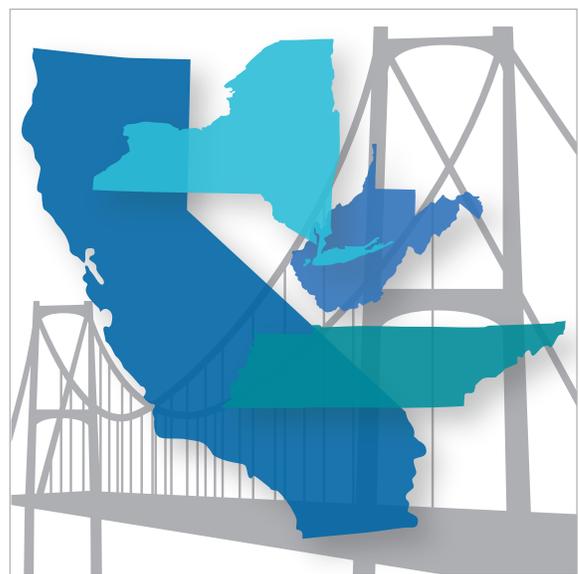

Reshaping the College Transition

Early College Readiness Assessments and Transition Curricula in Four States

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The Community College Research Center (CCRC), Teachers College, Columbia University, conducts research on the major issues affecting community colleges in the United States and contributes to the development of practice and policy that expands access to higher education and promotes success for all students.

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Inside This Report

Too many students who graduate from high school are underprepared for college-level coursework. To address this problem, states are increasingly administering assessments in the 11th grade to measure students' college readiness. Some states are also beginning to offer transition curricula, developed by secondary and postsecondary faculty, that are designed to help at-risk students avoid remediation and become better prepared for the challenges of college.

Based largely on interviews with stakeholders in California, New York, Tennessee, and West Virginia, this report describes how these four states have developed initiatives related to early college readiness assessments and transition curricula. Leaders in each state have made particular choices in the design of each program, including what assessment to use; how to determine what level of performance on an assessment aligns with college-level expectations; whether transition curricula should focus on math, English, or both; and how students should be placed into transition courses.

In comparing the development of these interventions across states, we identify several central challenges: Given that high school students will attend different colleges and pursue different college programs, how should college readiness be defined? Should transition curricula focus on having students pass remedial placement tests, or should the curricula cover a broader range of skills needed for success in college courses? Should transition courses be offered to all low-performing students or only those who are nearly college ready?

While early college assessments and transition curricula are promising approaches for improving students' college readiness, findings from our study suggest that strong collaboration between the K-12 and higher education sectors in developing these initiatives is essential for ensuring that the skills and knowledge taught and assessed in high school are well aligned with those needed for success in college. What is more, program designers need to carefully consider competing priorities concerning initiative goals, populations served, and course content. The study also suggests that state-level commitment to improving college readiness in the form of legislation may be helpful in building support and momentum for these initiatives. More research is needed on the impact of these two interrelated and relatively new interventions. CCRC plans to pursue additional research in the four states discussed in this report.

Introduction

Despite the fact that many states have increased their high school graduation requirements over the last several years, too many high school graduates are still inadequately prepared for college. A large proportion of students entering college require remediation, and those who place into remediation are much less likely to earn a credential than students who initially enroll in college-level courses (Bailey, Jeong, & Cho, 2010). In addition, employers have expressed the concern that some students may not have adequate skills in reading, writing, math, and problem-solving to be effective on the job (Symonds, Schwartz, & Ferguson, 2011).

A growing body of research suggests that it is important to better prepare students for college during the high school years (Conley, 2007; Kirst & Venezia, 2003; National Center on Education and the Economy, 2013). Interventions embedded in the high school experience can reach substantial numbers of students early on and at a reasonable cost. One new approach involves the early assessment of high school students to gauge their progress toward becoming college ready. Information gained from such an assessment may help high school students understand their strengths and weaknesses, which is useful in their preparation for college. Some high schools employing early assessments are even reconceiving the senior year of high school as a transition year in which the high school and the college develop and use transition curricula to improve students' college readiness. In this report, we focus on these two interconnected interventions for improving student college readiness.

- **Early college readiness assessments:** Assessments administered no later than the 11th grade that measure students' readiness to successfully perform entry-level, credit-bearing postsecondary work.
- **Transition curricula:** Courses, learning modules, or online tutorials developed jointly by secondary and postsecondary faculty and offered no later than 12th grade to students at risk of being placed into remedial math or English in college.

This report provides information on how initiatives employing these interventions arose and the policy context that surrounds them in four states that are leaders in this area: California, New York, Tennessee, and West Virginia. We selected these four states because they have implemented early college readiness assessments and transition curricula in a robust fashion, with at least some degree of centralization of control and oversight. In each state, we conducted telephone or face-to-face interviews with 7–10 persons who were involved in setting up and/or managing systems for early college readiness assessments and transition curricula. The interviews were guided by semi-structured interview protocols. The data gathered were analyzed for themes and patterns; the results are summarized in this report.

The current report is the second of four publications that will be produced as part of CCRC's *Reshaping the College Transition* project. The first, released in May 2013, examined the prevalence

of early college readiness assessments and transition curricula in the United States (Barnett, Fay, Bork, & Weiss, 2013). The third will investigate their implementation in the same four states considered in this report, and the fourth will examine outcomes of students who participated in transition curricula in two of these four states.

The Problem

Many students who graduate from high school and go on to college do not persist and complete credentials, for at least three interrelated reasons. First, many are inadequately prepared academically. Nationally, almost half of students entering two- and four-year colleges place into at least one remedial education course (Hodara, 2013). Of those who place into remedial math in community colleges, only 20 percent complete a college-level math course within three years, and among those who place into remedial reading, only 37 percent complete a college-level English course over that period (Bailey et al., 2010). Overall, students who place into remedial courses in college are considerably less likely to earn a credential (Adelman, 2004).

Second, even when academically prepared, students may lack “college-knowledge” skills, such as time management, note-taking, and help-seeking, that are critical for success in college (Conley, 2007). Supports provided in high school can help students learn the “noncognitive” skills that can improve their chances for college success (Karp & Bork, 2012).

Finally, high schools and colleges have traditionally functioned in separate spheres, often paying little attention to the impact this separation has on students. Each has different priorities, goals, and accountability systems, leading to a lack of alignment between what is taught in high school and in college (Kirst & Venezia, 2003). As systems emerge that provide information to high schools on student performance in college, school leaders and faculty are often surprised to hear that many of their students are not succeeding. Many high schools and colleges have thus begun to work together to improve curricula and student success so that students can make a smoother transition to college (Barnett et al., 2012). Early college readiness assessments and transition curricula, especially when developed through partnerships between high schools and colleges, can help prepare students for the academic and nonacademic challenges of college.

What Are Early College Readiness Assessments?

States and school districts across the country are using a variety of assessments to measure 11th grade students’ readiness for entry-level, credit-bearing postsecondary coursework. Early college readiness assessments are designed to inform students of the knowledge and skills they need to gain in math, reading, and/or writing to enter college without the need for remediation. The results may also be used by high schools interested in taking measures to strengthen student preparation for college.

Origins and Development

In order to assess college readiness in time to take action (usually in 11th grade), many states use established college readiness tests, such as the ACT and SAT, or existing college placement tests,

such as the ACCUPLACER and COMPASS, as early assessment instruments. Others take advantage of 11th-grade state accountability assessments and identify college readiness benchmarks within them. In addition, some states have developed their own early assessment systems. The oldest and best known of these is California's Early Assessment Program (EAP). First implemented in 2004, the EAP was spurred by California State University's (CSU) desire to identify students likely to require remediation in college and address their needs *before* they enroll. Since its implementation, similar approaches have been developed in other states, especially with encouragement and support from the Southern Regional Education Board, an organization that has taken leadership on this issue.

National Picture

Some form of early college readiness assessment is offered in 38 states (Barnett et al., 2013). Of these, 25 are implemented through state initiatives and 13 through local initiatives. Many states that do not currently assess college readiness expect to do so using assessments as they become available through the Partnership for Assessment of Readiness for College and Careers (PARCC) or Smarter Balanced, two consortia creating testing systems aligned to the Common Core State Standards (see Barnett & Fay, 2013).

Research Findings

Little research has been conducted on the impact of the use of early college readiness assessments. However, some studies have found modest improvements in outcomes among those students who participated. A study of California's EAP by Howell, Kurlaender, and Grodsky (2010) showed that participation in early assessment reduced students' probability of taking remedial courses in college by 6.1 percent in English and by 4.3 percent in math. Another study found moderately improved outcomes for high school students in El Paso, Texas, who participated in a "college readiness protocol." Under this protocol, students take the ACCUPLACER test, and those identified as underprepared receive assistance in improving their skills before retaking the test. Of those who first enrolled in El Paso Community College in 2007, 5 percent of students placed into college-level math, compared with 3 percent of first-time enrollees in 2005, before the protocol was introduced (Kerrigan & Slater, 2010). Further, 65 percent of program participants improved at least one level of developmental reading upon retaking the placement test, and 47 percent improved at least one level of developmental writing (Jobs for the Future, 2012).

What Are Transition Curricula?

Transition curricula are interventions, offered no later than the senior year of high school, designed to address deficits in students' academic preparation for college-level work. Students enroll in transition courses to attain a higher level of preparation for college and possibly avoid remediation altogether. In combination, early college readiness assessments and transition curricula can reshape the transition from high school to college so that students who are not fully prepared for college are identified and given the supports they need to become college ready.

Origins and Development

For some time, high schools have engaged in isolated projects to address deficits in students' preparation for college. However, these efforts were generally of low intensity; few high schools offered extensive interventions such as full courses (Tierney, Bailey, Constantine, Finkelstein, & Hurd, 2009). Much of the early work on developing transition courses was undertaken with leadership from the Southern Regional Education Board, beginning in the early 2000s. In 2008, the Southern Regional Education Board received a multiyear grant from the Bill & Melinda Gates Foundation to fund a project called the Strengthening Statewide College/Career Readiness Initiative, in which participating states used a number of strategies to improve college readiness. Based on this experience, several states began focusing on efforts to revise teaching and learning in the senior year of high school.

Most of the transition courses we observed in the current study are fairly young initiatives. The Bridge Math course in Tennessee began in 2011, and the At Home in College transition courses in New York City were first implemented in 2009. In West Virginia, the Transition Mathematics for Seniors course was first offered in 2009, and the English 12 CR course was piloted in 2012. The oldest transition initiative we observed is the Expository Reading and Writing Course (ERWC) in California, which was first offered in public high schools in 2004.

National Picture

Through a national scan to ascertain the prevalence of transition courses, Barnett et al. (2013) found 29 states in which transition curricula are offered. Various types of transition courses are available, including face-to-face and online formats, and more courses are offered in math than in English. The majority of transition curricula were developed locally by individual high schools or districts, sometimes in partnership with colleges. Only eight states have statewide initiatives led by a K-12 or higher education agency. Based on the affiliation of the respondents to a CCRC survey, it appears that transition course initiatives are more often led by K-12 state agencies than by post-secondary state agencies.

Research Findings

The available literature on transition curricula is largely descriptive, outlining the general design and goals of the interventions, which vary considerably in different settings (Barger, Murray, & Smith, 2011; Kannapel, 2012; Wathington et al., 2012). As with early assessments, little research has been conducted on the effectiveness of transition curricula. We found no studies of student outcomes following participation in transition curricula, although some data are available from implementing organizations that demonstrate their promise.

State Profiles

We conducted research in four states (New York, Tennessee, California, and West Virginia) to learn about why they developed early college readiness assessments and transition curricula, the main features of these interventions, the policies and governance structures that affect them, and the factors that have facilitated or hindered their development. We also sought out information on particularly innovative practices.

New York

The Problem

Among New York City high school students who entered ninth grade in 2008, 60 percent graduated from high school, but only 21 percent of graduates were found to be college ready in math and 22 percent found college ready in English (New York State Education Department, 2013). In New York State, the overall public high school graduation rate was 74 percent, with 35 percent of graduates attaining college readiness benchmarks in math and 35 percent reaching benchmarks in English. According to New York City district education officials and City University of New York (CUNY) staff, the gap between high school graduation rates and college readiness rates was a major impetus for the development and adoption of transition courses in New York City. In interviews, state officials with CUNY and with the State University of New York (SUNY) system both emphasized the need to reduce remediation rates for incoming students, and they expressed the belief that transition curricula could play a role in doing so (also see CUNY Office of Academic Affairs, Working Group on Remediation, 2011; SUNY, 2012).

Main Features of the Model

In the state of New York, students take Regents exams, which serve as high school exit exams; the math and English Regents exams also have college readiness benchmark scores. In New York City, transition courses have been developed for students who are on track to graduate high school but not likely to attain college readiness without additional support. The state of New York is now in the process of developing similar courses for other regions of the state.

Early assessment: Students in New York are required to take a series of Regents exams at the end of specified courses. The exams were first created in 1864 and administered to students in the eighth grade; in 1978, they were extended to secondary schools (New York State Education Department, 1987). Currently, students must pass the exams with a score of at least 65 out of 100 to graduate from high school. The state has also established benchmark scores that indicate college readiness on the English and math Regents exams. To be considered college ready, a student must have a score of at least 75 on the English exam and a score of at least 80 on either the Integrated Algebra and Geometry exam or the Algebra II and Trigonometry exam. Students must also complete Algebra II and Trigonometry or a higher level math course to be considered college ready in math.

Transition curricula: In the spring of 2008, the Robin Hood Foundation, a nonprofit organization dedicated to fighting poverty in New York City, asked CUNY to develop a project to improve student access to and success in community colleges. In response to this request, CUNY's senior university dean for academic affairs convened pre-college program administrators (mainly from dual enrollment programs) to examine the available data on student enrollment and persistence and to discuss initiatives that would address the main barriers that students encounter in the transition to community college. In fall 2008, this work resulted in the proposal for the At Home in College (AHC) program, including its transition courses (Venezia & Voloch, 2012).

During the 2012–13 school year, AHC transition courses were offered in 62 (out of about 400) public high schools, located in all five boroughs of New York City, to 1,903 participants (personal communication, director of At Home in College). Sixty schools offered the English transition course; of these, 51 also offered the math transition course. Two schools offered only the math transition course. All schools offered a College Access and Success Workshop, embedded in the transition courses, to support students as they apply for college and financial aid. In order to be enrolled in AHC transition courses in New York City, a student must be on track to graduate high school but not on track to attain college readiness by graduation based on Regents exam scores.

The English AHC course was originally implemented in spring 2009 as semester-long intervention for 12th grade students but evolved into a yearlong course by the 2009–10 academic year. The math course was first offered during the 2010–11 year as a full-year course. Program staff and faculty in CUNY's College Now dual enrollment program developed the English curricula, and staff developers in CUNY's Adult Literacy/GED Program developed the original math course.

In addition to the transition courses, the AHC program consists of a number of components designed to prepare high school students for success in college. The program prepares students to take the CUNY placement tests or retake the Regents exams, and students also receive CUNY fee waivers, assistance with preparing the Free Application for Federal Student Aid (FAFSA), and advisement during the summer after high school graduation. For students who choose to enroll in a CUNY community college, AHC provides ongoing advisement until they transfer to a four-year college or begin their careers.

Professional development for the instructors and college counselors who teach these courses is considered a vital element of the program. Participating high school faculty receive two 5–6 hour training sessions over the summer and engage in bimonthly sessions during the academic year to discuss upcoming lessons and how students are responding to the curriculum. Professional development sessions are designed and led by AHC staff.

In alignment with the Common Core State Standards, one goal of the AHC English courses is to expose high school students to more nonfiction texts. Thus, students focus on topics in psychology during the first semester and topics in sociology in the second semester. The math course emphasizes student discussions, alternative solution methods, inductive and other active-learning approaches to topics, and activities that build students' conceptual understanding beyond procedural knowledge. The course includes fewer topics than a traditional math course and covers each topic in greater depth. Both the English and math courses are intentionally aligned to the CUNY

Assessment Test (which includes the COMPASS test in math) with the goal that students will place into and succeed in introductory college-level courses. AHC students take the exams twice—once in the winter and again at the end of the senior year. Students' scores are accepted by CUNY colleges for placement purposes.

The New York State Education Department has recently taken steps to begin a transition course initiative for schools outside of New York City. The new initiative will be led by the New York State Education Department and informed by the AHC model.

Policy, Governance, and Oversight

The Regents exam system has evolved considerably over time (New York State Education Department, 1987). The exams are currently developed and administered by the New York State Education Department, under the authority of the Board of Regents of the University of the State of New York. Beginning in June 2014, the Regents exams will be aligned to the Common Core State Standards (EngageNY, 2013).

In the state of New York, public colleges in New York City are part of the CUNY system, while those in other parts of the state are part of the SUNY system. The New York City AHC program is overseen by CUNY's Office of Collaborative Programs, which has historically developed strong partnerships and joint programming with the New York City Department of Education. Although the courses themselves are self-supporting, funding for professional development and other elements of AHC comes from several sources, including the Robin Hood Foundation and, more recently, the Tiger Foundation.

The recent New York State initiative to develop transition courses began under the Regents Reform Agenda, largely in response to recommendations made by both SUNY and CUNY. Both systems wrote reports to the state legislature in December 2012 recommending that the New York State Education Department prioritize the development of 12th grade transition courses statewide (CUNY Office of Academic Affairs, Working Group on Remediation, 2011; SUNY, 2012).

Facilitators

In addition to foundation funding, factors that have facilitated the development of early college readiness assessments and transition curricula in New York include a history of collaboration between K-12 and higher education, the use of a common cut score for placement in CUNY colleges, local data-sharing agreements, and flexible high school English requirements.

Collaboration between the K-12 and higher education sectors: CUNY's Office of Collaborative Programs has long-standing partnerships with high schools through its College Now dual enrollment program. The original director of AHC had previously led a dual enrollment program at a community college in the Bronx and in this role had developed relationships with many high school principals. In its early years, the AHC program was able to expand as a result of relationships such as these, built with K-12 sector counterparts.

What is more, CUNY's dual enrollment program includes developmental education courses for high school students. These courses were originally offered to provide a pathway into dual enrollment for students who had not earned the Regents exam scores needed to participate. Thus New York City high schools already had experience with including developmental education courses in high school, albeit outside of the regular school day.

Common cut scores for college-level courses at CUNY colleges: The CUNY system has recently been creating greater consistency in its use of cut scores that govern placement into developmental education courses. This provides students participating in AHC transition courses with clear information about what their performance on the COMPASS placement test means for their academic trajectory in the CUNY system.

Flexibility in senior-year English course offerings: New York State requires that students take four years of English in high school, but high schools have been given flexibility regarding what courses are taught. In some schools, there has been considerable interest in the AHC English course as a substitute for traditional English literature courses, and it is being offered to increasing numbers of students.

Hindrances

Factors that have hindered the spread of transition curricula in New York include variation in college readiness standards and school practices, lack of a senior-year math requirement, and lack of ongoing funding.

Variation in college readiness standards across the state: Interviewees reported that colleges in the SUNY system use different cut scores for college readiness and administer a variety of assessment instruments. This lack of consistency in assessment and placement policies across the state makes it difficult to create a single transition course that helps all students achieve college readiness. It also limits the ability of students to understand what they need to know and be able to do to be prepared for college.

Lack of a senior-year math requirement: New York State requires high school students to take four years of English to graduate but only three years of math. Therefore, high schools can substitute the AHC English course for another English course, but schools do not always have the staffing capacity to offer an additional math course. In addition, given that algebra comprises a significant portion of the content on college placement tests, there is a heavy focus on algebra in the transition course. State policy limits the number of math credits a student can earn in algebra-related content.

Lack of ongoing funding: As with any grant-funded program, there are concerns about the sustainability of the AHC program after the end of the grant award.

Innovative Practices

The AHC program blends engaging pedagogies with test preparation strategies. The curricula explicitly promote the use of pedagogies that require students to interact, solve problems, and

think critically. At the same time, students prepare for the high-stakes college placement test. In addition, they take two trips to local CUNY colleges to take the COMPASS test during the year-long courses. Students take practice tests in a cohort—which, according to the math curriculum developer, reduces students’ anxiety about testing.

Tennessee

The Problem

In Tennessee, an early assessment of college readiness and math transition courses was developed in response to concerns about poor educational outcomes statewide in comparison with other states. Among those who took the ACT exam in 2012, 29 percent of Tennessee students met the college readiness benchmark in math, compared with 46 percent of students nationally; 59 percent attained the English benchmark, compared with 67 percent nationally (ACT, 2012b). Further, the proportion of working adults with an associate degree or higher in 2011 was 32 percent, compared with 39 percent across the United States (Southern Regional Education Board, 2013a).

Similarly, the high proportion of students in need of developmental education is also a concern for Tennessee; in 2006, 71 percent of students entering community colleges in Tennessee required some developmental education (Complete College America, 2011a). It is estimated that the state could save \$19.6 million and increase annual earnings by \$27.2 million if it eliminated the need for remediation by all community college students under 25 years of age (Alliance for Excellent Education, 2011).

Main Features of the Model

Tennessee has developed a Bridge Math course for high school seniors with low ACT scores, which is intended to help them attain the skills needed for college-level math. Math was prioritized over English because there were large numbers of students considered below college-ready in math; many fewer were placing below college-ready in English. The state is also moving toward allowing schools to organize the Bridge Math course around a set of online developmental math modules that are currently used for math remediation in its community colleges.

Early assessment: Tennessee uses the ACT test, administered to all 11th grade students, to make judgments about their progress toward college readiness. This is a high-stakes test, as the results are used for college admissions, college placement, math placement in the senior year of high school, and access to scholarships. The results are also used by individual students and schools to structure the senior year to better prepare for college. The state pays for students to take the test once; students can take it more times but must generally pay the test fees themselves.¹ ACT considers students who earn a 22 or higher out of 36 on the ACT to be college ready in math (ACT, 2012b). Tennessee is a member of the Partnership for Assessment of Readiness for College and Careers (PARCC)² and expects to use the consortium’s assessments as they become available.

Transition curricula: Beginning in the 2012–13 academic year, students in Tennessee must take four years of high school math to graduate. The Bridge Math course was developed specifically to

1. Students who qualify for free or reduced lunch can take the ACT test multiple times at no cost.

2. PARCC is one of two consortia developing assessments aligned with the Common Core State Standards.

make sure that there would be a lower level, but college-preparatory, senior-year math option. The standards and framework for the course were developed in 2010 by representatives of the Tennessee Board of Regents and a team of university and community college developmental math professors. In establishing the framework for the course, the group was guided by the state's newly created standards for postsecondary developmental education and also had the Common Core State Standards in mind; the aim was to have students college ready upon completion. A mathematics professor from Middle Tennessee State University was charged with developing the course and a textbook based on the framework.

The Bridge Math course is recommended for all students who earn below a 19 in math on the ACT. Although schools are not required to offer it, most do. Some schools offered the course in 2011–12. However, the 2012–13 academic year was the first year in which a substantial number of students took the course—a total of 29,249 during the year (personal communication, mathematics coordinator, Tennessee Department of Education).

In the past two years, there has been a movement to create a version of Bridge Math based on MyMathLab, an online education package used by Tennessee colleges to teach the five sets of competencies required to place out of developmental math. In a subgroup of high schools that are coordinating with community colleges, the material from MyMathLab has been integrated with the Bridge Math course or has replaced the original course material altogether. Students who complete the five sets of competencies are considered college ready and are eligible to take dual enrollment math at the high school or college-level math when they enter college. The leader in this work is Chattanooga State Community College, where the course is called SAILS (Seamless Alignment and Integrated Learning Support). In a pilot of the SAILS program, 83 percent of students who participated placed into college-level math by the end of the year. In March 2013, the college received a grant from the governor to scale up the model statewide in the coming year; it is expected that 12 colleges and their feeder high schools will participate.

Policy, Governance, and Oversight

Governor Bill Haslam has taken a particular interest in education in Tennessee and has led the work to establish goals on college attainment. The Drive to 55 initiative calls for 55 percent of the state's adults to have earned college credentials by 2025, a goal that one interviewee considered mathematically impossible unless the state is able to reduce the need for developmental education.

Regarding early assessments, the Tennessee Code Annotated 49-6-6001(b) states: "As a strategy for assessing student readiness to enter and succeed in postsecondary training, every public school student shall take a series of three examinations, one administered at grade eight, one administered at grade ten, and one at grade eleven. These assessments shall ... provide educators with diagnostic information to assist in developing interventions for the purpose of increasing high school graduation rates and improving student preparation for postsecondary achievement" (Tennessee State Board of Education, 2013). ACT is the provider of these assessments.

The Code also requires "four units of math to be completed" in high school (i.e., Algebra I, Geometry, Algebra II or their equivalents, and an additional advanced math unit). Students also

must take one math course each year they are in high school (Tennessee State Board of Education, 2013). Because schools are autonomous, they are not required to offer the Bridge Math course; however, they must use state-approved courses and course numbers and report data on enrollments to the state.

Facilitators

Tennessee's work on early college readiness assessments and transition curricula has been facilitated by its long-standing use of the ACT, the timing of events, a history of collaboration between K-12 and higher education, and an interest in technology to support educational achievement.

Tennessee's long-term use of the ACT and its college readiness benchmarks: The deployment of early assessments of college readiness in Tennessee was largely driven by legislative action, propelled by concerns about poor education outcomes. The availability of an assessment already in wide use, with benchmarks for college readiness, made it easier to rapidly implement an early college readiness assessment system.

Timing of events: With regard to the Bridge Math course, a major facilitator was the legislation requiring four years of high school math. This occurred about the same time as a movement toward the creation of statewide standards in postsecondary developmental education, making it easier for the secondary curriculum to be aligned with an agreed-upon standard for college readiness in math. Leaders from the Tennessee Board of Regents saw an opportunity to make sure that the Bridge Math course would align with both the college readiness standards and with the Common Core State Standards as they emerged. In sum, although introduction of the Common Core served to reduce resources for Bridge Math (see *Hindrances* below), there was a confluence of supportive conditions for the creation of the course.

Collaboration between the K-12 and higher education sectors: The role played by Chattanooga State Community College in partnership with Red Bank High School was important in the creation of SAILS. Key individuals from the two institutions piloted and carefully refined the model; they were also instrumental in documenting and disseminating the practice. Other high schools and colleges have well-established relationships as well, many of them through the implementation of dual enrollment courses.

Interest in the use of technology in education: The State Board of Regents had undertaken a prior initiative to collaborate with the National Center for Academic Transformation to promote technology-supported instruction in developmental education. What is more, the governor's office had made technology-supported instruction a priority and set aside funds to support it; a portion of these resources has been used to fund the SAILS project.

Hindrances

There have been two hindrances to progress in implementing transition curricula in Tennessee—the emergence of the Common Core State Standards and a lack of policies that allow students who complete the Bridge Math course to place out of developmental education in college.

The Common Core State Standards: Although the Common Core State Standards have the potential to increase college readiness in Tennessee, they emerged at an inopportune time for the full implementation of the Bridge Math course. There had originally been a plan in place to offer extensive professional development to teachers of the course; however, this plan was shelved in favor of training aligned with the Common Core State Standards. Similarly, when the state received Race to the Top funding from the U.S. Department of Education, resources and attention were diverted toward this effort as opposed to Bridge Math.

Lack of a placement policy related to Bridge Math: The traditional Bridge Math course does not incorporate a mechanism by which students can place out of developmental math in college. This limits its effectiveness in smoothing students' transition to college and reducing rates of remediation. This will not be the case for participants in SAILS; those who complete the five online math modules will be considered college ready by all participating Tennessee colleges.

Innovative Practices

Interviewees believed that SAILS has the potential to (1) reduce the need for developmental education in college; (2) personalize learning through the use of online, self-paced modules; (3) employ a balance of learning via technology and direct teaching to maintain student motivation and address different learning preferences; and (4) maintain quality through the involvement of college-based coordinators who spend extensive time in schools. It is important that SAILS gives participating students the opportunity to formally place out of all or portions of the developmental education sequence while in high school.

Tennessee has created uniform standards for developmental education statewide, including the point at which students exit from developmental education into college-level math. As a result, high schools have clear information on what students should know to be ready for college and can act accordingly.

The state now requires all students to take four years of math and also requires that they take math during the senior year of high school. Thus, many fewer students will have an extended gap between the math courses they take in high school and college.

California

The Problem

According to a survey by the California Community College Chancellor's Office, 85 percent of California's incoming community college students arrive underprepared for college-level math, and about 70 percent arrive underprepared for college-level English (California Legislative Office, 2011). More than 60 percent of first-time freshmen admitted to CSU each year require remedial education in math, English, or both (CSU, 2013a). Further, California interviewees described a persistent and growing problem with curriculum alignment between high school and college, as well as an increasing number of remedial enrollments at CSU.

Main Features of the Model

California's Early Assessment Program (EAP) has several components geared toward assessing and preparing students for college-level math and English: 11th grade college-readiness testing, supplemental high school preparation, professional development for teachers and administrators, communication with students' parents and families, and pre-service teacher preparation (CSU, 2013a). A number of transition curricula are offered in California, some of which were developed as part of the EAP and others of which were developed locally.

Early assessment: The EAP assessment is embedded in the California Standards Tests administered at the end of students' junior year of high school. The assessment, prepared by a team of CSU and K-12 faculty, consists of 15 multiple-choice questions in math and 15 in English as well as an essay in English. Students' scores on the EAP inform them whether or not they are ready for college-level work in math and English. The EAP portion of the test is optional, although more than 87 percent of students who take the California Standard Tests opt to participate in the EAP English assessment, and 83 percent take the math assessment (Torlakson, White, & Harris, 2013). Although participation in the EAP test is widespread, many students do not understand the results or receive them too late to use in making decisions about senior course schedules (Tierney & Garcia, 2011).

The EAP test scores are provided to students and their families in late August at the beginning of students' senior year. Students are informed that they are ready, conditionally ready, or not ready for credit-bearing courses at CSU or participating California community colleges. All CSU campuses use the EAP scores to place students, but California community colleges do so only voluntarily and may have varying requirements (CSU, 2011).

Students who are conditionally ready in math or English can be designated as ready if they meet certain conditions. For example, one option for a student who is conditionally ready in English is to complete the Expository Reading and Writing Course (ERWC), described in more detail below. This exempts the student from having to take the CSU placement test (Torlakson et al., 2013).

Transition curricula: Some transition curricula in California have been developed as part of the overall EAP, and others have resulted from local initiatives. A statewide EAP transition course, the ERWC, along with significant professional development activities, were explicitly developed by the CSU system to address students' low scores on the EAP assessment. Local initiatives have emerged in response to funding opportunities and/or local concerns about college readiness.

The ERWC, developed by a task force of high school and CSU English faculty members in 2004, was designed for students who place "conditionally ready" on the EAP assessment. It is comprised of 12 modules which, in combination, are considered to meet college preparatory expectations for the University of California and CSU systems (CSU, 2013b). The ERWC is taught by high school teachers who participate in a three-day professional development sequence in which they receive training as well as access to materials. The course focuses on areas within reading and writing that are essential for college readiness, especially those in which teachers struggle pedagogically. As of 2012, over 6,000 teachers have adopted the ERWC curriculum, and more than 20 percent of the state's high schools have adopted the ERWC as a full-year course (Jendian, 2012).

While no statewide math transition course has been introduced, the Strengthening Math Instruction professional development program for math instructors was explicitly designed in response to low student scores on the EAP and is designed to promote college readiness in math. It is comprised of two components: a one-hour online program and a one-day workshop. The program is designed for math teachers who work at the level of Algebra I and above to help them better prepare students for college-level math. The modules for the program were created by a team of high school and CSU faculty. The Strengthening Math Instruction program is offered to incumbent teachers; its modules focus on strategies that are aligned with commonly used textbooks and can be integrated into existing math courses.

In addition, localities within California have developed transition curricula in math and reading and/or writing. For example, faculty from Sierra College and CSU Sacramento collaborated with teachers from Placer County Schools to create a transition course in math. The development of the course was funded in part by a grant from the California Community College Chancellor's Office. It was explicitly designed to help students who were on track to attend college but were lacking in the math skills required, in particular in the ability to apply concepts they learned in prior courses to new situations. The course includes modules on math-related daily living skills.

Policy, Governance, and Oversight

CSU originally conceived the EAP to curb high remediation rates and associated costs. In the early 2000s, CSU partnered with the California Department of Education and the California State Board of Education to create the EAP (McLean, 2012), and CSU continues to lead its implementation. In 2008, former governor Arnold Schwarzenegger signed into law Senate Bill 946, granting the California Community Colleges the right to use EAP scores for placement. Because California's community colleges are autonomous organizations, they vary in the definitions of college readiness they use and in the EAP scores they accept for exemption from remediation. Because no funds are attached to the authorizing legislation, the California Community Colleges Chancellor's Office determined that participation in the EAP by individual colleges would be voluntary (Torlakson et al., 2013).

Currently, all 23 CSU campuses are involved in coordinating EAP testing. CSU, in collaboration with the California County Superintendents of Educational Services Association, oversees the Strengthening Mathematics Instruction curricula for teachers. The ERWC is overseen by the ERWC Advisory Committee, which reports to CSU. In addition, an EAP coordinator within each California community college and CSU provides regional oversight, coordinating EAP activities with local schools and districts (McLean, 2012).

Facilitators

There have been three significant facilitators of the development and dissemination of the EAP assessments and transition courses in California: previous collaborative initiatives between the K-12 and higher education sectors, CSU's championing of the work, and the increased use of EAP assessments in community colleges.

Collaboration between the K-12 and higher education sectors: California has a history of extensive collaboration between the K-12 and higher education sectors. Joint initiatives include Cal-PASS, the California Linked Learning District Initiative, the Linked Learning Initiative, and the Student Success Initiative. This history of collaboration laid the groundwork for the creation of the EAP.

CSU's championing of the work: Many senior administrators at CSU pushed for the development of early assessments and transition courses in order to reduce students' need for remediation in college. The CSU system has invested resources in improving secondary education that may result in better college outcomes statewide.

Participation of community colleges: Acceptance of EAP assessment results for placement in the community college system has helped to improve the consistency of expectations for college readiness in the higher education system in California (McLean, 2012). This makes it easier for those developing transition curricula to align new courses and modules with a widely accepted set of college readiness benchmarks.

Hindrances

Challenges to the implementation of the EAP transition courses have included the logistics of course scheduling, the lack of a fourth-year high school math requirement, and the adoption of the Common Core State Standards.

Logistics of course scheduling: Delays in scoring the EAP test mean that many students do not receive their college readiness designation until they are already enrolled in courses for their senior year. This has made it challenging to place the target group of students in transition courses.

Lack of a fourth-year math requirement: A significant challenge to the success of transition math courses has been the difficulty of recruiting schools and teachers to adopt a curriculum in the absence of a state-mandated math requirement for students in their senior year of high school.

Adoption of the Common Core State Standards: California plans to implement a new system of student assessment aligned with the Common Core State Standards beginning in 2014. This will require modification of the EAP system for determining college readiness as well as for placement into transition courses, where available (Brynelson, 2012). Although California's adoption of the Common Core State Standards could ultimately be beneficial, it will pose challenges to the implementation of the EAP for a period of time.

Innovative Practices

Educators' response to the curriculum and professional development associated with the ERWC has been so positive that the developers of the program have been asked to create modules for grades 7–11. Interviewees described these new modules as based on “backward mapping”—they are designed to build students' reading and writing skills in a seamless pathway from the seventh through 12th grades.

West Virginia

The Problem

In 2012, 33 percent of West Virginia students who took the ACT met the college readiness benchmark in math, compared with 46 percent nationally, while 70 percent attained the English benchmark, compared with 67 percent nationally (ACT, 2012a). Only 19 percent of ACT-tested high school students in the state met the college readiness benchmarks in all four subjects of the ACT (English, reading, mathematics, and science) (ACT, 2012a). In addition, there has been widespread concern about high rates of remediation in college among recent high school graduates (S.B. 359, 2013). According to Complete College America, 69 percent of students who entered two-year colleges in West Virginia in 2004 required remediation; of those who entered remediation, only 8 percent graduated within three years. Further, 28 percent of adults in the state have an associate degree or higher, compared with 39 percent in the United States (Complete College America, 2011b).

Main Features of the Model

West Virginia uses its 11th grade state accountability test to indicate early college readiness. The state has developed transition courses in both math and English that are implemented statewide. Although different in terms of design and instructional approaches, both are intended to prepare students for college.

Early assessment: All students in West Virginia take the West Virginia Educational Standards Test 2 (WESTEST 2) as part of their statewide assessments. This exam was designed as a summative assessment of students' attainment of state standards for grades 8–11 as well as an assessment of whether students have mastered the knowledge and skills required for success in entry-level, credit-bearing college courses. Students who do not achieve mastery on the statewide assessment in 11th-grade math are expected to participate in a transition course (Southern Regional Education Board, 2013b).

Transition curricula: West Virginia offers transition curricula in both math and English. Rollout and implementation have occurred statewide: Courses in both subjects are offered at every West Virginia public high school as part of the standard set of course options offered to students. Policymakers began discussing plans for transition courses around 2007, which coincided with the Southern Regional Education Board's encouragement of this strategy, according to one interviewee. In the 2007–08 academic year, the West Virginia Department of Education began working toward the development of the transition course in mathematics. Though the department wanted to develop both math and English transition courses, it started with math because there was no designated math course option for lower performing college-bound seniors. The development of the math course, Transition Mathematics for Seniors, was completed in 2009.

The math course consists of a set of modules that cover content students have been previously exposed to (algebra, geometry, and introductory trigonometry) in greater depth in order to prepare students for the “first college-level math course for a liberal arts major,” according to one interviewee. Developed before the Common Core State Standards were adopted, its content is in-

formed by ACT guidelines and several developmental math courses in the state. Any student scoring below mastery on the statewide assessment is eligible for Transition Mathematics for Seniors and is required to take either that course or a higher level math course in the senior year.

Development of the English transition course, English 12 CR, began in June 2011. It is aligned to the Common Core State Standards and targets students who tested at mastery or above on the WESTEST 2 but who still need additional coursework to achieve college and career readiness; it is not intended as remediation or for students who are more than two grade levels behind. The course was piloted in six schools during the 2011–12 academic year and rolled out statewide in the 2012–13 academic year. Placement into the course depends on both WESTEST 2 scores and a recommendation from a counselor or a request from the student or student’s parent. The course is viewed as an alternative to the standard, literature-based 12th-grade English course, with a focus on research-based writing and nonfiction texts. A theme of real-world preparation is woven through the course.

In both math and English, students take the COMPASS exam at the conclusion of the transition course to get a sense of their likely college placement level in that subject. The COMPASS scores are not automatically transferred to the colleges; students must either submit a high school transcript that includes the test score information or submit an official score report in order for their COMPASS scores to be considered by the college they attend.

Policy, Governance, and Oversight

The West Virginia Legislature has passed a series of bills related to college readiness. One of the most important was Senate Bill 595 in 2008, which set an overall “Vision 2020” for education in the state with a focus on college and career readiness. The most recent was Senate Bill 359 in 2013, which mandates transition courses for students who do not meet college readiness benchmarks in math and English, with college placement tests administered to students at the conclusion of the courses. This bill leaves some details, such as the test to be used to assess college readiness benchmarks, to the discretion of the education agencies.

In the state educational agencies, the West Virginia Department of Education Policy 2510 and the West Virginia Higher Education Policy Commission Series 21 were developed to be complementary policies that respond to the state’s legislation on college readiness and offer specific guidelines for the implementation of the vision detailed there. These policies aim to create a seamless transition from high school to college within the state and ensure that common assessments and cut scores are used across sectors.

Facilitators

The use of early college readiness assessments and transition courses in West Virginia has been facilitated by the advocacy work of the Southern Regional Education Board, a history of strong K-12 collaboration with higher education, and a state requirement that schools offer transition courses.

The Southern Regional Education Board: The Southern Regional Education Board helped spur initial conversations about transforming the college readiness experience for high school seniors in

the state as part of a large, multi-state initiative that included a focus on developing transition curricula. A number of legislators in the state have been involved with Southern Regional Education Board initiatives, creating an awareness of low college readiness rates and potential ways to boost college and career readiness.

Collaboration between the K-12 and higher education sectors: Leaders at the West Virginia Department of Education and the West Virginia Higher Education Policy Commission had a long-standing, strong, and collaborative relationship that was instrumental in bringing about change. Both secondary and postsecondary faculty members were represented on the committees that were established to write the curriculum for the Transition Mathematics for Seniors and English 12 CR courses. Champions at the state level who were excited about the promise of transition courses helped to steer course development and implementation.

State-required transition courses: Transition Mathematics for Seniors and English 12 CR are both offered as part of the standard set of courses for high school students; high schools are required to offer them. This has resulted in rapid statewide adoption of the math and English transition courses.

Hindrances

The implementation of transition courses has been hindered by turnover in leadership as well as by the timing of the emergence of the Common Core State Standards.

Lack of consistent leadership: There has been rapid turnover of staff members at the West Virginia Department of Education, including among those involved with the reforms discussed here. For example, the state has had three superintendents in the past four years. Those who originally championed the initiative are no longer in their posts; those who have entered since are less familiar with the initiative.

Timing of the Common Core State Standards: West Virginia was an early adopter of transition courses, developing the math curriculum in 2009, before the Common Core State Standards were developed. Thus, the curriculum may need to be revised substantially in order to remain relevant as the state's entire K-12 math pathway undergoes changes.

Innovative Practices

Materials for instructors of transition courses are available on the West Virginia Department of Education's Teach21 website (<http://wvde.state.wv.us/teach21/>). The materials can be used by teachers as they tailor the curriculum for their own classrooms.

Transition Mathematics for Seniors includes a unit on functions that combines content from all the standard high school courses, with the idea that a more integrated and holistic approach might help tie together concepts that students have had difficulty learning in the past.

Cross-State Analysis

Each of the four states we studied—New York, Tennessee, California, and West Virginia—identified a similar problem within their education systems: Too many recent high school graduates were being referred to remediation upon college entry, in part due to the misalignment between high school graduation requirements and college expectations.

Variations in Design

All four states offered students the chance to take early college readiness assessments and for selected students to engage in transition courses. However, there were key differences in how the states structured these opportunities.

Early College Readiness Assessments

Types of assessments used: In all four states, existing assessments formed the basis of the system for assessing students' college readiness. In New York and West Virginia, assessments used to place students in transition courses are those already administered to students for accountability purposes (Regents exams and the WESTEST 2, respectively). However, in both of these systems, students take a college placement test (the COMPASS) at the conclusion of the transition course, thus creating alignment with college-level expectations. Tennessee uses the ACT to assess college readiness; this assessment is also administered to all students as part of the state accountability system. On the other hand, California augments the statewide accountability assessment with additional questions (the EAP) to assess college readiness. In all of these cases, using existing assessments is less expensive and presents fewer administrative challenges than using other tests.

How the results are used: In some of the states we studied, the results of the early assessment are used to offer an intervention, such as a transition course, to any student who is not yet college ready. In others, the assessment may be considered useful in itself because it provides students with information about the knowledge and skills they need to develop. In both California and New York, an intervention may not be available to all students who are assessed because their school, district, or region of the state may not be offering a course or other option.

The influence of the Common Core State Standards: The implementation of the Common Core State Standards aligned assessments for 11th-grade students may change how students are evaluated for college readiness. Many of those we interviewed expected to use the Common Core State Standards assessments to assess students' college readiness in the future.

Transition Courses

Course subjects: New York City and West Virginia offer transition courses in both math and English. However, in New York City, schools can choose to offer transition courses in both math and English or to offer a transition course in a single subject. In West Virginia, all high schools must of-

fer transition courses in both math and English. In California, individual schools choose whether to offer the state-developed transition course in English; in addition, some localities offer their own transition curricula in math and/or English. Tennessee offers transition courses in math only.

Placement policies: In participating New York City schools, students who do not meet the cut scores for college readiness on the Regents exam but are on track to graduate are automatically enrolled in transition courses in either math or English. A similar process is followed in Tennessee, where students who receive low scores on the ACT are enrolled in math transition courses. In West Virginia, the processes for math and English placement differ. In math, students who do not meet mastery on the statewide assessment are typically enrolled in the math transition course. However, in English, students are only placed in the transition course if they score in the “middle range” and either request the course or are recommended for the course by a guidance counselor. In California, a range of placement practices are in place.

Requirements in math: In New York and California, there is no fourth-year math requirement, so some students might not enroll in math in their senior year were it not for a transition course. In Tennessee and West Virginia, there is a fourth-year math requirement; the transition courses were added to address the need for a senior-year option for lower performing students. However, in West Virginia, if students finish their fourth-year math early (for instance, by taking Algebra I in eighth grade), they are not required to take a math course in their senior year. In contrast, in Tennessee, students are required take math in their final year of high school; thus, students who graduate and go immediately to college will still have math content knowledge relatively fresh in their minds.

The influence of the Common Core State Standards: The Common Core State Standards have had a substantial impact on the content and administration of transition courses. In all four states that we studied, stakeholders discussed the necessity of aligning transition curricula to the Common Core State Standards. In West Virginia’s English 12 CR course, the Common Core State Standards were purposefully integrated into the course during the curriculum development process. In other cases, courses were developed before the Common Core State Standards emerged and are being checked for alignment. Most stakeholders emphasized that they are waiting to see what happens when the Common Core State Standards assessments are implemented and whether changes will need to be made to transition courses.

Governance, Oversight, and Accountability

Different participants have been involved in developing and implementing early college readiness assessments and transition curricula in each state.

Local Versus Statewide Initiatives

The California and New York initiatives were developed locally and are now being scaled up across the state. In contrast, transition courses in West Virginia began at scale statewide. In Tennessee, the Bridge Math course was originally developed for statewide use as a regular senior-year math course. However, through a local initiative, the course was integrated with a set of online devel-

opmental math modules used by Tennessee colleges; there is currently a movement underway to scale up the blended version of the Bridge Math course statewide.

Higher Education Versus K-12-Led Initiatives

In New York City, a city college system (CUNY) has been responsible for running the program, in collaboration with New York City schools. Now, the state's Regents Research Fund is leading a drive to use transition curricula throughout the state. In West Virginia, the state's K-12 system has had primary responsibility for implementing the program, with a high degree of collaboration from state-level postsecondary partners; policies governing the program are set by the Board of Education and the state legislature. California is a large, complex environment with many overlapping programs and initiatives, often spearheaded by different institutions. However, much of the program leadership has come from one of the three public postsecondary systems in the state—the CSU system. In Tennessee, leadership originally came from the state's Board of Regents. The more recent movement to include online modules in the transition course is led by Chattanooga State Community College, with financial support from the governor's office.

Types of Partnerships

In several systems, prior relationships between secondary and postsecondary institutions helped facilitate the planning and implementation of transition curricula. For example, in New York City, some key players had worked together previously on dual enrollment initiatives, including developmental education courses offered to high school students. In West Virginia, education leaders in state offices worked closely with their counterparts in K-12 and higher education, engaging in ongoing discussions of how decisions made at one level would impact students on the other level. In Tennessee, a collaboration between a college and a local high school in the use of online developmental math materials has led to a statewide initiative involving collaboration between community colleges and their feeder high schools. It appears that a history of collaboration serves as a strong foundation for the implementation of early college readiness assessments and transition curricula.

A Fast-Changing Reform Environment

Across sites, we observed that the transition courses were in different phases of what might be called the reform cycle (Kirst, 1986). In some states and locales, they were considered a fresh, new approach to improving students' college readiness; in other settings, their relative importance had been reduced by the introduction of other reforms associated with Race to the Top or the Common Core State Standards. This influenced the extent to which resources were used to facilitate implementation and scale-up in each state.

Converging Accountability Systems

Historically, K-12 and higher education have been subject to different accountability systems and expectations. However, in West Virginia and New York City, high schools are being held accountable for preparing students for college, based on the college's definition of college readiness. At the same time, there is a movement toward holding colleges accountable for graduation rates,

which are highly influenced by incoming students' academic preparedness (Adelman, 2004). The development of early assessments and transition courses can increasingly meet the needs of both systems, making it more likely that they will share responsibility for students' college readiness and collaborate in creating systems to improve it.

Competing Values and Priorities

As stakeholders in each state began working to address the needs of students who are underprepared for college, tensions between competing values or priorities sometimes arose. The issues discussed below are some of the most common tensions that emerged during our research.

How Should College Readiness Be Defined?

The term “college readiness” does not have an obvious and universal definition. In interviews conducted in all the states we studied, the question “college ready for what?” repeatedly came up. College readiness may mean one thing for incoming freshmen at a flagship state university and something different for students at an open-access community college. Even within a college, different programs may have different expectations for students in terms of standards in math and English. For instance, programs in the science, technology, engineering, and math (STEM) fields may have different expectations than those in the humanities fields; associate degree programs may have different expectations than programs leading to shorter term occupational credentials. Moreover, readiness for the first college-level course in math or English may require different competencies than readiness for introductory college-level courses in disciplinary subjects such as psychology, sociology, biology, and chemistry.

Multiple definitions of college readiness may have value to the extent that they help students to prepare well for different types of college experiences. However, they make it much more difficult to align curricula in general and transition courses in particular.

How Should Transition Courses Help Students Become College Ready?

Should transition courses focus on helping students place out of developmental education (either directly upon passing the transition course or by helping students to pass their college placement tests), or should they focus on increasing students' readiness for college-level work? Ideally, these two goals would be fully aligned, but we found that this was not always the case. Some interviewees felt that students would be best served by a holistic or innovative curriculum that might not change their performance on a placement test but might better prepare them for college-level courses. Others emphasized the importance of improving students' performance on college entry assessments, making sure that students who participate in transition courses are less likely to need remediation. Although this tension speaks to larger issues related to the need for alignment between high school standards, developmental education curricula, and college-level course expectations, educators creating transition courses must address these questions at the beginning of the course development process.

Which Students Should Transition Courses Target?

Can a single transition course meet the needs of all students who may graduate high school underprepared for college? Students who barely miss college readiness cutoffs may need a different intervention than students with much lower test scores. In West Virginia, the math transition course was originally designed for *all* students who did not meet college readiness benchmarks on the statewide assessment. However, the program designers learned from challenges faced in the math transition courses, and when they began planning for the English transition course a couple of years later, they designed it for the middle range of students who are near the cutoff for college readiness. Across states, interviewees voiced concerns that a one-size-fits-all approach might turn the course into a “dumping ground” or just another low-level course offering. On the other hand, when a course targets only the middle range of students, what happens to the students who do not qualify for the course?

Should High School Graduation Equal College Readiness?

A debate about the role of high school is currently playing out in the public sphere. Do all students who graduate high school need to be college ready? Some believe that the expectation of college readiness puts unfair pressure on students who might never go to college. Others argue that all students may need to go to college at some point—possibly for career-related education at community and technical colleges—and it is the role of high schools to prepare them for that eventuality. It should be noted that college credentials greatly increase students’ chances of getting a job that pays a living wage (Carnevale, Jayasundera, & Cheah, 2012).

Conclusion

There is broad agreement that too many students require remediation in college, depleting scarce resources and reducing college completion rates. It is also widely agreed that the best way to reduce the need for remediation is to make sure that students have opportunities to master the math and English skills required for college while still in high school. For this to occur, students who are not on track to be college ready by graduation must be identified, and appropriate interventions need to be provided.

Early college readiness assessments are now widely used to identify high school students who may benefit from additional assistance in becoming college ready. While little research has been conducted on them, studies suggest that they reduce the need for remediation at college (e.g., Howell et al., 2010). Moreover, they do not require extensive resources for implementation. Especially when existing assessments can be used to gauge college readiness, considerable benefits may be realized.

While early assessments are now commonplace, there is still only limited access to interventions for students who are not yet college ready by the end of 11th grade. Transition courses can help serve this need; the courses offer such students up to a full year of support in math and English, potentially reducing the likelihood that the students will need college remediation. While they seem like a sensible way to promote student preparation for college, they are still untested. Research is clearly needed to understand the extent to which they can improve student outcomes in college.

Findings from the current study have a number of implications for state and system leaders interested in developing early college readiness assessment systems and transitions curricula. They are as follows:

- A strong working relationship between the K-12 and higher education sectors is critical to effective implementation and to maximizing the benefits that can derive from early college readiness assessments and transition curricula. Importantly, this collaboration will help ensure that what is assessed and taught in high school is what is valued at the college level. If strong working relationships between sectors do not already exist, they should be encouraged.
- A state-level commitment to improving college readiness in the form of legislation and state guidelines appears to be helpful in building support and momentum for these initiatives. State-level mandates that call for the increase of college-preparatory high school course requirements may broaden enrollment in transition courses.

- These initiatives are not easy, one-size-fits-all solutions. We encourage deep and honest dialogue between the secondary and postsecondary education sectors about goals, content, and governance. Program designers must make difficult decisions to balance competing priorities in terms of target audiences, mechanisms for increasing college readiness, and the definition of college readiness itself.
- There is a clear need for further research on early college readiness assessments and transition courses to determine their impact both on students' readiness for college and on students' college outcomes. CCRC plans to examine the effects of these initiatives in ongoing research through the *Reshaping the College Transition* project.

References

- ACT. (2012a). *The condition of college and career readiness 2012: West Virginia*. Retrieved from <http://www.act.org/newsroom/data/2012/states/pdf/WestVirginia.pdf>
- ACT. (2012b). *The condition of college and career readiness 2012: Tennessee*. Retrieved from <http://www.act.org/newsroom/data/2012/states/pdf/Tennessee.pdf>
- Adelman, C. (2004). *Principal indicators of student academic histories in postsecondary education, 1972–2000*. Washington, DC: U.S. Department of Education, Institute of Education Sciences.
- Alliance for Excellent Education. (2011). *Saving now and saving later: How high school reform can reduce the nation's wasted remediation dollars*. Retrieved from <http://www.all4ed.org/files/archive/publications/remediation.pdf>
- Bailey, T., Jeong, D. W., & Cho, S. W. (2010). *Referral, enrollment, and completion in developmental education sequences in community colleges* (CCRC Working Paper No. 15). New York, NY: Columbia University, Teachers College, Community College Research Center.
- Barger, K., Murray, R., & Smith, J. (with Blanco, C., & Root, M.). (2011). *State college and career readiness initiative: Statewide transitional courses for college readiness*. Atlanta, GA: Southern Regional Education Board.
- Barnett, E. A., Corrin, W., Nakanishi, A., Bork, R. H., Mitchell, C., & Sepanik, S. (with Wathington, H. D., Pretlow, J., Hustedt, B., Edgcombe, N., Gardenhire, A., & Clabaugh, N.). (2012). *Preparing high school students for college: An exploratory study of college readiness partnership programs in Texas*. New York, NY: National Center for Postsecondary Research.
- Barnett, E. A., & Fay, M. P. (2013). *The Common Core State Standards: Implications for community colleges and student preparedness for college* (NCPR Working Paper). New York, NY: National Center for Postsecondary Research.
- Barnett, E. A., Fay, M. P., Bork, R. H., & Weiss, M. J. (2013). *Reshaping the college transition: States that offer early college readiness assessments and transition curricula*. New York, NY: Columbia University, Teachers College, Community College Research Center.
- Brynelson, N. (2012). Early assessment program: Assessment and accountability information meeting [PowerPoint presentation]. Retrieved from www.calstate.edu/eap/documents/presentation_cde.ppt
- California Legislative Office. (2011). *Higher education: Answers to frequently asked questions: Are entering freshmen prepared for college-level work?* (Issue 2). Retrieved from http://www.lao.ca.gov/sections/higher_ed/FAQs/Higher_Education_Issue_02.pdf
- California State University. (2011, January 25–26). Meeting of the Committee on Education Policy [agenda]. Retrieved from <http://www.calstate.edu/bot/agendas/Jan11/EdPol.pdf>

California State University. (2013a). Early Assessment Program. Retrieved from <http://www.calstate.edu/eap/>

California State University. (2013b). Expository Reading and Writing Course. Retrieved from <http://www.calstate.edu/eap/englishcourse>.

Carnevale, A. P., Jayasundera, T., & Cheah, B. (2012). *The college advantage: Weathering the economic storm*. Washington, DC: Georgetown University, Center on Education and the Workforce.

Complete College America. (2011a). *Tennessee: 2011*. Retrieved from <http://www.completecollege.org/docs/Tennessee.pdf>

Complete College America. (2011b). *West Virginia: 2011*. Retrieved from http://www.completecollege.org/docs/West_Virginia.pdf

Conley, D. T. (2007). *Redefining college readiness, volume 3*. Eugene, OR: Educational Policy Improvement Center.

CUNY Office of Academic Affairs, Working Group on Remediation. (2011). *Proposals to improve success rates for students in developmental education*. Retrieved from <http://www.cuny.edu/about/administration/offices/ue/cue/ReportoftheRemediationWorkingGroup8-11.pdf>

EngageNY. (2013). *Changes to New York State standards, curricula, and assessments: ELA and mathematics*. Retrieved from <http://www.engageny.org/sites/default/files/resource/attachments/ccsstimeline.pdf>

Hodara, M. (2013). *Improving students' college math readiness: A review of the evidence on postsecondary interventions and reforms* (CAPSEE Working Paper). New York, NY: Center for Analysis of Postsecondary Education and Employment.

Howell, J. S., Kurlaender, M., & Grodsky, E. (2010). Postsecondary preparation and remediation: Examining the effect of the early assessment program at California State University. *Journal of Policy Analysis and Management*, 29(4), 726–748.

Jendian, M. (2012). The ERWC: An additional approach to increasing college readiness. Retrieved from <http://asccc.org/content/erwc-additional-approach-increasing-college-readiness>

Jobs for the Future. (2012). *Study of early assessment and early intervention models authorized by House Bill 3468, 82nd Texas Legislature, 2011*. Boston, MA: Author

Kannapel, P. J. (2012). *High school capstone courses: A review of the literature*. Charleston, WV: Appalachia Regional Comprehensive Center at Edvantia.

- Karp, M. M., & Bork, R. H. (2012). *"They never told me what to expect, so I didn't know what to do": Defining and clarifying the role of the community college student* (CCRC Working Paper No. 47). New York, NY: Columbia University, Teachers College, Community College Research Center.
- Kerrigan, M. R., & Slater, D. (2010). *Collaborating to create change: How El Paso Community College improved the readiness of its incoming students through Achieving the Dream* (Culture of Evidence Series Report No. 4). New York, NY: Community College Research Center and MDRC.
- Kirst, M. W. (1986). Sustaining the momentum of state education reform: The link between assessments and financial support. *The Phi Delta Kappan*, 67(5), 341–345.
- Kirst, M. W., & Venezia, A. (2003). Undermining student aspirations: The frayed connections between K-12 and postsecondary education set students up for failure. *National CrossTalk*, 11, 12–13.
- McLean, H. (2012). *California's Early Assessment Program: Its effectiveness and the obstacles to successful program implementation*. Stanford, CA: Policy Analysis for California Education.
- National Center on Education and the Economy. (2013). *What does it really mean to be college and work ready? The mathematics and English literacy required of first year community college students*. Washington, DC: Author.
- New York State Education Department. (1987). History of Regents examinations: 1865 to 1987. Retrieved from <http://www.p12.nysed.gov/assessment/hsgen/archive/rehistory.htm>
- New York State Education Department. (2013). *2008 cohort graduation rates summary slides* [PowerPoint presentation]. Retrieved from <http://www.p12.nysed.gov/irs/pressRelease/20130617/home.html>
- S.B. 359, 2013-2014. Leg., Reg. Sess. (WV. 2013). Retrieved from http://www.legis.state.wv.us/Bill_Text_HTML/2013_SESSIONS/RS/pdf_bills/SB359%20SUB1%20PRINTED.pdf
- S.B. 595, 2007-2008. Leg., Reg. Sess. (WV. 2008). Retrieved from http://www.legis.state.wv.us/Bill_Status/bills_text.cfm?billdoc=sb595%20enr.htm&yr=2008&sesstype=RS&i=595
- S.B. 946, 2007-2008. Leg., Reg. Sess. (CA. 2008). Community College Early Assessment Pilot Program. Retrieved from http://www.leginfo.ca.gov/pub/07-08/bill/sen/sb_0901-0950/sb_946_bill_20080830_enrolled.pdf
- Southern Regional Education Board. (2013a). *Tennessee featured facts: From the SREB fact book on higher education*. Retrieved from <http://publications.sreb.org/2013/tennessee13w.pdf>
- Southern Regional Education Board. (2013b). College and career readiness in West Virginia. Retrieved from http://www.sreb.org/page/1520/college_and_career_readiness_in_wv.html
- State University of New York. (2012). *The SUNY pathway to success: The report of the SUNY Task Force on Remediation*. Albany, NY: Author.

Symonds, W. C., Schwartz, R., & Ferguson, R. F. (2011). *Pathways to prosperity: Meeting the challenge of preparing young Americans for the 21st century*. Cambridge, MA: Harvard Graduate School of Education, Pathways to Prosperity Project.

Tennessee State Board of Education. (2013). *High school transition policy: Frequently asked questions*. Retrieved from http://www.tn.gov/sbe/FAQ_Page/SBE_HS_Trans_Policy_FAQ_3-07-2013.pdf

Tierney, W. G., Bailey, T., Constantine, J., Finkelstein, N., & Hurd, N. F. (2009). *Helping students navigate the path to college: What high schools can do* (NCEE Report No. 2009-4066). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance.

Tierney, W. G., & Garcia, L. D. (2011). Remediation in higher education: The role of information. *American Behavioral Scientist*, 55(2), 102–120.

Torlakson, T., White, T. P., & Harris, B. W. (2013). Letter to county and district superintendents, charter school administrators, high school principals, college and high school counselors and career center directors, and grade eleven English and mathematics teachers. Retrieved from http://www.calstate.edu/eap/documents/letters/EAPLetter_Superintendents.pdf

Venezia, A., & Voloch, D. (2012). Using college placement exams as early signals of college readiness: An examination of California's Early Assessment Program and New York's At Home in College Program. *New Directions for Higher Education*, 2012(158), 71–90.

Wathington, H. D., Barnett, E. A., Fay, M. P., Mitchell, C., Pretlow, J., & Bork, R. H. (2012). *Preparing students for college learning and work: Investigating the capstone course components of Virginia's college and career readiness initiative*. New York, NY: National Center for Postsecondary Research.



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