

# Destination Known

Valuing College AND Career Readiness  
in State Accountability Systems



***The destination is known:***

success for all students in life after high school. Students will take multiple paths to get there, and most will need postsecondary education or training beyond high school to have rewarding careers. States' education strategies and accountability systems must support this by more accurately measuring and more prominently valuing college and career readiness.

**TABLE OF CONTENTS**

**Executive Summary**..... **1**

Valuing Career Readiness in Accountability ..... 1

A Path Forward..... 2

Recommended Measures of College and Career Readiness..... 2

Opportunities for States to Incorporate the Recommended CCR Measures ..... 4

**Recommended Actions for States**..... **6**

**Introduction** ..... **7**

Why College and Career Readiness is Paramount..... 7

States Working to Close the Gaps ..... 8

What Gets Measured Matters ..... 8

**Designing State Systems to Measure  
and Value College and Career Readiness**..... **10**

A Robust Vision for College and Career Readiness ..... 11

Recommended College- and Career-Ready Measurement Categories..... 12

Measures for Every State Context ..... 13

**How States Can Incorporate Recommended  
College and Career Readiness Measures into  
their Accountability Systems** ..... **25**

Highlight CCR Measures in High School Public Reports ..... 25

Align K-12, Higher Education and Workforce Goals..... 29

Make the Most Valid CCR Measures Count in School  
Accountability Determinations ..... 30

**Recommended Actions for States**..... **36**

Immediate Steps ..... 37

Mid- to Long-term Steps: ..... 37

**Notes and Acknowledgements** ..... **38**

# Executive Summary

The economic future of the country rests on students' ability to develop the knowledge and skills and earn the postsecondary credentials necessary to meet workforce demands of the future. According to economic projections, the country needs to dramatically increase—from 50 to 65 percent—the working age population that possesses a degree, certificate or other high-quality postsecondary credential to meet future workforce needs.<sup>1</sup> While recent trends show a slight increase, states still have a long way to go. Only six states have current attainment rates above 50 percent, and every state will need to increase its success by more than one percentage point each year to meet the national mark by 2025.<sup>2</sup>

The challenge is more than just an issue of economic competitiveness; it's an issue of equity—as fewer youth from traditionally underserved subgroups transition to and successfully complete postsecondary education and training. These youth are at a significant disadvantage in their ability to successfully engage in the economy of the future. Nearly all of the jobs created during the recovery from the Great Recession have gone to workers with some college education or training, leaving behind those with a high school diploma or less.<sup>3</sup> This trend is confirmed in employer surveys that indicate students with only a high school education have significant skill gaps that make them less marketable in the workforce.<sup>4</sup>

America's growing national skills and attainment gaps necessitate that state K-12 systems prepare more students for success in college *and* career. State education leaders recognize the challenge and are committed to dramatically increasing the number of students that graduate high school well prepared to attain a postsecondary credential with labor market value. In developing their Every Student Succeeds Act (ESSA) plans, many states are considering how to include important measures of college- and career-readiness in their K-12 accountability systems. Data drives action, and right now, data on the most critical outcome of the K-12 system is largely absent. States need this information to support students on their path toward success beyond high school.

States have an immense opportunity to refine their accountability systems to focus on preparing students for both college and careers. State leaders can and should develop systems of accountability and support that drive toward that vision. States are right to double down on student preparation—by increasing access, providing targeted supports, and holding

all schools accountable for the success of all students—to meet the future workforce projections and close the skills gap. In preparing all youth for success beyond high school, states will fuel their economic engine.<sup>5</sup>

## Valuing Career Readiness in Accountability

In 2014, Council of Chief State School Officers' (CCSSO) Taskforce on Career Readiness released a pivotal report calling on states to make career readiness more meaningful in their accountability systems. As *Opportunities and Options: Making Career Preparation Work for Students* succinctly summarizes, “What’s measured gets valued by schools, but most state accountability systems today don’t measure or value career readiness. Given the critical role that accountability systems play in signaling priorities and driving resources, states must expand these metrics to emphasize readiness for both college *and* careers.”

Under No Child Left Behind (NCLB), graduation rates and test scores were the predominant measures of student success, with little attention to indicators that reflect students' successful transition to postsecondary education and training opportunities.

Since the passage of NCLB, states have slowly added college and career readiness measures to their accountability systems. Currently, over half the states publicly report on measures of college and career readiness and 17 states include at least one measure of career readiness in school accountability determinations. The approach to and quality of those measures vary widely.

For example,

- Fewer than 20 of states publicly report how many students completed a rigorous sequence of classes that research indicates will prepare students for success in college and career.<sup>6</sup>
- While approximately 20 state accountability systems include information about students earning postsecondary credit while in high school in their accountability determinations, through dual credit, Advanced Placement (AP) or International Baccalaureate (IB), only 11 states include information on students earning any industry certification—and even fewer include industry-recognized credentials—in their accountability system.<sup>7</sup>
- Only thirty states and the District of Columbia make explicit in public reports the percentage of students that have scored at the college- and career-ready level on the state’s high school assessment, and even fewer states report career pathway-aligned demonstrations of readiness.<sup>8</sup>
- Fewer than five states publicly report any measure of a student’s learning outside the classroom, leading to a limited understanding of the development of professional skills through long-term work-based learning opportunities.<sup>9</sup>
- Publicly-reported, student-level information on transitions into postsecondary certificate or registered apprenticeship programs, military, and even employment is nearly nonexistent in states.

*Without a clear focus on career readiness in state accountability systems, educators, parents, policy makers and other key stakeholders lack the information and incentives necessary to make career preparation a priority for all students.*

This informational gap leaves parents and policymakers in the dark about students’ college- and career-readiness—and may not lead educators to prioritize the actions that are most predictive of long-term success beyond high school.

## A Path Forward

While accountability is not a silver bullet, it is apparent that educators and students respond to clear goals, transparent data and systems that highlight success and identify underperformance. In particular, accountability can provide useful information to help school and state leaders understand where there are gaps in performance of specific student groups. This information can lead to critical actions, such as increasing access to college-level coursework, developing opportunities to gain career certificates that have value in the workplace, and

offering targeted student supports to meet college- and career-ready expectations on assessments that are validated by higher education and industry.

ESSA presents states with a critical opportunity to design a truly college- and career-ready K-12 education system, with an accountability system that fully captures and values student preparation. Each state has the opportunity to include measures of college and career readiness as an indicator of “school quality or student success.” Further, states have increased flexibility to design and financially support student preparation for and transition to postsecondary education and training.

CCSSO launched a Career Readiness Initiative in 2015 to support states in following through on the recommendations outlined in the Opportunities and Options report. In 2016, JPMorgan Chase collaborated with CCSSO, Education Strategy Group (ESG) and Advance CTE in its New Skills for Youth Initiative to dedicate \$33 million in grant funding to help states turn their visions for transforming career readiness into a reality. To help inform this work, ESG convened an Accountability Workgroup of state and national experts with a clear charge: provide guidance on the measures states should adopt to make college and career readiness the main driver of accountability systems.

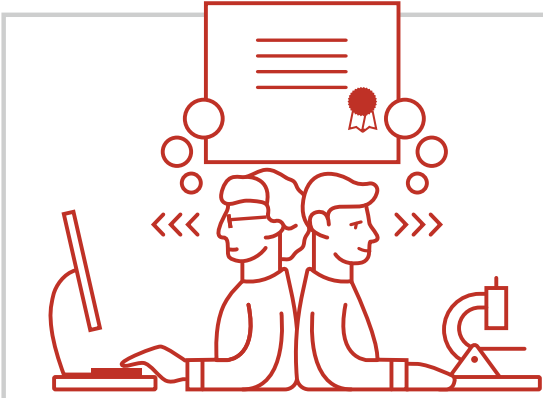
In identifying potential measures, the Accountability Workgroup placed emphasis on measuring college and career readiness together, rather than as separate components. If the goal is for all students to be college- and career-ready, then it is paramount that state systems promote and capture students’ demonstration of that preparation through multiple means. This is especially true given our growing understanding that “college and career readiness” means the development of academic, technical and professional skills. These skills are obtained and demonstrated through completion of rigorous coursework, long-term co-curricular experiences and meaningful assessments, and they are ultimately validated by a student’s successful transition to life beyond high school.

Separating measures of college and career readiness can present a false choice to students, parents, educators and the public—especially as the new economy demands all students to receive some education or training beyond high school.

## Recommended Measures of College and Career Readiness (CCR)

Drawing upon this vision, the Workgroup recommended four measures that all states should consider including in their high school accountability systems. The four categories outlined on the following page are a much more robust set of measures than those currently in place in most states and are consistent with the goals and intent of ESSA.

## Recommended College and Career Readiness Measures



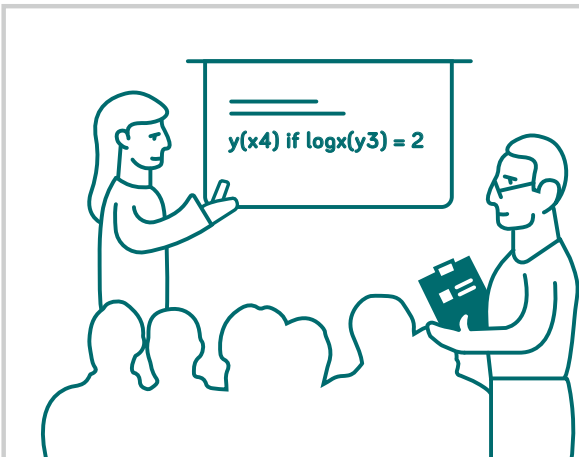
### Progress Toward Post-High School Credential

Student demonstration of successful progress toward credentials of value beyond high school. At a minimum that means completion of a validated college- and career-ready course of study. It should also include whether students completed a rigorous pathway<sup>10</sup> and earned postsecondary credit while in high school. Rather than focus solely on whether a student graduates, this is a critical measure of whether a student is graduating prepared for the next step. Research suggests completion of rigorous coursework—including career pathways and dual credit—is highly correlated with student success beyond high school.<sup>11</sup>



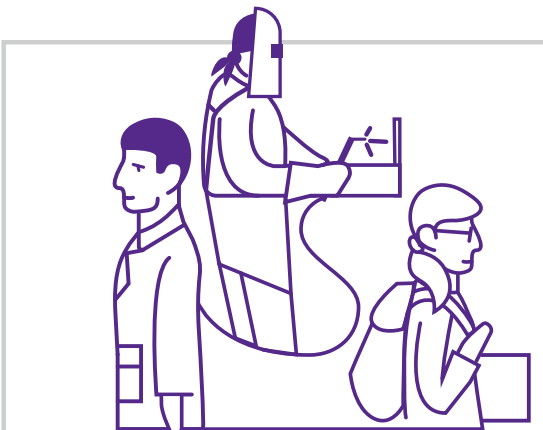
### Co-Curricular Learning and Leadership Experiences

Student completion of state-defined co-curricular experience(s) aligned to students' academic and career plans. This would include an evaluation that the student met expectations and gained the professional skills necessary for success in college and careers. Learning and Leadership experiences include extended work-based learning, service learning or co-curricular activity, such as participation in state career technical student organization competitions.



### Assessment of Readiness

Students scoring at the college- and career-ready level on assessment(s) that are validated by higher education and industry. In many states, the proficiency cut point on the high school assessment does not indicate college and career readiness, so an accurate examination of readiness for the next level is critical, including assessments that provide value to students' paths into education, training and the workforce beyond high school. Advanced Placement, International Baccalaureate, industry recognized credentials, technical skills assessments and other performance-based demonstrations of students' knowledge and skills should be incorporated to provide valuable insight into student progression toward college and career in their chosen pathway.

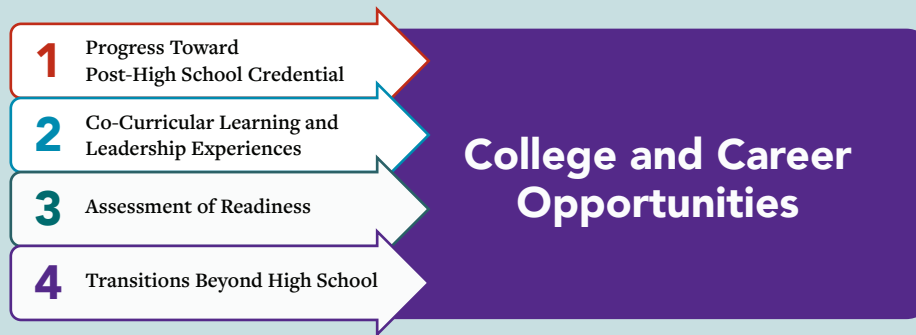


### Transitions Beyond High School

Successful student transition to postsecondary education, training or the workforce within 12 months of graduation. Examining the quality of each of these transitions is critical to ensure that alignment between K-12, higher education and workforce exists and that students are placed into situations that promote their ability to realize long-term economic success. This means enrollment in higher education without the need for remediation, engagement in high-quality registered apprenticeship certificate programs, military enlistment, or employment in state-defined in-demand fields.

FIGURE 1

## Recommended College and Career Readiness Measures



### Opportunities for States to Incorporate the Recommended CCR Measures

There are three main ways that states can work to integrate the recommended college and career readiness measures into their overall accountability system: public reporting, goal setting and school accountability determinations. The Accountability Workgroup recommends that states consider the following steps:

#### HIGHLIGHT CCR MEASURES IN HIGH SCHOOL PUBLIC REPORT CARDS

Every state has mechanisms in place today for publicly reporting how its schools are performing, including school report cards that give parents and community leaders critical information on how each school performs on a common set of indicators. Unfortunately, very few school report cards include meaningful measures of college and career readiness. States should report information about student performance in each of the four recommended areas, either through incorporating the measures into the federally-required school report cards or creating a College and Career Readiness and Success Feedback report for each high school. For instance, **Kentucky** reports on the post-high school outcomes of students in college and the workforce by level of preparation in high school. Public reporting is a foundational step in creating a college- and career-ready accountability system—and one in which systems are already in place to support immediate state action. In fact, there are many additional indicators—measuring college and career readiness and otherwise—that may be best handled through public reporting, rather than inclusion in school accountability determinations. Students, parents, educators, policymakers and the public all want more information about the success of the K-12 system in preparing youth for life beyond high school. States can and should provide that information.

#### ALIGN K-12, HIGHER EDUCATION AND WORKFORCE GOALS

Integrating ambitious goals into state education policy is a fundamental step to galvanize change and realize system improvement. States can leverage the ESSA opportunity to inspire and support successful transitions to college, career, and life for all youth. This means statewide agreement on the critical components of student

*Very few school report cards include meaningful measures of college and career readiness*

preparation; implementing ambitious and achievable goals that are aligned across K-12, higher education, and workforce systems; and, monitoring progress against annual milestones to highlight success and bring support and resources to bear in areas of struggle. For instance, **Tennessee** has included postsecondary attainment as one of its K-12 state goals under ESSA. States should articulate the trajectory toward college and career readiness for all students—incorporating each of the recommended measures—to set a vision for the future that is aligned to state’s long-term economic needs.

### **MAKE THE MOST VALID CCR MEASURES COUNT IN SCHOOL ACCOUNTABILITY DETERMINATIONS**

To truly put college and career readiness at the forefront of the K-12 system, schools need to be held accountable for how well they are preparing students for the next steps beyond high school. Publicly reporting data for each high school is a good start, and incorporating the indicators into actual accountability determinations can make these data even more powerful. Each of the recommended measures in this report—with the appropriate access and data quality control checks in place—can be considered for inclusion in state accountability determinations. States will need to ground these decisions in their vision for the education system and ability to collect and report the pertinent information. Every state has authority and flexibility to make college and career readiness the focus of their high school accountability system. While ESSA provides room for an indicator of “school quality or student success,” it is clear that states are in control of their own accountability systems and have multiple ways to incorporate CCR measures. States are approaching this in several ways:

- Including CCR measures as a “school quality or student success” indicator: In their proposed ESSA plans, both **California** and **Tennessee** intend to include multiple measures of college and career readiness that students can meet as the “school quality or student success” indicator under ESSA. Alternatively, **Kentucky** pioneered the creation of an accountability incentive for students demonstrating readiness for both college and careers.
- Measuring CCR with high school graduation: **Louisiana** includes an index in its accountability system that rewards points to schools based on students’ graduation status and completion of advanced college- and career-ready coursework. Under ESSA, **New York** is considering adding a similar graduation index to its accountability system.
- Incorporating CCR into assessment calculations: When calculating student assessment scores for accountability purposes, **Rhode Island**, among other states, provides additional points for students scoring at the CCR level.



# Recommended Actions for States

For college and career readiness to be valued in all schools and for all students, states should strive to:

- 1** Publicly report performance of all high schools across all four measurement categories, disaggregated by individual measures and all subgroups;
- 2** Increase the sophistication of its measures in all four categories annually, striving to reach the Exceptional level within 5 years;
- 3** Include each category of measure in the state's accountability determination system;
- 4** Make each measure a significant part of the high school accountability determination; and,
- 5** Use the information to support improvements in preparing all students for college and career.

States are at different starting points in their ability to collect, report and use data in the four measurement areas. For states that are nascent in this work, collecting and publicly reporting data at the baseline level of each category will be pivotal to their progress. States that are more advanced should increase the sophistication of the measure definitions and transition from reporting to inclusion in accountability ratings.

Regardless of the starting point, all states have opportunity to move forward with the recommended action steps. States should take advantage of the focus on continuous improvement in ESSA to transition measures and increase performance expectations over time. It is critical that all states set a vision for the future and work to implement the data and policy changes necessary to bring that vision to life.

*Preparing students for success beyond high school is the charge of the K-12 system. Today, states have an opportunity to reflect this in their accountability systems—and provide equal and collective measurement of college and career readiness for all students.*

# Introduction

## Why College and Career Readiness is Paramount

The economic future of the country rests on students' ability to develop the knowledge and skills and earn the postsecondary credentials necessary to meet workforce demands of the future. Today's economy is vastly different than that of the past. While a high school diploma was a ticket to the middle class for much of the 20<sup>th</sup> century, that is not the reality today—and it is becoming even less so as technological automation increases. As economist Anthony Carnevale argued, “There is no way back to the legions of good manufacturing jobs that only required high school. The way forward for the American class is the New Middle: career fields that pay and don't require a Bachelor's degree, but do require at least education and training beyond high school.”<sup>12</sup>

Since 2000, creative, non-routine jobs, or those that require complex human interaction and cannot be accomplished by following explicit rules (i.e. automation), account for all of the job growth in the country. These jobs often demand skills and credentials that the current workforce lacks. For instance, economists attributed about 30 percent of the increase in unemployment during the Great Recession to skills mismatch, meaning that approximately two million jobs went unfulfilled as a result of skills, training, and education gaps.<sup>13</sup> While the economy has improved since the recession, the trend toward jobs demanding higher order skills has not slowed. In fact, nearly every job created during the recovery has gone to workers with some college education or training, leaving behind those with a high school diploma or less.<sup>14</sup>

To close these skill gaps and meet the projected workforce demands, the country needs to dramatically increase—from 50 to 65 percent—the working age population that possesses a two- or four-year degree or other high-quality postsecondary credential with labor market value.<sup>15</sup> Recent trends suggest a slight increase in attainment rates, yet the rate of improvement is not enough to meet the country's long-term economic needs.<sup>16</sup>

Every state will need to support dramatic increases in the number of students prepared for, seamlessly transitioning to, and successfully completing postsecondary education and training. Even a state such as **Massachusetts**, which has the nation's highest attainment rate at 55 percent, will need to increase its rate by more than ten percentage points to meet the 65 percent projection by 2025. Only six states have current

attainment rates above 50 percent, and seven have rates below 40 percent. On average, each state will need to improve by more than two percentage points per year to meet the goal.<sup>17</sup> This does not mean that all students need to enroll in four-year colleges; rather, the data are clear that there are significant growth opportunities in the workforce for individuals with long-term postsecondary certificates and two-year degrees.<sup>18</sup>

The challenge is more than just an issue of economic competitiveness; it's an issue of equity—as fewer youth from traditionally underserved subgroups transition to and successfully complete postsecondary education and training. Degree attainment rates differ considerably by racial/ethnic group. Whereas 60 percent of Asian/Pacific Islander adults have a postsecondary credential in the U.S., only 20 percent of Hispanic adults do. The completion trends mirror the current college enrollment trends by population group.<sup>19</sup> Too few students from traditionally underserved student populations are making it into postsecondary education and training—let alone attaining a certificate or degree.

These youth are at a significant disadvantage in their ability to successfully engage in the economy of the future. Workers lacking postsecondary credentials today are much more likely to be employed in low-wage, low-skilled occupations than were such workers in the past.<sup>20</sup> The gap in earnings between high-school-educated and college-educated workers has more than doubled in the United States over the past three decades.<sup>21</sup> Employer surveys confirm that students with only a high school education have significant skill gaps that make them less marketable in the workforce.

*It is clear that states must take on significant work to help students meet the demands of the new economy—and to do so will require partnerships between K-12, higher education, and industry leaders.*

## States Working to Close the Gaps

States stand willing and able to address the skills and attainment gaps that exist in the country today. From a renewed commitment to career readiness to a deep focus on postsecondary credential attainment, states are forging a path toward a more prosperous future for all youth.

In 2014, the Council of Chief State School Officers (CCSSO) convened a Career Readiness Task Force to develop recommendations for how all states could strengthen their career preparation systems, beginning in K-12. The Task Force comprised education and business leaders from around the country, and the resulting report pressed states to dramatically improve the quality of career programs and pathways available to students, with a special emphasis on working with industry leaders to align the pathways with labor market needs. The Task Force report, *Opportunities and Options: Making Career Preparation Work for Students*, laid out three recommendations for states:

- Enlist the employer community as a lead partner in defining the pathways and skills most essential in today's economy
- Set a higher bar for the quality of career preparation programs, enabling all students to earn a meaningful postsecondary degree or credential
- Make career readiness matter to schools and students by prioritizing it in accountability systems<sup>22</sup>

The Task Force report was a call to action—and it worked. Forty-three states, the District of Columbia, and two territories signed on to bring the recommendations to life. JPMorgan Chase then dedicated \$33 million of grant funding through its New Skills for Youth initiative to help states turn their visions for improving career readiness in K-12 into a reality. CCSSO, in partnership with Advance CTE and Education Strategy Group, awarded grants and provided technical assistance to 24 states and D.C. as part of phase one of the New Skills for Youth initiative. The funding enabled states to perform a diagnostic assessment of their career preparation system and develop an action plan to transform their systems of career preparation focused on six critical objectives. Key among them:

*Incorporate robust career-focused indicators in state accountability systems that measure and value successful completion of meaningful pathways, work-based learning, enrollment in postsecondary education or apprenticeships, and credentials of value.*

Ten of the states were selected for three-year, \$1.95 million grants to implement their action plans, and all states continue to receive technical assistance to improve their systems to support students' career readiness.

Beyond work in K-12, a majority of states have set long-term postsecondary attainment goals that are aligned with future workforce projections. States are committed to not only setting these goals, but also providing the supports necessary to reach them. For many states, this support begins in K-12, as states help “speed up” students who are ready for college-level coursework in high school and “catch up” those that need additional interventions prior to graduation.<sup>23</sup>

The appetite for improvement is clear and significant work is underway in states to close the nation's skill and attainment gaps. And now states can take advantage of a new opportunity through the Every Student Succeeds Act to expand their work in the K-12 system in ways that will help close those gaps, and open doors to a productive future for all students. States will need to use all of the policy and practice levers available to realize significant improvements.

## What Gets Measured Matters

States are deeply focused on supporting the preparation of all youth for college and career,<sup>24</sup> but very few have built systems that measure and incentivize this for their students and schools. This is especially true of career readiness. The Task Force report succinctly sums the issue:

*What's measured gets valued by schools, but most state accountability systems today don't measure or value career readiness. Given the critical role that accountability systems play in signaling priorities and driving resources, states must expand these metrics to emphasize readiness for both college and careers.<sup>25</sup>*

Under No Child Left Behind, there was no room for state innovation for purposes of federal accountability. As states moved to take advantage of ESEA waiver flexibility, many began to explore how to better incorporate a broader array of measures within their accountability systems. This is a challenging shift that requires both broader access to opportunities for students and increased capacity to track and report college- and career-ready measures. Moving to such a system will take time, but a clear commitment to measures and metrics that value career readiness in state accountability systems is an essential first step.

Recent history demonstrates that if states are intentional about highlighting and valuing college and career readiness, it can lead to improved outcomes. In 2010, **Kentucky** implemented its Unbridled Learning accountability model, which included a college and career readiness measure that accounted for 20 percent of a school's overall determination. Within that measure,

students who demonstrate college readiness receive 1 point, students who demonstrate career readiness receive 1 point and students who demonstrate both college and career readiness receive 1.5 points. This “bonus” structure may have promoted an increase in the number of students meeting both benchmarks. In five years, the percent of students’ college- and career-ready increased from 9 to nearly 27 percent statewide. This is but one example of students and educators responding to the incentives inherent in any accountability system.

**FIGURE 2**

## Kentucky College and Career Readiness Accountability Data

YEAR	COLLEGE READY	CAREER READY	BONUS (COLLEGE & CAREER READY)
2011 – 2012	43.5%	8%	9.3%
2012 – 2013	49.4%	11.8%	13.3%
2013 – 2014	55.6%	18%	19.8%
2014 – 2015	58.8%	20.7%	24.3%
2015 – 2016	60.1%	22.1%	26.7%

Data provided by the Kentucky Department of Education.

Since No Child Left Behind, high school graduation rates and test scores have been the predominant measures in state accountability systems. Less attention was paid to college and career ready indicators. Through the Elementary and Secondary Education Act waivers, only 17 states included a specific career readiness measure. In those states, the “career readiness” measure often took a back seat to the “college readiness” measures, in critical ways:<sup>26</sup>

- The quality of career-ready measures varied considerably, in terms of data, validation, and value to students’ long-term success.
- The value of career-ready measures is hidden in many of the 17 states’ systems, which often combine multiple ways for a student to demonstrate CCR into a single “metaindicator” without reporting individual performance. This can mask how many students display career readiness. For instance, in one state, more than 30 percent of students demonstrated CCR, yet fewer than 10 students statewide did so by completing a work-based learning experience, which was one of the included measures.
- Denominators for career readiness vary across measures and often include only a small subset of students (i.e., 12<sup>th</sup> grade students, high school graduates, tested students) rather than all students from the 9<sup>th</sup> grade cohort.
- Data are missing on critical indicators of career readiness and success, such as employment, in most state reporting and accountability systems.

Without access to this information, or quality controls around the measurement of outcomes in state reporting and accountability systems, states lack the ability to answer key questions about students’ readiness to successfully transition to education, training and employment beyond high school. For instance, very few states can answer the following questions, which could have a profound impact on student access to and preparation for education, training and employment after high school:

- How many students have demonstrated the academic, technical and professional skills necessary for success beyond high school? How does that differ by demographics, regionally or within certain pathways?
- How many high school students are enrolled in and/or have completed a pathway that is likely to culminate in a credential with labor market value? How does pathway enrollment and completion align with workforce projections for “in-demand” fields in the state?
- How many students have participated in meaningful “work-based learning” opportunities during high school, such as internships and apprenticeships, that enable them to connect the world of work with classroom learning? How does that differ by demographics, regionally or within certain pathways?
- How many youth successfully transition to college, training programs and gainful employment after high school? Which districts and which high schools are doing the best job preparing students for successful transitions?

*This informational gap has left parents, educators, and policymakers in the dark about students’ college and career readiness—and has failed to drive the performance focus in high school toward the actions that are most predictive of long-term success beyond high school.*

# Designing State Systems to Measure and Value College and Career Readiness

CCSSO launched a Career Readiness Initiative in 2015 to support states in following through on the recommendations outlined in the Opportunities and Options report. In 2016, JPMorgan Chase collaborated with CCSSO, Education Strategy Group (ESG) and Advance CTE in its New Skills for Youth Initiative to dedicate \$33 million in grant funding to help states turn their visions for transforming career readiness into a reality. To help inform this work, ESG convened an Accountability Workgroup of state and national experts with a clear charge: provide guidance on the measures states should adopt to make college and career readiness the main driver of accountability systems.

The Workgroup undertook this work based on the following guiding principles:

- Promote greater access to high-quality career pathways for all students that culminate with a credential with labor market value beyond high school.
- Recognize that preparation for college and career requires a suite of skills and experiences that cannot be captured through a single measure.
- Validate students' preparation for college and career based on successful transitions beyond high school.
- Value the unique context and starting points of states' accountability systems and provide a clear path for improvement.

These principles highlight a shared commitment—among the Workgroup members and affiliated organizations—to inspire and support all students in their efforts to realize success beyond high school.

## Members of the Expert Workgroup on Accountability

Chad Aldeman, *Bellwether Education Partners*

Chris Domaleski, *Center for Assessment*

Melissa Fincher, *Georgia Department of Education*

Matthew Gandal, *Education Strategy Group*

Christy Hovanetz, *Foundation for Excellence in Education*

Dan Jorgensen, *Colorado Department of Education*

Paige Kowalski, *Data Quality Campaign*

Kate Blosveren Kreamer, *Advance CTE*

Marie O'Hara, *Achieve*

Rich McKeon, *Council of Chief State School Officers*

Danielle Mezera, *Tennessee Department of Education*

Ryan Reyna, *Education Strategy Group (facilitator)*

Scott Sargrad, *Center for American Progress*

Robert (Bob) Sheets, *The George Washington University Institute of Public Policy and (Advisor) U.S. Chamber of Commerce Foundation*

Leslie Slaughter, *Kentucky Department of Education*

Anne Stanton, *National Academy Foundation Future Ready Venture*

Natasha Ushomirsky, *The Education Trust*

Christopher Woolard, *Ohio Department of Education*

## A Robust Vision for College and Career Readiness

A growing body of research confirms that the skills needed for success in college are consistent with those for jobs that pay well and allow for career advancement.<sup>27</sup> The Workgroup report does not aim to define college and career readiness for states; rather, it recognizes the general consensus among practitioners, policy makers, higher education, business and the public that students need a suite of skills—called academic, technical and professional<sup>28</sup> skills in this report—to successfully transition to life beyond high school, regardless of their path.

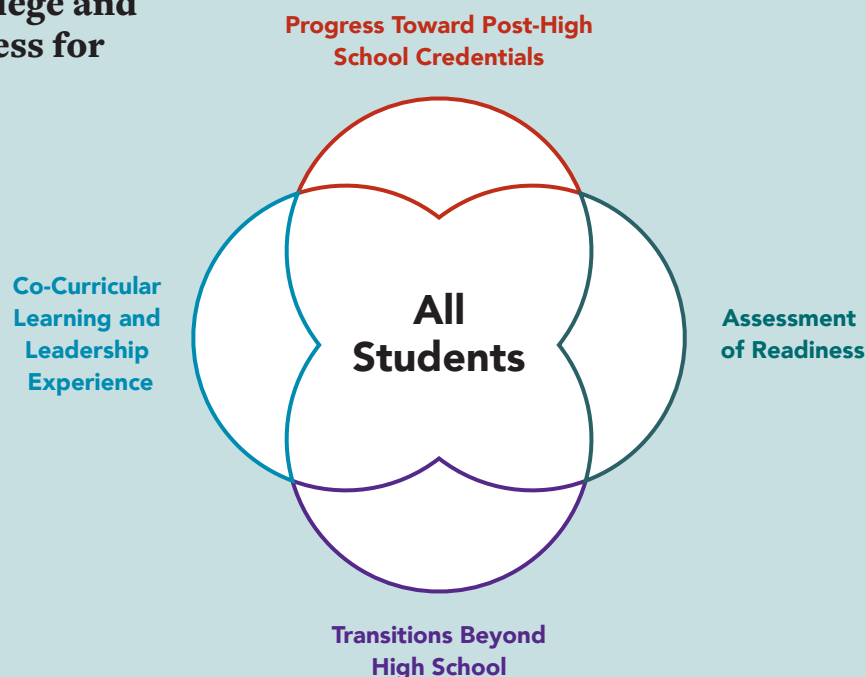
While state definitions of college and career readiness (CCR) differ, more than half of the states with CCR definitions include components of all the following categories<sup>29</sup>:

- Academic knowledge
- Critical thinking and/or problem solving
- Social and emotional learning, collaboration or communication
- Grit/resilience/perseverance

*While states have clearly set rigorous expectations for what skills students need to gain for success beyond high school, to date there has been less clarity regarding how to best measure those skills. The recommended measures in this report aim to fill that gap—helping all states get a robust picture of student readiness and success.*

FIGURE 3

### Measuring College and Career Readiness for All Students





## Recommended College- and Career-Ready Measurement Categories

The Expert Workgroup on Accountability recommended four measurement categories for states to measure college and career readiness. Each category is described below in more detail.

**PROGRESS TOWARD POST-HIGH SCHOOL CREDENTIAL:** Student demonstration of successful progress toward credential of value beyond high school.

**CO-CURRICULAR LEARNING AND LEADERSHIP EXPERIENCES:** Student completion of state-defined co-curricular experience(s) aligned to students' academic and career plans. Learning and Leadership experiences include extended work-based learning, service learning or co-curricular activity, such as participation in state career technical student organization competitions.

**ASSESSMENT OF READINESS:** Students scoring at the college- and career-ready level on assessment(s) that are validated by higher education and industry.

**TRANSITIONS BEYOND HIGH SCHOOL:** Successful student transition to postsecondary education, training, or the workforce within 12 months of graduation.

Taken together, these measures represent a more complete accounting of a student's college and career readiness. Each measure contributes substantially to a state's understanding of student preparation. The academic intensity of a student's high school curriculum is one of the most important components in predicting whether a student will succeed in postsecondary coursework and training. Yet, it is incomplete in that course completion does not signify competency, nor is it the only vehicle for students gaining important academic, technical and professional skills. In particular, professional skills—such as communication, collaboration, creative problem solving—are often gained in settings outside the classroom. Both course work and Learning and Leadership experiences must be supported by a validated demonstration of student knowledge and skills. Finally, the most telling indicator of college and career preparation is whether students successfully transitioned to postsecondary education, training or the workforce after graduating from high school.

In identifying potential measures, the Accountability Workgroup placed emphasis on measuring college and career readiness together, rather than as separate components. If the goal is for all students to be college- and career-ready, then it is paramount that state systems promote and capture students' demonstration of that preparation through multiple means. This is especially true given our growing understanding that "college and career readiness" means the development of academic, technical and professional skills. These skills are obtained and demonstrated through completion of rigorous coursework, long-term co-curricular experiences and meaningful assessments, and they are ultimately validated by a student's successful transition to life beyond high school. While specific measurements of college and career readiness may differ—IB exam and industry-recognized credential, for instance—the goal is the same for both: a validated outcome of readiness that can speed along a student's transition into college and career. Separating measures of college and career readiness can present a false choice to students, parents, educators, and the public—especially as the new economy demands all students to receive some education or training beyond high school.

*Taken together, these measures represent a more complete accounting of a student's college and career readiness.*

## The Power of the 9th Grade Cohort

All of the recommended measures in the Accountability Workgroup report begin with the “percentage of the 9<sup>th</sup> grade cohort.” This may seem like trivial language, but it is actually one of the most powerful actions a state can take to provide an accurate accounting of student preparation for college and careers. As mentioned previously, for too long the reporting of education data has contributed to misperceptions among the public about students’ readiness for life beyond high school. Current state reporting of college and career readiness measures is inconsistent, across measures and states. It

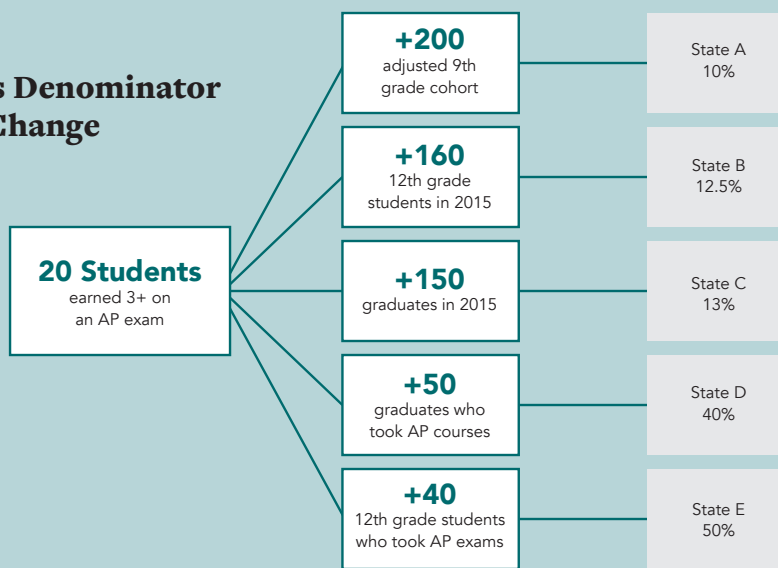
is regular practice in states to use multiple different denominators when calculating performance. For instance, a state may use only test takers (usually 11<sup>th</sup> graders) for calculating assessment proficiency, 12<sup>th</sup> grade students for calculating AP exam success, and high school graduates for calculating the percent of students that completed a career pathway. There is nothing inherently wrong with this approach, it simply makes it more difficult for parents and policymakers to have a consistent view of student preparation. The illustration below, from Achieve’s brief *Count All Kids: Using the 9<sup>th</sup> Grade*

*Cohort to Improve Transparency and Accountability*, demonstrates why this is an issue, using student scores on AP exams as an example.<sup>30</sup>

Depending on which students the state decides to include in the calculation, performance can vary significantly. While the same number of students scored a 3 or higher on an AP exam in State A and State E, the public would likely interpret State E as excelling and State A as struggling. This view would likely extend to specific schools within each state.

**FIGURE 4**

### How a State’s Denominator Choice Can Change the Storyline



Although transitioning to consistent use of the 9<sup>th</sup> grade cohort as the denominator for all college and career readiness measures may “lower” performance, reporting how the 9<sup>th</sup> grade cohort fares portrays a full picture of students’ readiness. Ultimately, providing an accurate picture of student success based on the number of students that started in the high school—similar to what is done for high school graduation—is a critical lever for ensuring student access and supports are available statewide.

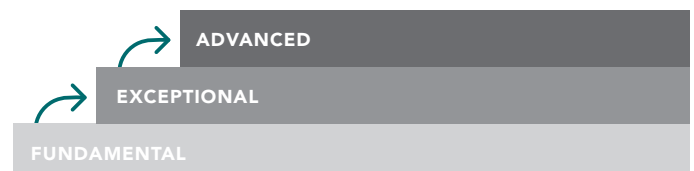
Achieve, *Count All Kids: Using the 9th Grade Cohort to Improve Transparency and Accountability*, Washington, DC., 2016. Available at: <http://www.achieve.org/files/Achieve-CountAllKids-09-29-2016.pdf>.

## Measures for Every State Context

States are in very different places in terms of reporting and including college and career readiness measures in accountability. To meet the needs of multiple contexts, stretch each state’s ability to meet critical components of college and career readiness, and provide all states with a path forward, the Accountability Workgroup developed a framework for addressing the recommended measures that acknowledges different state starting points.

For each recommended measurement category, the Accountability Workgroup identified a single, consistent measure that all states should strive to adopt, and then articulated three levels of sophistication (e.g., Fundamental, Advanced,

Exceptional) that enable states to increase the level of rigor over time. Each of the definition levels builds upon the previous level. Movement up the continuum—from Fundamental to Advanced to Exceptional—represents increased specificity in state policy definitions as a result of (1) increasing expectations for the student and (2) acquisition of data by the state.





In this set of recommendations, every state can find areas for improvement. Most states are able to report at the Fundamental level in at least one measurement category today, while no state currently reports all of the categories at the Exceptional level. The definitions are intended to be illustrative of the core elements that states should address when measuring college and career readiness. Each state will need to approach the measures—and their definitions—based on their unique context.

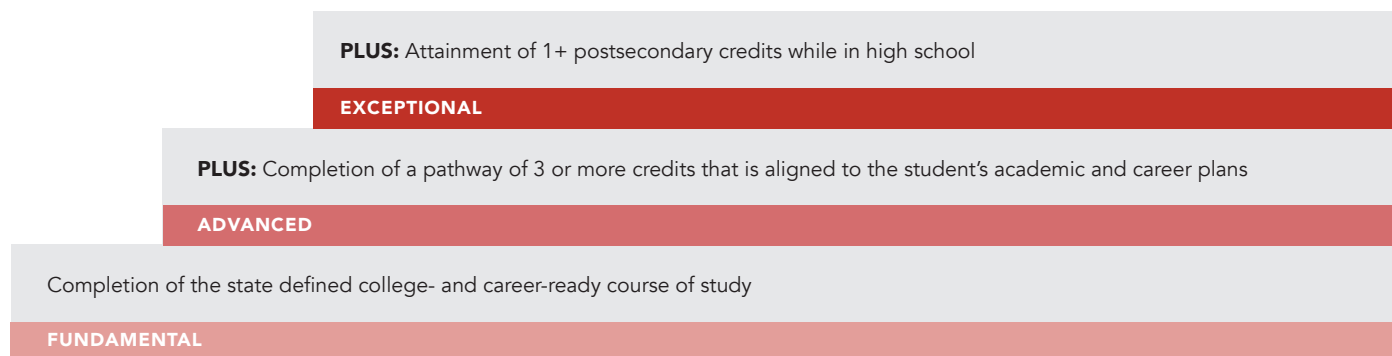
A state’s ability to meet certain measurement definitions will likely reflect more than just data capacity. Each of the measurement categories, and the recommended measures within, are predicated on the state’s policies and practices in that particular area. For instance, to appropriately measure the percent of students completing a Learning and Leadership experience aligned to the student’s academic and career plans, the state needs to clearly define which experiences “count” and ensure that a common process is in place for documenting student plans. Further, states will want to ensure that they have the appropriate validation and quality controls in place prior to using data in accountability determinations. States may need to provide schools and districts with guidance on what a high-quality, work-based learning experience entails and how to properly account for that in the district’s reporting to the state. States will also want to consider access to pathways, advanced coursework and exams, and co-curricular experiences as they work to implement the recommended measurement categories.

For each measurement category, the following is detailed below:

- The measure calculation and three levels of definitional sophistication
- Why the measure is important to include as an indicator of college and career readiness
- Where states stand in the collection and reporting of the measure
- Additional policy and data components that can support the successful implementation of the measure

**FIGURE 5**

## Ability to Measure *Progress* Toward Post-High School Credential Includes:



### MEASUREMENT CATEGORY 1: PROGRESS TOWARD POST-HIGH SCHOOL CREDENTIAL

**MEASURE:** Percent of the 9th grade cohort that demonstrated successful *progress* toward attaining a credential of value beyond high school

At the *Fundamental* level, a state would calculate how many students completed a college- and career-ready (CCR) course of study. Typically, this includes at least four years of rigorous, grade-level English and three years of mathematics (through the content generally found in an Algebra II or an integrated third-year math course), science, and social studies, with some states requiring four years of each content area. CCR courses of study must be validated by higher education systems, and ideally employers, to be credible as a valued measure of readiness.

At the *Advanced* level, the state would examine the number of students completing a CCR course of study and a pathway of three or more credits<sup>31</sup> that is aligned to the student’s academic and career plans. In this framework, “pathway” means an aligned sequence of courses that span secondary and postsecondary—and may include additional required experiences—that culminates in a credential with specific labor market value established by industry. A credential of value may include an industry-recognized credential, trade certification, Associates degree, Bachelor’s degree or advanced degree. This definition of pathway goes beyond a CTE pathway to encompass the trajectory of all students in all fields. For more information, see the text box “Create Meaningful Pathways for All Students” on page 15.

At the *Exceptional* level, the state would add a final layer to the analysis to examine how many of those students attained postsecondary credits while in high school as part of their course of study.

### *Why This Measure Is Important for College and Career Readiness*

In many state accountability systems, high school graduation is taken as a proxy for high school success and preparation for the next step in their education or training journey—without regard for the courses students took or their performance in those courses. This is problematic given that research suggests that the courses a student completes, and the grades achieved in those courses, are the strongest predictor of success beyond high school.<sup>32</sup> For example, taking math courses throughout high school is beneficial, but these effects are much stronger for students who take advanced math courses rather than basic math. The annual earnings of students who took calculus in high school were about 65 percent higher than the earnings of students who only completed basic math.<sup>33</sup> The data are clear that a high school diploma alone is not enough for long-term student success, especially when a student has not completed a rigorous set of courses that prepare them for their next step.

When students complete a pathway, and earn college credit while in high school as part of that pathway, they greatly increase their probability of graduation and successful transition beyond high school. Students who concentrate in a single pathway are 21 percent more likely to graduate from high school than similar students, including those who have taken the same number of CTE courses, with no concentration. These students also demonstrate greater likelihood to transition to postsecondary education and are employed at higher wages than their peers.<sup>34</sup> Participation in a CTE dual enrollment course magnifies that positive trend.<sup>35</sup> That is why many states are working to ensure that all high-quality pathways culminate in dual credit opportunity or industry-recognized credential.

This does not mean that states should solely measure the course completions of students, for two important reasons. First, the rigor of coursework varies dramatically—even in courses with the same titles—within and across states.<sup>36</sup> Second, course completion does not signify competency. For this reason, both Progress Toward Post-High School Completion and Co-Curricular Learning and Leadership Experiences

## **Create Meaningful Pathways for All Students**

All students can and should have opportunities to engage in aligned, rigorous K-12 and higher education course sequences that propel them toward a credential with value in the labor market. As a result, the term “pathways” should expand beyond career technical education, and encompass the multiple, often overlapping, options that students have to meet their postsecondary aspirations. Regardless of whether a student wants to become a machinist or an engineer, all students should have opportunities to enroll in rigorous courses and earn certificates and college credits in fields of interest

while in high school. Dual credit, Advanced Placement, International Baccalaureate, technical skills assessments, and industry-recognized credentials should all coexist, providing students with a plethora of options—individually and collectively—to propel students faster toward their next step beyond high school.

For a student in a Government & Public Administration pathway that aspires to be a political scientist, that may mean enrolling in a dual enrollment Statistics course and AP US Government. For a student in a Science, Technology, Engineering & Mathematics pathway interested in becoming a biomedical

engineer, that could mean passing the Project Lead the Way end of course pathway assessments, taking AP Chemistry and earning postsecondary credit for Principles of Engineering. For a student in a Manufacturing pathway interested in becoming a welder, that may mean earning an American Welding Society Certified Welder credential and participating in a pre-apprenticeship program that awards student credit.

Expanding the definition of pathways is an important first step to help all students recognize the importance of career readiness—and provide them with meaningful supports to meet their aspirations.

measures should be connected to a validated demonstration of student knowledge and skills. The courses a student completes are one of many foundational elements on the path to college and career readiness.

### **Where States Stand**

In 2016, 27 states offered students a college- and career ready (CCR) course of study. Seven states and the District of Columbia, require a CCR course of study for graduation; 14 other states have made CCR the default for students, with an option to opt out into another course of study if desired. Despite more than half of the country encouraging students to complete a CCR course of study, only 20 states and DC currently report the percentage of students completing that option publicly.<sup>37</sup>

In **Ohio**, the percent of students graduating with an Honors Diploma (which is more rigorous than the state's CCR level diploma) was factored into school grades starting in the 2015-16 school year as part of the "Prepared for Success Component." **California's** proposed ESSA accountability system will include a measure of college and career readiness that accounts for completion of the state's CCR course of study, known as the A-G course sequence (see text box on page 32 for more information).<sup>38</sup>

Some states also recognize students who complete coursework or experiences beyond the standard CCR diploma in accountability calculations. For instance, **Louisiana's** Strength of Diploma Index assigns each high school points based on the exit status of their students. For instance, students that graduate with an Advanced Jump Start credential—the state's career ready diploma—and earn college credit with a passing AP, IB or CLEP score while in high school will earn their school 160 points, while a student with only a regular diploma will earn their school 100 points (160 points represents an A+ for school rating purposes and 100-150 points represents an A).<sup>39</sup> This encourages schools to support all students in exceeding the minimum state graduation requirements.

Thirteen states include dual enrollment success in school accountability determinations.<sup>40</sup> For example, **Delaware** counts students who earn a B or better in a dual enrollment course in its "College and Career Preparation" measure.<sup>41</sup> Only dual enrollment courses that are transferrable across all higher education institutions are eligible, so that students are encouraged to take courses for which credit is guaranteed upon postsecondary enrollment. Of these 13 states, fewer than five report publicly report that data in a way that is disaggregated from other measures of college and career readiness.<sup>42</sup>

Seven states include student completion of a CTE pathway or program of study in school accountability determinations.<sup>43</sup> For instance, **New Mexico's** Career Program of Studies is a sequence of high school courses that lead to an industry-recognized

credential. To be included in the accountability calculation, a student must complete all coursework with a C or better and graduate from high school with a regular diploma. Outside of those seven states, all 50 states report pathway enrollment and completion based on the federal Perkins data requirements. However, despite a recommended set of common definitions, reporting varies from state to state. Both the identification of CTE Concentrators and the students included in the denominator for calculations is not consistent. Further, this measurement only includes a subset of the student population. In the new model of pathways included in this report—and beginning to take hold in a significant number of states—pathway enrollment and completion should reflect all high school students, not just CTE students.

### **Implementation Considerations**

There are a number of factors that can support a state's ability to successfully incorporate this measure into its accountability system, including:

- CCR course of study that has been validated as meeting the demands of postsecondary and industry and is connected to students' demonstration of skills
- State identification of and access to high-quality pathways that lead to a credential of value, and the opportunity to earn postsecondary credit in those pathways while in high school
- Statewide system for identifying and documenting students' academic and career plans, such as a student graduation plan
- Statewide articulation agreements that enable students to transport the postsecondary credit(s) earned in high school to any institution of higher education in the state, and receive transferrable credits for their work
- Data system capacity to document participation in specific pathways and passage of dual enrollment/credit courses

## **MEASUREMENT CATEGORY 2: CO-CURRICULAR LEARNING AND LEADERSHIP EXPERIENCES**

**MEASURE:** Percent of the 9th grade cohort that *successfully completed* a co-curricular experience aligned to their identified academic and career plans

Learning and Leadership experiences include extended work-based learning, service learning or co-curricular activity, such as participation in state career technical student organization competitions.

The ability to collect and validate information on work-based learning and other co-curricular experiences is nascent in nearly every state, so the timeline to put this measure into place will be longer than the other recommended measures. Additionally given the rudimentary nature of the data, states will want to start by simply reporting this information and wait until the data are more reliable before including in accountability determinations.

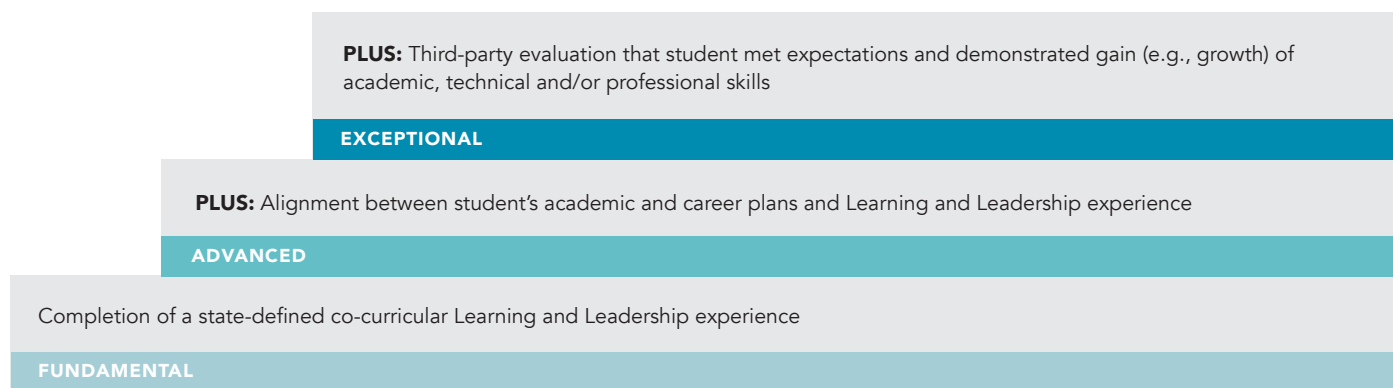
At the *Fundamental* level, a state would measure how many students completed any state-defined Learning and Leadership experiences. Taking this step would require states to develop an approved list of these experiences and work with districts to collect participation data.

While all Learning and Leadership experiences have value, it is when they are connected to a student’s academic and career plans that they can contribute significantly to skill development and become powerful motivators for continued engagement. Thus, in moving to the *Advanced* level of this measure, a state would analyze and report the extent to which student participation in Learning and Leadership experiences is aligned to their interests and long-term plans.

Finally, at the *Exceptional* level, an individual responsible for overseeing the student’s co-curricular experience—such as a sponsor, mentor, or employer—would evaluate whether the student successfully completed the experience and gained academic, technical, and/or professional skills. That information would then be aggregated at the state to calculate an overall measure. A tangible example of a student demonstrating successful completion could be the receipt of course credit or compensation.

**FIGURE 6**

### **Ability to Measure *Successful Completion* of Learning and Leadership Experiences Includes:**



#### ***Why This Measure Is Important for College and Career Readiness***

The skills that youth need for long-term success are clear. Critical thinking, problem solving, work ethic, metacognition (i.e., the ability to reflect on one’s own learning and make adjustments accordingly), communication and collaboration skills—among many others—all are associated with positive educational and career outcomes.<sup>44</sup> Research suggests that when provided with appropriate opportunities, youth can learn these skills both in and out of school.<sup>45</sup> In particular, youth are more likely to gain these skills in settings that harness their personal motivation, are engaging, and are connected to the everyday world.<sup>46</sup> As most educators and parents recognize, youth motivation is stronger when it emerges from internally held interests and goals, rather than from an external source.<sup>47</sup> Youth are most likely to learn when they are genuinely interested in the learning task.<sup>48</sup> Creating experiences where students can take control of their learning and receive feedback from peers and mentors can increase this engagement.

Experiential learning—through long-term work-based learning, service learning and engagement in co-curricular activities—can be particularly valuable for students’ development of knowledge and skills necessary for success in life beyond high school.<sup>49</sup> For example, students who participate in work-based learning have the opportunity to engage in tasks that are connected to classroom learning and offer exposure to industry standards, while also taking responsibility for their own behaviors, solving problems and communicating with colleagues appropriately in real life settings. These students gain not only valuable exposure to the career field of their interest, they begin to build meaningful relationships with employers and colleagues that can help smooth their transition into further education, training and work.<sup>50</sup> Effective work-based learning is long-term, supports a student’s entry and advancement in a career track, rewards skill development, and provides meaningful tasks to build transferrable skills and knowledge.<sup>51</sup>

Participation in Career Technical Student Organizations (or CTSOs) increases student motivation, engagement and aspirations, with students who participate in competitions accruing the greatest benefits.<sup>52</sup> These organizations, and other leadership activities outside of CTE such as student government, provide students with opportunities to learn and lead in supportive settings, surrounded by peers and mentors.

Ultimately, student engagement drives learning. As states seek to prepare more youth for the rigors of postsecondary education and training and the workforce, it is critical that students are able to experience—and receive recognition for—learning in and out of the classroom.

### **Where States Stand**

There is growing interest in states to incorporate measures of learning and leadership into public reporting or in accountability determinations. While the measurement category is largely nascent, a few examples do exist. Two states currently include experiential learning in their accountability systems. In **Georgia**, schools receive bonus points for the percentage of graduates completing a career-related work-based learning program or a career-related capstone project.<sup>53</sup> In **Connecticut**, the “Preparation for Postsecondary and Career Readiness” metric counts, among other things, students who complete two workplace experience “courses.”<sup>54</sup>

**Illinois** proposed ESSA accountability model would count students as college- and career-ready based on the collective demonstration of assessments, course grades, and a mix of academic and career indicators. The list of potential career indicators includes: service learning, workplace learning, and organized co-curricular activities.<sup>55</sup> If enacted, the state would

become the vanguard for incorporating a robust set of learning and leadership experiences into its accountability system.

**Massachusetts** annually tracks and publicly reports performance metrics for its Connecting Activities initiative, which facilitates work-based learning and career awareness activities for high school students. Information is provided statewide on student participation, the amount and quality of employer engagement, and, importantly, skill gains.<sup>56</sup> As part of this process, the state developed a rubric that employers use to rate students’ performance in foundational and career and workforce specific skills.

In addition to the percentage of students participating in work-based experiences, **South Carolina** also includes information on the number of CTE students participating in co-curricular student organizations on its school report card.

### **Implementation Considerations**

This category of measures will likely require the most work for a state to facilitate the collection and reporting of student performance. In many ways, this category represents the clearest opportunity for states to measure students’ professional skills. Yet, processes to collect that information and to validate students’ skill gain are in the beginning stages overall. There are a number of elements that can support a state’s ability to successfully incorporate this measure into its accountability system, including:

- State-defined list of eligible co-curricular Learning and Leadership experiences, which should include extended work-based learning opportunities (i.e., pre-apprenticeship, internship, co-op), service learning and co-curricular activities that provide students with leadership experiences and support their classroom learning (e.g., SkillsUSA)
- System for identifying and documenting students’ academic and career plans, such as a student graduation plan
- Statewide system for linking students’ academic and career plans and Learning and Leadership experiences
- Process for validating the rigor of Learning and Leadership experiences, including the development of documentation for supervisors or mentors to acknowledge completion of program expectations
- Quality instrument(s) for judging academic, technical, and/or professional skills



### MEASUREMENT CATEGORY 3: ASSESSMENT OF READINESS

**MEASURE:** Percent of the 9th grade cohort that *scored at the college- and career-ready level*

At the *Fundamental* level, a state would measure how many students from the 9<sup>th</sup> grade cohort score at or above the CCR benchmark on the state’s high school assessment. Recognizing that students currently take multiple other assessments to demonstrate their knowledge and academic, technical and professional skills, the Advanced and Exceptional levels aim to organize and narrow those to focus directly on student readiness connected to their chosen pathway. In this way, states can counteract the trend toward over testing—focusing on assessments that are directly beneficial to a student’s next step beyond high school.

The *Advanced* level would include important opportunities for students to gain early postsecondary credit—such as Advanced Placement and International Baccalaureate—and industry-recognized credentials that have value in the workplace. In both instances, students would need to score at a level of performance accepted by colleges and employers on those assessments.

The *Exceptional* level would include student demonstrations of the skills that employers and higher education leaders collectively desire—such as communication, collaboration, and problem solving—through portfolios, performances, capstone projects, or other approaches that enable students to show their readiness for life beyond high school.

FIGURE 7

### Ability to Measure Assessment of Readiness Includes:

**PLUS:** Performance-based demonstration of professional skills within an academic or technical context (e.g. capstone)

#### EXCEPTIONAL

**PLUS:** Completion of a pathway-aligned assessment or demonstration of technical skills (e.g. AP, IB, Industry-Recognized Credential)

#### ADVANCED

Attainment of state-defined college- and career-ready level on high school summative assessment

#### FUNDAMENTAL

### Why This Measure Is Important for College and Career Readiness

There is a long-standing, well documented gap between what was once expected of students to complete high school and the expectations for success in higher education. For years, students could achieve “proficiency” on the state’s high school assessment and still find themselves in remedial coursework when they enter postsecondary education. For example, a study by the Massachusetts Business Alliance for Education found that more than a third of high school students who scored “Proficient” on the state-required graduation test and enrolled in a state higher education institution had to take at least one remedial course upon enrollment.<sup>57</sup>

Fortunately, this is changing in many states. Over the past five years, a majority of states have implemented high school assessments that are aligned to the state’s college- and career-ready standards. As a component of that implementation, many have developed a performance level (or cut score) that provides high school students a clear signal regarding their readiness for first-year mathematics and English courses at postsecondary institutions (and in some cases, is used by two- and four-year colleges and universities for placement into first-year, credit-bearing courses). These scores are established with input from higher education and industry to validate that the skills measured and performance demonstrated meet their expectations and confirmed through follow-up research. For

instance, a student scoring at the College Readiness benchmark on the SAT or ACT has a 75 percent chance of earning at least a C in entry-level college courses.<sup>58</sup> PARCC and Smarter Balanced have also designated college ready performance levels on their assessments, which have been validated by university faculty.

*Despite the improvements, state assessment reporting and use of assessments in accountability remains largely focused on achievement levels that fall short of accurately signaling postsecondary readiness.*

Leaving high school with postsecondary credit or an industry-recognized credential demonstrates that a student is ready for success beyond high school, and provides a head start to that objective. Students who obtain college credit in high school—through dual enrollment/credit, Advanced Placement (AP) or International Baccalaureate (IB) programs—are more likely to enroll in college and complete a degree than those who do not.<sup>59</sup> The assessments related to these programs provide an important, externally validated measure of a student’s successful progression through a pathway, allowing students to demonstrate both academic and technical skills.

Since 2000, all job growth in the U.S. is attributable to “non-routine” jobs (i.e., jobs that cannot be accomplished by following explicit rules).<sup>60</sup> As technology automates the routine aspects of jobs, employees are increasingly expected to spend time interacting with colleagues and customers and identifying opportunities for improving efficiency. This drives the increasing importance of skills like communications, problem solving and teamwork.<sup>61</sup>

The National Association of Colleges and Employers’ (NACE) semi-annual survey of employers confirms this trend. The NACE survey asks employers to rate the skills they most value in new hires. According to surveys in 2014 and 2016, clearly companies want candidates who can make decisions, solve problems, communicate clearly, analyze data and prioritize their work.<sup>62</sup> Yet, today we have very few—if any—solid methods for measuring these skills. The path toward measurement of these skills probably does not lie in multiple choice assessments, but in opportunities that mirror real-world settings, allowing students to show—rather than tell—what they know and can do.

### **Where States Stand**

Thirty states and the District of Columbia provide information about students’ preparation for college and careers based on assessments that are validated by higher education and industry.<sup>63</sup> This generally occurs either through the creation of a college- and career-ready score on the state’s high school summative assessment (e.g., PARCC, Smarter Balanced or other third-party-developed assessment) or the use of a college-ready benchmark score on a national assessment such as SAT or ACT. For instance, all states that use the Smarter Balanced assessment in high school report CCR performance and include it in their accountability determinations, as the “Proficient” bar represents college and career readiness. Four states (**Alaska, Alabama, Delaware and Texas**) include the percent of students scoring at the College Ready Benchmark on SAT or ACT in their accountability determinations.<sup>64</sup> While the information is available, no state publicly reports the percentage of its adjusted 9th grade cohort scoring college ready on a CCR assessment.

Participation and performance on Advanced Placement and International Baccalaureate exams is one of the main college and career measures in place today in states. Currently, twenty-two states report the percentage of students scoring a 3 or higher on an AP exam, and few additional states also report data on student performance on IB exams.<sup>65</sup> **Florida** pioneered the inclusion of AP test performance in its high school accountability system. Since its inclusion, the state has experienced growth in the number of students taking and earning successful scores on the exams, including those from traditionally underserved groups.<sup>66</sup>

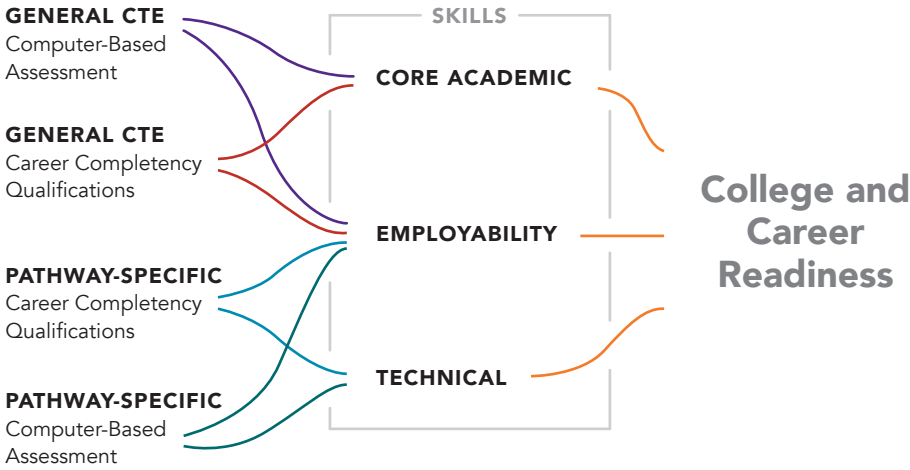
**Kentucky** is one of 11 states that currently include industry certifications in their accountability system, with many more states exhibiting interest in their ESSA planning.<sup>67</sup> States interested in incorporating industry-recognized credentials into their accountability systems must confront two issues. First, not all credentials or certificates are created equal. States will need to develop a process—preferably led by employers—to recognize the credentials with the greatest labor market value in different industry fields. The text box on page 22 titled “Identifying Credentials of Value for Use in Accountability Systems” briefly discusses the approach two states have used to address this issue. Second, access to student certification/credential data is incomplete. Often states have to establish specific data sharing agreements with each industry association that offers a credential. There is no centralized way to organize the data collection, which can be burdensome as the number of credentials available to students are well into the thousands.

Performance-based student demonstration is largely nascent in states, but there is growing interest in developing and scaling these opportunities statewide. For example, **Kansas** and **Colorado** are currently partnering to develop and test a new method for assessing students' readiness for entry into postsecondary and the workforce. The Career Pathways Assessment System (cPass) aims to measure academic skills, as well as the knowledge and skills necessary for specific career pathways. The system incorporates a general assessment and a pathway specific assessment that each include a computer-based assessment and a hands-on performance demonstration of knowledge and skills (referred to as Career Competency Qualification) that occurs in a work environment.<sup>68</sup> The demonstrations are judged by local experts, allowing the students to receive immediate feedback and build their network. Figure 8 demonstrates how the components come together to assess the full scope of a student's academic, technical and professional skills. If a system like this could come to fruition, it could displace many other individual assessments and narrow student testing time, while expanding the importance of performance-based assessments.

*Performance-based student demonstration is largely nascent in states, but there is growing interest in developing and scaling these opportunities statewide.*

**FIGURE 8**

**The Career Pathways Assessment System**



*Career Pathways Collaborative, The Center for Educational Testing and Evaluation at the University of Kansas, Lawrence, KS. Available at: <https://careerpathways.us/>.*

**Implementation Considerations**

There are a number of elements that can support a state's ability to successfully incorporate this measure into its accountability system, including:

- A college- and career-ready score validated by higher education to represent the knowledge and skills necessary to be successful in entry-level credit-bearing coursework
- Pathway-aligned assessments broadly available to students, such as a technical skill assessment that is validated/judged by employers; industry-recognized credential with labor market value in a state-defined "in-demand" field; AP exam; or, IB exam
- List of eligible assessments for each pathway
- Quality rubric for capstone project or other performance-based skill demonstration



## Identifying Credentials of Value for Use in Accountability Systems

Not all industry-recognized credentials (IRCs) are created equal. States should work to identify—and incentivize—those credentials that hold direct labor market value for students. Partnering with employers, states such as Florida and Kentucky have implemented processes to identify the credentials that have the greatest return on investment for students and employers, and have worked to include those specific credentials into their accountability systems. For example, Florida has developed an approved list of IRCs that students can obtain

for credit in its school accountability model and developed statewide articulation agreements with higher education institutions for students to receive college credit for successfully earning a nationally recognized industry certification.<sup>69</sup> There are also financial incentives in place for schools and teachers to support their students earning the approved IRCs. In this way, both schools and students benefit. The Kentucky Department of Education has partnered with the state's Workforce Innovation Board to create a Business and Education Alignment Committee.

This permanent committee is now the approving authority over the state's valid industry certification list, which is used for CCR accountability. Over time, the Committee will continue to add, remove, and stack particular credentials and certifications that have been validated by Kentucky employers.<sup>70</sup> Through the New Skills for Youth initiative, additional work is underway to help states develop processes for identifying credentials of value, building upon the work of these and other leading states.<sup>71</sup>

### MEASUREMENT CATEGORY 4: TRANSITIONS BEYOND HIGH SCHOOL

**MEASURE:** Percent of the 9th grade cohort who *successfully transitioned* to postsecondary or the workforce within 12 months of graduation

This particular measure more closely focuses on a state's ability to collect and report data on students' progress after they graduate high school, which is in part a reflection of their level of preparation in high school.<sup>72</sup> While each of the paths described in the measurement definition signifies a successful transition beyond high school, state data systems will need to continue to evolve to fully capture and reflect these multiple paths. ESSA supports a move in this direction by requiring that states incorporate postsecondary enrollment on school report cards. While this is a good place to start, states should go further than enrollment data to provide a more robust picture of student transitions.

At the *Fundamental* level, this would include transitions into postsecondary education and training, disaggregated by the level of institution (i.e., two- or four-year, public or private) and type of program (i.e., academic or technical).

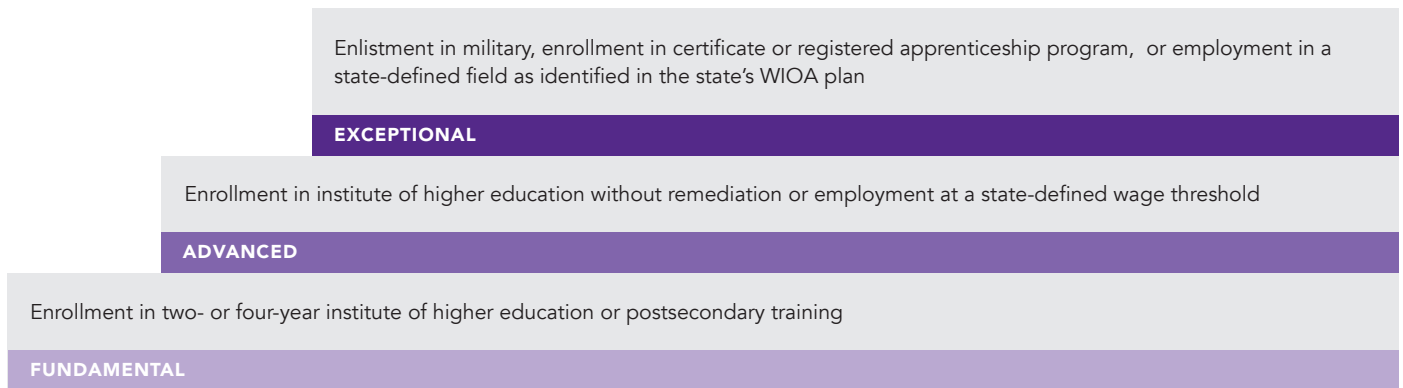
At the *Advanced* level, the quality of student transition into postsecondary is measured by whether the student requires remediation upon enrollment, which is a sign that his or her academic preparation was not adequate. Additionally, the state would include students that are directly employed after high school, using state-defined criteria such as high-demand sectors, specific wage threshold (i.e., family-sustaining wage), opportunities for growth, or other factors consistent with the state's policy values to identify the population of students that are productively engaging with the economy.

The *Exceptional* level further increases the variety and sophistication of paths beyond high school represented. It opens the door to students that enlist in the military, enroll in a certificate program of at least one year<sup>73</sup> or a registered apprenticeship program, or are employed in a qualified field as identified in the state's Workforce Innovation and Opportunity Act (WIOA) plan.

*The performance of each high school should be based—in part—on the success of students in postsecondary education, training and the workforce.*

FIGURE 9

## Ability to Measure *Successful Transition* Includes:



### Why This Measure Is Important for College and Career Readiness

If the goal of the K-12 system is to prepare students for their next step beyond high school, it is critical that states monitor how successfully students make those transitions. In this way, the performance of each high school should be based—in part—on the success of students in postsecondary education, training and the workforce. Students take many paths after high school—enroll in two- and four-year colleges, postsecondary certificate and training programs, registered apprenticeships, enlist in the military and transition directly into the workforce—and the transition to each should be measured and reported.

There is no more telling indicator of postsecondary preparation than the need for remediation. Research indicates that students requiring remediation are significantly less successful than those who place directly into credit-bearing courses.<sup>74</sup> Less than 25 percent of students who enroll in remedial coursework in community college—where a majority of remedial education occurs—earn a credential or degree within eight years. Only about 16 percent of students referred to remedial math even complete a college-level math course within three years, let alone earn a credential.<sup>75</sup> Regardless of whether students start in two- or four-year institutions, most remedial students do not attain a certificate or degree.<sup>76</sup>

Beyond enrollment in two- and four-year colleges, states should also account for students enrolling in postsecondary credential and apprenticeship programs, given their growing importance in the economy. According to a national survey data, 4.9 percent of Americans hold high-quality postsecondary certificates.<sup>77</sup> Lumina Foundation finds that certificates, “which are often awarded by community and technical colleges, have significant value in the workforce and can provide the basis and gateway for further

education.”<sup>78</sup> Completion of a registered apprenticeship program also leads to substantially higher earnings over an individual’s lifetime.<sup>79</sup> From 2013 to 2015, the number of registered apprentices grew by almost 20 percent nationally.<sup>80</sup>

### Where States Stand

As part of Perkins reporting, all states are required to report the number of CTE concentrators who left secondary education and were placed in postsecondary education or advanced training, in the military service, or employment. Unfortunately, this information is not adequate, as it (1) only includes a subsection of the full high school population and (2) often is reported based on student’s own self-reporting, which significantly limits the validity of the measurement.

Forty-five states publicly report the postsecondary enrollment of the state’s high school graduates, with 30 states reporting remediation information for high school graduates.<sup>81</sup> Four states (**Connecticut, Hawaii, Maryland and Missouri**) include postsecondary enrollment as a measure in high school accountability determinations. This information is confined to enrollment in state institutions of higher education, which can vary significantly by state.

Data on certificates is sparse. Approximately 30 states report information on certificate completion for their 2-year institutions, yet very little information is available about which of those certifications have long-term value in the labor market. For this reason, certificates of one year in length or greater are used as the current best proxy for measuring quality. It should be noted that certifications offered by institutions of higher education only represent a small sliver of the certification market. There are thousands of certificates offered by industry and trade groups and proprietary schools, with states having very limited access to this information at the individual student level.

Data on registered apprenticeship programs is available for 34 states in a single database.<sup>82</sup> Unfortunately, those data are not currently accessible to the public. A few states, including **Nebraska** and **Washington** maintain this data in their statewide longitudinal data system, but again, the data are not available in easy to access public reports that link back to the K-12 system. Given the growing demand for middle-skill workers, certificates and apprenticeships represent a meaningful credential that can open the door to the middle class for many youth. States should be aware of this transition step.

States have traditionally relied upon self-reporting to confirm students’ military enlistment, however, there are a few examples of states establishing relationships with the armed services to obtain individual student data. For a number of years, **Kentucky** has acknowledged military enlistment as a successful student transition beyond high school as part of its accountability framework. The state worked with Junior Reserves Officers’ Training Corps (JROTC) to define the qualifications of a program completer. Only those students that earn a JROTC Certificate of Training and demonstrate career readiness through multiple measures such as the Armed Services Vocational Aptitude Battery (ASVAB) are recognized as ready for the military in the state’s system. In this way, the state sent a quality signal to students about the level of readiness necessary for successful transition into the Armed Forces. While this data is challenging to obtain for many states, it provides an important window into student transitions.

At present, the data connections between K-12 and workforce are limited in states. According to the Data Quality Campaign, only 19 states can share data across those systems. There are political and technical challenges to increasing these connections in all states. **Kentucky** is one of the few states that links its K-12 and employment data, and produces statewide reports on student progressions into the workforce (see Figure 10). These data powerfully communicate the challenge facing students who move straight into employment without additional training or education after high school. Students directly employed after high school only earned an average annual salary of \$7,567, and only increased to \$11,511 three years after high school graduation.<sup>83</sup>

### Implementation Considerations

There are a number of elements that can support a state’s ability to successfully incorporate this measure into its accountability system, including:

- The ability to link individual student data across the K-12, higher education and workforce data system, with appropriate privacy protocols to protect personally identifiable information.
- State and/or regional definition of a sustaining wage and “in-demand” fields aligned with the state’s WIOA plan
- Access to
  - individual student information regarding military enlistment
  - proprietary trade school certification data
  - Postsecondary remediation information across-state lines (as data become available over time)

## How the Recommended Measures Improve Upon Current High School Accountability Indicators

MEASURE CATEGORY	CURRENT	RECOMMENDED
<b>Progress Toward Post-High School Credential</b>	<ul style="list-style-type: none"> <li>– Graduation does not signify preparation</li> <li>– Only included in states that require CCR diploma or have a graduation index</li> <li>– Pathways limited to CTE students</li> </ul>	<ul style="list-style-type: none"> <li>– Includes coursework that is predictive of future student success</li> <li>– Encourages access to rigorous coursework for all</li> <li>– Treats pathways as something for all students</li> </ul>
<b>Co-Curricular Learning and Leadership Experiences</b>	<ul style="list-style-type: none"> <li>– Nonexistent, or limited in scope to work-based learning</li> </ul>	<ul style="list-style-type: none"> <li>– Recognizes the learning that occurs outside the classroom can contribute to students’ development of academic, technical and professional skills</li> </ul>
<b>Assessment of Readiness</b>	<ul style="list-style-type: none"> <li>– Proficiency-focused, lacking connection to postsecondary readiness</li> <li>– Additional assessments largely disconnected from student pathways</li> </ul>	<ul style="list-style-type: none"> <li>– Measures readiness at a level validated by industry and higher education</li> <li>– Organizes and narrows assessments for students</li> <li>– Inclusive of academic, technical, and professional skills</li> </ul>
<b>Transitions Beyond High School</b>	<ul style="list-style-type: none"> <li>– Data only focused on college enrollment, often without consideration for placement into remediation or disaggregation by level</li> <li>– Largely nonexistent data on employment or military outcomes</li> </ul>	<ul style="list-style-type: none"> <li>– Includes quality checks on student transitions</li> <li>– Incorporates an expanded set of student paths</li> </ul>

# How States Can Incorporate Recommended College and Career Readiness Measures into their Accountability Systems

There are three main ways that states can integrate the recommended measures into their overall accountability system: public reporting, goal setting, and school accountability determinations.

## Highlight CCR Measures in High School Public Reports

Every state has mechanisms in place today for publicly reporting how its schools are performing, including school report cards that give parents and community leaders critical information about individual school performance based on a common set of indicators. Unfortunately, very few school report cards include meaningful measures of college and career readiness.

*All states should begin to shine the spotlight on these indicators by incorporating all four recommended CCR measures in their public reports as soon as possible.*

This can be accomplished by:

- ✓ Incorporating the recommended measures of college and career readiness into the federally-required school report cards.
- ✓ Producing an online, interactive high school feedback report that provides information on all student transitions into college and the workforce, based on students' preparation for college and career.

For example, **Ohio** has publicly reported the percent of students “Prepared for Success” on its school report card (Figure 11). While the measure was not part of the state’s accountability determinations until 2016, for a number of years previously the state’s online portal included this information—in an ungraded format—helping parents, educators, and the public understand the current performance of students without consequences attached. An example of how this would look for the recommended measures is on page 28.

Alternatively, a state education agency could create a College and Career Readiness and Success Feedback report for each high school in the state that includes both students’ preparation for and successful transitions into postsecondary education, training and the workforce. This data should be disaggregated, and student transition information should be broken down by whether students demonstrated college and career readiness in high school. Nearly all states currently produce a high school feedback report that provides information on student transitions beyond high school; however, in nearly every case, that information is restricted to enrollment in two- and four-year colleges. For the past few years, **Kentucky** has produced feedback reports that incorporate transitions into both postsecondary education and the workforce, breaking down data according to whether the student demonstrated college and career readiness in high school (Figure 12).<sup>84</sup>

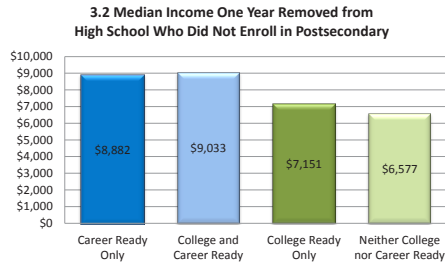
There are many additional indicators—measuring college and career readiness and otherwise—that may be best handled through public reporting, rather than inclusion in school accountability determinations. For instance, states may also consider publicly reporting earlier on-

track measures of postsecondary and career readiness in elementary and middle school and long-term post-high school measures, such as credential attainment and employment at specific wage thresholds.

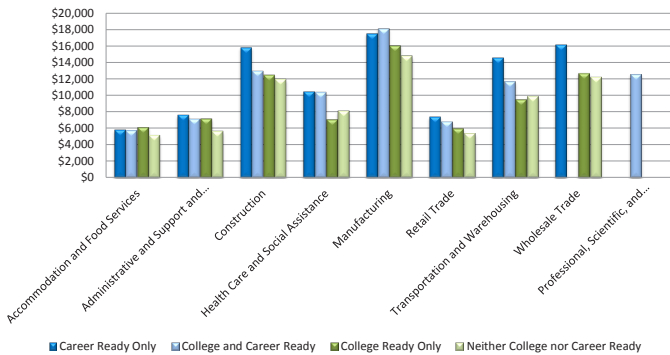
**FIGURE 10**

## Kentucky Report on Outcomes of Career Ready Students

➤ Of those 2012-13 graduates who did not enroll in postsecondary in 2013-14, **Career Ready graduates employed in the state of Kentucky overall are earning more income one year removed from high school than College Ready Only and Neither College nor Career Ready graduates.**



**Chart 3.3 Median Income by Industry for College/Career Ready Graduates Who Did Not Enroll in Postsecondary**



➤ Manufacturing is the highest earning industry employing Kentucky graduates who did not enroll in postsecondary and are one year removed from high school - with the highest median income earned

**FIGURE 11**

## Ohio School Report Card, “Prepared for Success” Measure

**Prepared for Success**



Whether training in a technical field or preparing for work or college, the Prepared for Success component looks at how well prepared Ohio's students are for all future opportunities.

**COMPONENT GRADE**  
**C**

**COMPONENT GRADE**  
**C**

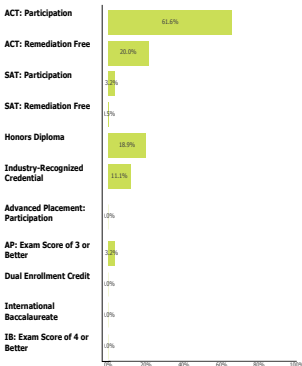


Number of students that earned a remediation free score on all parts of the ACT or SAT, earned an honors diploma, and/or earned an industry-recognized credential

**36.1%**  
A = 85.0% - 100.0%  
B = 65.0% - 84.9%  
C = 34.0% - 64.9%  
D = 15.0% - 33.9%  
F = 0.0% - 14.9%

Number of Students	Point Value	Points Earned
67	1	67.0
5	0.3	1.5
Total Points:		68.5
Graduation Cohort:		190
Percentage:		36.1%

**How Prepared were Your 2014 and 2015 Graduating Classes?**



Note: These data represent students in the 4-year and 5-year graduation rates, i.e. students who entered 9th grade in 2011 and 2012.

**FIGURE 12**

# Kentucky High School Feedback Report

## A. Overall, how do 2013-14 graduates from this school compare to others in Kentucky?

In order to ensure the confidentiality of individuals, some data items have been redacted. Redacted data are represented by an asterisk (\*).

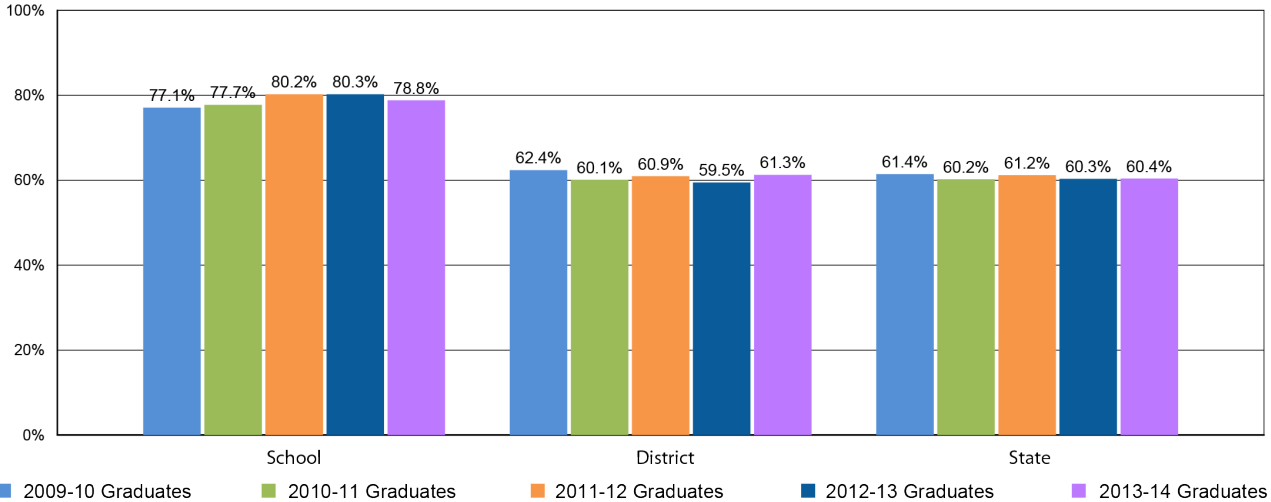
	School	District	Kentucky
1. Number of high school graduates	430	5,918	43,783
2. Average high school GPA	3.02	2.76	2.89
3. Percent of students in this class who were eligible for free or reduced lunch	23.3%	54.0%	49.4%
4. Average junior year ACT scores for this class by subject			
a. English	21.1	18.3	18.7
b. Mathematics	20.6	19.0	19.1
c. Reading	21.7	19.3	19.7
d. Science	21.3	19.5	19.7
e. Composite	21.3	19.1	19.5
5. Percent of these graduates who enrolled in at least one Advanced Placement (AP) course	59.3%	41.7%	40.7%
6. Average Kentucky Educational Excellence Scholarship (KEES) Awards earned by these graduates	\$1,466	\$1,035	\$1,136
7. Overall college-going rate for graduates from this class	78.8%	61.3%	60.4%
8. Percent of graduates from this class who attended an in-state college or university	71.4%	53.8%	55.4%
9. Percent of graduates from this class who attended an out-of-state college or university	7.7%	8.0%	5.5%

### Quick Statistics




High school graduation rate (cohort)	92.5%
Percent of graduates ready for college**	69.5%
Percent of graduates ready for career**	*
Percent of graduates ready for college and/or career**	69.5%
Average KEES Awards earned by these graduates	\$1,466
College-going rates:	
a. Overall college-going rate	78.8%
b. Eligible for free/reduced price lunch	57.0%
c. College and/or career ready**	89.0%
d. Not college and/or career ready**	55.7%
Percent of graduates attending an in-state public college or university who started college full-time	95.3%

\*\* As defined by the Kentucky Department of Education.

**College Going Rates Compared to Previous Graduating Classes**

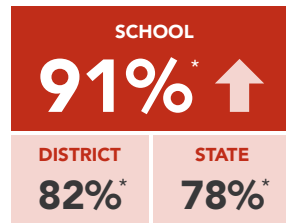


# Sample College and Career Readiness and Success Report Card

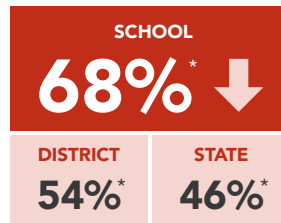
Change from previous year   

## Progress Toward Post-High School Credential

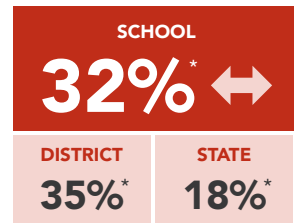
CCR Diploma



+ Pathway completion



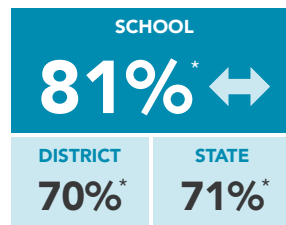
+ Postsecondary credit



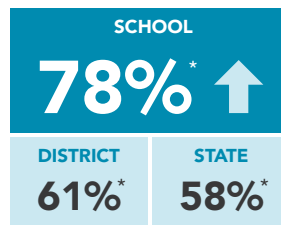
\*Percentage of 9th grade cohort

## Co-Curricular Learning and Leadership Experiences

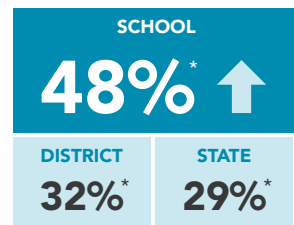
Completion of experience Learning and Leadership



+ Aligned to student's academic and career plans



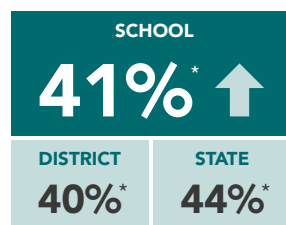
+ Third party evaluation of demonstrated skill gains



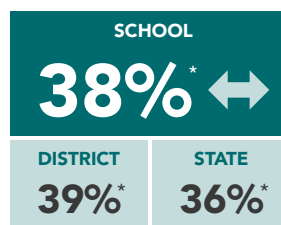
\*Percentage of 9th grade cohort

## Assessment of Readiness

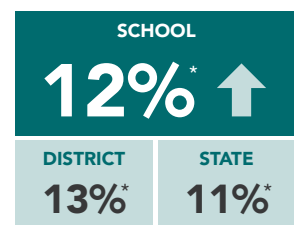
CCR Score on high school summative assessment



+ Completion of a pathway-aligned assessment of demonstration of technical skills



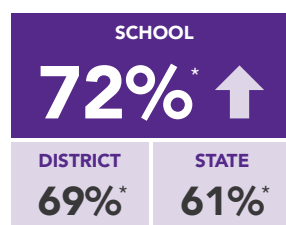
+ Performance-based demonstration of professional skills



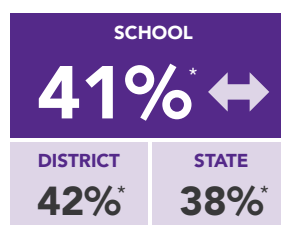
\*Percentage of 9th grade cohort

## Transitions Beyond High School

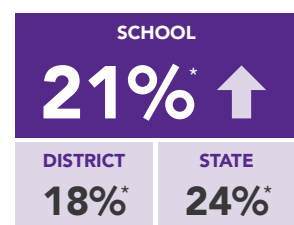
Enrollment in postsecondary education



Enrollment in postsecondary without remediation or employment with a family-sustaining wage



Enrollment in certificate or registered apprenticeship program, enlistment in military, or employment in "in-demand" field



\*Percentage of 9th grade cohort



## The Importance of Disaggregated Data

Regardless of the specific measures that a state includes as its college and career readiness indicator(s), it is paramount that the information is disaggregated so that all stakeholders have the information they need to make critical decisions. This disaggregation should occur for each of the following student groups: race/ethnicity, gender, low socioeconomic status, special education, and English language learners. The more information provided—even down to the specific pathway or program area—the better. This will

support students and parents in making pathway decisions, educators and administrators in making improvements, and policymakers and the public hold school accountable for the performance of all students.

Moreover, as states implement more sophisticated definitions of the recommended measures in this report, the specific performance of students across each measure should be provided. For instance, the state should report the percentage of students

completing a college and career course of study and the percentage of those students that have also completed pathway (as demonstrated on page 28). Each level of the recommended measures provides valuable information about students' readiness for college and career—and that information should be easily accessible to the public.

## Align K-12, Higher Education and Workforce Goals

The passage of the Every Student Succeeds Act (ESSA) provides a perfect window for K-12 and higher education leaders to collaborate in establishing K-12 goals that will set the state on a path to meeting its attainment goals. Just as many states' postsecondary credential goals are mapped to workforce projections, so too could K-12 goals align with the aspirations of the postsecondary system(s). A streamlined set of goals, all pointing in the same direction, can support and inspire collective action.

In this approach, the state would map out the trajectory of students moving from high school to postsecondary—establishing common goals in areas such as college and career readiness, seamless transitions, remediation, and retention—to provide a cross-sector vision for the state. Through this process, K-12 and higher education leaders can better understand the type and extent of preparation<sup>85</sup> necessary for the state to meet its goals. The leaders can also collectively analyze how enrollment and persistence trends in higher education differ by student preparation. For example, **Delaware** has a goal to improve the percentage of students that seamlessly transition to postsecondary education.<sup>86</sup> In 2016, the state produced a report that examined student transitions by the course enrollments of students in their senior year. The state found that students enrolled in Calculus in 12<sup>th</sup> grade were nearly 10 times less likely to enroll in remediation as those who took Algebra 2 in their senior year. Similarly, students enrolled in AP or Dual Enrollment English in 12<sup>th</sup> grade were 10 times less likely to place into remediation than those enrolled in traditional Senior English.<sup>87</sup> This led the state to focus its attention on both (1) increasing access to advanced courses and (2) early preparation and remediation for students so that they could enter the senior year ready to succeed in higher level courses. Without an aligned K-12 and higher education goal, this research and the responses it generated may not have occurred.

Figure 13 provides an example of how goals can be established for each recommended measurement category in a way that follows the student flow from entering high school to postsecondary attainment.

*A streamlined set of goals, all pointing in the same direction, can support and inspire collective action.*



**FIGURE 13**

## Example Set of Aligned CCR and Postsecondary Attainment Goals

MEASURES	GOAL <sup>88</sup> 2025
<b>ON TRACK TO CCR</b> Students who have: Scored at CCR level on state assessment in ELA and Math	<b>85%</b>
<b>HIGH SCHOOL GRADUATION</b> Students who have: Graduated high school within four years	<b>80%</b>
<b>PREPARED FOR CCR</b> Students who have: Completed CCR course of study and earned 1. 1+ dual enrollment credit; 2. Successfully completed a cocurricular Learning and Leadership experience; and 3. Demonstrated CCR on a pathway-aligned assessment	<b>70%</b>
<b>TRANSITION BEYOND HIGH SCHOOL</b> Students who have: Enrolled in 2-/4-year college without remediation, certificate program greater than one year, registered apprenticeship program, completion and JROTC and military enlistment or employment in state-defined in-demand field within 12 months of graduation	<b>60%</b>
<b>POSTSECONDARY ATTAINMENT</b> Adults who have: Earned a certificate with labor market value, Associates or Bachelor's degree	<b>55%</b>

It would be a significant missed opportunity for K-12 leaders to set long-term goals that are disconnected from the goals of the higher education system. Recognizing this, **Tennessee** has proposed including its higher education goal in the state's ESSA plan.<sup>89</sup> States can put college- and career-ready goals into practice by:

- ✓ Creating tangible goals for the recommended measures, broken down at the district and school levels so that they know exactly what they need to contribute to meet the overall state goals (i.e., 3 additional students' college- and career-ready).
- ✓ Building goals into strategic planning and grant documents, including ESSA, that direct resources and supports to increase the college and career readiness of students and their successful transition to life beyond high school.
- ✓ Establishing internal and external processes for review, reflection and communication of progress in each of the recommended areas.

## Make the Most Valid CCR Measures Count in School Accountability Determinations

To truly put college and career readiness at the forefront of the K-12 system, schools need to be accountable for how well they are preparing students for the next steps beyond high school. Publicly reporting data for each high school is a good start, and moving toward incorporating the indicators into actual accountability determinations can make them even more powerful.

While ESSA provides room for an indicator of “school quality or student success,” it is clear that states are in control of their own accountability system. Each of the measures recommended in this report is ripe for inclusion in state accountability determinations. This can occur in two different ways: (1) include one or more measures of college and career readiness as the “school quality or student success” indicator in ESSA, as **California** and **Tennessee** intend to do, and/or (2) include measure(s) of college and career readiness in the calculation of one of the other required ESSA indicators, such as Academic Achievement.

### INCLUDING CCR AS “SCHOOL QUALITY OR STUDENT SUCCESS” INDICATOR

Some states may choose to assign specific accountability points to one or more measures of college and career readiness in their accountability system. This can occur in two ways. First, the state could assign points in the aggregate for performance on each measure. For example, a sample accountability model in Figure 14 attributes 25 percent of a high school's rating based on the recommended college and career ready measures. This is the approach most often used by states when they include a CCR measure in accountability determinations, and will likely be the clearest path for implementation. For instance, **California** intends to include a “College and Career Indicator” in its ESSA accountability system. Students will have multiple opportunities to demonstrate preparation, and school performance will be judged on the extent to which students meet certain benchmarks, such as completing of the state's college- and career-ready course of study, scoring at the CCR level in both math and English on the state's high school assessment, and earning postsecondary credit while in high school. For more information, see “Measuring CCR in California under ESSA” on page 32.

## Tennessee Puts the Recommendations into Action

Tennessee’s draft ESSA plan provides a clear example of how a state could incorporate all of the recommended college and career readiness measures into its accountability system.<sup>90</sup> The state proposes to:

### PUBLICLY REPORT ON COLLEGE AND CAREER READINESS

The state’s school report cards will include postsecondary matriculation into two-year, four-year and credential programs, students earning postsecondary credit while in high school, students earning industry credentials, students participating in extracurricular activities, as well as required information on student assessment performance.

### SET ALIGNED K-12 AND HIGHER EDUCATION GOAL

The state has identified two meaningful goals for students’ readiness and transition into postsecondary. First, the state expects its average ACT composite score to be a 21—or the college readiness benchmark—by 2020. Second, Tennessee expects the majority of high school graduates from the class of 2020 will earn a postsecondary certificate, diploma or degree. Both of these targets clearly point to, and align with, the state’s *Drive to 55* credential attainment goal.

### INCLUDE COLLEGE AND CAREER READINESS IN ACCOUNTABILITY DETERMINATIONS

High schools in the state will be rated on five areas, including Readiness. The Readiness measure is derived by multiplying the percent of high school graduates by the percent of students that (1) score at the college readiness benchmark on ACT, (2) complete four early postsecondary opportunities (such as AP or dual enrollment), or (3) complete two early postsecondary opportunities and earning industry certification on a CTE pathway leading to a credential. This approach provides students with multiple opportunities to demonstrate readiness. Importantly, it also reports performance based on the 9<sup>th</sup> grade cohort through the graduation rate multiplication.

Through accountability, Tennessee is making college and career readiness meaningful for all students and all schools. This is a promising example that other states can follow.

**FIGURE 14**

### Example Measure Weighting for School Accountability

AREA/MEASURES	WEIGHT
<b>ACADEMIC ACHIEVEMENT</b>	<b>30%</b>
Proficiency ELA	10%
Proficiency Math	10%
Proficiency Science	10%
<b>GROWTH</b>	<b>35%</b>
Growth in ELA	15%
Growth in Math	15%
Progress in EL Proficiency	5%
<b>ON TRACK TO CCR</b>	<b>15%</b>
Learning and Leadership experiences	5%
4-year Cohort Graduation Rate	10%
<b>COLLEGE AND CAREER READINESS</b>	<b>20%</b>
Progress toward Credential	5%
Assessment of Readiness	10%
Post High School Transitions	5%
<b>TOTAL</b>	<b>100%</b>

*Under ESSA, states are in control of their own school rating system.*

## Measuring CCR in California under ESSA

California’s new school accountability model includes a College and Career Indicator (CCI) that incorporates multiple ways for a student to demonstrate preparation. The CCI will include four categories: Well Prepared, Prepared, Approaching Prepared, and Not Yet Prepared. Within each category (see below), students will be able to demonstrate their readiness through a combination of course and pathway completion, assessment scores, and earning postsecondary credit while in high school. The goal is to provide equal opportunities for students to demonstrate both college and career readiness.

While the state initially proposed a “Well Prepared” category, it recognized that it included an over-emphasis on college readiness measures in a way that could undercut

the indicator’s value as measuring preparedness for college *and* career. To develop a robust set of college and career measures for the “Well Prepared” category, state agency staff plan to work with researchers, practitioners and stakeholders to propose a revised set of indicators for implementation in 2017–18.<sup>91</sup> This approach takes advantage of language in ESSA supporting a state’s “continuous improvement” of its accountability system, recognizing that states may require different timelines to enact their full system or may want to make important improvements as more data become available. Given that some of the recommended measures in this report may be a stretch for states today, states should follow California’s lead in identifying a realistic timeline for action and working with stakeholders to deliver a robust set of college and career readiness measures.

## California’s College and Career Indicator

**WELL PREPARED** *To be determined*

**PREPARED** *Complete one of the following:*

- Career technical education pathway completion with “C” or better, plus one other measure below:
  - \_\_\_ Score at Level 3 on either the ELA or Mathematics Smarter Balanced assessment
  - \_\_\_ Complete one semester of dual/concurrent enrollment with a passing grade, in either academic or technical coursework
- Score at Level 3 on both the ELA and Mathematics Smarter Balanced assessment
- Complete two semesters of dual/concurrent enrollment with a passing grade, in either academic or technical coursework
- Earn a 3 or higher on at least two AP exams
- Pass at least two International Baccalaureate (IB) exams
- Complete the A-G course sequence,<sup>92</sup> which are the courses required for University of California and California State University system admission, plus one other measure below:
  - \_\_\_ Complete a CTE Pathway
  - \_\_\_ Score at Level 3 on either the ELA or Mathematics Smarter Balanced assessment
  - \_\_\_ Complete one semester of dual/concurrent enrollment with a passing grade, in either academic or technical coursework

**APPROACHING PREPARED** *Complete one of the following:*

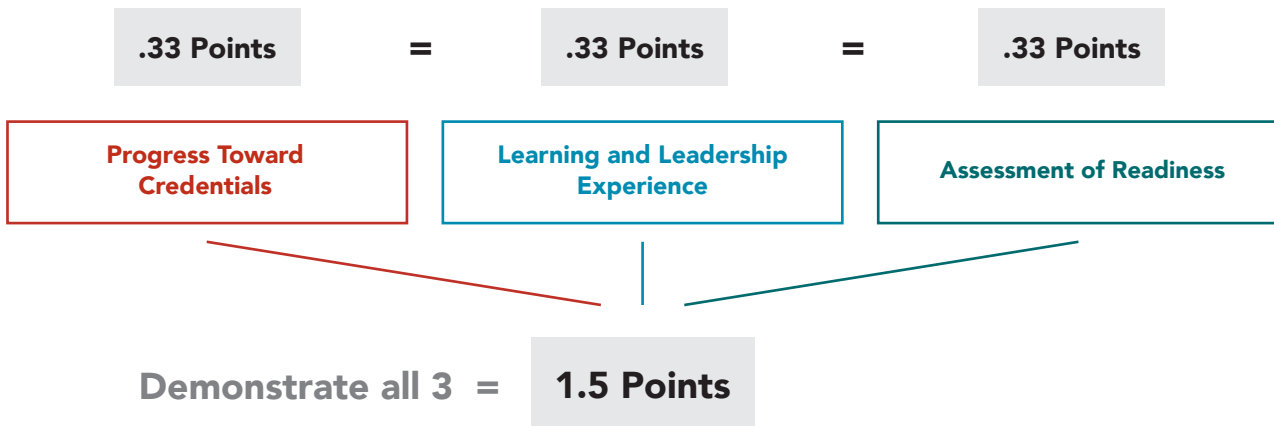
- Complete a CTE pathway
- Score at Level 2 on one or both the ELA or Mathematics Smarter Balanced assessments
- Complete one semester of dual/concurrent enrollment with a passing grade, in either academic or technical coursework
- Complete the A-G course sequence

**NOT YET PREPARED** *Has not met any of the benchmarks above.*

**Kentucky** introduced an alternative approach to 2010 that has gained interest: a measure that counts success at the individual, rather than aggregate, level. In this approach (Figure 15), the accountability system would provide incentives for student completion of a package of pathways, experiences and assessments. Each student would receive points based on their demonstration of the separate recommended measures of college and career readiness. A student that only completed one CCR aspect would receive 0.33 points, for instance. Students able to meet all three benchmarks would receive “bonus” points in the accountability system. The school would receive a score—accounting for 20 percent of the overall accountability determination for instance—based on the percent of the 9<sup>th</sup> grade cohort who demonstrated the CCR successes. The state could also choose to incorporate student transitions as an additional indicator for consideration.

**FIGURE 15**

### Example of CCR Measure at the Student Level



#### INCORPORATING CCR INTO THE CALCULATION OF OTHER ACCOUNTABILITY INDICATORS

States may choose to incorporate college and career readiness into their calculation of required ESSA indicators. For instance, a number of states—including **Rhode Island**—currently use an “achievement index” to calculate Academic Achievement on state assessments. This index awards points based on where a student scores on the assessment scale, with more points awarded for students that are advanced (i.e., meeting the college- and career-ready cut score). An example of an assessment index that incorporates the recommended measures is available in Figure 16. Students who score at the CCR level on the assessment would receive an additional 20 points as compared to those that only demonstrated Proficiency. Many scholars believe this approach to be a better representation of student performance than simple proficiency rates.<sup>93</sup>

**FIGURE 16**

### Example of Assessment Index

LEVEL ON ASSESSMENT	POINTS AWARDED*
College- and Career-ready on HS summative + Passage of pathways aligned assessment	<b>130</b>
CCR on HS summative <sup>94</sup>	<b>120</b>
Proficiency on HS summative + Passage of pathways aligned assessment	<b>110</b>
Proficiency on HS summative	<b>100</b>
Approaching proficiency on HS summative	<b>66</b>
Basic on HS summative	<b>33</b>
Test not taken	<b>0</b>

States may also consider including the recommended measures in a graduation index as **Louisiana** has done previously, and as **New York** is considering in its ESSA plan. In this approach (see Figure 17), a state would award points for each student that graduates having met specific benchmarks. For instance, a student that completes an Advanced diploma and earns college credit while in high school would receive 125 points, which would be 25 points greater than a student who graduated with a regular diploma and no postsecondary credit. In this way, there is an incentive for schools to encourage students to complete rigorous coursework and Learning and Leadership experiences that set them up for success beyond high school.

**FIGURE 17**

### Example of Graduation Index

GRADUATION LEVELS	POINTS AWARDED*
<b>ADVANCED DIPLOMA PLUS</b> (a) 1+postsecondary credits in high school; OR (b) Demonstration of skill gains through Learning experience *Students achieving both (a) and (b) will generate 150 points.	<b>125</b>
Four-year graduate, CCR course of study + Completion of a pathway of 3+ credits that is aligned to the student’s academic and career plans (e.g.,Advanced Diploma)	<b>110</b>
Four-year graduate, CCR course of study	<b>100</b>
Four-year graduate, non-CCR course of study	<b>75</b>
Five-year graduate, non-CCR course of study	<b>50</b>
Six-year graduate, non-CCR course of study	<b>25</b>
Non-graduate	<b>0</b>

Regardless of the approach, high schools need to be accountable for the college and career readiness of their students. Every state has authority and flexibility to make college and career readiness the focus of their high school accountability system. This can be accomplished by:

- ✓ Including one or more measures of college and career readiness as the “school quality or student success” indicator in the state’s ESSA accountability system.
- ✓ Measuring college and career readiness in the calculation of one of the other required ESSA indicators.

## Getting Implementation Right

To deliver on this set of recommendations in a high-quality way, states will need to attend to a number of important implementation issues.

### DEFINITIONS

States need to implement a rigorous and ongoing process to define the critical terms found in the recommended measures, such as which pathways “lead to a credential of value” to the state’s workforce, what jobs are in a “high-skill, high-demand field,” and what entails a meaningful “Learning and Leadership experience.” Each of these terms will be shaped by the unique context of the state. Postsecondary education and industry must be involved in developing and refining these definitions over time.

### VALIDATION OF QUALITY

Verifying that a student’s performance or experience is both rigorous and meaningful for preparation is essential. This validation will likely need to come from outside the K-12 system. Higher education and business are the ultimate validators of whether a student is ready, and thus they should play a pivotal role in defining quality. Validation is especially important for measurement categories one through three. Without validation from outside the K-12 system, the measures may not hold value.

### TIMELINE

The timeline for action will vary from state to state. Movement from reporting to accountability must be based on the state’s comfort with the quality of data in each performance category.

### PERFORMANCE EXPECTATIONS

States need to balance the rigor of expecting all students to be postsecondary and career ready with the reality that we are far from that goal. States would likely find it helpful to set realistic targets for school performance and increase them over time.

Collecting and reporting high-quality data is also a fundamental component for success. There are a host of issues that states will need to address, including, at a minimum:

- ✓ Transition from self-report to individual student data
- ✓ Establish necessary new data agreements and new partnerships for collecting/sharing information to get individual student data
- ✓ Access information from employers and other external partners about student skill development.
- ✓ Develop and verify methods for measuring “professional” skills
- ✓ Define which industry-recognized credentials have value in the field and have an ongoing process for identification and validation
- ✓ Partner with industry to validate the state’s technical skills assessments
- ✓ Create a plan to obtain individual student data across state lines regarding enrollment in remediation, certification, apprenticeships, and employment, while ensuring proper student privacy protections are in place.

# Recommended Actions for States

For college and career readiness to be valued in all schools and for all students, states should strive to:

- 1** Publicly report performance of all high schools across all four measurement categories, disaggregated by individual measures and all subgroups;
- 2** Increase the sophistication of measures in all four categories annually, striving to reach the Exceptional level within 5 years;
- 3** Include each category of measure in the state's accountability determination system;
- 4** Make each measure a significant part of the high school accountability determination; and,
- 5** Use the information to support improvements in preparing all students for college and career.

States are at different starting points in their ability to collect, report and use data in the four measurement areas. Most states are nascent in this work. For those states, collecting and publicly reporting data at the baseline level of each category will be pivotal to their progress. For those states at a more advanced starting point, increasing the sophistication of the measure definitions and transitioning from reporting to inclusion in accountability determinations will be key.

Regardless of starting point, all states have opportunity to move forward with the recommendations. States should take advantage of the focus on continuous improvement in ESSA to transition metrics and increase performance expectations over time. It is critical that all states set a vision for the future and work to implement the data and policy changes necessary to bring that vision to life.

## Immediate Steps

### UNDERSTAND YOUR BASELINE

Assess current capacity in terms of student access, data, and policy

### INCORPORATE INTO ESSA PLAN

Commit to publicly report recommended measures, include as state goals and/or use in school accountability determinations

### SET AN AGGRESSIVE GOAL TO BRING SYSTEM ON LINE

Develop timelines to meet the ESSA plan and processes for examining when a measure is ready for use in accountability determinations

### COLLECT CRITICAL DATA

Increase the sophistication of measurement definitions, develop systems for managing new data, and institute data quality controls

## Mid- to Long-term Steps:

### PUBLICLY REPORT DATA

Include the performance of all high schools in all four categories of measurement, and disaggregate the data by individual measures and student subgroups

### INCLUDE RECOMMENDED COLLEGE- AND CAREER-READY MEASURES IN SCHOOL ACCOUNTABILITY DETERMINATIONS

Over time, incorporate each category of measure into the state's system and place significant emphasis on those measures in accountability determinations

### USE THE INFORMATION

Support improvements in preparing all students for college and career

Preparing students for success beyond high school is the charge of K-12 system. It's time that all state accountability systems reflect that fact—providing equal and collective measurement of college and career readiness for all students.



## NOTES

- <sup>1</sup> Anthony P. Carnevale, Nicole Smith, and Jeff Strohl, *Recovery: Job Growth and Education Requirements Through 2020*, Georgetown University Center on Education and Workforce, Washington, D.C., 2013. Available at: [https://cew.georgetown.edu/wp-content/uploads/2014/11/Recovery2020.FR\\_Web\\_.pdf](https://cew.georgetown.edu/wp-content/uploads/2014/11/Recovery2020.FR_Web_.pdf)
- <sup>2</sup> Author's own calculations based on Lumina Foundation, *A Stronger Nation: 2016*, Indianapolis, IN. Available at: <http://strongernation.luminafoundation.org/report/2016/>
- <sup>3</sup> Anthony P. Carnevale, Tamara Jayasundera, and Artem Gulish, *America's Divided Recovery: College Haves and Have-Nots*, 2016, Georgetown University Center on Education and Workforce, Washington, D.C., 2016. Available at: <https://cew.georgetown.edu/wp-content/uploads/Americas-Divided-Recovery-web.pdf>
- <sup>4</sup> Susan Adams, "The College Degrees and Skills Employers Most Want," *Forbes*, April 16, 2014. Available at: <http://www.forbes.com/sites/susanadams/2014/04/16/the-college-degrees-and-skills-employers-most-want/#9536fd3fd2de>. See also, National Association of Colleges and Employers, "Employers: Verbal Communication Most Important Candidate Skill," February 24, 2016. Available at: <http://naceweb.com/s02242016/verbal-communication-important-job-candidate-skill.aspx#sthash.ul0bK1zs.dpuf>
- <sup>5</sup> Eric A. Hanushek et al, *Education and Economic Growth*, *Education Next*, Spring 2008, Volume 8, Number 2. Available at: <http://educationnext.org/education-and-economic-growth/>.
- <sup>6</sup> Achieve, *The College and Career Readiness of U.S. High School Graduates*, Washington, D.C., 2016. Available at: <http://www.achieve.org/files/CCRHSGrads-March2016.pdf>
- <sup>7</sup> Achieve and Advance CTE, *How States are Making Career Readiness Count: 2016 Update*, Washington, D.C. and Silver Spring, MD, 2016. Available at: <https://careertech.org/sites/default/files/MakingCareerReadinessCountUpdate-2016.pdf>
- <sup>8</sup> Achieve
- <sup>9</sup> Achieve and Advance CTE.
- <sup>10</sup> "Professional" skills include the skills that are meaningful for a student's success beyond high school such as: communication, collaboration, problem solving, self-determination, college/career knowledge.
- <sup>11</sup> "Pathway" means an aligned sequence of courses that span secondary and postsecondary (and may include additional required experiences) that culminates in a credential with specific labor market value established by industry. A credential of value may include an industry-recognized credential, journeyperson certificates through registered apprenticeship opportunities, trade certification, Associates degree, Bachelor's degree or advanced degree.
- <sup>12</sup> Shaun M. Daugherty, *Career and Technical Education in High School: Does it Improve School Outcomes?*, for Thomas B. Fordham Institute, Washington, D.C., 2016. Available at: <https://edex.s3-us-west-2.amazonaws.com/publication/pdfs/%282016.04.07%29%20Career%20and%20Technical%20Education%20in%20High%20School.pdf>. See also, Clifford Adelman, *The Toolbox Revisited: Paths to Degree Completion from High School through College*, U.S. Department of Education, Washington, D.C., 2006. Available at: <http://files.eric.ed.gov/fulltext/ED490195.pdf>.
- <sup>13</sup> Anthony P. Carnevale, "The New 'Good Jobs,'" *The Atlantic City Lab*, Washington, D.C., 2016. Available at: <http://www.citylab.com/work/2016/12/the-new-good-jobs/509180/>
- <sup>14</sup> Carnevale, Smith and Strohl.
- <sup>15</sup> Carnevale, Jayasundera, and Gulish.
- <sup>16</sup> Carnevale, Smith and Strohl.
- <sup>17</sup> Lumina Foundation.
- <sup>18</sup> Author's own calculations based on Lumina Foundation, *A Stronger Nation: 2016*
- <sup>19</sup> Carnevale, Smith and Strohl.
- <sup>20</sup> Lumina Foundation.
- <sup>21</sup> Melissa S. Kearney, Brad Hershbein, and Elisa Jácome, "Profiles of Change: Employment, Earnings and Occupations from 1990–2013." *Economic Analysis*, Hamilton Project, Brookings Institution, Washington, DC., 2015. Available at: <https://www.brookings.edu/blog/up-front/2015/04/21/profiles-of-change-employment-earnings-and-occupations-from-1990-2013/>.
- <sup>22</sup> David H. Autor, "Skills, Education, and the Rise of Earnings Inequality Among the 'Other 99 Percent.'" *Science* 344: 843–51, 2014.
- <sup>23</sup> Council of Chief State School Officers, *Opportunities and Options: Making Career Preparation Work for Students*, Washington, D.C., 2014. Available at: <http://www.ccsso.org/Documents/2014/CCSSOTaskForceCareerReadiness120114.pdf>
- <sup>24</sup> Higher Education for Higher Standards, *Leveraging ESSA: Strategies to Support Students' K-12 to Postsecondary Transitions*, Education Strategy Group, Bethesda, MD, 2016. Available at: <http://highereducationstandards.org/wp-content/uploads/2016/11/HEHS-ESSA-postsecondary-transitions-11182016.pdf>
- <sup>25</sup> In this report, we discuss both college and career readiness in terms of the academic, technical and professional skills students need for success beyond high school. This approach draws upon the definition of career readiness developed by the Career Readiness Partner Council, a group representing nearly 30 national education and workforce organizations, and aims to bridge the gap between education and workforce preparation. Specifically, "A career-ready person effectively navigates pathways that connect education and employment to achieve a fulfilling, financially-secure and successful career. A career is more than just a job. Career readiness has no defined endpoint. To be career ready in our ever-changing global economy requires adaptability and a commitment to lifelong learning, along with mastery of key knowledge, skills and dispositions that vary from one career to another and change over time as a person progresses along a developmental continuum. ...These include (1) Academic and Technical Knowledge and Skills and (2) Employability, Knowledge, Skills and Dispositions." See Career Readiness Partner Council, "Building Blocks for Change: What it Means to be Career Ready." Available at: [https://www.careertech.org/sites/default/files/CRPC\\_4pager.pdf](https://www.careertech.org/sites/default/files/CRPC_4pager.pdf).
- <sup>26</sup> Council of Chief State School Officers.
- <sup>27</sup> Achieve and Advance CTE.

- <sup>28</sup> Achieve, *Ready or Not: Creating a High School Diploma that Counts*. Washington, D.C., 2004. Available at: <http://www.achieve.org/files/ReadyorNot.pdf>. See also, Committee on Defining Deeper Learning and 21st Century Skills, “Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century,” edited by James W. Pellegrino and Margaret L. Hilton, Center for Education, Division on Behavioral and Social Sciences and Education, National Research Council, 2012.
- <sup>29</sup> “Professional” skills include the skills that are meaningful for a student’s success beyond high school such as: communication, collaboration, problem solving, self-determination, college/career knowledge. In other reports, these skills have been referred to by various names, such as 21st Century skills, soft skills, employability skills. The Workgroup felt that none of those names appropriately conveyed the importance of the skills for both college and career readiness. To be successful in higher education and on the job, professionalism is paramount.
- <sup>30</sup> Anne Mishkind, *Overview: State Definitions of College and Career Readiness*, College and Career Readiness and Success Center at American Institutes of Research, Washington, D.C., 2014. Available at: [http://www.ccrscenter.org/sites/default/files/CCRS%20Defintions%20Brief\\_REV\\_1.pdf](http://www.ccrscenter.org/sites/default/files/CCRS%20Defintions%20Brief_REV_1.pdf)
- <sup>31</sup> Achieve, *Count All Kids: Using the 9th Grade Cohort to Improve Transparency and Accountability*, Washington, DC., 2016. Available at: <http://www.achieve.org/files/Achieve-CountAllKids-09-29-2016.pdf>.
- <sup>32</sup> Or courses, depending on the state
- <sup>33</sup> Robert Balfanz, et al, *Closing the College Gap: A Roadmap to Postsecondary Readiness and Attainment*, Civic Enterprises and Everyone Graduates Center at the School of Education at Johns Hopkins University, Washington, D.C. and Baltimore, MD, 2016. Available at: [http://new.every1graduates.org/wp-content/uploads/2016/12/CCRReport\\_vf.pdf](http://new.every1graduates.org/wp-content/uploads/2016/12/CCRReport_vf.pdf).
- <sup>34</sup> Heather Rose and Julien R. Betts, *Math Matters: The Links Between High School Curriculum, College Graduation, and Earnings*, Public Policy Institute of California, San Francisco, CA, 2001. Available at: [www.ppic.org/content/pubs/report/R\\_701JBR.pdf](http://www.ppic.org/content/pubs/report/R_701JBR.pdf).
- <sup>35</sup> Daugherty.
- <sup>36</sup> Ibid
- <sup>37</sup> Chrys Dougherty, Lynn Mellor, and Shuling Jian, *Orange Juice or Orange Drink?: Ensuring that “Advanced Courses” Live Up to Their Potential*, National Center for Educational Accountability, Austin, TX, 2006. Available at: <http://files.eric.ed.gov/fulltext/ED519415.pdf>.
- <sup>38</sup> Achieve, *How States Got Their Rates*, 2015, Washington, D.C., 2016. Available at: [http://www.achieve.org/files/Achieve\\_StateGradRate\\_1.20.pdf](http://www.achieve.org/files/Achieve_StateGradRate_1.20.pdf).
- <sup>39</sup> California Department of Education, “Developing a New Accountability System: An Overview of the College/Career Indicator Structure and Proposed Measures,” Memo to the State Board of Education, Sacramento, CA, August 19, 2016. Available at: <http://www.cde.ca.gov/be/pn/im/documents/memo-dsib-amard-aug16item01.doc>.
- <sup>40</sup> Louisiana Department of Education, “Jumpstart Fact Sheet,” Baton Rouge, LA. Available at: <https://www.louisianabelieves.com/docs/default-source/accountability/jump-start-accountability-fact-sheet.pdf?sfvrsn=2>.
- <sup>41</sup> Achieve and Advance CTE.
- <sup>42</sup> Delaware Department of Education, “Delaware School Success Framework Reference Guide,” Dover, DE. Available at: <http://www.doe.k12.de.us/cms/lib09/DE01922744/Centricity/Domain/310/Delaware%20School%20Success%20Framework%20Reference%20Document-Updated12.15-1.26.pdf>.
- <sup>43</sup> Achieve, *The College and Career Readiness of U.S. High School Graduates*.
- <sup>44</sup> Achieve and Advance CTE.
- <sup>45</sup> Committee on Defining Deeper Learning and 21st Century Skills.
- <sup>46</sup> Christina Hinton, Kurt W. Fisher, and Catherine Glennon, *Mind, Brain and Education*, Students at the Center Series, Jobs for the Future, Boston, MA, 2012. Available at: <http://www.jff.org/sites/default/files/publications/materials/Mind%20Brain%20EducationPDF.pdf>.
- <sup>47</sup> Jeffrey A. Rosen et al., *Noncognitive Skills in the Classroom: New Perspectives on Educational Research*, Research Triangle Park, NC: RTI Press, 2010.
- <sup>48</sup> Eric Toshalis and Michael J. Nakkula, *Motivation, Engagement and Student Voice*, Students at the Center Series, Jobs for the Future, Boston, MA, 2012. Available at: <http://studentsatthecenterhub.org/wp-content/uploads/2012/04/Exec-Toshalis-Nakkula-032312.pdf>.
- <sup>49</sup> Ibid. See also Laurence F. Johnson et al., *Challenge-Based Learning: An Approach for Our Time*, The New Media Consortium, Austin, TX, 2009. Available at: <https://www.nmc.org/pdf/Challenge-Based-Learning.pdf>.
- <sup>50</sup> Mizuko Ito et al., *Connected Learning: An Agenda for Research and Design*, Digital Media and Research Learning Hub, Irvine, CA, 2013. Available at: [http://dmlhub.net/wp-content/uploads/files/Connected\\_Learning\\_report.pdf](http://dmlhub.net/wp-content/uploads/files/Connected_Learning_report.pdf).
- <sup>51</sup> Nancy Hoffman, *Let’s Get Real: Deeper Learning and the Power of the Workplace*, Deeper Learning Research Series, Jobs for the Future, Boston, MA, 2015. Available at: <http://www.jff.org/sites/default/files/publications/materials/Lets-Get-Real-021715.pdf>.
- <sup>52</sup> Charlotte Cahill, *Making Work-based Learning Work*, Jobs for the Future, Boston, MA, 2016. Available at: <http://www.jff.org/sites/default/files/publications/materials/WBL%20Principles%20Paper%20062416.pdf>
- <sup>53</sup> Corinne Alfeld, et al, *Looking Inside the Black Box: The Value Added by Career and Technical Student Organizations to Students’ High School Experience*, National Research Center for Career and Technical Education, University of Minnesota, Minneapolis, MN, 2007. Available at: [http://www.nrccte.org/sites/default/files/publication-files/looking\\_inside\\_the\\_black\\_box.pdf](http://www.nrccte.org/sites/default/files/publication-files/looking_inside_the_black_box.pdf).
- <sup>54</sup> Georgia Department of Education, “2016 CCRPI Indicators,” Atlanta, GA, 2015. Available at: <https://www.gadoe.org/Curriculum-Instruction-and-Assessment/Accountability/Documents/Indicators%20and%20Targets/2016%20Indicators.pdf>.
- <sup>55</sup> Connecticut State Department of Education, “ESEA Flexibility Renewal: Connecticut’s ‘Next Generation’ Accountability System,” Hartford, CT, 2016. Available at: [http://www.sde.ct.gov/sde/lib/sde/pdf/evalresearch/next\\_generation\\_accountability\\_system\\_march\\_2016.pdf](http://www.sde.ct.gov/sde/lib/sde/pdf/evalresearch/next_generation_accountability_system_march_2016.pdf).

- <sup>56</sup> Illinois State Board of Education, “A Reader’s Guide for the ISBE Every Student Succeeds Act (ESSA) State Plan: Draft #2,” Springfield, IL, 2016. Available at: <https://www.isbe.net/Documents/ESSA-Illinois-State-Plan-draft-2-reader%27s-guide.pdf>.
- <sup>57</sup> Connecting Activities, “Performance Metrics,” Massachusetts Department of Elementary and Secondary Education, Malden, MA. Available at: <http://www.massconnecting.org/content/performance-metrics-connecting-activities>.
- <sup>58</sup> Massachusetts Business Alliance for Education and Center for Assessment, Educating Students for Success: A Comparison of the MCAS and PARCC Assessments as Indicators of College- and Career-Readiness, Boston, MA and Dover, NH, 2015. Available at: <http://www.mbae.org/wp-content/uploads/2015/02/MBAE-MCAS-PARCC-Exec-Summary-FINAL.pdf>
- <sup>59</sup> College Board, K-12 Educator Brief: The College and Career Readiness Benchmarks for the SAT Suite of Assessments, New York, NY. Available at: <https://collegereadiness.collegeboard.org/pdf/educator-benchmark-brief.pdf>. See also, ACT, “ACT College Readiness Benchmarks,” Iowa City, IA. Available at: <https://www.act.org/content/act/en/education-and-career-planning/college-and-career-readiness-standards/benchmarks.html>.
- <sup>60</sup> Melinda Mechur Karp, et al., The Postsecondary Achievement of Participants in Dual Enrollment: An Analysis of Student Outcomes in Two States, National Research Center for Career and Technical Education, University of Minnesota, Minneapolis, MN, 2007. Available at: [http://www.nrccte.org/sites/default/files/publication-files/dual\\_enrollment.pdf](http://www.nrccte.org/sites/default/files/publication-files/dual_enrollment.pdf).
- <sup>61</sup> Jed Kolko, “Republican-Leaning Cities are at Greater Risk of Automation,” FiveThirtyEight, February 17, 2016. Available at: <http://fivethirtyeight.com/features/republican-leaning-cities-are-at-greater-risk-of-job-automation>
- <sup>62</sup> Carnevale, Smith and Strohl.
- <sup>63</sup> Adams and National Association of Colleges and Employers
- <sup>64</sup> Achieve, The College and Career Readiness of U.S. High School Graduates.
- <sup>65</sup> Achieve and Advance CTE.
- <sup>66</sup> Achieve, The College and Career Readiness of U.S. High School Graduates.
- <sup>67</sup> College Board, AP Report to the Nation, State Supplement: Florida, New York, NY, 2014. Available at: <http://media.collegeboard.com/digitalServices/pdf/ap/rtn/10th-annual/10th-annual-ap-report-state-supplement-florida.pdf>.
- <sup>68</sup> Achieve and Advance CTE.
- <sup>69</sup> Career Pathways Collaborative, “Test Structure,” The Center for Educational Testing and Evaluation at the University of Kansas, Lawrence, KS. Available at: <https://careerpathways.us/TestStructure>.
- <sup>70</sup> Florida Department of Education, “Industry Certification,” Tallahassee, FL. Available at: <http://www.fldoe.org/academics/career-adult-edu/career-technical-edu-agreements/industry-certification.stml>.
- <sup>71</sup> State of Kentucky, “Kentucky Employers Asked to Help Get Technical Credentials on the Right Track with Education Needs,” Frankfort, KY, March 17, 2016. Available at: <http://kentucky.gov/Pages/Activity-stream.aspx?n=EducationCabinet&prId=20>.
- <sup>72</sup> Additional information on identifying credentials of value can be found in the Advance CTE report “Credentials of Value: State Strategies for Identifying and Endorsing Industry-Recognized Credentials.” Available at: [https://cte.careertech.org/sites/default/files/files/resources/Credentials\\_of\\_Value\\_2016\\_0.pdf](https://cte.careertech.org/sites/default/files/files/resources/Credentials_of_Value_2016_0.pdf).
- <sup>73</sup> The steps in this measure should not be read as “plus” as in the other three measures. Rather, each step refers to increasing sophistication in the quality of data available to include in the accountability system.
- <sup>74</sup> Complete College America commissioned Brian Bosworth of FutureWorks to conduct a quantitative and qualitative assessment of the production, content, and value of sub-baccalaureate certificates. In the release of this work, Certificates Count, he recommends the use of technical certificates at least one-year in program length as a guide. Available at: <http://www.completecollege.org/docs/Certificates%20Count%20FINAL%2012-05.pdf>.
- <sup>75</sup> Complete College America, Remediation: Higher Education’s Bridge to Nowhere, Washington, D.C., 2012. Available at: <http://www.completecollege.org/docs/CCA-Remediation-final.pdf>.
- <sup>76</sup> <http://ccrc.tc.columbia.edu/media/k2/attachments/developmental-education-community-colleges.pdf>.
- <sup>77</sup> Thomas Bailey and Sung-Woo Cho, Issue Brief: Developmental Education in Community Colleges, Prepared for the White House Summit on Community Colleges, Community College Research Center at Teachers College, Columbia University, New York, NY, 2010. Available at: <http://www.completecollege.org/docs/CCA-Remediation-final.pdf>. See also Xianglei Chen and Sean Simone, Remedial Coursetaking at U.S. Public 2- and 4-Year Institutions: Scope, Experiences and Outcomes, National Center for Education Statistics 2016-405, Institute of Education Sciences, U.S. Department of Education, 2016. Available at: <https://nces.ed.gov/pubs2016/2016405.pdf>.
- <sup>78</sup> Lumina Foundation.
- <sup>79</sup> Ibid
- <sup>80</sup> Debbie Reed, et al, An Effectiveness Assessment and Cost-Benefit Analysis of Registered Apprenticeship in 10 States, Mathematica Policy Research for the U.S. Department of Labor Employment and Training Administration, Oakland, CA, 2012. Available at: <https://www.mathematica-mpr.com/download-media?MediaItemId={96EFC004-5C8F-4EF8-A396-16E2EE00796F}>
- <sup>81</sup> Angela Hanks, Now is the Time to Invest in Apprenticeships, Center for American Progress, Washington, D.C., 2016. Available at: <https://www.americanprogress.org/issues/economy/reports/2016/11/18/292558/now-is-the-time-to-invest-in-apprenticeships/>.
- <sup>82</sup> Data Quality Campaign, State Capacity to Link K-12/Postsecondary Data Systems and Report Key Indicators, Washington, D.C., 2016. Available at: <http://2pido73em67o3eytaqlcp8au.wpengine.netdna-cdn.com/wp-content/uploads/2016/06/State-Capacity-to-Link-K12-Postsec-Data-and-Report-Key-Indicators.pdf> and Achieve, The College and Career Readiness of U.S. High School Graduates.
- <sup>83</sup> Workforce Data Quality Campaign, Registered Apprenticeship FAQs, National Skills Coalition, Washington, D.C. Available at: [http://www.workforcedqc.org/sites/default/files/images/3%202013%20Apprentice\\_FAQ\\_2pg\\_web.pdf](http://www.workforcedqc.org/sites/default/files/images/3%202013%20Apprentice_FAQ_2pg_web.pdf).

<sup>84</sup> Charles McGrew, No College = Low Wages, Kentucky Center for Education and Workforce Statistics, Frankfort, KY, 2014. Available at: <https://kcews.ky.gov/Content/Reports/Whitepapers/NoCollegeLowWagesJuly2014.pdf>.

<sup>85</sup> Kentucky Center for Education and Workforce Statistics, Outcomes for Career Ready Graduates, Frankfort, KY. Available at: <https://kcews.ky.gov/Content/Reports/Whitepapers/2016%20CTE%20Outcomes.pdf>.

<sup>86</sup> As measured by assessments, graduation, course taking, early exposure to college coursework in high school, etc.

<sup>87</sup> Higher Education for Higher Standards.

<sup>88</sup> Delaware Department of Education.

<sup>89</sup> Percent of the 9th grade cohort

<sup>90</sup> Tennessee Department of Education, Every Student Succeeds Act: Building on Success in Tennessee, Nashville, TN, 2016. Available at: [https://tn.gov/assets/entities/education/attachments/ESSA\\_Draft\\_Plan\\_Full.pdf](https://tn.gov/assets/entities/education/attachments/ESSA_Draft_Plan_Full.pdf).

<sup>91</sup> Ibid.

<sup>92</sup> California Department of Education.

<sup>93</sup> University of California Board of Regents, “A-G Subject Requirements,” Oakland, CA. Available at: <http://www.ucop.edu/agguide/a-g-requirements/>.

<sup>94</sup> Morgan Polikoff, “A Letter to the U.S. Department of Education (Final Signatory List),” July 12, 2016. Available at: <https://morganpolikoff.com/2016/07/12/a-letter-to-the-u-s-department-of-education/>.

<sup>95</sup> Example assumes different CCR and Proficiency cut points on the assessment. If those are the same, then the points would shift to reflect that reality

## ACKNOWLEDGEMENTS

*Education Strategy Group and the Council of Chief State School Officers want to acknowledge the significant contributions of the members of the Expert Workgroup on Accountability who devoted considerable time to working through the complex data, measurement and policy issues involved in redesigning accountability systems: Chad Aldeman, Chris Domaleski, Matthew Gandai, Melissa Fincher, Christy Hovanetz, Dan Jorgensen, Paige Kowalski, Kate Blosveren Kreamer, Marie O’Hara, Rich McKeon, Danielle Mezera, Ryan Reyna, Scott Sargrad, Robert (Bob) Sheets, Leslie Slaughter, Anne Stanton, Natasha Ushomirsky, and Christopher Woolard.*

*Special thanks to Ryan Reyna of Education Strategy Group for his leadership in developing the recommendations and authoring the report based on the Workgroup’s advice. Thanks to staff from the partner organizations who reviewed drafts and offered significant contributions, especially Kathleen Mathers from Education Strategy Group, and Melissa McGrath, Kirsten Carr, Ashley Gardiner and Katie Carroll from CCSSO. Thanks also to Advance CTE for their partnership in the broader New Skills for Youth initiative.*

*Thanks to Kristin Girvin Redman, Tessa Gibbs and Dana Kravitz at Cricket Design Works for their tireless work to design and produce a visually compelling report.*

*Finally, we are grateful to Mary Blanus of The Leona M. and Harry B. Helmsley Charitable Trust for providing financial support and recognizing the importance of developing new approaches to high school accountability that better align with students’ long term goals.*



[ccsso.org](http://ccsso.org)



[edstrategy.org](http://edstrategy.org)



[careertech.org](http://careertech.org)