



# Bringing High School Students to College Readiness—Before High School Graduation: What Do Research and Experience Tell Us, and Where Do We Go from Here?



Education Commission  
of the States

by: Jennifer Dounay Zinth  
March 2013

## Introduction

The fact that 46 states and the District of Columbia have adopted the Common Core state standards and joined one or both of the related assessment consortia makes it clear—raising student levels of college and career readiness are key priorities for state leaders. Yet beyond adopting the standards and new assessments, states need to create a policy environment and provide the necessary supports and structures to ensure to the extent possible that students will graduate high school college and career ready.

“  
... raising student levels of college and career readiness are key priorities for state leaders.  
”

## What Does the External Research Say?

Projections of the number of students who will meet college-readiness expectations on the Common Core assessments are dismal. Kentucky, the first state to adopt the Common Core State Standards (CCSS) and the first state to release results of a statewide assessment of the CCSS, made national headlines in November 2012 when state test scores, while slightly better than projected, showed large drops in the numbers of students demonstrating proficiency.<sup>1</sup> Assessment experts note, however, that a direct comparison to former tests cannot be made since the new assessments were based on different, more rigorous standards; had higher benchmarks for determining proficiency; used a different test structure and measured results on a different scale. Similarly, just over four in 10 of Georgia students completing an algebra course linked to the Common Core met the related end-of-course assessment’s standard.<sup>2</sup>

Still, the results of Common Core-aligned assessments in both English/language arts and mathematics will likely show similar sobering results when the SBAC and PARCC assessments are launched during the 2014-15 school year. Year after year, data suggest that nearly half of ACT-tested high school graduates fail to meet ACT’s college-readiness benchmark in reading.<sup>3</sup> Student results on mathematics exams may be particularly compromised, due to several converging factors. State-set graduation requirements in math are just one concern. Five states (Alaska, California, Maine, Montana, Wisconsin) currently require as few as two units of math for students to graduate from high school, and in a number of states, students are not required to complete math content beyond Algebra I—if they are even required to complete any algebra.<sup>4</sup> While students may be exposed to algebraic concepts without completing a course with “Algebra” in the title, are they likely to receive this exposure without algebra being reflected in high school graduation requirements?

This concern about exposure to rigorous mathematics is compounded by recent data from the U.S. Department of Education’s Office for Civil Rights (OCR), indicating that access to intensive coursework in math and science is shockingly uneven among districts and schools. The OCR’s nationally representative sample found 14% of high schools not offering Algebra I—with high schools serving the highest proportions of black and Latino students 17% less likely to offer Algebra II, and 26% less likely to offer calculus.<sup>5</sup> Access aside, data abound on the lower likelihood that traditionally underserved students will be held to higher math standards. Bill Schmidt speaks extensively and eloquently to this in his 2012 book, *Inequality for All*. Dr. Schmidt’s findings are underscored by a 2012 analysis, which found that nearly one in five—18%—of the high school Class of 2004 did not meet their state’s graduation requirements in math, science, or both subjects. Students receiving a diploma without meeting state-level graduation requirements were found more likely to be at-risk students—overage, to have previously been suspended, to have parents with a high school diploma or less, or to have transferred high schools.<sup>6</sup>

## Lessons Learned

The good news is that while the external research points to significant needs to be addressed, we can identify policy barriers that, once addressed, could lead to gains in students' college and career readiness as assessed by the PARCC and Smarter Balanced Assessment Consortium.

**Transitions to postsecondary are less clear without a common definition of “college-readiness”:** Prior to the advent of ESEA waivers, which call for states to identify standards, assessments, or other means of defining college-readiness statewide, college-readiness definitions in many states were predicated on cut scores on college placement exams or ACT or SAT scores, which could differ from institution to institution within the same state. States need a baseline to know the level of knowledge and skill to which students need to be brought.

**High school remediation—low expectations, little evaluation:** An ECS survey of state-level high school remediation policies suggests that insufficient—or nonexistent—state policies may play a role.

- **Students not identified:** In a 2007 ECS analysis, only 33 states had any state policy regarding remediation of high school students not meeting certain criteria.<sup>7</sup>
- **Students not required to attend:** In many of the states addressing remediation, students were not required to participate.
- **Low horizon:** States generally required student remediation to bring them to grade-level competency, rather than college readiness.<sup>8</sup>
- **Little to no evaluation:** Just 10 states required districts to conduct evaluations of their remediation programs.<sup>9</sup>

**Limited—or only recently emerging use—of valuable student data:** Until recently, few states employed early warning data systems to identify students whose academic performance and behaviors suggested they were at risk of not completing high school. The Data Quality Campaign (DQC) notes that as of 2012, 28 states reported producing early warning reports. Yet despite this progress in state adoption of this approach, DQC notes that critical issues have yet to be resolved:

- “As more states utilize predictive analyses to reach their goals, new questions about the role of the state will emerge. More work is necessary to better understand current state data practices around early warning system implementation.
- States must take steps to ensure that stakeholders have the support to utilize early warning data. Trainings on using early warning systems and interpreting data are critical to implementing interventions based on early warning data.”<sup>10</sup>
- More work is needed to understand how predictive analyses can be linked to college- and career-readiness efforts. In the coming years, it will become increasingly important to ensure that students not only stay on track to graduate from high school, but also enter and succeed in postsecondary education and beyond.

And while DQC reports that high school feedback systems—informing high schools and districts of their recent graduates' remediation needs upon college entry—are in place in 47 states, only 29 states report data that is available by high school (making it actionable), and even fewer states—24—use *timely* data (since 2010).<sup>11</sup> In 2008, ECS found only *two* states—Arkansas and Florida—that required schools and districts to use feedback report data for local improvement efforts. Some theorize that these existing data are not being used to improve college readiness because teachers and administrators did not know how to interpret and apply the data.

**Structural barriers:** The mentality that high school remediation needs to be delivered in a semester- or year-long course—and the scheduling challenges this mentality poses—can impede meaningful high school remediation efforts. Credit recovery allows students to accelerate remediation by targeting only the knowledge and skills in which they were deficient. Yet limited state policy establishing parameters for credit recovery in many states has led to largely locally driven programs, resulting in the potential for significant unevenness in program access and quality.

## Strategies for Moving Forward

---

Fortunately, recent state experience points to strategies states can apply. These strategies can be grouped under five broad areas of state action: (1) get adults to work well together, (2) do right by students, (3) drive improvements in instruction, (4) facilitate structural options in course or instructional module delivery, and (5) evaluate processes and systems.

### Get adults to work well together

States need to ensure the right players are brought to the table, and a level of trust and collaboration is established among the adults involved in the business. In Kentucky, 2009 S.B. 1 mandated collaboration among the Kentucky Department of Education, Kentucky Board of Education, Council on Postsecondary Education, and Education Professional Standards Board for the development of content standards in reading and math aligned with postsecondary education course expectations, and the incorporation of these standards in teacher preparation

programs. Communications was critical to the success of this initiative. As April Pieper of the Kentucky Department of Education notes, in the past, the actions of these boards and agencies had been more siloed with less focus on the collective goal of student readiness and success. While she says there was initial tension during the first meeting of high school teachers and postsecondary faculty, once staff across agencies realized that they were all on the same page (wanting students to be prepared for the next step in achieving their academic goals) and that no one was going to be “blamed” for students not being college ready, things “went wonderfully.”<sup>12</sup>

Additionally, The department put together a multipronged communications strategy based on the core message that Kentucky was moving toward preparing all public school students for college and/or careers.<sup>13</sup> Also important was the fact that the Kentucky Board of Education, the Council on Postsecondary Education, and the Education Professional Standards Board had agreed—together—to adopt the Common Core State Standards.<sup>14</sup>

## Do right by students

Doing right by students means ensuring critical actions are not overlooked:

**Launch public awareness/communication efforts:** Parents, students, and the general public need to know why their state is raising expectations, and to brace themselves for higher percentages of students not meeting standards. Communication efforts should:

- Underscore the research and state data indicating that rising tides can lift all boats, and higher expectations do not automatically translate into higher dropout rates.<sup>15</sup>
- Warn that making the transition to higher standards usually entails dips in assessment results, but that over time, the expectation is for many more students to graduate college- and career-ready.
- Emphasize that the Common Core assessments *do* correlate to college-readiness.
- Send a “do it now or pay later” message (if students do not raise their skills to college readiness before high school graduation, they will incur greater tuition costs required to pay for non-credit-bearing remedial coursework).
- Clarify unequivocally that while setting college- and career-ready expectations for all students does not imply that all students are expected to go to college, performance on the assessments will importantly document whether students have the skills necessary to pursue further high-skills training and to get and hold living-wage jobs in high-potential sectors of the economy.
- Make it clear that “college” does not exclusively mean a four-year institution, but extends to other postsecondary options, such as apprenticeships, informal and formal employer-provided training, military training, public job training, industry-based certifications, postsecondary certificates, and associates degrees.<sup>16</sup>

**Raise high school graduation requirements, particularly in math:** Students not exposed to algebraic or geometric content are unlikely to demonstrate college-readiness in math. A 2012 ECS analysis found that 25 states and the District of Columbia require students to complete algebra to graduate high school, with five states joining them effective with the Class of 2014. Twenty-two states currently require students to additionally complete geometry, with four states joining them in future years. An additional four states—New York, Ohio, Oklahoma, and Virginia—require students to complete advanced mathematics coursework or assessments but do not explicitly require all students to earn credits in algebra and geometry.<sup>17</sup>

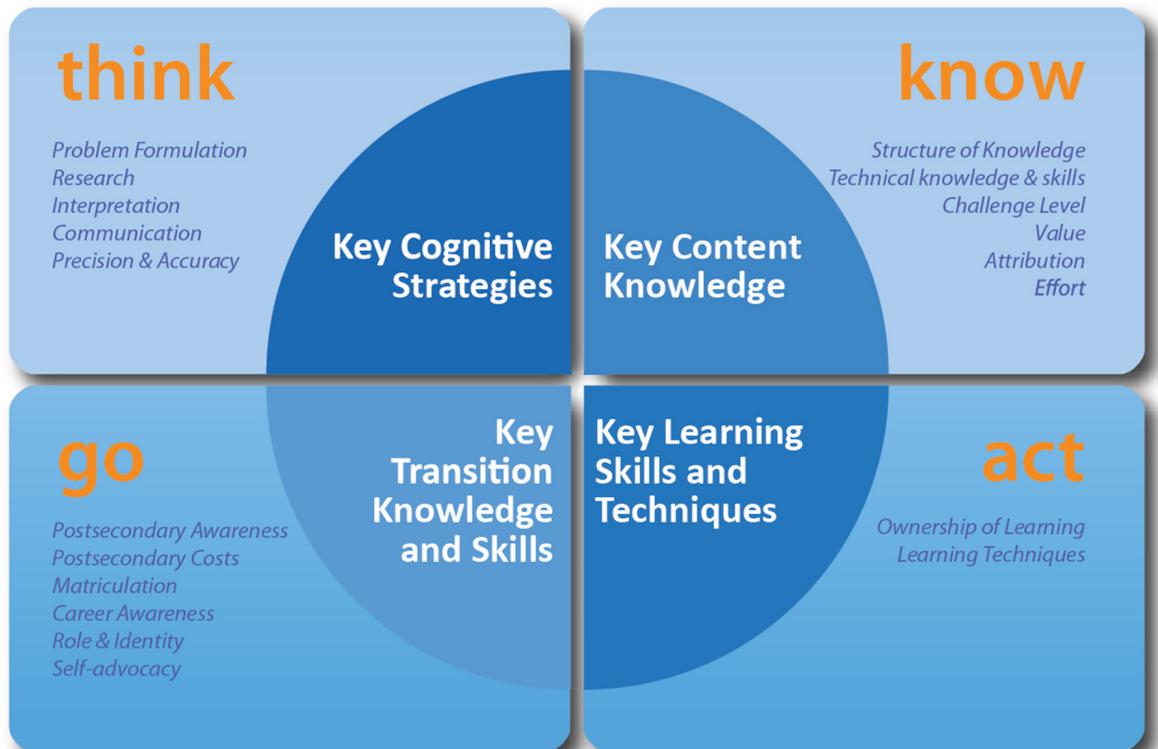
Students who take a year off from math during their final year(s) of high school are likely to forget critical knowledge and skills at college entry. ECS analysis has found that, effective with the Class of 2013, just 16 states and the District of Columbia require students to complete four years of math for high school graduation, with that number inching up to 18 states and D.C. by the Class of 2020. However, many states allow students to count coursework completed before grade 9 toward high school graduation, leaving the door open for such students to be cooling their heels, math-wise, during their senior year of high school. Just three states—Delaware, Kentucky, and Tennessee—specify that students complete a math course each year of high school (or during their senior year). They will be joined by a fourth state, Indiana, effective with the Class of 2016.<sup>18</sup>

**Ensure otherwise qualified students are not being counseled out of courses leading to college-readiness:** The default expectation should be that all students complete a rigorous college- and career-ready curriculum. And mechanisms should hold schools and districts accountable for the number of students not held to that default expectation. Texas law requires the commissioner to order a special accreditation investigation of any district in which excessive numbers of students either (a) graduate under the minimum high school program (which has lower math expectations), or (b) are eligible but do not enroll in Algebra II or any other courses required for the recommended high school program but not the minimum high school program.<sup>19</sup> Texas high school accountability reports help make this element transparent to the public by disaggregating by student subgroup the number of students taking courses under the minimum high school program.<sup>20</sup>

**Get 'em before grade 12:** The road to college and career readiness starts long before high school. States need to implement high-quality, user-friendly early warning systems to identify students early on who are not on track to being college and career ready. States implementing early warning systems should heed DQC's recommendations to link predictive analyses to college- and career-readiness efforts, and ensure school staff have the support and training they need to correctly interpret and apply data from early warning systems. States should make formative and interim assessments available to classroom teachers in the secondary grades, to identify need throughout the school year, not just at semester or year's end.

**Remediate remediation:** 1) Benchmark state and local processes for ensuring successful intervention with struggling students. Provide rewards for schools working to improve processes and promote best practices statewide. 2) Ensure flexibility in delivery methods: States should encourage flexibility in instructional delivery, such as blended and online courses, or courses offered concurrently with a regular course in the same subject area. Kentucky policy uses the phrase "transitional course *or* intervention" (emphasis added).<sup>21</sup> Pieper notes this is to accommodate students who are very close to demonstrating college readiness and may need only a minimum amount of remediation, not an entire semester or year of help. 3) Ensure flexibility in group size: Alternate between small group/cohort instruction and one-on-one instruction (delivered either in-person or via computer module/online). 4) Require students to participate.

David Conley, who heads the Educational Policy Improvement Center (EPIC), makes clear that "college- and career-readiness" should not be defined solely by a cut score on an assessment. Rather, a readiness definition should take into consideration: (1) Key Cognitive Strategies, (2) Key Content Knowledge, (3) Key Learning Skills and Techniques, and (4) Key Transition Knowledge and Skills.<sup>22</sup>



Source: David T. Conley, *A Complete Definition of College and Career Readiness*, Educational Policy Improvement Center, May 2012, [https://www.epiconline.org/publications/documents/College%20and%20Career%20Readiness%20Definition.pdf?force\\_download=true](https://www.epiconline.org/publications/documents/College%20and%20Career%20Readiness%20Definition.pdf?force_download=true)

**Ensure instruction and interventions—however framed—are not “drill and kill”:** Courses or standards-based modules should be externally evaluated, and modified as needed. These interventions cannot be viewed to be simply intensive test preparation courses. In a recently published commentary, David Conley also proposes that instruction include higher forms of thinking such as persisting with difficult tasks, including overcoming frustration; setting and achieving goals; seeking help; working with others; and developing, managing, and perceiving sense of self-efficacy.<sup>23</sup> Virginia’s senior-year capstone courses in math (for students who intend to go to college but may not be college ready) are designed to provide opportunities for real-world learning, and offer problem-based (two-minute assignment based on a real problem) and project-based learning (projects of up to two months, requiring students to conduct research, write letters and emails, gather data, etc.).<sup>24</sup>

**Recognize progress:** Even with strong interventions, not all students may reach the college- and career-ready standard. In Kentucky, all students who initially fail to meet state college-readiness benchmarks participate in accelerated learning designed to address identified academic deficiencies.<sup>25</sup> Once they have completed the interventions, students may take state college-placement exams or may re-take the ACT, says Pieper, of the Kentucky Department of Education. And while college readiness is not a requirement for graduation,<sup>26</sup> Pieper notes that the state accountability system “provides a carrot for schools and districts to deliver high-quality remediation” since they earn credit for students who achieve college-readiness prior to graduation. The system also credits schools and districts for students who meet career-ready academic goals as measured by the Armed Services Vocational Aptitude Battery (ASVAB) or ACT WorkKeys.<sup>27</sup>

## Drive Improvements in Instruction

**Monitor whether rigorous, core standards are actually being taught:** Implementation of CCSS or other benchmarked standards does not guarantee consistent high quality across the country, or even from classroom to classroom. Implementation of earlier iterations of state standards bears out this concern. In William Schmidt’s detailed analysis of whether math standards were evenly taught across classrooms and districts, he determined that “What was planned was not delivered.”<sup>28</sup>

**Incorporate progress toward college readiness in school and district accountability systems:** This progress should take into account the progress of students, who may not have attained college readiness by the end of the intervention, but are much closer to college readiness than they were before the intervention.

**Don’t discount the value of informal feedback:** As with any implementation, it is important to establish formal feedback loops, but keep the door open for informal feedback opportunities. Kentucky invited districts and schools who were early adopters of the transitional course to provide honest feedback on the course, which the state incorporated. For example, when local educators indicated it would be nice for the reading articles to be lexiled, the state accommodated the request. Pre- and post-tests for individual units (there are approximately eight math units and four reading units) were developed based on feedback from early usage.<sup>29</sup>

The goal of all students meeting expectations for college and careers is achievable if we pay attention to the past, learn from mistakes, plan for new challenges, and share a vision of the future.

## Endnotes

---

- 1 Kentucky Department of Education, News Release, *First Results from Unbridled Learning Accountability Model Released: College/Career Readiness Is a Bright Spot in Data*, (November 2, 2012), <http://education.ky.gov/comm/Documents/R077data.pdf>, (accessed January 15, 2013); Andrew Ujifusa, “Scores Drop on Ky’s Common Core-Aligned Tests”, *Education Week* (November 2, 2012).
- 2 Wayne Washington, “Georgia students struggle on test tied to common core math course,” *The Atlanta Journal-Constitution* (February 11, 2013), <http://www.ajc.com/news/news/georgia-students-struggle-on-test-tied-to-common-c/nWLBm/>, (accessed February 27, 2013).
- 3 ACT, *The Condition of College & Career Readiness 2012* (ACT, 2012), <http://media.act.org/documents/CCCR12-NationalReadinessRpt.pdf>, (accessed February 27, 2013).
- 4 Jennifer Dounay Zinth, *50-State Mathematics Requirements for the Standard High School Diploma*, (Denver: Education Commission of the States, March 2012), <http://www.ecs.org/clearinghouse/01/01/28/10128.pdf>, (accessed January 15, 2013).
- 5 U.S. Department of Education, Office for Civil Rights, *The Transformed Civil Rights Data Collection* (CRDC), (March 2012) <http://www2.ed.gov/about/offices/list/ocr/docs/crdc-2012-data-summary.pdf>, (accessed January 15, 2013).
- 6 Deven Carlson and Michael Planty, “The Ineffectiveness of High School Graduation Credit Requirement Reforms: A Story of Implementation and Enforcement?,” *Education Policy* 26(4), 592-626.
- 7 Kyle Zinth, *Student Support and Remediation: Student Participation Requirements* (Denver: Education Commission of the States, June 2007), <http://mb2.ecs.org/reports/Report.aspx?id=1540>, (accessed January 21, 2013).
- 8 Ibid.
- 9 Kyle Zinth, Education Commission of the States, *Student Support and Remediation: State Policy Requires District or State to Evaluate Student Remediation Program* (June 2007), <http://mb2.ecs.org/reports/Report.aspx?id=1545>, (accessed January 21, 2013).
- 10 Data Quality Campaign, *Supporting Early Warning Systems: Using data to keep students on track to success*, (n.d.), [http://www.dataqualitycampaign.org/files/DFA2012\\_Early%20Warning.pdf](http://www.dataqualitycampaign.org/files/DFA2012_Early%20Warning.pdf), (accessed January 15, 2013).
- 11 Data Quality Campaign, *Data for Action 2012, Providing High School Feedback* (2012), [http://dataqualitycampaign.org/files/Hot%20Topic\\_HS%20Feedback.pdf](http://dataqualitycampaign.org/files/Hot%20Topic_HS%20Feedback.pdf), (accessed January 22, 2013).
- 12 Phone interview, January 9, 2013.
- 13 Kentucky Department of Education, *Unbridled Learning – Communications and Collaboration* (December 2012), <http://education.ky.gov/comm/UL/documents/Unbridled%20learning.pdf> (accessed February 27, 2013).
- 14 Ibid.
- 15 Constance Clark and Peter W. Cookson Jr., Education Sector, *High Standards Help Struggling Students: New Evidence* (November 2012), [http://www.educationsector.org/sites/default/files/publications/Equity\\_CYCT\\_RELEASED.pdf](http://www.educationsector.org/sites/default/files/publications/Equity_CYCT_RELEASED.pdf) (accessed January 21, 2013).

- 16 Anthony P. Carnevale, Tamara Jayasundera, and Andrew R. Hanson, *Career and Technical Education: Five Ways That Pay Along the Way to the B.A.*, (Georgetown University, Center on Education and the Workforce, September 2012), <http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/CTE.FiveWays.FullReport.pdf>, (accessed March 22, 2013); Anthony P. Carnevale, Nicole Smith, and Jeff Strohl, *Help Wanted: Projections of Jobs and Education Requirements Through 2018*, (Georgetown University, Center on Education and the Workforce, June 2010), <http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/FullReport.pdf>, (accessed March 22, 2013).
- 17 Jennifer Dounay Zinth, *50-State Mathematics Requirements for the Standard High School Diploma*, (Denver: Education Commission of the States, March 2012), <http://www.ecs.org/clearinghouse/01/01/28/10128.pdf>, (accessed February 27, 2013).
- 18 Ibid.
- 19 TEX. EDUC. CODE § 39.057(10), (11)
- 20 TEX. EDUC. CODE § 39.301(c)(4)
- 21 704 KY. ADMIN. REGS. 3:305
- 22 David T. Conley, *A Complete Definition of College and Career Readiness*, (Oregon: Educational Policy Improvement Center (EPIC), May 2, 2012), [https://www.epiconline.org/publications/documents/College%20and%20Career%20Readiness%20Definition.pdf?force\\_download=true](https://www.epiconline.org/publications/documents/College%20and%20Career%20Readiness%20Definition.pdf?force_download=true), (accessed January 21, 2013).
- 23 David Conley, "Rethinking the Notion of 'Noncognitive,'" *Education Week*, published online January 22, 2013, Vol. 32, Issue 18, Pages 20-21.
- 24 Phone interview with Michael Bolling, Virginia Department of Education, January 9, 2013; Virginia Department of Education, Mathematics Capstone Course, (n.d.), [http://www.doe.virginia.gov/instruction/mathematics/capstone\\_course/index.shtml](http://www.doe.virginia.gov/instruction/mathematics/capstone_course/index.shtml), (accessed February 27, 2013).
- 25 KY. REV. STAT. ANN. § 158.6459
- 26 704 KY. ADMIN. REGS. 3:305
- 27 Kentucky Department of Education, *Unbridled Learning Accountability Model (with Focus on the Next-Generation Learners Component)* (revised June 26, 2012), <http://education.ky.gov/comm/UL/documents/white%20paper%20062612%20final.pdf>, (accessed February 27, 2013).
- 28 William H. Schmidt and Curtis C. McKnight, *Inequality for All: The Challenge of Unequal Opportunity in American Schools* (New York: Teachers College Press, 2012), p. 92.
- 29 Phone interview with April Pieper, Kentucky Department of Education, January 9, 2013.