Promoting College and Career Readiness

A Pocket Guide for State and District Leaders

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Implementing ESEA Flexibility Plans

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Implementing ESEA Flexibility Plans: Focus on College and Career Readiness

The 2002 reauthorization of the Elementary and Secondary Education Act (ESEA) emphasized standards-based instruction, assessment, and accountability for all students, underscoring the nationwide mandate to prepare students for academic success. In the current economic environment, high school success has been redefined as not only ensuring that all students graduate from high school but that they graduate ready for college and careers. In 2011, the U.S. Department of Education waived certain provisions of ESEA in exchange for reforms by states related to four principles: (1) achieving college- and career-ready expectations for all students; (2) developing differentiated recognition, accountability, and support systems; (3) supporting effective instruction and leadership; and (4) reducing duplication and unnecessary burden. As of December 2012, the U.S. Department of Education had approved the flexibility plans of 35 states (including the District of Columbia[1]).

American Institutes for Research (AIR) has developed a series of Pocket Guides that provide research-based information to support state and district leaders in implementing ESEA flexibility plans. This particular Pocket Guide focuses on the implementation of reforms related to college and career readiness in Principle 1 of the flexibility plan requirements. Principle 1 is the primary focus of this guide because of its explicit emphasis on college- and career-ready standards and assessments.[2] Under Principle 1, the state education agency (SEA) must show that it has college- and career-ready expectations for all students. This includes "adopting college- and career-ready standards…developing and administering annual, statewide, aligned, high-quality assessments," and supporting English language learners (ELLs) by "committing to adopt English language proficiency standards that correspond to its college- and career-ready standards" (U.S. Department of Education, 2012a, p. 5).

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[1] Throughout this guide, the District of Columbia is treated as a state in state totals.

[2] Principles 2 through 4 also have important implications for college and career readiness as states move forward with their plans, but these principles are beyond the scope of this guide.

To prepare this guide, AIR researchers reviewed the 35 approved flexibility plans to identify policies and practices relevant to college and career readiness. In the sections that follow, we (1) describe the importance of college and career readiness for all students; (2) discuss how college and career readiness is addressed in the approved plans; and (3) provide considerations, based on our knowledge of research, for the implementation of proposed reforms.

> ### *Methodology*
> A team of AIR researchers conducted an initial review of Principle 1 in the 35 approved flexibility plans. The purpose of the review was to learn more about how states plan to address college and career readiness. Our review was not exhaustive. For example, we did not include historical or background information in our review; instead, we focused on what states plan to do to ensure that all students are ready for postsecondary success going forward. We also did not review Principles 2 or 3 in the flexibility plans, though undoubtedly the important goals of college and career readiness will be incorporated into accountability systems and school staff evaluations as well. *Note:* Any counts or summary statistics in the following sections of this Pocket Guide are approximations.

The Importance of College and Career Readiness for All Students

College and career readiness is rapidly supplanting high school graduation as a key priority of the K–12 education system. As workforce demands change, it has become increasingly apparent that students will benefit greatly from at least some postsecondary education or training as they prepare to participate in today's global economy. For example, recent projections indicate that by 2018, 63 percent of all jobs in the United States and 90 percent of new jobs in growing industries will require some postsecondary training (Carnevale, Smith, & Strohl, 2010).

However, despite the growing importance of preparing students for postsecondary success, research suggests that our country is failing in its efforts to meet these demands. In recent international comparisons, for example, the United States ranked 9th in the world in the proportion of young adults enrolled in college and 16th in the share of certificates and

degrees awarded to adults between the ages of 25 and 34 (U.S. Department of Education, 2012b). Outcome measures for some groups of students are particularly troubling. For example, although 37 percent of young adults from the general education population enroll in four-year colleges or universities, only 15 percent of high school graduates with disabilities do the same (Sanford et al., 2011). Similarly, 62 percent of white students complete their four-year college degrees, but only 50 percent of Hispanic students and 40 percent of black students graduate (Aud et al., 2012). Though the college enrollment and graduation rates for students with disabilities, minorities, and low-income students are particularly bleak, future projections suggest that *all* students must be better prepared for postsecondary success to improve college readiness and completion outcomes.

College and career readiness is important for the success of individuals and the country as a whole. Failure to increase the numbers of college- and career-ready students will come at an immense cost. College and career readiness impacts our country's global competitiveness, leading to increased costs for both individual students and taxpayers. Twenty percent of incoming freshmen at four-year institutions and 52 percent of those at two-year colleges require remedial courses (Complete College America, 2012). This lack of preparation forces many students to spend resources, including student loans and scholarships, on remedial coursework in addition to or in place of credit-bearing courses, and only 25 percent of two-year college students who require remediation complete college within eight years (Bailey, 2009). Remediation is estimated to cost federal, state, and local governments nearly $3 billion annually (Complete College America, 2012), and, according to recent research from AIR, over a five-year time period, community colleges have been estimated to spend nearly $4 billion on students who fail to enroll in a second year of study (Schneider & Yin, 2011).

Though students who are not prepared for postsecondary success take on a great burden, the benefits for those who are prepared are clear. The unemployment rate for students with only a high school diploma is 9.4 percent, compared to just 4.9 percent for those who have earned a bachelor's degree. Similarly, four-year degree graduates have median weekly earnings that are 65 percent higher than those whose education stopped after high school (Bureau

of Labor Statistics, 2012). Higher employment rates and wages translate into more taxable income and increased consumer spending, which contributes to the country's economic health. In addition, a more highly educated workforce will be better prepared to fill the needs of our rapidly changing global economy.

Principle 1a: Adopting College- and Career-Ready Standards in ELA and Mathematics

ESEA Flexibility Guidelines: Principle 1a

Under Principle 1a, an SEA must show that it has college- and career-ready expectations for all students by "adopting college- and career-ready standards in at least reading/language arts and mathematics" (U.S. Department of Education, 2012a, p. 4).

"College- and career-ready standards," as defined by ESEA flexibility guidance, "are content standards for kindergarten through 12th grade that build towards college and career readiness by the time of high school graduation. A State's college- and career-ready standards must be either (1) standards that are common to a significant number of States; or (2) standards that are approved by a State network of institutions of higher education, which must certify that students who meet the standards will not need remedial course work at the postsecondary level" (U.S. Department of Education, 2012a, p. 8).

Findings From the AIR Review of State Flexibility Plans: Principle 1a

Across the nation, most states committed to fulfill Principle 1a through implementation of the Common Core State Standards in English language arts (ELA) [3] and mathematics. As of September 2012, 46 states and the District of Columbia elected to adopt the standards, including 33 states that received approval for their ESEA flexibility plans; however, the degree of adoption varies

[3] Although the ESEA flexibility request uses the term *reading/language arts,* the term *English language arts (ELA)* is used within the Common Core State Standards and is therefore used in this and other sections of the Pocket Guide.

among states. For example, Arizona is adopting the comprehensive set of ELA and mathematics standards but has made small changes based on feedback from local stakeholders (Arizona Department of Education, 2012).

Two states that have been approved for ESEA flexibility, Minnesota and Virginia, took alternative routes and elected not to adopt the complete set of Common Core State Standards. Minnesota (which adopted the Common Core State Standards in ELA but not mathematics) compared its mathematics standards with the Common Core State Standards in 2010 and found them to be equally rigorous (Minnesota Department of Education, 2012). In 2011, Virginia collaborated with local institutions of higher education (IHEs) to ensure that its high school standards aligned with college entrance requirements (Virginia Department of Education, 2012).

Based on application requirements, each state must consult and collaborate with a variety of stakeholders to develop their flexibility plans. Many states elected to invest stakeholders in the development of rigorous college- and career-ready standards aligned with state postsecondary expectations. Most states communicated and collaborated with IHEs and ELA and mathematics educators at multiple levels of the K–20 continuum. Many states, however, also recognized that adoption of rigorous standards has important implications across the education spectrum beyond ELA and mathematics.

In Oregon's adoption of the Common Core State Standards, for example, the state consulted with science, social studies, and career and technical education (CTE) practitioners as well as directors of special education and ELLs (Oregon Department of Education, 2012). Similarly, in recognition of the fact that postsecondary success expands beyond college, many states, such as Connecticut, also collaborated with members of the business community in the adoption of their standards implementation plans (Connecticut Department of Education, 2012).

Common Core State Standards

The Common Core State Standards are evidence-based and derived from internationally competitive benchmarks in academic achievement. The aim of the Common Core State Standards is to provide fewer standards with explicit and attainable goals for all students and to establish grade- or course-specific expectations that students must master to be college and career ready in ELA and mathematics.

Performance in high school ELA and mathematics courses is an important predictor of college success (Adelman, 2006; Therriault, Kim, Heppen, Manzella, & O'Cummings, forthcoming). Furthermore, a growing consensus indicates that similarly rigorous ELA and mathematics standards are essential for success in both college and careers (Educational Policy Improvement Center, 2009; Tanner, 2009). The Common Core State Standards not only provide ELA and mathematics academic standards, but they also integrate higher-order thinking skills, such as problem-solving, critical thinking, and research and synthesis skills. By embedding these skills within the ELA and mathematics standards, the Common Core State Standards provide a framework for curricula that allows students to demonstrate both an understanding of higher-order thinking skills and their application within meaningful academic contexts (National Governors' Association Center for Best Practices & Council of Chief State School Officers, 2010; Partnership for 21st Century Skills, 2010). Though states, districts, and schools have just begun implementation of the Common Core State Standards, early research suggests that they are correlated with postsecondary expectations in ELA and mathematics (Conley, Drummond, de Gonzalez, Rooseboom, & Stout, 2011).

Though ESEA flexibility requires only adoption of rigorous college- and career-ready standards in ELA and mathematics, students require a broader base of knowledge in a variety of subject areas to be truly prepared for postsecondary success. In recognition of this fact, many states proposed to increase the rigor of state standards in core academic content areas beyond ELA and mathematics. For example, five states plan to adopt more rigorous science standards, and four states plan to adopt more rigorous history and/or social studies standards. Seven states intend to review fine arts standards in an effort to increase rigor. Still, other states plan to focus on health and/or physical education standards and foreign/world language standards.

Similarly, many states plan to focus on important skills for postsecondary success that are outside the traditional core academic content areas. For example, states are working to increase the rigor of standards in workforce readiness/employability skills, financial literacy, and school counseling. Six states plan to focus on social and emotional learning standards, with several specifically targeting the social and emotional readiness of special populations such as students with disabilities. In addition to these "lifelong learning skills," two states plan to increase the rigor of CTE standards (Hein, Smerdon, Lebow, & Agus, 2012). In addition to efforts cited in their flexibility plans, many states recently have chosen to adopt the Common Career Technical Core (CCTC) standards. As of December 2012, 42 states and the District of Columbia have committed to adopt all or part of these rigorous CTE standards.

Common Career Technical Core

CTE standards in the United States, like ELA and mathematics standards, have historically been defined by state or local context. In some cases, private industry organizations have developed their own CTE standards. To create a set of rigorous, uniform standards for CTE, postsecondary, and secondary education, the National Association of State Directors of Career Technical Education Consortium (NASDCTEc) coordinated with individual stakeholders, organizations, and state leaders. The result was the recently approved Common Career Technical Core (CCTC).

Designed for students enrolled in CTE programs, the CCTC aligns with the 16 National Career Clusters developed by NASDCTEc. More than 3,500 individuals, 42 states, and representatives from the District of Columbia and Palau participated in the development of the CCTC. The standards are aligned with each cluster's corresponding career pathways and contain an overarching set of career-ready practices that apply to all programs of study. The CCTC sets a benchmark for what all students in CTE programs should know and be able to do upon completion of a program of study at the secondary or postsecondary level. Additional information about the CCTC is available at the NASDCTEc website (www.careertech.org/career-technical-education/cctc).

Implementation Considerations for Principle 1a

As states strive to design rigorous college- and career-ready standards, they must consider a broad and complex range of issues. Following are a set of considerations for states and districts related to implementing Principle 1a:

1. **Adopt rigorous standards for content areas and skills beyond ELA and mathematics.** Mastery of the Common Core State Standards or similarly rigorous mathematics and ELA standards is necessary but not sufficient for college and career readiness. Though the Common Core State Standards contain rigorous ELA, mathematics, and higher-order thinking skills standards, mastery of these standards does not ensure that students are ready for college and careers. Although mastery of ELA and mathematics standards may enable students to test out of remedial coursework in college, it must be coupled with other lifelong learning skills to truly enable students to thrive in postsecondary settings. These lifelong learning skills, as summarized in the National High School Center's College and Career Development Organizer brief series, include social and emotional skills; employability skills, such as teamwork, communication, and time management; and mastery of other pathway-specific academic standards, such as CTE, science, and foreign language (Hein et al., 2012).

   Social emotional learning skills, employment skills, and pathway-specific content can all contribute positively to students' acquisition of knowledge (Asberg, Bowers, Renk, & McKinney, 2008; Harvard Graduate School of Education, 2011). As states implement new academic standards, they should engage stakeholders from CTE, social emotional learning, and business and industry to help bridge the standards to those from other necessary college and career readiness skill sets. This approach will enable districts and schools to implement these standards through cohesive and innovative instructional approaches that facilitate student learning.

2. **Align college- and career-ready standards with standards for special populations.** An increased emphasis on college and career readiness may mean a change in school culture and expectations. Where once students were tracked into college preparatory or vocational pathways, schools are now tasked with preparing all students for college and careers. Rigorous college and career readiness expectations must be set for all students including ELLs, students with disabilities, and other special populations who have historically been held to lower academic expectations. SEAs must examine standards for special populations, such as ELLs; alternative diplomas tailored to students with disabilities; and other policies impacting these subgroups to ensure that they are aligned with rigorous college- and career-ready standards. States and districts also must offer guidance to schools on providing appropriate additional supports to ensure that special populations can meet these rigorous standards.

3. **Communicate and collaborate with stakeholders across the PK–20 continuum.** By carefully mapping grade-level benchmarks in ELA and mathematics, the Common Core State Standards help build K–12 alignment; however, vertical collaboration between elementary, middle, and high schools is essential to prevent gaps in curricula and ensure content mastery. It is also essential that states, districts, and high schools collaborate with IHEs to ensure that college- and career-ready standards align with entrance requirements for local colleges and universities. Maintaining this alignment will help reduce the number of students who enter college in need of remediation, reducing costs and leading to more students' successful completion of postsecondary degrees.

Principle 1b: Transitioning to and Implementing College- and Career-Ready Standards Statewide for All Students and Schools

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ESEA Flexibility Guidelines, Principle 1b

Under Principle 1b, a state must provide an explicit plan to transition to rigorous college- and career-ready standards by the 2013–14 school year. According to the ESEA flexibility guidance, a high-quality plan likely will include the following:

- "Alignment between current content standards and the college- and career-ready standards"

- Analysis of "the learning and accommodation factors necessary to ensure that [ELLs and] students with disabilities will have the opportunity to achieve college- and career-ready standards"

- "Professional development and other supports to prepare teachers to teach all students, including … [ELLs], students with disabilities, and low-achieving students, to the new standards"

- "Expand[ed] access to college-level courses or their prerequisites, dual enrollment courses, or accelerated learning opportunities."

Source: U.S. Department of Education, 2012, pp. 6–7

Findings From the AIR Review of State Flexibility Plans: Principle 1b

The scope of Principle 1b is broad; therefore, the review focused on "expanded access to…accelerated learning opportunities." Accelerated learning encapsulates many of the elements of Principle 1b. As States increase access to accelerated learning and other college and career readiness pathways, teachers need adequate preservice training and professional development to ensure that they hold all students to the same rigorous standards. States must both expand access to accelerated options

for students who master standards quickly and increase student supports to ensure that all students, including ELLs, students with disabilities, and low-achieving students, can be successful in these pathways. As a result, this section focuses primarily on state plans to expand accelerated learning options and pathways for postsecondary success.

The most popular approaches to accelerated learning cited in the flexibility plans are Advanced Placement (AP) and International Baccalaureate (IB) courses and dual or concurrent enrollment. Each of these strategies provides students with opportunities to earn college credit either through performance on an end-of-course exam or through enrollment in and completion of a local or virtual college course. Thirty states include dual enrollment opportunities in their flexibility plans, and 30 states will offer AP courses. Seventeen states list IB courses as a part of their implementation plan. In addition to these strategies, four states plan to promote the use of Early College High Schools, a model that allows students to earn college credit in high school, and three states plan to target strategies for students in the middle grades including pre-AP or honors classes and early enrollment in high school coursework.

Though CTE is not necessarily an accelerated learning pathway, many states chose to include plans to expand their focus on courses and programs designed to prepare students for careers. Fifteen states plan to focus on CTE efforts, including alignment of CTE and core academic standards (see Principle 1a), integration with higher education, and increased certification for high school students enrolled in CTE. South Dakota plans to increase dual enrollment options to include affiliation with four technical community colleges, and eight states plan to increase their focus on science, technology, engineering, and mathematics (STEM) education through technical high schools, STEM education centers, and/or STEM education expansion into middle schools.

Though offering accelerated learning options is an important component of the flexibility plans, states also must include strategies for increasing access and providing supports to ensure student success. To increase access to and enrollment in accelerated coursework:

- Eight states will provide reimbursements for lower income students who take end-of-course exams for either AP or IB classes and/or enrollment fees for those in dual enrollment courses.

- South Dakota and Utah will offer virtual options for accelerated coursework, targeting students in rural areas.

- Arkansas will require that each school offer at least one accelerated course in each core subject area.

- New Mexico will change its statutory requirements to ensure that each student completes at least one dual enrollment, AP, or distance learning course by the time he or she graduates from high school.

- Indiana will encourage each school to enlist an AP champion or an adult advocate at the school to enroll low-income students in advanced coursework.

To ensure student success in accelerated courses:

- Six states will invest in training programs or professional development to better prepare teachers to teach advanced or college-level courses.

- Five states will use individual learning plans or education and career action plans to help students map their college- and career-ready trajectory and stay on track for success.

- South Carolina plans to develop a Web-based system to help students navigate the process of credit articulation when they enroll in college.

Implementation Considerations for Principle 1b

As states seek to expand access to rigorous accelerated options, they also must work to ensure student success. Following are a set of considerations for states and districts related to implementing Principle 1b:

1. **Offer multiple pathways to provide students with a diverse range of options for meeting rigorous college- and career-ready standards.** Because students have different interests, strengths, and aspirations, states should offer multiple alternatives to ensure that students meet the same rigorous standards. Pathways might include CTE, dual enrollment, or sequenced AP or IB coursework. All pathways should include the option for advancement into college-level material for which students should receive credit toward a degree or certification. Though states may set the goal of postsecondary education for every student, they must recognize that a diverse range of postsecondary options includes components of continuing education. As a result, states should support districts and schools in developing multiple pathway offerings and may need to develop statewide options in the case of limited district capacity.

2. **Design each pathway to help students meet similarly rigorous standards.** All pathways—whether they focus on advanced content, career exploration, or bringing students up to speed on remedial content—must be designed to provide students with the opportunity to engage in rigorous academic curricula. Programs of study and career exploration pathways are meant to provide for the integration of core content knowledge into a technical field. The technical knowledge taught in these pathways should not be a substitute for core content, as mastering mathematics and ELA standards are essential for students who intend to go to college and for those who will go straight into the workforce (Alliance for Excellent Education, 2009; Darche et al., 2009; Educational Policy Improvement Center, 2009).

3. **Design pathways sequentially, emphasizing universal college- and career-ready skills first.** It is important that students be provided an opportunity to begin pathway exploration early so that they can select the pathway that best fits their interests, skills, and aspirations. Because students may wish to change pathways after they have begun, it is also important to allow for flexibility. Mapping the curriculum across each pathway to begin with a general curriculum in early years and narrow toward pathway-specific skills in later years facilitates an easier transition from one pathway to the next (U. S. Department of Education, 2012b).

4. **Offer professional development to ensure that teachers are well-prepared to provide instruction in accelerated and career-specific content.** Individuals who wish to become CTE teachers or teachers of advanced coursework undertake a heavy burden. In most states, these teachers must be "highly qualified," as defined by the 2002 reauthorization of ESEA and have deep content knowledge in their chosen field (U.S. Department of Education, 2004). States must help districts and schools provide these teachers with professional development to ensure that they can master the more specialized content, integrate college- and career-ready standards into this content, and help students apply knowledge to meet these rigorous standards. States should provide opportunities for teachers to enroll in preservice coursework and professional development so that they can gain the knowledge and skills necessary to meet these ambitious goals.

5. **Provide individualized counseling services and supports to ensure that all students maximize pathway success.** Counselors are essential to students' preparation for college and careers and should be held accountable for student awareness of available pathways as they begin high school and the postsecondary options available upon graduation and high school pathway completion (Center for Occupational Research in Education, 2004; Lerner & Brand, 2006). In recent years, many counselor positions have been eliminated, resulting in schools where the student-to-counselor ratio can be as much as 500:1. By investing in counselors, states and districts not only help provide a multitude of pathway options but also help ensure that students harness those pathways for postsecondary success. Low-income students from urban high schools are far more likely to apply for, enroll in, and attend a four-year college matching their academic qualifications if they attend schools with rigorous academic expectations and receive substantial guidance throughout the application process (Roderick, Coca, & Nagaoka, 2011).

6. **Collaborate with IHEs, community-based organizations, and the workforce to design pathways that support student mastery of aligned college- and career-ready standards.** By developing pathway curricula in conjunction with a variety of stakeholders, states and districts can work to increase alignment between secondary and postsecondary expectations and skills. This collaboration can take place, for example, through joint inservice for K–12 teachers and professors from IHEs or through dual enrollment or Early College High School programs (Lerner & Brand, 2006). These collaborations are also essential for establishing formal articulation strategies to ensure that students receive postsecondary or credentialing credit for the work they complete as part of a career pathway (Center for Occupational Research in Education, 2004).

Principle 1c: Developing and Administering Annual, Statewide, Aligned, High-Quality Assessments, and Corresponding Academic Achievement Standards That Measure Student Growth

> **ESEA Flexibility Guidelines, Principle 1c**
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> Under Principle 1c, each State must develop "high-quality assessments, and corresponding academic achievement standards, that measure student growth and are aligned with the State's college- and career-ready standards in reading/language arts and mathematics, in at least Grades 3–8 and at least once in high school" (U.S. Department of Education, 2012a, p. 8).
>
> States can achieve the goals of this principle by "participating in one of the two State consortia that received a grant under the Race to the Top Assessment competition," developing new high-quality assessments, or using existing assessments (U.S. Department of Education, 2012a, p. 8).

Findings From the AIR Review of State Flexibility Plans: Principle 1c

Thirty-nine states have committed to participating in either the Partnership for Assessment of Readiness for College and Career (PARCC) or Smarter Balanced Assessment Consortium (SBAC), which were funded under the Race to the Top Assessment competition. Both consortia are working to develop reading/language arts and mathematics assessments for Grades 3–8 and high school. The consortia's assessments are set to be finalized and implemented in the 2014–15 school year. Of the states that have been granted ESEA flexibility so far, 16 states are exclusively participating in PARCC, 11 states are exclusively participating in SBAC, and five states are participating in both consortia. Two states, Minnesota and Virginia, are using existing assessments that map to their state-developed, rigorous reading/language arts and mathematics standards, and one state, Utah, is developing a new assessment to measure

student progress on the Common Core State Standards. Though the ESEA flexibility guidelines require states to develop rigorous assessments in only ELA and mathematics, several states include rigorous assessments of other content areas in their flexibility plans. Six states are developing assessments or end-of-course exams in science, and five states are developing assessments or end-of-course exams for social studies/history. Ohio plans to develop more rigorous technical assessments for CTE, and many states will focus on modified assessments and adaptations to ensure that data can be collected while the needs of students with disabilities and ELLs are still met.[4]

Although the development of rigorous assessments is essential to adequately preparing students for postsecondary success, it is also important to consider use of data as a lever for offering more rigorous college- and career-ready information. According to their flexibility plans, several states will focus on access to and use of data. Indiana and Maryland both plan to utilize online data systems to disseminate data and facilitate teacher use, whereas South Carolina is creating an online data platform, including an early warning system, which will be accessible to each district and school. Massachusetts plans to provide professional development to ensure that teachers in lower performing schools can use data to inform instruction. Six states plan to harness data to increase collaboration between PK–12 and postsecondary stakeholders. Five states will implement longitudinal data systems that integrate student performance data from rigorous K–12 assessments and postsecondary performance information, and Minnesota will build on its existing comprehensive data system for dual enrollment, which identifies gaps and areas of student need between high school and college.

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[4] For more information on assessment modification for ELLs, see *Supporting English Language Learners: A Pocket Guide for State and District Leaders* at http://www.air. org/files/ELL_Pocket_Guide1.pdf.

Data Use

The recent literature on college and career readiness is uncovering connections between academic and nonacademic indicators of student performance that are predictive of success in postsecondary education. The indicators in the left column of the following table are correlated with or, in some cases, predictive of college and career readiness outcomes as shown in the column on the right.

Indicators of Student Performance	Outcomes of Student Readiness
• Participating and performing well in rigorous coursework • Taking courses in sequence at the appropriate grade levels • Completing a Free Application for Student Aid • High grade point average • High SAT or ACT scores	• Applying to and enrolling in college • Persisting in college coursework • Attaining a degree

Source: Engberg and Wolniak, 2010

Leading schools and districts are now using a wealth of data to identify students who are on track to graduate from high school and those who are college- and career-ready.

AIR developed at-risk indicators for K–12 students who may miss key educational benchmarks of reading by the end of third grade, proficiency in ELA and mathematics by the end of sixth grade, passing all ninth-grade courses, and graduating from high school. Using available state data, the model assigns a level of low, moderate, or high risk to each student based on data from the previous year. Districts and schools can use this information to identify students who are at risk of missing these benchmarks and may need additional supports.

More recently, AIR examined and validated indicators of student performance, behavior, and engagement data in eight districts within a single state. The work allowed researchers to determine whether the indicators were predictive of students meeting entrance requirements and enrolling in college. Findings suggest that ninth-grade students who have below a B average in courses are less likely to enroll in college, and students who receive a grade of F in either a reading/language arts course or a mathematics course are unlikely to enroll in college. In addition, ninth-grade students who missed 10 percent or more school days were considered off-track for college readiness.

Implementation Considerations for Principle 1c

As states begin implementation of rigorous college- and career-ready assessments, they also must consider the use of the rich data that those assessments will yield. Following are a set of considerations for states and districts related to implementing Principle 1c:

1. **Broaden assessments to include additional measures of college and career readiness.** It is essential that states, districts, and schools develop measures to evaluate whether students are on track to meet expectations throughout their K–12 career. Outcome measures, such as earning an industry-recognized certification; earning a living wage in a middle or higher skills occupation; and/or college matriculation, persistence, and graduation are important measures of state, district, and school performance over time. However, it is also important to develop benchmarks and formative assessments to assess individual student progress toward college and career readiness in the elementary and secondary grades. PARCC and SBAC are currently developing benchmark assessments that can be used to evaluate student academic progress toward college and career readiness in ELA and mathematics. To enhance state, district, and school ability to assess college and career readiness, additional measures and indicators must be developed for other essential college and career readiness expectations, including social and emotional learning, employability, and higher-order thinking skills, which are typically more challenging to measure.

2. **Adapt assessments to better measure student growth.** Because most current assessments are static and given at grade levels, they only enable measurement of student growth above the baseline expectations for entering each grade. These assessments do not measure student growth below the grade level or student growth that is significantly above the grade level. For example, if a student enters Grade 7 at a Grade 2 level and advances to a Grade 5 level in that year, the student has made significant growth; however, the Grade 7 state test will not capture this growth. For this reason, it is essential that states seek to develop dynamic assessments that adapt to student knowledge and ability.

3. **Continue development of longitudinal data systems—with unique student identifiers—to better connect individual students from preschool through college and into the workforce.** Though rigorous assessments are an important step in helping districts and schools ensure that students are college and career ready, it is also important to implement systems that improve data use. Statewide longitudinal data systems are being used to identify necessary student supports along the education pipeline. These data systems, currently under development throughout the country, link individual student records across systems, including preschool, K–12, postsecondary education, and the public workforce investment system. Because these data systems are in the early stages of development, there is little substantiating research or best practices to validate them at this time. However, the development of such systems provides SEAs and LEAs with rich sets of data that can be used as a source of feedback by capturing outcome data and measuring the effectiveness of programs and supports. The Data Quality Campaign (2010) notes that although most states have the capacity to match data along the education pipeline, the vast majority lack the ability to match these data with the public workforce systems. Unique student identifiers coupled with stakeholder buy-in to match records from preschools, K–12, IHEs, and workforce groups are essential to the realization of these systems' full potential.

4. **Use research-based predictive indicators to monitor and support student readiness for college and careers.** Research has recently identified several student behaviors and academic factors that are correlated with or predictive of one or more college- and career-ready goals. For example, participating in school-based programs, such as CTE (Lekes et al., 2007), taking the SAT (Johnson, 2008), and enrolling in rigorous coursework like that offered in AP and IB classes (Horn & Kojaku, 2001) are positively correlated with college matriculation. Though matriculation does not necessarily indicate college and career readiness, these indicators provide a direction for further research. Potential predictive indicators should be studied and validated to provide critical information to educators so that they are able to offer support to students who are struggling to meet college- and career-ready standards.

State Longitudinal Data Systems

Since 2005, many states have been focusing attention and funding on the development of state longitudinal data systems (SLDS) as part of the federal SLDS grant program. Florida, a two-time recipient of this grant, has long been thought to be at the forefront of SLDS development. Though many states have been working to develop unique student identifiers and data systems to track student data through postsecondary education and beyond, the Florida Education and Training Placement Information Program (FETPIP) gives the state a strong foundation on which to build. In 1988, Florida developed FETPIP to consolidate student information after graduation. FETPIP aggregates individual data from a number of different databases and includes data on the following:

- Employment
- Earnings
- Postsecondary education
- Public assistance
- Military enlistments
- Incarceration

Though this database is intended to track trends in student performance rather than individual statistics, FETPIP can be used to compare student outcomes for schools and training programs across the state, earnings across education levels, and the level of public assistance required by high school dropouts and graduates. The Florida Department of Education has put this data system to good use. For example, FETPIP has been used to identify employers that hire significant numbers of high school dropouts so that the state can target re-engagement efforts to these locations. As Florida continues to develop its SLDS as a part of Race to the Top, state agencies will work to combine FETPIP with the PK–12 SLDS and the university data system as part of a comprehensive data warehouse (Data Quality Campaign, n.d.; Florida Department of Education, 2005a, 2005b; Kugle & Smith, 2006).

5. **Focus on research-based nonacademic predictive indicators.** Several nonacademic indicators also have been found to be correlated with or predictive of college enrollment. For example, students from low-income families that complete the FAFSA are far more likely to enroll in a four-year college than their peers who do not complete a FAFSA (Roderick, Nagaoka, Coca, & Moeller, 2008). Indicators for social-emotional learning or higher-order thinking have not yet been validated by research but are important components of college and career readiness. Further research is needed to help identify and validate predictive indicators so that SEAs and LEAs can monitor progress toward these high standards.

Conclusion

States face a difficult challenge as accountability systems shift to focus on college and career readiness. They must support districts and schools as they implement more rigorous standards while simultaneously providing guidance on the many other skills that students need for postsecondary success. However, as states develop comprehensive plans for preparing students for college and careers, they also will have remarkable opportunities to build capacity and collaboration. Because of the daunting nature of the task, states have already begun to strengthen relationships between historically siloed departments, foster collaboration between the PK–12 and postsecondary systems, and invest industry stakeholders in contributing to the education of their future workforce. In addition, states have begun to harness the rich research and evidence base to develop student pathways to success and interventions to keep them on track. Though states have an ambitious undertaking ahead of them, they also have many resources available as they strive to help students achieve readiness for college and careers.

Resources for Principle 1

Principle 1a

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Federal Technical Assistance Centers

The following centers provide technical assistance that is targeted to provide states with guidance and resources to improve college and career readiness outcomes for all students. These centers are part of the federal technical assistance network designed to support education initiatives across states.

- College and Career Readiness and Success Center
  Contact ccrrscenter@air.org for information.
- Center on Standards and Assessment Implementation
  www.wested.org/cs/we/view/pj/605
- National Post-School Outcomes Center
  www.psocenter.org
- National Secondary Transition Technical Assistance Center
  www.nsttac.org
- National Postsecondary Education Programs Network (PEPNet) 2.0
  www.pepnet.org

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