A BACKGROUND PAPER FOR THE HOOVER EDUCATION SUCCESS INITIATIVE

Ready or Not?

PREPARING ALL STUDENTS FOR A MEANINGFUL POST–HIGH SCHOOL EXPERIENCE

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Students graduating from high school should have doors open to them. They should leave high school with the knowledge and skills they need to succeed in pursuing a postsecondary pathway or a credential of value that leads to a career. Successful preparation for life after high school starts with setting high expectations for all students. In too many states, however, a high school diploma does not mean that a graduate is ready to successfully enter the workforce, the military, or college, limiting the opportunities available to them after high school graduation. The national high school graduation rate has been increasing annually since 2011, setting new records each year, but other measures of high school graduates' academic preparation have not seen corresponding gains. Performance on the states' high school assessments and the twelfth-grade National Assessment of Educational Progress (NAEP) in reading and mathematics has essentially remained flat, and college remediation rates are still high—particularly for black and Hispanic students.[1]

Furthermore, high school graduates, college professors, and employers acknowledge gaps in students' readiness for life after high school. Forty-five percent of recent high school graduates report that they lack essential academic skills necessary to succeed in their current context.[2] A majority of college instructors report that fewer than 50 percent of recent high school graduates were adequately prepared in mathematics and writing. And 61 percent of employers report that they require or request recent high school graduates to obtain additional education or training to make up for gaps in their preparation. These results are consistent with findings from similar surveys Achieve conducted ten years earlier, in 2004.

These points raise a critical question: Why aren't students ready? To answer this question, we need to establish a baseline understanding of what students are expected to do to earn a high school diploma, and then ask whether these are the right courses and experiences to drive a student's readiness for life after high school. What do we know about students' readiness, and where are the gaps? How are states defining college and career readiness in their state, and what do these outcome measures and their related reporting tell us about students' readiness for life after high school?

This paper will lay out the current graduation requirements landscape across states; present states' most recent high school student outcomes data, including completing a college- and career-ready (CCR) course of study, assessment results, and meeting a CCR measure in a state; identify gaps between K–12 exit and higher education entrance requirements; and

prioritize key actions for state education leaders looking to tackle the most pressing issues around high school education in our nation.

The Graduation Requirements Landscape

State education leaders play a critical role in setting the expectations for completing a K–12 education so that meeting those expectations signals that graduates will be college and career ready. In all states, the state sets the graduation "floor"—the minimum set of expectations to graduate.[3] But each student's pathway may look different. Pathways for students must account for a system in which students may pursue different college and career options along the way or switch pathways. Students planning to go directly into college after high school make a stop along the way to their eventual careers and must still be exposed to career-readiness skills and learning experiences in high school (and perhaps earlier). Going into and through a career pathway should not mean that students are not exposed to courses preparing them for college-level coursework, as most will likely need some postsecondary education during their career.

States' recent efforts to create multiple pathways to graduation or to allow students to earn endorsements in specific content areas, such as career and technical education (CTE) or arts, among others, recognize that not all students need to pursue the same path, and not all end at the same destination. However, these changes have also led to a more complicated, and sometimes messy, high school graduation landscape that is becoming more confusing for students and families to understand and navigate. Additionally, recent changes in some states have in effect lowered expectations and allow some students to graduate by meeting less rigorous standards, raising concerns that some students may be steered toward a less rigorous pathway based on race, ethnicity, or socioeconomic status.

State policies for high school graduation requirements differ in the number of graduation options available to students, the number of courses required, the content of those courses, and the assessments required. Some states offer a single option for graduation, while others offer several options. *Nationally, states offer more than 115 different high school graduation options for students*.[4] Although often billed as a single, statewide diploma, many states still have different sets of expectations for students in order to complete high school, depending on the options students choose or the options made available to them. These may take the form of endorsements, seals, pathways, diplomas, and so on. High school graduates in fourteen states had three or more paths to graduation in 2019. Fifteen states offered two paths to graduation. And twenty-one states and the District of Columbia had one state-defined path to graduation in 2019. In the last year, a number of states have modified or added to the number of options available to students for graduation. States adopt these policy changes in the belief that they provide opportunities for students to personalize their education, or to better prepare students for career paths or postsecondary coursework.

Offering more options and flexibility is good for many students, but this should not result in lower expectations. States are not serving students' best interests by allowing them to graduate without having taken an appropriately rigorous course of study or demonstrated that they are ready for their next steps.

States have also adopted *diverse policy structures* for graduation requirements. Some states have traditional units or courses students must take prior to graduation. Some states have competency-based requirements, basing graduation requirements on student proficiency or mastery of standards rather than on particular courses. Some states have created specific pathways to graduation through a combination of courses, student experiences, and demonstrations of what they know and can do. Some states have a combination of these approaches.

The required *numbers of courses* and the *rigor and specificity* of those courses vary considerably across states; all high school diplomas are not created equal. For example, in some states, expectations are set that all students can and must complete a college- and career-ready course of study in English language arts (ELA) or literacy and in mathematics that reflects the breadth and depth of states' CCR standards. In other states, the state sets lower expectations, placing the burden on districts, students, and their families to know and advocate for placement in the courses students need to complete in order to be prepared for their next steps after high school. This can disadvantage students depending on where they live and their default or chosen course of study. Figures 1 and 2 provide an illustrative look at the range in states' course requirements for mathematics.[5] Figure 1 demonstrates the range in the number of mathematics credits a student must earn to graduate from high school across states. And figure 2 captures the significant variation

Figure 1. Number of required mathematics credits

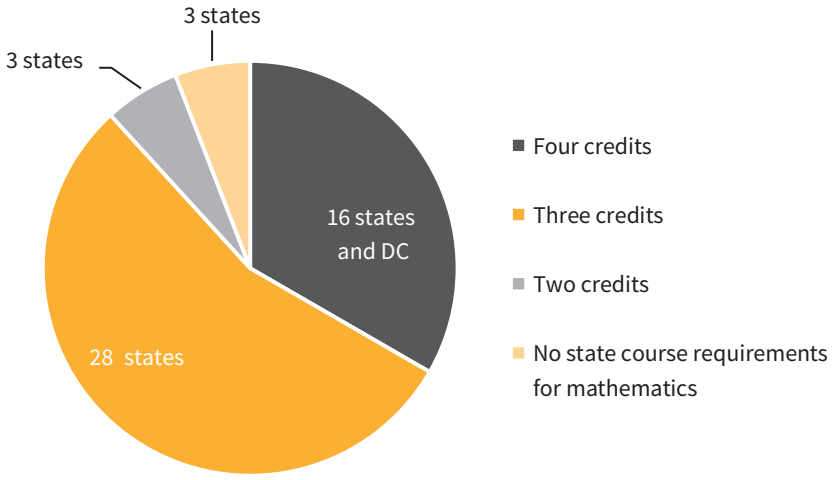
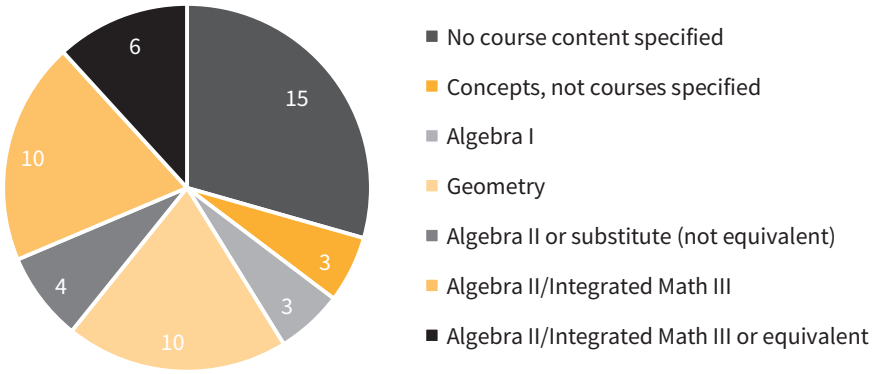


Figure 2. Highest-level mathematics course specified by states



across states when we look at course requirements in terms of content. Fifteen states require a number of mathematics courses be taken but do not specify which courses. An additional three states require mathematical concepts be learned but do not go so far as to specify the courses. Three states require students take no less than Algebra I before they graduate. Ten states require that students take no less than Geometry before they graduate. Finally, twenty states require students take Algebra II or Integrated Math III, but four of these states allow (nonequivalent) substitutions, and six permit equivalent substitutions for these courses.

Finally, graduation requirements for students are not always limited to courses and may include assessment stakes, capstones, or other experiences. A May 2019 review of statewide assessment policies found that in mathematics and ELA, twenty states administer one or more assessments that matter for students' graduation or grades. Thirteen states among those twenty also administer one or more science assessments that matter for students' graduation or grades. In social studies/civics, twenty states administer one or more assessments that matter for students' graduation or grades.[6] Here again, student high school experiences vary greatly from one state to the next.

Review of States' Public Reporting on Graduation Outcomes

Earlier in this paper, we referenced the variety of ways states have designed their graduation policy structures. With so many alternatives and graduation options for students across the country (in the form of modifications, opt-outs, endorsements, and pathways), very little is known about which students graduate having taken courses that deliver the CCR standards—and whether disparities exist across racial and ethnic lines—unless states report which students are completing which set of requirements. However, there are significant limitations in the availability of data and inconsistencies in how they are reported, making it challenging for policy makers, educators, families, and advocates to have a clear answer to the simple question, Are high school graduates

Table 1. State approaches to graduation requirements policies

Graduation requirements policy design	*Policy details*
CCR diploma is the only diploma	By definition, students in these states must complete a CCR course of study in ELA and mathematics in order to graduate. These are the states with "mandatory" CCR graduation requirements.
Multiple diplomas/endorsements/ pathway options, but at least one requires a CCR course of study	Students are expected to complete CCR course requirements in ELA and mathematics. Students may opt out of a course of study or individual course and pursue less demanding coursework. These are the states with "default" CCR graduation requirements.
	Students must opt in to a CCR course of study. The burden is placed on students or districts to ensure access to CCR courses in ELA and mathematics for all students. These are the states with "opt-in" CCR graduation requirements.
No CCR diploma/endorsement/ pathway available	Students are required to take a state-defined set of requirements that is below the CCR threshold in ELA and mathematics or not specific to which courses students must take to graduate. These are the states with "minimum" graduation requirements.

prepared for postsecondary success? Table 1 classifies the state policy structures for graduation options.

Achieve's review of states' SY 2017–18 report cards and supplemental reporting found that *thirty-eight states* have defined a college- and career-ready graduation option (whether as a diploma, endorsement, seal, etc.), but *just twenty-one states* are reporting the percentage of students who complete these options.

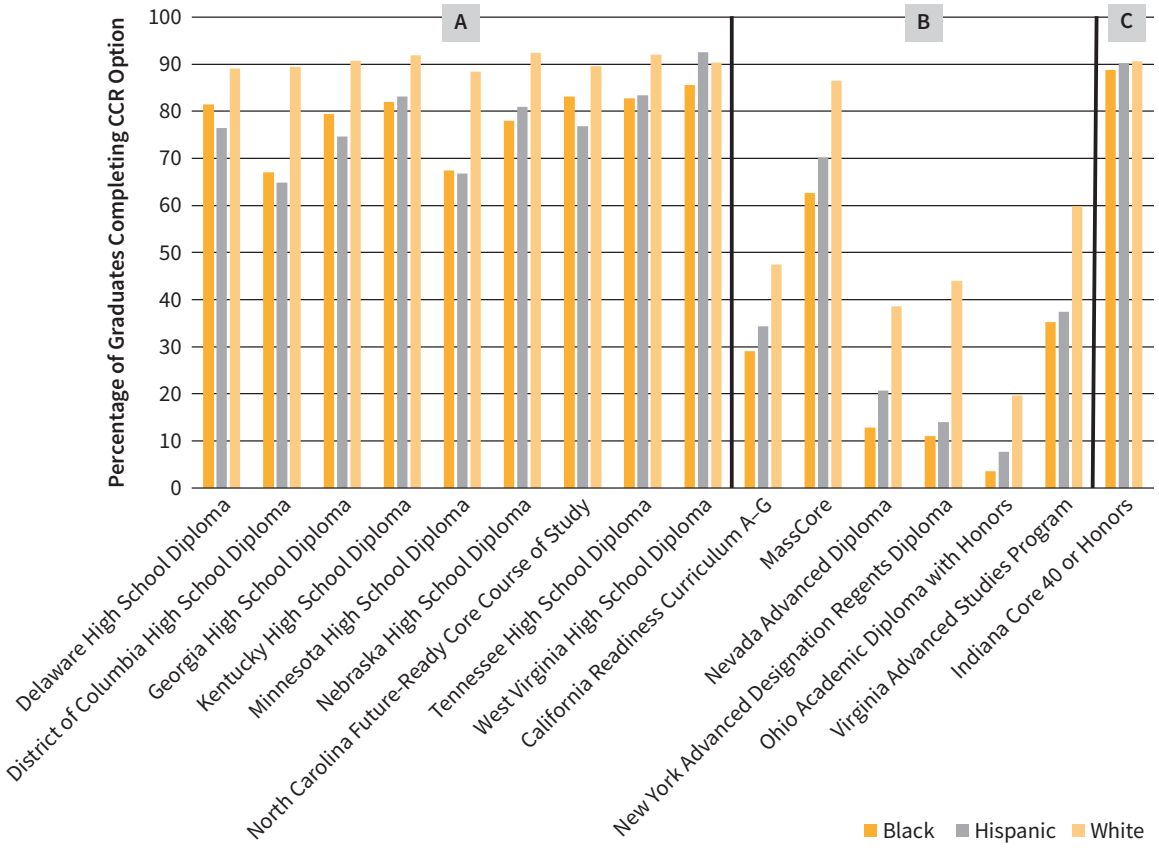
- *Eight states and the District of Columbia* require all students to complete college- and career-ready coursework in order to graduate: Delaware, Georgia, Kentucky, Minnesota, Nebraska, North Carolina, Tennessee, West Virginia.

- *Twelve states* default all students into a college- and career-ready graduation option, with the option to opt out—but only *two states* (Indiana, Oklahoma) are reporting the percentage of students completing the college- and career-ready option, and just *one state* reports subgroup results (Indiana).

- *Seventeen states* have a college- and career-ready graduation option that students must opt into—but only ten states (Alaska, California, Hawaii, Louisiana, Maryland, Massachusetts, Nevada, New York, North Dakota, Virginia) are reporting the percentage of students completing the college- and career-ready option, and just *six states* report subgroup results (California, Massachusetts, Nevada, New York, Ohio, Virginia).[7]

Now we take a closer look at the *sixteen states* (out of twenty-one) that report the percentage of students who complete CCR coursework and how subgroup attainment of these options

Figure 3. College- and career-readiness (CCR) graduation option completion



differs (see figure 3).[8] Based on the very limited number of states reporting graduation outcomes for students and subgroups, states that have a default CCR diploma (group C) typically see a larger share of graduates completing the CCR option than opt-in states (group B). Students in group A states by definition must complete a CCR course of study in ELA and mathematics in order to graduate. These are the states with "mandatory" CCR graduation requirements.

In group B states, where students are not automatically expected to complete—or defaulted into—a CCR graduation option, students of color are significantly less likely to graduate having taken a CCR course of study. In Massachusetts, a state where students must opt into a CCR option, the black-white student gap is greater than 23 percentage points. Contrast this with Indiana, a state where all students are expected to complete a CCR option and defaulted into this course of study: there is a 2-percentage-point gap between black students and white students completing the CCR option.

States' reporting of student graduation outcomes suggests that when states offer both CCR and non-CCR diploma options (group B and C states), the policy design of how students choose among those options matters. These findings are unsurprising, as the

CCR graduation option in the opt-in states is voluntary and a more rigorous option than the minimum graduation requirements in the state. *In other words, it is the student's responsibility to elect to pursue the CCR option, which adds an extra barrier to completion of the CCR course of study that is not present in states with a default CCR diploma.* Completion of a CCR option is also lower in states with an opt-in policy *and* additional testing requirements (New York, Ohio, Virginia), expecting students to achieve certain benchmarks on state or national assessments.

Students who do not complete a CCR option when one is available to them may not have had access to the right courses or experiences or may not have enrolled in the right courses or experiences. Or perhaps students were not aware of what they needed to do in high school to prepare themselves for their post–high school goals, which wouldn't be surprising given that the average counselor has 482 students in his or her caseload,[9] and 21 percent of high schools and about 850,000 high school students nationwide do not have access to any school counselor.[10]

Diploma systems with multiple options provide much-needed choice and flexibility for students, recognizing that not all students are headed for the same destination. However, with that flexibility comes a responsibility to help students make choices that lead to their destination of choice. *Thus, every high school diploma option must be aligned with the expectations of the higher education system or the workforce.* When Achieve surveyed recent high school graduates, approximately 40 percent reported that they recognized significant gaps in their academic preparation once they were in postsecondary education programs or the workforce.[11] Only one in five respondents reported that their high schools set high academic expectations. Whether they went on to college or the workplace, more than half reported gaps in preparation for life after high school. And knowing what they know now, approximately 60 percent of those surveyed in the 2014 survey said that they would have worked harder, and 72 percent of students who went to college and 65 percent of those who did not would have taken higher-level or more challenging courses.

States, districts, and schools cannot make good policy and practice decisions—and ultimately cannot improve student performance—if they do not have basic information about how students are performing along the way. Because the majority of states provide several options for students to adjust graduation requirements (modifications, personal opt-outs, etc.), very little can be known about which students graduate having taken courses that deliver the CCR standards unless states report which students are completing which graduation options. Even less is known about how students do after high school. As states continually add flexibility to personalize the pathway through high school, state, district, and school leaders need to understand whether students are graduating college and career ready—and to use that data to examine trends and whether state and local decisions are producing the desired results for students.

State Highlight: Indiana's transparency around, and public reporting of, student postsecondary outcomes by high school graduation option suggest that high school courses matter for postsecondary readiness. Postsecondary remediation rates of graduates who earned the Indiana Diploma with Core 40 designation are 30 percentage points lower than the rates among students who earned the Diploma with General designation (which requires fewer credits, including mathematics and science). Remediation rates for all students, regardless of race or ethnicity, are also lower among students who earned Core 40 than the General designation. Just 3 percent of students who earn an Academic Honors designation, the most rigorous option in the state, require remedial coursework. Preparation matters, and rigorous high school pathways aligned to CCR expectations better prepare students for college-level coursework. No other state with both CCR and non-CCR high school diploma options reports postsecondary remediation rates by the type of diploma or course of study a student takes in high school. https://public.tableau.com/profile/che .staff/#!/vizhome/CollegeReadiness2019/Story

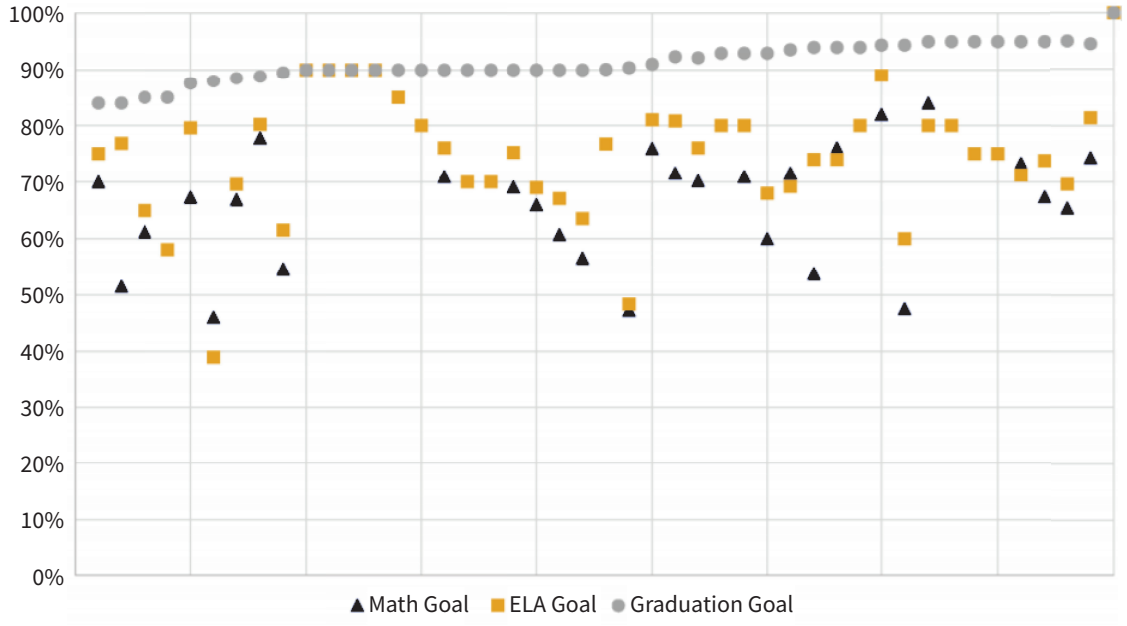
A Second Look at Student Outcomes: Mathematics and ELA Proficiency in High School

Achieve's review of school year 2017–18 report cards found that the average graduation rate across states was 84.6 percent.[12] Since 2011, high school graduation rates have risen annually in nearly every state, while other measures of student achievement have remained stagnant or declined, raising questions as to what exactly a high school diploma signals in terms of what students have learned.

For example, each year, states are graduating thousands of students who fail to demonstrate proficiency in key skills assessed by states' CCR mathematics and ELA summative assessments.[13] These assessments include a performance level/cut score that gives high school students a clear signal regarding their readiness for first-year mathematics and English courses at postsecondary institutions and are used by two- and four-year colleges and universities for placement into first-year, credit-bearing courses. The results are useful in preparing students for successful postsecondary transitions and can assist schools in identifying and addressing student learning gaps before students graduate from high school, reducing the need for costly remediation or workforce training. *In 2017–18, on average, just 35 percent of high school students demonstrated proficiency on their state assessments in mathematics. Just 49 percent of students were proficient in reading.*[14] *Compare this to the 84 percent graduation rate average across states in 2017–18.*[15]

Moreover, most states have explicitly set long-term goals for mathematics and ELA proficiency that fall far short of their graduation rate goals for students (see figure 4). *States seem resigned to continue awarding diplomas to large numbers of students who are underprepared in the core subjects of mathematics and ELA*. Despite forty states having four-year graduation rate goals at or above 90 percent, states' proficiency goals for students are typically set much lower. Twenty-nine states have set long-term proficiency goals for all students in mathematics at 75 percent or less. In ELA, twenty-three states have set long-term proficiency goals for all students at 75 percent or less. And these are the *goals* states are striving to

Figure 4. How much do graduation rate goals differ from mathematics/ELA proficiency goals?



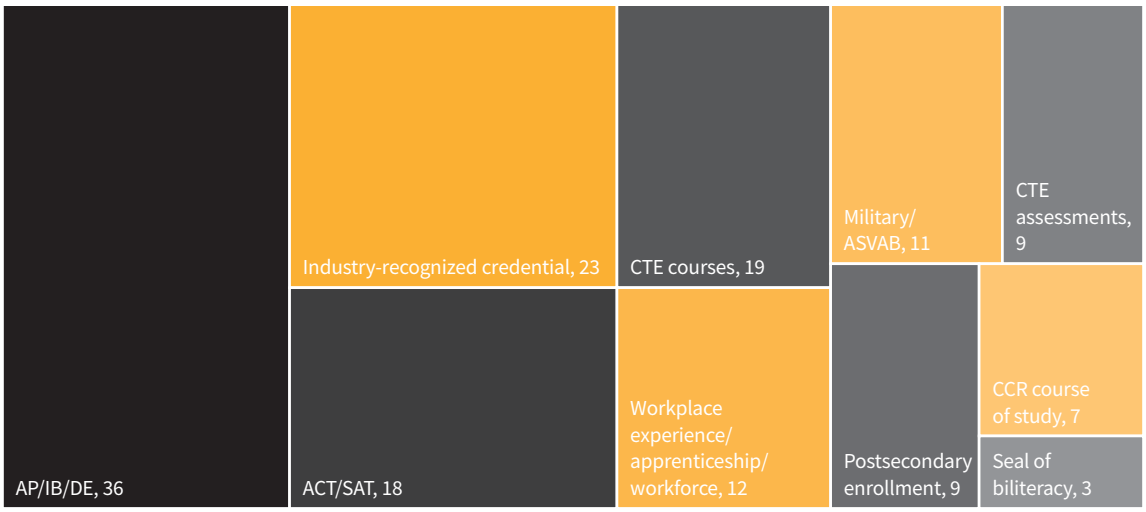
meet three to twenty years from now.[16] This creates a moral obligation for states—and the education field writ large—to figure out how to improve these results. Simply making sure the graduation requirements expectations are clear will be insufficient.

A Third Look at Student Outcomes: College- and Career-Readiness Measures

Every state has prioritized the college and career readiness of its high school graduates through the adoption of higher academic standards, but too many states aren't doing enough to monitor and report progress toward that goal. The passage of the Every Student Succeeds Act (ESSA) in 2015 catalyzed many states to develop new or revise existing measures of "college and career readiness." Many states have elected to include these in some way in their high school accountability systems as their "fifth indicator." These measures are distinct from graduation rate and, as a result, offer an opportunity to learn more about what states are signaling to students and schools that students should be able to know and do, as well as (through public reporting) how and whether students are meeting these readiness measures. Some states have CCR measures outside of their report cards, and some of these measures are defined by entities outside of the state department of education, such as the state legislatures.

In spring and summer 2019, Achieve reviewed states' 2017–18 report cards, dashboards, postsecondary and P–20 reports, and reports commissioned by state legislatures and other entities in the state for outcomes data reported by states related to states' identified college- and career-readiness measures. Our review found that *forty-six states* have defined CCR measures and *thirty-seven of these states* are reporting some state-level CCR values. See appendix A for a state-specific look at how states have constructed CCR measures.

Figure 5. Distribution of college- and career-readiness measures in states



States' reported state-level values for the percentage of students meeting their state-defined CCR measures ranged from 15 on the low end to 86 on the high end; this is not surprising given the tremendous variation in how states have defined their CCR measures. *On average, states reported 56 percent of students meeting their CCR measure, a percentage dramatically lower than states' graduation rates.*

Composition of CCR Measures

States typically included multiple ways for students to demonstrate their readiness for college or career in their CCR measures. Most frequently, states included earning college credit while in high school (e.g., through AP, IB, and dual enrollment; n = 36), earning industry-recognized credentials (n = 23), completing CTE courses or pathways (n = 19), and results on college-ready assessments (n = 18). See figure 5 for other common measures. With so many CCR measures included on states' menus, there's work to be done to improve the clarity of what the indicator(s) mean and guard against unintentionally creating incentives for schools/districts to push students to take the pathway to the least demanding/rigorous/valuable indicators.

States' Use of College- and Career-Readiness Measures

Most of these states have built CCR measures into their accountability systems. In these states, most assigned weights to the measures in their systems. The weighting of college- and career-readiness measures sends an important message to schools and districts about how much the state values this measure. While there is no "right" weight, the indicator(s) should have sufficient weight to be meaningful in the system. States have considerable leeway in determining the weight that college- and career-readiness indicators carry in their accountability systems. Three states are weighting the college- and

career-readiness indicator between 30 and 40 percent, seven states weight between 20 and 29 percent, eight states weight between 10 and 19 percent, and six states weight less than 10 percent.[17]

What Is a CCR "Metaindicator"?

State accountability systems for schools are made up of different measures, or indicators, that measure how well students are doing. In some parts of the accountability systems, states include multiple measures as part of a single indicator to signal student achievement or progress; we refer to these bundles of indicators as "metaindicators." The component indicators reflect different levels of rigor and skill, and often open doors to very different opportunities. For example, student A might complete the course requirements to earn the state's advanced academic diploma, student B might meet the college readiness benchmarks on the ACT, and student C might earn an industry-recognized credential. Each student experience satisfies the state's college- and career-readiness measure.

As important as which measures constitute a CCR measure are the criteria and thresholds that underlie the indicator. As states have filled in details through business rules and technical documentation, notable differences have emerged. States have set different benchmarks for success, use different denominators for the measure (e.g., ninth-grade cohort, seniors, graduates, test takers), value participation or performance (e.g., advanced coursework), and have taken different approaches in defining their measures. For example, here's how some sample states have included an Advanced Placement (AP) measure—the most common of all measures—in their CCR measures:

- California: Score 3 or higher on at least two AP exams
- Arkansas: Earn at least one college credit through an AP course
- Connecticut: Participate in at least two AP courses
- Indiana: Take at least two AP exams
- Montana: Complete an AP course with a passing grade
- Mississippi: Participate in an AP course

Of the forty-six states that have defined a CCR measure, twenty-seven states are reporting an aggregate, state-level measure of the percentage of students who have met their measure (see figure 6). Of these, *twenty-one states* are disaggregating their aggregate measures by subgroup. *Twelve states* report an aggregate measure and disaggregate by submeasure. *Five states* have defined CCR measures that they will report in the future. This latest analysis of states' reporting underscores the dearth of information related to whether and how students

Figure 6. Public reporting of CCR measures

are graduating college and career ready and the need for better information on students' performance. Absent data, it's not possible to have informed conversations about college and career readiness on results—on the actual performance of high school graduates in each state.

The Case for Better Reporting on CCR Measures

As a first step, states should break down their reporting such that progress on the indicators constituting a metaindicator can be monitored. Policy makers and the public deserve a strong understanding of how students are demonstrating readiness in their state. Then, within each indicator, data should be disaggregated by student subgroups.[18] Without subgroup reporting, it is impossible to truly understand how students are performing; only reporting "all students" results masks variation in reporting group performance. Subgroup reporting is critical to knowing whether there are meaningful differences in the percentages and groups of students demonstrating readiness through these measures. Finally, states should include all students in an adjusted ninth-grade cohort in the denominator when reporting key CCR indicators. In the same way that this denominator is appropriate for counting graduates, using the adjusted ninth-grade cohort as the denominator provides a better sense of how all students are doing, not just those who made it to graduation or self-select into an experience (e.g., AP course, CTE concentration).

State Highlights: Alabama and California are two notable states when it comes to reporting student outcomes for their CCR measures. Both states use the ninth-grade cohort as the denominator (meaning they hold themselves accountable for students who have dropped out or not yet finished high school), disaggregate their broader CCR measure by submeasure and subgroup, and disaggregate submeasure data by subgroup. This depth of reporting means that users can drill down to better understand how different groups of students are doing not just in college and career readiness overall, but in each of the submeasures that the respective states have identified as demonstrative of college and career readiness.

Strong public reporting of student performance will help schools, districts, and states know which indicators students are most frequently accessing to demonstrate college and career readiness, as well as provide additional information about which opportunities schools and districts are providing to students. Students and their families might be looking for schools that do a good job of providing specific CCR opportunities to best serve their students. Finally, the state can support a school offering mostly dual-enrollment opportunities differently than one that offers primarily AP or IB courses.

Gaps between High School Exit and College Admissions Requirements

The courses students must complete to be eligible for entry into postsecondary institutions across states are as varied as state high school graduation requirements, even when we limit the review to general education admissions requirements (i.e., not a particular track or school within the university). Between two- and four-year differences, differences among four-year institutions, and differences across states, it is not surprising that the K–12 sector has trouble setting requirements aligned to postsecondary admissions requirements. In many states, readiness gaps occur alongside gaps in expectations between what students must do to earn a high school diploma and what they must do to gain postsecondary admission. These gaps can leave students, parents, and schools confused about what students need to be prepared and succeed after high school. As a result, too many students receive a high school diploma that leaves them unprepared to enter postsecondary education. Some of these students may find out too late that their high school diploma may not lead to college. Some students are left scrambling to make up gaps in coursework that could have been taken during their high school experience. Others may enter a postsecondary institution only to find they did not take the right courses to be prepared for the rigors of college expectations.

Of course, a four-year institution of higher education will not end up being the destination for all students, but when asked about their goals after high school, 84 percent of high school students indicated a desire to go on to some form of two-year or four-year postsecondary education.[19] However, in most states, class or credit-based requirements differ enough that the choices made by students (or in some cases *for* students) impact whether a student will meet the minimum admissions requirements for public, in-state four-year institutions of higher education.

Achieve's recent review of high school exit and postsecondary entrance expectations found that in *more than half the states,* completing the graduation option that students automatically start in—the default option—will mean students do not complete the right *mathematics courses* for entry into at least one of the two broad-access universities analyzed.[20] This means the burden is on individual students and families to choose a different pathway—or supplement with additional mathematics coursework—in order to complete the courses needed to meet the mathematics requirements of the postsecondary institutions in the state. See appendix B for a state-specific look at how states' default high school graduation requirements in mathematics and science prepare students for the demands of two large in-state university options.

In *just twenty-four states,* completing the graduation option that students automatically start in (or are defaulted into) will mean students do not complete the right *science courses* for entry into at least one of the two universities we analyzed. Likewise, this means the burden is on individual students and families to choose a different pathway or supplement with additional coursework to meet the requirements for admission into postsecondary institutions. In many states, the higher education institution specifically references "lab sciences" students must complete in high school. However, many states' K–12 course requirements do not reflect this language.

For both mathematics and science, in nearly all cases of a difference in expectations, the higher education institutions require more advanced coursework than K–12, and higher education is more specific about the coursework students must complete. In a number of states, the higher education institutions also required more total units of mathematics or science. These gaps in expectations represent a significant barrier to student success, and they interfere with the educational mission of the secondary and postsecondary education systems alike.

The Need to Align Systems

States must help create seamless transitions for students after they graduate high school, regardless of the path they choose. This requires tight alignment between K–12 and the various postsecondary systems in each state, and appropriate information provided to stakeholders—students, families, and school counselors and administrators—to help guide these transitions. Without this alignment and the transparency, too many students are at risk of graduating with few postsecondary and career options available to them. *Especially as states are moving to systems of multiple pathways to graduation, failure to develop seamless transitions to four-year colleges, alongside two-year (or shorter) career training programs, and to careers could allow these multiple pathway systems to reinforce historical tracking based on race and income and leave too many students graduating from high school with a passport to nowhere.*

State Highlight: My Colorado Journey is a statewide platform designed to help students personalize their career pathways and connect to work, education, and support services. Students can view entrance requirements to four-year colleges, two-year colleges, and technical colleges; apprenticeships, the military, or going directly to work. One of the site's features, the College Admissions Tool, allows students to enter courses taken in high school, review benefits/trade-offs of postsecondary options, chart progress toward goals, and help understand how competitive they are or where gaps are in preparation, and then adjust course in high school as needed.

Many high school students aspire to enter a four-year postsecondary degree program and eventually move into good careers. For this reason, alignment between states' requirements for graduation and the admissions requirements for public institutions is an important part of the puzzle. State agencies that govern K–12 education, higher education systems governing two- and four-year programs, and employers need to work together to create a coherent system of well-aligned pathways that give students choices among good options, and that make sure low-income students, students of color, and other historically underserved groups have access to all of them. Higher education institutions have a responsibility for clearly stating their expectations; K–12 can help by aligning at least one graduation option to these expectations and clearly communicating the differences and how students need to supplement their coursework to be ready. *States with high school graduation requirements that are not aligned to college admissions requirements need to explain clearly what postsecondary opportunities they are aligned with.*

Recommendations for State Leaders

States should report a college- and career-ready (CCR) graduation rate using the ninth-grade cohort as the denominator to provide a clear picture of how well prepared all high school students are for life after high school (and how the K–12 system is performing). This is important, considering relatively flat academic performance while the graduation rate increases *and* in light of the gap between graduation rate goals and academic proficiency goals. There is a real risk that graduation rates are untethered to academic achievement. A CCR graduation rate would provide the transparency necessary to acknowledge and hopefully begin to counter that trend.

States should define, measure, and report on the college and career readiness of their students. Each year, states are graduating thousands of students who fail to demonstrate readiness for their next steps after high school, by whatever measure you use (e.g., assessments, CCR course of study completion, broader CCR measures, or meeting postsecondary admissions requirements). Nearly all states have defined measures of college and career readiness, though they vary considerably in terms of what they include. With so many CCR measures included on states' menus, there's work to be done to improve the clarity of what the indicator(s) mean and guard against unintentionally creating incentives for schools or districts to push students to take the pathway to the least demanding or rigorous or valuable

indicators. This also requires that states report disaggregated outcomes for these measures and seek answers to some tough questions: How are these similar to or different from states' graduation requirements? What do gaps between the state's defined CCR measure and the state's graduate rate imply? Are these gaps larger (or smaller) for certain student subgroups?

States should align high school course pathways with postsecondary pathways that lead to credentials of value for careers. It is past time to send clear and consistent signals to all students about the courses they must take and the skills they must demonstrate to earn a high school diploma and to be prepared to pursue their chosen education and careers. Too many graduation options available to students do not include requirements that will prepare them for college or for a career. Offering more options and flexibility can be good for many students, but they do not need to result in lower expectations, especially when traditionally underserved students are disproportionately held to these lower expectations. The point is to allow for greater student choice while making sure that every choice leads to and through postsecondary education. These policy and data issues straddle the K–12, postsecondary, and workforce sectors, and there are competing interests at play. These communities should work together to (re)define the pathways through high school and beyond, each of which should lead to and prepare students for success in a valued destination, whether a four-year college, two-year program, the military, or other high-quality postsecondary training programs for careers that pay well and have advancement potential. States must also verify that these experiences and demonstrations are in fact meaningful and valuable for students (i.e., there are quality controls in place and evidence to support the creation of each pathway).

States should build the infrastructure to support local continuous improvement efforts to increase CCR grad rates. Something must be done to move the needles on the flat-line performance data, and it won't be accomplished just by raising or clarifying the bar for students, or even holding districts and schools more accountable. Those are necessary but not sufficient. Instead, progress is more likely to be achieved through a combination of using *frequently collected data*—daily attendance, misbehavior, homework completion, quizzes, and so on—to identify students who are falling off track, providing for *rapid response or intervention* (which requires making all teachers and adults "first responders"), and *monitoring their impact and adjusting as needed*. Locally determined and driven improvement efforts matter, and data-driven and short-cycle strategies can be adjusted as needed. The state role should focus on helping to build or provide the data systems and analytics tools to support the process and support the professional learning/coaching in districts as well as cross-district networking that can sustain and improve these efforts.

States should increase data availability and transparency regarding student outcomes. Most states are missing key data on student outcomes in high school. These data are what state

leaders, partners, advocates, and the public need to understand how students are doing and to examine trends and whether policy and practice decisions are producing the kinds of student results desired. For example, does the state (and do students and their parents) have information about and understand the long-term impact of various high school graduation options and where they lead? Do school-level leaders, including guidance counselors, have the right information to help students make the right choices while in high school to best prepare them to meet their post–high school goals?

Appendix A: College- and Career-Readiness Measures in States (as of June 2019)

State	*Definition*	*All students value (%)*
Alabama	Students can be identified as college or career ready by the successful completion of one of six options. The six indicators are achieving a benchmark score on any ACT subtest, scoring a 3 or higher on an Advanced Placement (AP) exam/scoring a 4 or higher on an International Baccalaureate (IB) exam, scoring silver level or above on ACT WorkKeys, earning a transcripted college credit while still in high school, earning an approved Industry Credential, or being accepted for enlistment into any branch of the military.	71.5
Alaska	Alaska has not defined a CCR measure.	NA
Arizona	College- and Career-Readiness points are determined by averaging points from the current year's seniors' achievement and accomplishment in a matrix of various categories, from successful completion of a Career and Technical Education Program to performance on Advanced Placement exams.	NR
Arkansas	The percentage of twelfth-grade students who have received at least one college credit during high school through passing an AP or IB exam, or the completion of some other concurrent course including an Arkansas Career Education (ACE) course.	55.2
California	The College/Career-Readiness Calculation is based on the percent of students in the current year graduation cohort who earned Prepared by Scoring Level 3 "Standard Met" or higher on both the ELA and mathematics Smarter Balanced Summative Assessments; scoring 3 or higher on at least two AP exams; scoring 4 or higher on at least two IB Exams; completing at least two semesters or three quarters of college coursework with a grade of C minus or better in academic/CTE subjects where college credit is awarded; completing a-g course requirements with a grade of C minus or better plus an additional criterion; completing at least one CTE pathway with a grade of C minus or better in the capstone course plus an additional criterion; earning the State Seal of Biliteracy and scoring Level 3 "Standard Met" or higher on the ELA/literacy Smarter Balanced Summative Assessment; and completing at least two years of Leadership/Military Science courses and scoring Level 3 "Standard Met" or higher on ELA or mathematics and Level 2 "Standard Nearly Met" or higher in the other subject area.	42.2
Colorado	HB15-1170 specifies that beginning in the 2016–17 school year, the overall percentages of students graduating from high school who, in the school year immediately following graduation, enroll in a CTE program, community college, or four-year institution of higher education. Any high school graduate who earned a CTE certificate or two-year degree while they were enrolled in high school will also be included as meeting the matriculation expectation.	NR
Connecticut	The Preparation for Postsecondary and Career-Readiness Coursework measure is the percentage of students in grades 11 and 12 who participate in at least one of the following during high school: two courses in AP/IB/dual enrollment; two courses in one of seventeen career and technical education (CTE) categories; or two workplace experience "courses."	74.8

(continued)

Appendix A (*continued*)

State	*Definition*	*All students value (%)*
Delaware	There are eight College and/or Career Preparedness (CCP) options included in the Delaware School Success Framework. The College Preparedness Options are AP (3 or better), IB (4 or better), postsecondary credit attainment with a B or higher outside of a state-approved program of study, SAT College- and Career-Readiness Benchmark (SAT Essay). The Career Preparedness Options are DDOE-approved industry credential, Certificate of Multiliteracy, postsecondary credit attainment with a B or higher within a state-approved program of study, successful completion of an approved cooperative education and/or work-based learning extension, or AFQT score of 50+ on the Armed Forces Vocational Aptitude Battery (ASVAB).	NR
District of Columbia	The Access and Opportunities measure is based on the percentage of students taking at least one AP or IB exam by the time they complete their senior year and the percentage of students each year who score a 3 or above on an AP exam or a 4 or above on an IB exam.	NR
Florida	The High School Acceleration measure is based on the percentage of graduates earning a passing score on an IB, AP, or Advanced International Certification of Education (AICE) exam, earning a "C" or higher in a college-level dual enrollment course, or by earning an approved industry certification.	59.5
Georgia	The College- and Career-Readiness Measure measures the percentage of twelfth-grade students who have demonstrated college and career readiness through at least one of the following: entering the Technical College System of Georgia (TCSG) or the University System of Georgia (USG) without needing remediation; achieving a defined readiness score on the ACT (22+ composite), SAT (480+ on Evidence-Based Reading and Writing and 530+ on Math), two or more AP exams (3+), or two or more IB exams (4+); passing an end of pathway assessment (EOPA) (nationally recognized industry credential); or completing a work-based learning experience (in a field related to at least one course in the same pathway of study).	57.1
Hawaii	Hawaii's state accountability system (Strive HI) includes two measures. The Career & Technical Education Concentrator is the percentage of twelfth-graders who complete a CTE Program of Study. The College-Going Rate is the percentage of high school completers enrolled in postsecondary institutions nationwide—vocational or trade schools, two- or four-year colleges—in the fall following graduation.	NR
Idaho	College and career readiness is determined through a combination of twelfth-grade students participating in advanced opportunities, earning industry-recognized certification, or participating in recognized high school apprenticeship programs.	86.3
Illinois	Illinois's College & Career Readiness Indicator is under revision.	NR
Indiana	The College and Career Readiness measure is the percent of graduates at the school who demonstrated college and career readiness by taking two or more AP courses and exams, two or more IB courses and exams, two or more dual credit courses, or a combination of AP/IB/DE, SAT score, ACT score, WorkKeys score, Accuplacer, and Compass (i.e., graduated Core 40 with Technical and/or Academic Honors).	63.6
Iowa	PostSecondary Readiness Indicator (PSRI) includes participation in a college entrance exam and ACT or SAT score; college-level, postsecondary, or advanced coursework; career and technical education (CTE) concentrators; and career and academic planning.	NR
Kansas	Postsecondary Success includes success rate and effective rate. Success rate is the percent of high school graduates who, within two years of school graduation, either complete an industry-recognized certificate or a postsecondary academic degree, or have been enrolled in a postsecondary institution for both the first and second year after graduation. Effective rate is the graduation rate multiplied by the success rate. The result is the percentage of the freshman class that has either completed a credential or has been enrolled in a postsecondary program for two years after graduating high school.	48.9

State	*Definition*	*All students value (%)*
Kentucky	"Transition Readiness" means the attainment of the necessary knowledge, skills, and dispositions to successfully transition to the next level. At the high school level, schools earn credit when students earn a regular or alternative high school diploma and achieve academic readiness or career readiness. For academic readiness, that includes the ACT, college placement exam (KYOTE, ALEKS, GED College Readiness, SAT), AP, IB, and Cambridge Advanced International (CAI). For career readiness, that includes industry certifications, CTE End-of-Program Assessment [for articulated credit (KOSSA)], and KDE/ Labor Cabinet-approved apprenticeship.	60.3
Louisiana	The state reports the percentage of the ninth-grade cohort graduating and earning Advanced Credentials. Advanced Statewide Credentials indicate a student has attained advanced industry-valued skills.	15
Maine	Maine has not defined a CCR measure.	NA
Maryland	Credit for completion of a well-rounded curriculum is the percentage of graduating or exiting students with a certificate of program completion and achieving at least one of the following: scored 3 or higher on an AP examination, or 4 or higher on an IB program examination; met a standard set by the College Board on the SAT examination; met a standard set by ACT, Inc. on the ACT examination; earned credit for dual enrollment; met the University of Maryland entry requirements; completed a youth or other apprenticeship training program approved by the Maryland Apprenticeship Training Council; completed an industry certification aligned with an MSDE-approved CTE program and achieved CTE concentrator level status or higher; completed an MSDE-approved Career and Technology Education program; met a standard on the ASVAB examination; received the Seal of Biliteracy.	NR
Massachusetts	Advanced Course Completion measures the percentage of eleventh- and twelfth-grade students who achieve a passing score in challenging coursework, including but not limited to AP, IB, honors, dual enrollment, and other advanced courses in a school year.	65.5
Michigan	The Advanced Coursework indicator measures the percentage of eleventh- and twelfth-grade students successfully completing dual enrollment, early middle college, CTE, AP, and IB.	45
Minnesota	The state tracks high school graduates' activities in the following areas: HS Academics (ACT Proficiency); PostSecondary Enrollment; Course Taking (did they take courses beyond grad requirements in math, ELA, science, social studies, basic arts, world languages, PE/health); Rigorous Course Taking (AP/ IB/DE); and Entering the Workforce (graduates employed by hours worked, industry, and hourly wage).	NR
Mississippi	The student participation portion of the Acceleration Measure is the percentage of the ninth-grade cohort participating in accelerated courses (Advanced Placement, Dual Credit/Dual Enrollment, International Baccalaureate, and Industry Certification).	39.7
Missouri	The college- and career-readiness measures include multiple opportunities for students to demonstrate they are prepared for postsecondary success, including earning qualifying scores on AP or IB courses, dual credit, or industry-recognized credentials.	NR
Montana	The CCR indicator is defined as the percentage of twelfth-grade students who meet one or more of the following criteria: achieve a college-ready benchmark on the ACT composite according to the Montana University System; concentrator in a CTE pathway; or complete (with passing grade) a dual enrollment course, AP, or IB as data is available. A military-ready indicator will be included once data is available.	71
Nebraska	Nebraska has not defined a CCR measure.	NA

(continued)

Appendix A (*continued*)

State	*Definition*	*All students value (%)*
Nevada	The College and Career Readiness indicator includes three distinct measures: Post-Secondary Preparation Participation, Post-Secondary Preparation Completion, and the percent of graduates earning an Advanced Diploma. The Post-Secondary Preparation Measure can be met by passing an AP course; passing at least two dual credit/dual enrollment courses and earning at least six credits; passing an IB course; or enrolling in an approved CTE program of study and completing enough courses to be considered a CTE Concentrator. The Post-Secondary Completion Measure can be met by scoring a 3 or better on an AP exam; passing at least four dual credit/dual enrollment courses and earning at least twelve credits; scoring a 4 or better on at least one IB exam; or enrolling in an approved CTE program of study, completing enough courses to be considered a CTE Completer, and taking the associated end of program assessment and workplace readiness assessment.	NR
New Hampshire	The total number of graduating seniors meeting at least two of these requirements will be divided by the total number of students in the cohort to form the career- and college-ready index for schools. Under the CCR indicator, seniors are considered ready if they do two of the following: complete dual enrollment; earn an SAT/ACT college-ready benchmark score; earn passing scores on AP/IB exams; earn a CTE-recognized credential; complete a NH career pathway program; or earn an ACT Career Readiness Certificate.	NR
New Jersey	The College and Career Readiness section of the New Jersey School Performance Reports provide information about student behaviors that correlate with greater success in college and career. These behaviors include taking college entrance exams, taking advanced coursework, participating in visual and performing arts courses, and participating in career and technical education programs. The state also reports the percentage of students in grades 11 and 12 who took one or more exams and received a score of 3 or higher on AP exams or a score of 4 or higher on IB exams; Structured Learning Experiences Participation including work-based learning programs, internships, apprenticeships, and service learning experiences; CTE Concentrators: completing two or more courses in a single approved CTE program or completing the entire CTE program; Industry-Valued Credentials by Career Cluster (how many students enrolled, how many earn at least one credential, total credentials earned).	NR
New Mexico	For the 2018–19 system, the PED will refine the definition of this component to ensure the highest standards for all students and submit an amended plan to USED to ensure the CCR indicator continues to be calculated in a way that is valid, reliable, comparable, and adds to meaningful differentiation of high schools. Indicators such as college remediation and college persistence will be considered, as will newly developing indicators in CTE fields.	NR
New York	A student in the ninth-grade cohort earns two points toward NY's College, Career, and Civic Readiness Index if they earn a Regents Diploma with one of the following: Advanced designation, CTE endorsement, seal of biliteracy, score of 3+ on an AP exam or 4+ on an IB exam, receipt of an industry-recognized credential or passage of nationally certified CTE examination OR NYSAA with an average score of 4 on the New York State Alternate Assessment Examinations (NYSAA) in language arts, mathematics, and science.	48.4
North Carolina	The state measures the percentage of students scoring 17 or higher on the ACT (which meets UNC System Minimum Admission Requirement), earning a silver or higher designation on the ACT WorkKeys, and industry-recognized credential earning each type of diploma endorsement, as well as the number of students enrolled in AP/IB/DE/CTE courses.	NR

State	*Definition*	*All students value (%)*
North Dakota	The metrics outlined within the Choice Ready initiative measure student readiness in multiple areas: Academic Readiness, Essential Skills, College Ready, Career Ready, and Military Ready. College-ready element includes: (1) ACT score of 22+; (2) 2.8+ grade point average (GPA); and (3) at least two additional indicators: AP course (C or higher); dual credit course (C or higher); Algebra II (C or higher); 3+ on an AP exam; 4+ on an IB exam; and 3.0+ GPA in the core course requirements for university admissions. Career-ready element includes: (1) earning a 2.8+ GPA in a CTE pathway; (2) completing two credits in a coordinated plan of study and at least two additional indicators: (a) earning a 3.0 on a statewide rubric demonstrating career-ready practices or (b) completing at least seventy-five hours of a work-based learning experience; (3) earning an A, B, or C in a dual credit course; (4) earning a Gold or Silver on the WorkKeys assessment; or (5) earning a passing score on a technical assessment or industry credential. Military-ready element includes: (1) ASVAB score of 31+; (2) quality citizenship (as measured by expulsions and suspensions of zero); or (3) designation of physical fitness by a physical education instructor AND identification and completion of any two additional indicators from college or career preparation.	NR
Ohio	A student in the graduation cohort is considered "Prepared for Success" if that student meets the remediation-free score on all parts of the ACT or SAT (as set by Ohio's Department of Higher Education); earns an honors diploma; or earns an industry-recognized credential.	38.5
Oklahoma	The PostSecondary Opportunity indicator is the percentage of eleventh- and twelfth-grade students who earn credit in a postsecondary opportunity, including College Prep Coursework (i.e., AP and IB), Work-Based Internships, Dual (Concurrent) College Enrollment, and Industry Certification Programs (i.e., CareerTech career major courses).	42.6
Oregon	Oregon does not have a defined CCR measure.	NA
Pennsylvania	The state's postsecondary transition measure is the percentage of students who go to college, the military, and the workforce.	84.3
Rhode Island	The Post-Secondary Success Indicator will measure the percent of students in each high school who graduate each year with one or more of the following: Career and Technical Education industry-approved credential, college credits through dual or concurrent enrollment, or successful completion of Advanced Placement tests.	NR
South Carolina	Nine criteria comprise the state's CCR indicator. A graduate must meet one from either the college-ready or career-ready list to be deemed "prepared for success." College-ready measures include a composite score of 20 or higher on the ACT; a composite score of 1020 or higher on the SAT; 3 or higher on an AP exam; 4 or higher on an IB assessment; or at least six credit hours in dual credit/enrollment in two-year or four-year college transfer courses in an English, mathematics, or STEM course with a grade of C or higher. Career-Ready measures include completion of a CATE program with nationally recognized industry credential; a silver, gold, or platinum National Career Readiness Certificate on the WorkKeys exam; a 31 or higher on the ASVAB; or completion of a registered youth apprenticeship through Apprenticeship South Carolina.	69.6
South Dakota	The CCR academic indicator includes two dimensions: Assessment of Readiness and Progress Towards a Post High School Credential. Graduates receive credit for Assessment of Readiness if they either demonstrate English and mathematics readiness or earn a silver certification or higher on the National Career Readiness Certification exam. Progress Towards a Post High School Credential includes five components. Graduates must meet one of the following: two units of CTE coursework within one Career Cluster; completion of dual or concurrent credit with a C or better; completion of an AP course with a C or better; completion of an AP exam with a score of 3 or better; and two CTE foundational courses or capstone experiences completed with a C or higher.	46.1

(continued)

Appendix A (*continued*)

State	*Definition*	*All students value (%)*
Tennessee	The Ready Graduate indicator measures student readiness for postsecondary and career. For 2017–18, a ready graduate is a student who graduated on time in 2017 and earned a composite ACT score of a 21 or higher, or the equivalent score on the SAT. In the future, there will be additional pathways provided to demonstrate readiness. These pathways will include student enrollment in early postsecondary opportunities, industry certifications, and military readiness.	35.8
Texas	The Student Achievement high school indicator has a college, career, and military readiness indicator that includes graduates who meet TX Success Initiative benchmarks in reading and math; meet performance benchmarks on the AP/IB exam; earn dual credit; enlist in the military; earn industry certification; are admitted into postsecondary certification programs that require as a prerequisite for entrance successful performance at the secondary level; successfully complete a college prep course; demonstrate preparation to enroll without remediation in an associate's or bachelor's degree program; complete an OnRamps dual enrollment course; and earn an associate's degree in high school.	52
Utah	Readiness Coursework is the percentage of students in the ninth-grade cohort who complete at least one of the following: a "C" grade or better in an Advanced Placement course; a "C" grade or better in an International Baccalaureate course; a "C" grade or better in a concurrent enrollment course; or Career and Technical Education (CTE) pathway Concentrators.	61
Vermont	The CCR indicator includes both a measure of assessment performance and college- and career-ready outcomes. Assessment performance includes meeting benchmarks on SAT, ACT, AP, IB, CLEP, ASVAB, or industry-recognized/CTE certification.	NR
Virginia	The College and Career readiness measure contains diplomas and completion data, advanced program information (number and percentage of students enrolled in advanced programs like AP, IB, dual enrollment), postsecondary enrollment, CTE (students earning one or more CTE credentials), advanced placement participation and achievement.	NR
Washington	The Dual Credit Indicator measures the percentage of students (grades 9–12) who enroll in and complete a dual credit course. This includes Advanced Placement, International Baccalaureate, College in the High School, Tech Prep, and Cambridge programs.	59.3
West Virginia	On Track to Graduation and Postsecondary Achievement represents the percent of twelfth-grade students who earn at least one college/career benchmark on an AP or IB exam; complete college credit-bearing or advanced career coursework with a C or better; or complete a four-course state-approved CTE program of study.	65
Wisconsin	Wisconsin has defined participation in college entry exams and performance on college entry exams as part of the state's On-Track to Graduation and Postsecondary Readiness metrics.	NR
Wyoming	The Postsecondary Readiness measures the percentage of students in grade 12 who complete a college prep curriculum, earn a college-ready score on a college entrance exam, or earn college credit through AP, IB, or dual/concurrent courses; complete a CTE pathway (minimum three-course sequence) and a passing score on a state-approved CTE exam or industry-recognized certification; complete a college preparatory curriculum or CTE pathway and a military-readiness score on the ASVAB.	54.2

Appendix B: How Do States' Default High School Graduation Requirements in Mathematics and Science Prepare Students for the Demands of Two University Options in Their State?

To populate the *Mathematics and Science Requirements Data Explorer: Comparing K–12 Exit and Postsecondary Admissions Requirements*,[21] Achieve created a system to classify whether a student who completes the mathematics and science requirements prescribed by each state's high school graduation option(s) renders a student eligible for admission to two different public, four-year universities in the state that serve some of the largest populations of first-time freshmen (i.e., recent high school graduates) in the state.[22] Importantly, the classification system does not take into account the minimum content or coursework each sector requires, only whether K–12 and the higher education institution are sending clear and coherent signals about the necessary coursework to students and families.

Each state high school graduation option/university pairing received a separate rating in mathematics and science. There are three possible classifications:

- **Green ("Yes"):** A student who completes the K–12 specified coursework meets the subject-specific coursework requirements listed for admission. The K–12 graduation option and the higher education institution require the same number of courses (or K–12 requires a greater number), and the two sectors are consistent in their specificity about the courses students must complete.

- **Yellow ("Maybe"):** A student who completes the K–12 specified coursework may fall short of the coursework needed for entry into this higher education institution. The K–12 system specifies courses that students may count toward a student's mathematics or science credits for graduation, but it was not clear that the higher education institution would count those courses as meeting its admissions requirements. Students may find themselves unprepared because of the courses they took or did not take.

- **Red ("No"):** A student who completes the K–12 specified coursework will fall short of the coursework needed for entry into this higher education institution. K–12 requires fewer credits/years/units of science than the higher education institution or the higher education institution requires more advanced coursework, or the higher education institution is more specific about the coursework students must complete.

	University 1		*University 2*	
	Mathematics	**Science**	**Mathematics**	**Science**
Alabama				
Alaska				
Arizona				

(continued)

Appendix B (*continued*)

	University 1		*University 2*	
	Mathematics	**Science**	**Mathematics**	**Science**
Arkansas				
California				
Colorado				
Connecticut				
Delaware			N/A	N/A
Florida				
Georgia				
Hawaii				
Idaho				
Illinois				
Indiana				
Iowa				
Kansas				
Kentucky				
Louisiana				
Maine				
Maryland				
Massachusetts				
Michigan				
Minnesota				
Mississippi				
Missouri				
Montana				
Nebraska				
Nevada				
New Hampshire				
New Jersey				
New Mexico				
New York				
North Carolina				
North Dakota				
Ohio				
Oklahoma				
Oregon				
Pennsylvania				
Rhode Island				
South Carolina				
South Dakota				
Tennessee				
Texas				
Utah				
Vermont				
Virginia				
Washington				
West Virginia				
Wisconsin				
Wyoming			N/A	N/A

NOTES

1 Twenty-four percent of first-year college students are placed into remedial mathematics courses, 12 percent in remedial reading courses. In two-year colleges, 61 percent of black students and 50 percent of Hispanic students take remedial mathematics; 49 percent of black students and 41 percent of Hispanic students take remedial English. Complete College America, 2018, https://completecollege.org/data-dashboard/.

2 Achieve, 2015, https://www.achieve.org/rising-challenge-survey-1.

3 Districts, schools, and students may add on to the state-specified requirements.

4 Achieve Graduation Requirements Data Explorer, Class of 2019 Options, https://highschool.achieve.org/graduation-requirements-data-explorer.

5 Achieve Graduation Requirements Data Explorer, Class of 2019 Options, https://highschool.achieve.org/graduation-requirements-data-explorer.

6 Achieve, *How Do Assessments Matter—and for Whom? Making Sense of the High School Student's Assessment Experience,* May 2019, https://www.achieve.org/high-school-student-assessment-experience-2019.

7 Achieve College- and Career-Ready Student Outcomes Data Explorer, September 2019, https://highschool.achieve.org/college-and-career-ready-student-outcomes-data-explorer.

8 Louisiana and Maryland report outcomes for some subgroups of students (economically disadvantaged, English learners, students with disabilities) but do not report these data for black, Hispanic, and white students.

9 National Association for College Admission Counseling (NACAC) and the American School Counselor Association (ASCA), *State-by-State Student-to-Counselor Ratio Report: Ten-Year Trends,* https://www.nacacnet.org/globalassets/documents/publications/research/state-by-state-ratio-report.pdf.

10 Office of Civil Rights, *2013–2014 Civil Rights Data Collection: A First Look,* US Department of Education, https://www2.ed.gov/about/offices/list/ocr/docs/2013-14-first-look.pdf.

11 See www.achieve.org/rising-challenge for 2014 data and www.achieve.org/files/pollreport_0.pdf for 2004 data.

12 Achieve College- and Career-Ready Student Outcomes Data Explorer, September 2019, https://highschool.achieve.org/college-and-career-ready-student-outcomes-data-explorer.

13 The assessment data presented are limited to states that administer a CCR assessment aligned with their state standards in English 11/III and Math 11/Algebra II/Integrated Math III or that administer a college admissions assessment (i.e., SAT or ACT) to at least 90 percent of students.

14 ED Data Express, https://eddataexpress.ed.gov/data-elements.cfm.

15 Class of 2018 Adjusted Cohort Graduation Rates from https://highschool.achieve.org/sites/highschools.achieve.org/files/ACGR%20Table.pdf.

16 Achieve, *Thinking Long Term: State Graduation Rate Goals under ESSA,* February 2018, https://www.achieve.org/files/sites/default/files/ThinkingLongTermGraduationRateGoalsUnderESSA.pdf.

17 "Accountability in State ESSA Plans," Achieve, https://states.achieve.org/essa-tracker.

18 ESSA requires data disaggregation for accountability purposes by race/ethnicity, gender, socioeconomic status, disability, and English language learners (ELLs). States must also publicly report (but not necessarily use for accountability) disaggregated data for students with homeless status, students with a parent in the military, and students in foster care.

19 YouthTruth Student Survey, "The National High School Graduation Rate Has Continued to Rise—but Do Students Feel Prepared for What Comes Next?," https://youthtruthsurvey.org/college-career-readiness-2017/.

20 Mathematics and Science Requirements Data Explorer: Comparing K–12 Exit and Postsecondary Admissions Requirements, https://highschool.achieve.org/postsecondary-explorer.

21 Mathematics and Science Requirements Data Explorer.

22 Two states, Delaware and Wyoming, are home to only one public, four-year university that specified admissions requirements by subject. Thus, these two states have only one university included for comparison. The University of the District of Columbia, DC's only four-year institution, does not specify course requirements for admission. Thus, the District of Columbia was not included in this analysis.

26 25 24 23 22 21 20 7 6 5 4 3 2 1

About the Author

MARIE O'HARA

Marie O'Hara serves as the director of research at Achieve, managing the organization's state policy and student outcomes work. She is also responsible for identifying the best practices of states and districts in implementing college- and career-ready standards, graduation requirements, student assessments, and school accountability and data systems. Prior to her work at Achieve, O'Hara worked at the American Institutes for Research.

Hoover Education Success Initiative

With passage in 2015 of the Every Student Succeeds Act (ESSA), states are again in charge of American education policy. To support them in this undertaking, the Hoover Education Success Initiative (HESI), launched in 2019, seeks to provide state education leaders with policy recommendations that are based upon sound research and analysis.

HESI hosts workshops and policy symposia on high-impact areas related to the improvement and reinvention of the US education system. The findings and recommendations in each area are outlined in concise topical papers.

The leadership team at HESI engages with its Practitioner Council, composed of national policy leaders, and with interested state government leaders. HESI's ultimate goal is to contribute to the ongoing transformation of the nation's education landscape and to improve outcomes for our nation's children.

For more information about the Hoover Education Success Initiative, visit us online at hoover.org/hesi.

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