

The percentage of students in the class of 2016 who are on track to complete the a–g coursework by June 2016 varies dramatically by student group



SOURCE: Authors' calculations based on student administrative records.

NOTE: The bar shows, for students in the stated subgroup of the class of 2016, the percentage who are on track to complete the a–g coursework in time to graduate in June. English Learner and special education status is measured as of grade 9 for each student.

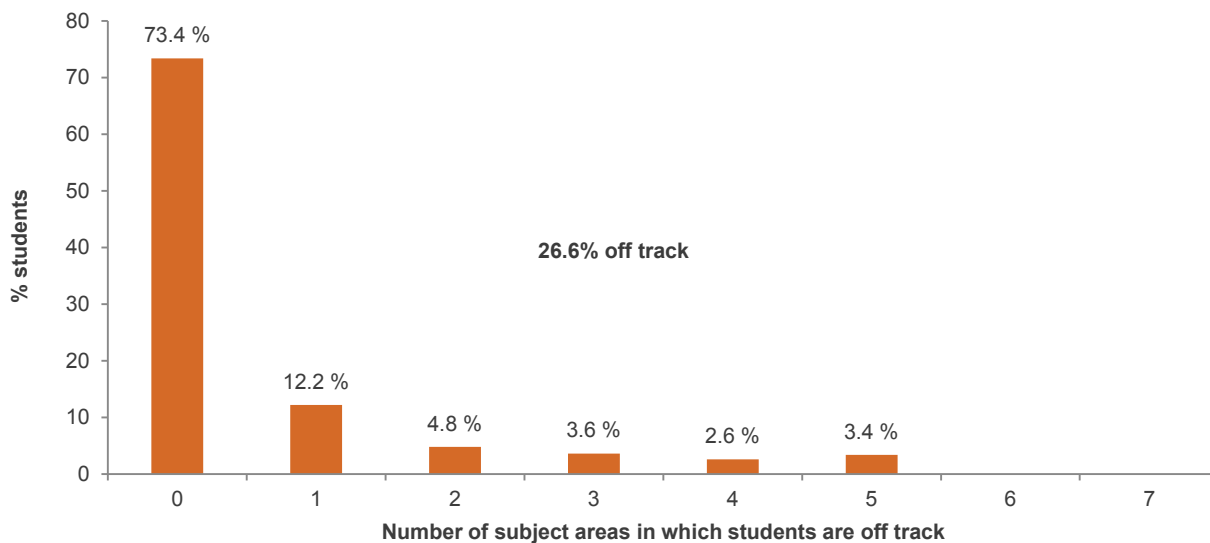
How Far Off Track Are Students in the Class of 2016?

The estimate that about 72 percent of students in the class of 2016 are on track to graduate in June is important, but does not give a sense of how far from meeting the course requirements off-track students might be.

Not all off track students are equally behind. Figure 7 shows the number of subject areas in which students must complete more than two semester courses in 2015–16 in order to graduate in June. Ten percent of students, or about a third of those we project to be off track, had at least three such subjects. And an additional 5 percent of students had two such subjects. Because it is very difficult to complete more than two semester courses in the same subject area in one year, students who must do this for multiple a–g subjects are unlikely to graduate in June 2016, and may be unable to graduate even if they attend summer school.

FIGURE 7

The percentage of students in the class of 2016 by the number of subject areas in which they have more than a year of material to complete in grade 12



SOURCE: Authors' calculations based on student administrative records.

NOTE: The bar shows, for students in the class of 2016, the distribution of the number of subject areas in which they have more than a year's worth of work (more than two semester courses) yet to complete during grade 12.

Which subject areas currently pose the biggest obstacles? Figure 8 shows the percentage of students in the class of 2016 by number of semester courses yet to complete in each a–g subject area. As seen in the figure, English and math appear to be giving students the most trouble, with 23 percent and 12 percent of students off track, respectively.⁷ Social studies, science, and world language all have between 7 and 10 percent of students off track. The colors in the graph provide additional detail on exactly how many credits students have yet to complete. As can be seen, students sometimes have four or more semester credits remaining in a given subject. This amounts to two school years of coursework, which will be extremely difficult to complete by June 2016.

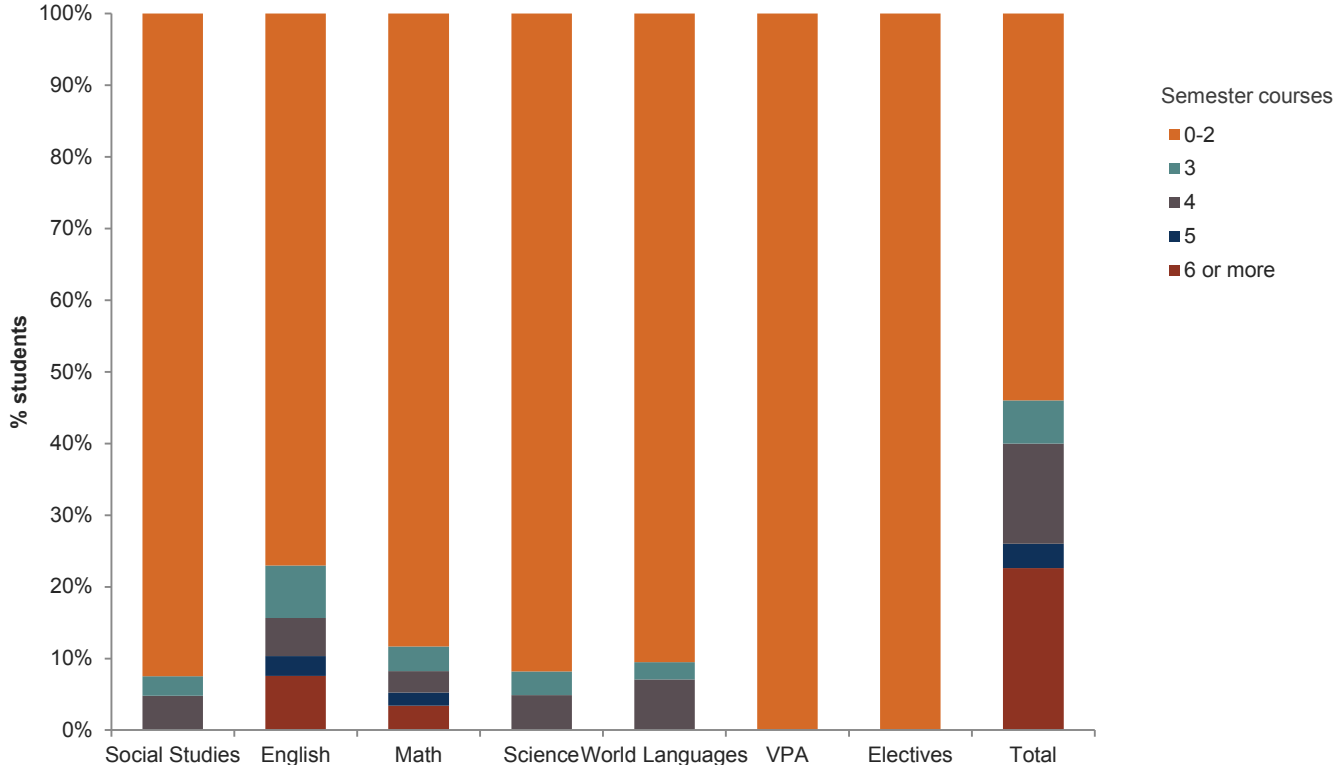
⁷ This 12% figure may somewhat understate the true share of students who are off track in math, since the math requirement specifies both a total number of semester credits and specific courses. Historically, between 5 and 8% of students in SDUSD who finish with six or more semesters of math credit nevertheless fail to complete the math requirement. For students who finish with exactly six semester credits, however, this non-completion rate is nearly 25%.

Prior to the change in graduation requirements, English, math, and world language had historically been the a–g subjects that students most commonly did not complete; each having about a 75 percent completion rate.⁸ It is not surprising that English, math, and world language, in that order, continue to be the most challenging subjects. The share of students on track to complete the English requirement by June is mostly unchanged from its historical completion rate. English Learners account for a disproportionate share of those off track in English. In the class of 2016, students who were EL in grade 9 account for 28 percent of those off track in English, but only 12 percent of the class as a whole.

In contrast, world language appears headed for a large increase in its completion rate. Just over 90 percent of students are on track to complete the world language requirement by June, perhaps due in part to expanded language course offerings in middle school.

Seeing how far behind some students are, it is natural to ask whether they can catch up, given the options the district makes available to students who are credit deficient. The district has recently introduced online credit recovery versions of a–g courses. If a student is just one course shy of graduating in June, the availability of these online courses during the school year could help. Similarly, a student who is still two courses short of graduating in June could perhaps attend summer school in 2016 and graduate in late summer.

FIGURE 8
A breakdown of the class of 2016 by the number of semester courses yet to complete in grade 12 by a–g subject area shows that English and math present the largest barriers to on-time graduation



SOURCE: Authors’ calculations based on student administrative records.
NOTE: The bar shows, in the class of 2016, the percentage of students by the number of courses yet to complete in a given subject area during grade 12. Students with more than two semester courses to complete in a given subject will have difficulty graduating on time.

⁸ See [Technical Appendix Table B22](#) for full details about historical completion rate by subject.

The Class of 2016: How Many Are Likely to Become Eligible to Attend CSU or UC?

Ultimately, the goal of making college preparatory coursework the norm for high school graduation is to increase the number of students who become eligible to attend university. California students must complete all a–g coursework with grades of C or higher in order to apply to the CSU and UC systems. In the class of 2016, how many SDUSD students might meet that goal? Using a similar approach as before—based on coursework through August 2015—we find that 59 percent are on track.⁹

By comparison, in 2011–2014, 44.0 percent, 45.8 percent, 49.8 percent, and 47.9 percent, respectively, fulfilled the UC/CSU requirements.¹⁰

This comparison is not exact because for 2016 we followed cohorts of students rather than analyzing completion rates for all students at the end of their grade 12 year. Our cohort model counts dropouts as non-completers of the a–g requirements, and we ignore students who arrive in SDUSD after grade 9. The former makes our calculation “too low” and the latter makes our number “too high” if later arrivers are relatively ill prepared.¹¹ Nevertheless, the gap of more than 10 percentage points suggests that the new graduation policy may in fact be succeeding at making more students eligible to attend the two state university systems.

An Unresolved Issue: Alternative Pathways to Graduation

Not all students want – or need – to take the same path from high school into college and career. In prior work on the SDUSD graduation reform, Betts, Zau, and Bachofer (2013) raised a related policy question that remains unanswered. Two provisions in the California Education Code mandate that school districts provide alternative routes to a high school diploma. One stipulation requires districts to adopt “alternative means” for students to meet graduation requirements (Ed Code 51225.3). A second requires districts to allow students who have successfully completed grade 10 to choose either a traditional college preparatory or a career preparatory program (Ed Code 52336.1). It is not clear that SDUSD currently allows the latter option.

In August 2015, the district introduced Administrative Procedure 4771 which, among other things, indicated alternative means for students to signal mastery of a world language and emphasized that online credit recovery has been available to students who fail a course. But alternative pathways to a regular high school diploma—including a Career and Technical Education (CTE) route—remain elusive. Logically, the problem seems to be that “college prep for all” means that all students must complete the a–g requirements, which is inconsistent with multiple routes to a diploma.

⁹ This estimate may be slightly high because it assumes that none of these students will get a grade below C in their remaining college prep courses. A probit model based on coursework through grade 11 estimates 55% may be a more realistic rate.

¹⁰ Downloaded from Dataquest on December 17, 2015, at <http://dq.cde.ca.gov/dataquest/>.

¹¹ Historically, the students arriving later than grade 9 finish with fewer a-g credits on average than those who arrive in or before grade 9. Further, if our estimates that 72% of students in the class of 2016 will graduate on time and that 59% (total) will graduate having fulfilled the a-g requirement with grades of C or higher prove accurate, the percentage of graduates meeting the UC/CSU requirement would be 81%, far above the recent rates for the district. Of course, part of this increase would come from the sizeable reduction in the number of students allowed to graduate.

SDUSD has worked hard to increase the academic content of its CTE courses in recent years, which helps to reduce the problem. But perhaps, in the near future, the district can identify alternative pathways that substitute two- or three-course CTE concentrations in specific career areas for a–g coursework for students who have completed most of the a–g course requirements. One possible approach would be to mimic the minimum course requirements for a high school diploma in California (Ed Code 51225.3), which state that a one-year requirement in either visual or performing arts, or foreign language, can be replaced by a one-year course in career technical education.

Such modifications in how the new requirements are implemented could go a long way toward supporting those students who might have a hard time—or little interest in—completing all of the a–g coursework.

Other Unintended Consequences?

Proponents of “college prep for all” argue that the policy will increase equality of opportunity by holding all students to the same standard. But as it stands now, there could be unintended negative consequences that harm the very students the policy seeks to assist.

We have already discussed that the college prep requirements may decrease the graduation rate for the classes of 2016 and later compared to past cohorts. In addition, students with a strong interest in Career and Technical Education (CTE) might be discouraged from taking these courses, which often do not qualify for a–g credit. This in turn could alter their careers in unexpected, perhaps negative, ways. Grades and grade point average (GPA) may also be affected when students start taking more rigorous courses – especially important because SDUSD has long made a GPA of 2.0 or higher a graduation requirement. Finally, discouraged students may be more likely to skip school, to transfer to charter schools in the district that have not imposed the a–g requirements, or to leave the district altogether.

It is important to examine possible unintended consequences now, while the reform is relatively new, so that California school districts moving toward implementing college prep for all graduation policies can proactively address barriers to student success. And, with respect to our findings for San Diego’s class of 2016 and beyond, it is critical to determine the impact of the policy on course-taking patterns, GPA, attendance, and out-of-district transfers. We assessed each of these possibilities, using separate models for grades 9, 10, and 11. We found no evidence that students in the classes of 2016 or later were more likely to be absent, to switch to charter schools, or to take fewer CTE courses. GPA was not affected, and there was similarly no break from trend in the percentage of students with a cumulative GPA below 2.0.

We found some weak evidence that, in the classes of 2016 and later, students were slightly more likely to leave the district compared to past cohorts. The increase beyond trend was statistically significant but very small. Overall, we find no evidence of the many negative side effects that seemed possible.¹² This conclusion is a very positive finding.

¹² Our data on which students enrolled in charter schools in 2013–14 and 2014–15 are incomplete, meaning that our data may misidentify some students who switched to charter schools as having left the district. When we instead modeled the probability that students *either* leave the district or enroll in charter schools, we found no significant evidence of breaks from trend in this probability.

Lessons Learned from Other Districts

SDUSD is just one of several California districts that have adopted the “college prep for all” policy. We have seen how San Diego is faring, but what have these other districts experienced?

Betts, Zau, and Bachofer (2013) surveyed the a–g requirements in various districts. San Jose Unified School District was the first to implement an a–g graduation requirement, for the class of 2002. However, students there can opt out. Blume and Butrymowicz (2013) reported that many of San Jose’s high school students—most of them minority students – sidestep the a–g graduation requirement by transferring to alternative high schools that are not subject to the a–g mandate. Given evidence that students there can opt out, it is not surprising that Betts, Zau, and Bachofer (2013) report very little gain in the percentage of San Jose’s graduates who met the UC and CSU eligibility requirements in the decade after the reform.

Betts, Zau, and Bachofer (2013) reported that Oakland Unified School District implemented a similar opt-out provision in its version of the a–g requirement, with students in special education eligible for an exemption, as are students who attend continuation schools. Again, this is quite a different policy from in other districts that have emphasized that their college prep requirements are intended for “all.”

Two districts in particular provide close parallels to San Diego, and important lessons to consider with respect to future implementations—Los Angeles Unified School District (LAUSD) and San Francisco Unified School District (SFUSD).

Like San Diego, Los Angeles is requiring students in the classes of 2016 and later to complete the a–g coursework with grades of D or higher. Clough (2016) reported that as of fall 2015, only 54 percent of seniors in LAUSD were on track to graduate. This compares to a graduation rate of 74 percent for the most recent year available. However, the district has invested \$15 million to help students complete their coursework. These supports include online credit recovery courses and a variety of interventions ranging from extra periods, independent study, and mastery learning in school to face-to-face courses at continuation and adult schools. Many students have enrolled in the online courses for the spring semester of 2016.

New reports from the district suggest that the graduation rate in June could be 63 percent or higher (Blume 2016, *Los Angeles Times* 2016). This estimate is based on the assumption that students in the class of 2016 will pass every regular and online course in which they have enrolled for spring semester.¹³ So, in spite of the supports provided, if students fail some classes or do not meet other graduation criteria the rate is still likely to drop from 74 percent to at most 63 percent—and potentially lower.

The San Francisco Unified School District (SFUSD) began requiring the a–g coursework for diplomas with the class of 2014. Data released in spring 2015 and commented on in the press (Dudnick 2015 and Tucker 2015) suggested a drop in graduation rates. But the district found some data errors, and new data released in summer 2015 now suggests that the overall graduation rate in spring 2014 rose marginally for the first cohort affected by the new requirement. In 2014 the graduation rate was 83.9 percent, compared to 81.7 percent the year before. The district made extensive use of online credit recovery courses to help many students meet the requirement.

There is a good chance that the change in San Francisco’s graduation rate is more positive than what will happen in other districts, for two reasons. First, somewhat akin to San Diego, San Francisco already had quite high course requirements for graduation before implementing the a–g requirement. The change adds just a third year of

¹³ We are grateful to Cynthia Lim, Executive Director of the Office of Data and Accountability at LAUSD, for explaining the basis for the district’s estimate that as many as 63% of the class of 2016 will complete the graduation requirement.

mathematics, and a second year of world language (SFUSD, undated). Therefore the increase may not be as daunting for San Francisco students as it might be in districts where completing the a–g requirements would involve many more courses than previously required. Second, San Francisco graduates have long been completing a higher proportion of the a–g coursework than students in many other districts. For instance, in 2010–11—a representative year well before any of these districts’ new requirements were in place—56.8 percent of San Francisco graduates completed the a–g coursework with grades of C or higher. This compares to only 41.2 overall in the state, 48.5 in SDUSD, and 38.7 in LAUSD.¹⁴ The difference implies that San Francisco’s results may understate the challenges facing SDUSD and—even more so—LAUSD, as well as districts that adopt the policy in future.

¹⁴ Data downloaded 2/29/16 from Dataquest at the California Department of Education at <http://dq.cde.ca.gov/dataquest/>.

Conclusion

This year could become a watershed moment in SDUSD’s history. In the class of 2016 there will be many who win and many who lose as a result of the “college prep for all” policy. Clearly, students and teachers are responding to the new graduation requirements. Affected cohorts of students are completing more a–g courses, and supports are in place to help them to graduate on time. Even so, many students are likely to fall short.

SDUSD currently has one of the highest graduation rates among large urban districts in California, at 89.7 percent in 2013–14 (measured as of August 2014).¹⁵ In an earlier study, Betts, Zau, and Bachofer (2013) pointed out that only 61 percent of the class of 2011 completed the new a–g requirements. Although we are confident that the class of 2016 will top that achievement, its graduation rate will still fall well below the district’s June 2014 rate of 87.5 percent. Our current best estimate is that 72 percent of students in the class of 2016 will meet both the district’s “D or higher” a–g requirement and the cumulative GPA requirement by June – a drop of more than 15 percentage points. The rate could rise if some students finish coursework over the summer or if new online courses boost course completion, but it is likely to be lower than 89.7 percent in August 2014.

The prospect of a lowered graduation rate notwithstanding, students are attempting and completing slightly more a–g coursework with D or higher marks. Interestingly, students with a lower predicted likelihood of completing the a–g course sequence have shown greater improvement than their classmates with a higher likelihood. In addition, as many as 59 percent of students in the class of 2016 may graduate having attained the C or higher a–g grades that make them eligible to apply for admission to the UC/CSU system. We cannot compare exactly to historical data, but we believe that this exceeds recent college eligibility rates in SDUSD by up to 10 percentage points. Further, theoretical models of graduation standards such as Betts (1998) suggest that over time the labor market will recognize the greater skills acquired by recent San Diego graduates, possibly boosting their earnings. These improvements all constitute wins for the district and its students.

But we must also consider students who lose in this new policy environment. The estimated 28 percent of students who will not graduate in June unless they accelerate their course completion may never receive the high school diplomas they need to gain employment, to join the military, or to attend universities outside the UC/CSU system. English Learners, students with special needs, and Hispanic and African American students are particularly at risk – presumably the very groups the new graduation policy was designed to help.

Clearly, there is an immediate need to support struggling students in San Diego’s class of 2016. To its credit, the district has recently increased summer school offerings, which appears to have helped students make modest gains, especially in English, mathematics, and science. During summer 2015, the average number of semester courses completed rose by 0.3 for the classes of 2016 to 2018. In 2015–16 the district has implemented new online credit recovery courses, which might help more students graduate on time. If many students who will not graduate in June are very close to meeting the new a–g requirements, an aggressive campaign to encourage continued high school enrollment in 2016–17 might offer non-graduates a “fifth-year” pathway to a high school diploma. On average over the classes of 2009 to 2013, the number receiving a diploma in five years was about 2.8 percentage points higher than the number receiving a diploma in four years. These numbers suggest that a “re-enrollment” campaign for non-graduates could attract many students. Such a program could especially help disadvantaged students, given national evidence that the gap in five-year graduation rates between advantaged and disadvantaged groups is smaller than the gap in four-year graduation rates (Murnane 2013).

¹⁵ Downloaded from Dataquest at <http://dq.cde.ca.gov/dataquest/dataquest.asp> in November 2015.

However, a fifth year of high school is at best a stopgap measure, and online credit recovery courses in grade 12 may or may not impart as many skills as a regular semester-long course. Other, far earlier supports are urgently needed to ensure students' readiness to conquer the a–g curriculum. We note that the two subject areas posing the most difficulty to the class of 2016 are English and math. In both cases, the solution likely will require more help for students well before they reach high school. Such expanded supports for the district's many long-term English Learners, provided years in advance, may help more students to meet the a–g English requirement. Likewise, the many students struggling with the math requirement point to weak foundational skills in math that are apparent as early as elementary school. For example, our model predicting a–g coursework completion for cohorts that have graduated found that student characteristics gathered in grade 6 provided highly accurate forecasts of who would complete the coursework six years later. (For details on this model see [Technical Appendix Table B10](#).) It is eminently feasible to identify at-risk students and to intervene well before high school.

Because San Diego's graduation requirements were already quite similar to the a–g course sequence, the “ramp up” was not as daunting as it might have been, and yet the district has faced considerable challenges in helping students to meet the new goal. San Francisco and Los Angeles faced similar challenges. Other districts planning to adopt the “college prep for all” policy in future would do well to learn from these trailblazers. They need to carefully consider the differences between their existing and proposed graduation requirements, the type and amount of preparation needed to support students from the early elementary grades onward, the mechanisms through which students, parents, and community members will be informed, and the funding to provide supports and services for struggling students.

In sum, by increasing graduation requirements, San Diego and other districts have opened more doors to success. Ironically, they have also opened more doors to failure, in the sense that a greater number of students are now at risk of not graduating. The “college prep for all” graduation requirement has made it more urgent than ever to support students, starting in the elementary grades, so they may achieve the best possible outcomes. Without such efforts, it is far from clear that this new policy, which was introduced to increase equality of opportunity, will in fact equalize educational opportunities between advantaged and disadvantaged groups.

REFERENCES

- Allensworth, Elaine M., Takako Nomi, Nicholas Montgomery, Valerie E. Lee. 2009. "College Preparatory Curriculum for All: Academic Consequences of Requiring Algebra and English I for Ninth Graders in Chicago." *Educational Evaluation and Policy Analysis*, 31 (4): 367–391.
- Betts, Julian, Andrew C. Zau, and Karen Volz Bachofer. 2013. *College Readiness as a Graduation Requirement: An Assessment of San Diego's Challenges*. Public Policy Institute of California.
- Betts, Julian R. "The Impact of Educational Standards on the Level and Distribution of Earnings." 1998. *American Economic Review* 88 (1): 266–275.
- Blume, Howard. 2016. "Why L.A. Unified's Graduation Rate is Expected to Soar This Year." *Los Angeles Times*, February 24.
- Blume Howard and Sarah Butrymowicz. 2013. "L.A. Unified's College-Prep Push is Based on False Data: San Jose's School District, Which Requires All Students to Pass the Classes Necessary to Apply to California Universities, Initially Reported Strong Results. But its Success Was Overstated." *Los Angeles Times*, January 28.
- Clough, Craig. 2016. *LAUSD Graduation Crisis: No District Area is Untouched*. LA School Report, February 12.
- Costrell, Robert M. 1994. "A Simple Model of Educational Standards." *American Economic Review* 84 (4): 956-971.
- Dudnick, Laura. 2015. "SF High School Grad Rate Drops Below Statewide Average." *San Francisco Examiner*, April 28. downloaded 2/29/16 from <http://archives.sfexaminer.com/sanfrancisco/sf-high-school-grad-rate-drops-below-statewide-average>.
- Los Angeles Times*. 2016. "Are LAUSD Students Really Ready for College?" February 26.
- Murnane, Richard J. 2013. "U.S High School Graduation Rates: Patterns and Explanations." *Journal of Economic Literature* (June) 51 (2): 370–422.
- Nomi, Takako and Elaine Allensworth. 2009. "'Double-Dose' Algebra as an Alternative Strategy to Remediation: Effects on Students' Academic Outcomes." *Journal of Research on Educational Effectiveness* 2 (2): 111–148.
- San Francisco Unified School District. Undated. "A–G Implementation Plan FAQ" Office of Public Outreach and Communications.
- Tucker, Jill. 2015. "Drop in S.F. Graduation Rate Surprises Officials." *San Francisco Chronicle*, May 4.

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