Embedding College Readiness Indicators in High School Curriculum and Assessments

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A growing number of studies are suggesting that all students will need to complete some postsecondary education – be it technical certification, an associate’s degree, a bachelor’s degree or beyond – to be prepared for the vast majority of the jobs of the 21st century. To help ensure that students are prepared for college-level work, a number of states embed college readiness indicators in curriculum and assessments. This policy brief presents how several states have implemented this practice – often through legislation – at the local, state and district levels. A curriculum embedded with college readiness indicators may consist of courses that are aligned with college admissions requirements, which are generally more challenging than the state- or district-mandated high school graduation requirements. Assessments with indicators may be either college placement exams such as the ACT or SAT, the pre-ACT tests (EXPLORE and PLAN), or items from state tests calibrated with the SAT, ACT or state college entrance expectations.

The influence of coursework

Research such as Cliff Adelman’s 2006 The Toolbox Revisited, a follow-up to his 1999 Answers in the Toolbox, found that completing a challenging high school curriculum was the greatest precollegiate indicator of bachelor’s degree completion, and the impact was even greater for black and Hispanic students than white students. Adelman specifies in the 2006 report, “At the highest level of a 31-level scale describing this academic intensity … one finds students who, through grade 12 in 1992, had accumulated:"

- At least 3.75 units (years) of English and math, with the highest level of math reaching either calculus, precalculus or trigonometry
- At least 2.5 units of science or more than 2 units of core lab science (biology, chemistry and physics)
- More than 2 units of foreign languages and history/social sciences
- 1 or more units of computer science
- More than one Advanced Placement (AP) course
- No remedial English or math.

In fact, Adelman found that these were minimums. “[S]tudents who reached this level of academic curriculum intensity accumulated much more than these threshold criteria …” and 95% of these students earned bachelor’s degrees (41% also earned master’s, first professional or doctoral degrees) by December 2000. However, Adelman likewise discovered that this curriculum was not always available – Latino and low-income students, for example, are significantly less likely than their Asian or white counterparts to attend high schools offering trigonometry or above.

The influence of assessments

College entrance tests have typically been aimed at students whose families expect they will complete a bachelor’s degree. Youth who score well on college placement-level assessments, however, are not always those who consider themselves “college material.” Their strong performance can serve as an incentive to reconsider their post-high school plans. College-level assessments can also serve as an
indicator of whether students are on track for entry-level college courses while there’s still time in high school to hone knowledge and skills.

Some states may have assessments that can serve as college-readiness indicators even if that was not the original intent. Connecticut, for example, has not explicitly established assessments to determine students’ readiness for college; however, one recent study has shown that the Connecticut Academic Performance Test (CAPT) is an excellent predictor of students’ college readiness and success. “First Steps: An Evaluation of the Success of Connecticut Students Beyond High School” reports the findings of a study that followed the entire cohort of sophomores taking the CAPT in 1996 through their first five years after high school, to 2003. The researchers evaluated (1) the effectiveness of high school testing in predicting students’ later success; (2) choices Connecticut students made in attending college; and (3) the potential state policy implications. The researchers examined seven indicators of future college enrollment and success: (1) interest in college, (2) time elapsed before starting college, (3) number of remediation courses in college, (4) credits taken per semester, (5) number of courses taken and passed per semester, (6) college GPA, and (7) whether or not a student completed a college degree. Both the SAT and CAPT were found to be effective – yet independent – predictors of college readiness and success, with the CAPT accurately predicting all seven indicators.²

How States Embed College Readiness Indicators in the High School Curriculum

While labeling a course “English IV” or “Algebra II” does not unequivocally ensure the curriculum will prepare high school students for college-level coursework, requiring students to complete a curriculum aligned with college admissions requirements is a step in the right direction.

No state currently requires all students to complete a high school curriculum aligned with state-set college admission requirements, although some states provide an optional aligned curriculum, and a few others – Indiana, Oklahoma and South Dakota – will make an aligned curriculum mandatory for all students in future graduating classes. The April 2006 ECS StateNote “Alignment of High School Graduation Requirements with College Admissions Requirements” provides 50-state information on the level of alignment in English, math, science, social studies and foreign language requirements for high school graduation and statewide college admission requirements – both for standard diplomas and honors/college prep diplomas or endorsements that offer such options.

A handful of states have efforts underway to align not only the numbers and types of courses required for high school graduation and college admission, but specific curriculum standards in high school courses. These standards incorporate the skills and knowledge students need to succeed – to avoid remediation – in entry-level college courses. In 2005, Minnesota enacted legislation (H.F. 141, section 82) requiring the state’s higher education advisory council to convene a working group to define the skills and knowledge a student needs when entering postsecondary education. These standards are currently being developed by the state’s P-16 College and Work Readiness Working Group, one of six working groups of the Minnesota P-16 Education Partnership. In designing the standards, the partnership is utilizing a variety of sources, including the American Diploma Project, the state language arts and math standards, the Minnesota State University Preparation Competencies (endorsed by the University of Minnesota) and the joint mathematics competencies (created by representatives from the University of Minnesota, Minnesota State Colleges and Universities, and the Minnesota Private College Council).

To date, working group subcommittees have developed draft standards in reading, writing and math, which were submitted to Minnesota Department of Education Commissioner Alice Seagren on March 13, 2006. The standards are expected to be fully developed by the end of 2006. The 2005 legislation requires the commissioner of education to report to the legislature’s education committees the recommended changes, if any, that must be made to the state standards to ensure that high school graduates attain the higher education advisory council’s college readiness standards.³

Iowa legislation (S.F. 245) calls on the state board to develop a model core curriculum and set a goal of 80% of high school graduates in the state completing the core curriculum by July 2009. (The state currently does not have comprehensive high school graduation requirements.) The legislation additionally requires each 8th grader, beginning in the 2006-07 school year, to have “a core curriculum plan to guide the student toward the goal” of completing the model core curriculum; and to annually report to the student and his/her parent the student’s progress toward completing the model core curriculum. The
department of education has convened a project lead team and work teams in the areas of literacy, science and math to design the model core curriculum. Recommendations on the model core curriculum will be presented at the state board’s May 2006 meeting.

In addition, the American Diploma Project (ADP), housed within Achieve, Inc., is assisting 22 states in their efforts to develop and implement action plans to better align high school exit requirements and postsecondary/workforce entrance expectations. As of April 2006, 17 state plans were posted to the Achieve Web site.

**How States Are Embedding College Readiness Indicators in High School Assessments**

While parents and students may assume that scoring well on a standard high school assessment indicates a student is ready for college-level coursework, recent research points to the contrary. “Mixed Messages: What State High School Tests Communicate About Student Readiness for College,” by David Conley, director of the Standards for Success program at the University of Oregon, is a first-of-its-kind study examining the extent of alignment between high school assessments and the knowledge and skills needed for success in entry-level postsecondary courses. Researchers analyzed 35 state exams in English language arts and 31 in mathematics for: matches in categories of knowledge/skills tested in each subject area, depth of knowledge, range of knowledge and balance of representation. The assessments were sorted into one of three levels based on the degree of alignment with college entrance expectations. The findings: in math, no state’s tests received an overall “A” for a high degree of alignment, and only three received this score in English.

In "Do Graduation Tests Measure Up? A Closer Look at State High School Exit Exams," researchers from Achieve, Inc. analyzed exit exams in English and math in six states – Florida, Maryland, Massachusetts, New Jersey, Ohio and Texas. The study examined the content the tests assess and the grade level of that content; the complexity of each question and of the items altogether; “how well the exit tests measure what matters most to postsecondary education institutions and to employers in high-growth, high-performance industries”; and “what it takes for students to pass each state test and how those expectations compare across states.” The evaluation concluded that the level of English and math tested is generally low compared to international standards – the majority of reading questions were at international 8th- and 9th-grade levels and math questions were at 7th- or 8th-grade levels. None “of the tests adequately measures the full range of college- and work-readiness benchmarks identified through the American Diploma Project.

States are currently taking one of the following approaches in attempts to align high school assessments with college-readiness indicators:

- Aligning stand-alone voluntary assessments with college placement exams
- Administering state assessments with embedded/aligned college-ready items
- Providing opportunities for high school students to take college placement exams
- Requiring all students to take the ACT or SAT
- Providing opportunities for 11th graders to take the PSAT
- Providing opportunities for middle and high school students to take the EPAS (Educational Planning and Assessment System, comprised of the pre-ACT EXPLORE and PLAN assessments, and the ACT).

**Aligning stand-alone voluntary assessments with college placement exams**

Concerned with the number of college freshmen who need remedial English and math before going onto credit-bearing postsecondary coursework, California and Kentucky have developed high school assessments to determine students’ readiness for college while there’s still time to identify deficiencies and build essential skills before high school graduation.

California’s Early Assessment Program – piloted during the 2003-04 school year and first available to high school juniors statewide in spring 2004 – is a voluntary supplement to the grade 11 mandatory California Standards Tests. Students can elect to take the exam in English language arts (reading and writing) and math. Students who score high enough on the math assessment are exempt from taking California State University’s entry-level mathematics exam (lower-scoring students are partially-exempt or not exempt) and students scoring well on the language arts assessment may also be exempt from the
CSU English placement exams. The CSU system maintains a Web site, http://www.csumaths SUCCESS.org/mshome, which provides students and high school teachers with diagnostic assessments and online instructional resources to help students meet CSU’s placement benchmarks. The Early Assessment Program is a joint effort of the California Department of Education, the state board of education and California State University, which has set a goal of reducing remediation rates of incoming freshmen to 10% by fall 2007.4

Kentucky’s Early Mathematics Testing Program is a collaborative effort of the University of Kentucky, Northern Kentucky University and the Kentucky Council on Postsecondary Education that was first available in spring 2001. The program offers voluntary online math tests to high school sophomores and juniors. The exams are aligned with placement tests at state community and technical colleges and four-year public universities, and can be taken either at school or at home. Students can select up to three participating postsecondary institutions they are considering attending. The program generates students’ scores as well as the following information for each institution:

- A list of math courses required for the student’s intended major
- A list of any remedial courses the student might need to take based on the student’s math skills as demonstrated on the test
- The estimated cost of the remedial courses the student might need
- The high school courses and specific math concepts or functions the student should study to target deficiencies. (KY REV. STAT. ANN. § 158.803)

Administering state assessments with embedded/aligned college-ready items

The Texas Success Initiative (TSI), adopted by the Texas Higher Education Coordinating Board in December 2003, requires postsecondary institutions in the state to assess the academic skills of each entering undergraduate prior to the student’s enrollment. The state recognizes students as college-ready who:

- Achieve standard scores on traditional college placement tests such as the ACT, ASSET and COMPASS
- Achieve standard scores on the College Board’s ACCUPLACER and the Texas Higher Education Assessment (THEA)
- Exceed a set standard on the reading, writing and math portions of the grade 11 Texas Assessment of Knowledge and Skills (TAKS) exit exam.

Scores are valid for a period of three years from the date of testing. (TEX. EDUC. CODE ANN. § 39.023, 19 TEX. ADMIN. CODE § 4.51 through § 4.60)

New Mexico passed legislation in 2003 that mandates high school curricula and end-of-course exams be aligned with the placement tests used by two- and four-year public postsecondary institutions in the state. The policy requires the state department of education and the commission on higher education to collaborate in achieving this goal. The work is currently in progress, led by a joint task force. According to the commission’s Web site, “The task force will make recommendations for adoption of a set of tests, a range of scores, and policy recommendations for a pilot phase to measure the effectiveness of student assessments as students prepare for postsecondary education. They will also define needed support services, early academic interventions, and better forms of academic diagnoses beginning as early as middle school years.”5 (N.M. STAT. ANN. § 22-2-8.11)

During the 2003-04 school year, four community colleges in Washington State piloted admissions/placement policies that took into account the 10th grade Washington Assessment of Student Learning (WASL) scores earned by students entering community college immediately after high school. The study looked at four sets of information: (1) WASL scores (by subject area); (2) high school course-taking in English and math, and the grades earned in these courses; (3) placement test scores by subject; and (4) students’ grades in the first college-level English and math courses taken after enrolling in the colleges. The community colleges found that certain components of the English and math WASLs were the greatest predictors of grades in the first college courses in these subject areas. However, the sample sizes were small, the operation time-consuming, and implementation difficult, “reinforcing the argument for a better and more coordinated statewide data system.”6
Providing opportunities for high school students to take college placement exams

States have begun to establish policies that provide students with the chance to take college placement tests while still in high school to help gauge their preparation for entry-level postsecondary coursework, and seek any necessary remediation while still in high school.

Arkansas policy states that every 11th-grade public school student who chooses to do so may take a state board-approved placement test. Students scoring below the minimum scores set by the Arkansas Higher Education Coordinating Board in English, reading and math must receive counseling and strong encouragement to enroll, during their senior year, in coursework to help them overcome deficiencies in any of these areas. The state also offers a five-week summer program for high school seniors who plan to enroll in postsecondary programs in the state and scored below 19 on the ACT. At the end of the summer program, students may choose to take a placement test approved by the state board and the higher education coordinating board. In addition, those who complete the summer enrichment program and in their senior year enroll in an “appropriate” English or math course, as determined by the state board and higher education governing board, may take the placement test at no cost. At students’ request, placement test scores must be submitted to and accepted by public postsecondary institutions in the state. (ARK. CODE ANN. § 6-16-603 through -605)

Florida policy authorizes community colleges and universities to make agreements with local districts to allow high school students to take the Florida College Entry-Level Placement Test at the beginning of grade 10. The purpose of the test is to guide students in college and career planning and identify students in need of remediation. Students in grades 11 and 12 may also be given the opportunity to take the placement test. The policy requires each community college president to negotiate agreements with its local service area school district. It makes district agreements optional for each state public university president, though university negotiations must “take into consideration any previous or anticipated agreement negotiated by the community college president” so as to minimize confusion. (FLA. STAT. ANN. § 1008.30, § 1007.21, FLA. ADMIN. CODE ANN. r. 6A-10.0315)

Requiring all students to take the ACT or SAT

Since the spring of 2001, Illinois and Colorado have required all juniors to take the ACT, regardless of their plans for after high school. Michigan legislation signed in January 2005 eliminated the Michigan Educational Assessment Program (MEAP) and made the ACT one of the four components of the 11th-grade assessments (collectively known as the Michigan Merit Exam or MME), effective in spring 2006.

In the summer of 2005, Maine likewise moved to require 11th graders in the state to take the SAT in April 2006. According to the department of education Web site, “A program of preparation and assessment that includes both Preliminary SAT (PSAT) and SAT tests, is being made available to students. Students will receive standard SAT reports and official scores that they may use as they apply to colleges both in Maine and nationally."

But does it work? In fact, both the Illinois and Colorado programs appear to have been a success. According to case studies conducted by ACT after state implementation of these testing programs, the number of in-state, ACT-tested fall freshmen enrolled in Illinois and Colorado colleges in 2002 (the first graduating class affected by mandatory ACT testing) was up by 24% and 23%, respectively, in comparison to 2001. These reports on the state programs likewise indicate that not only were more students taking the ACT and entering college, access to college increased among low-income and minority students. In Colorado, 12% of the fall 2002 college freshmen reported that they did not plan to go to college when they took the ACT as high school juniors. In Illinois, the number of fall 2002 college freshmen from households earning $30,000 or less a year rose by 8% from 2001.

Gains were also observed in college readiness in both states. According to the ACT report, Measuring Colorado Students’ Progress Toward State Learning Standards, the number of Colorado high school graduates earning an ACT Composite score of 18 (the low end of the range for admission to colleges with liberal admission policies) or higher was 42% higher in 2003 than in 2001. The ACT scores of Illinois graduates showed many more were ready for college algebra (21% more) and English composition (29% more) in 2003 than in 2001.

Providing opportunities for 11th graders to take the PSAT

Generally taken during the junior year of high school, the preliminary SAT (PSAT) covers reading, math and writing. It helps students identify the skills they need to be ready for the SAT – and for entry-level
college work – and is the qualifying exam for the National Merit Scholarship, a $2,500 scholarship. No state currently requires all students to take the PSAT, although this would be another option for states seeking to promote high school students’ college awareness and readiness. South Carolina, however, as part of its 1998 Education Accountability Act, provides every public high school with funds to give 10th grade students the PSAT or the PLAN (pre-ACT). Students are not required to participate in either exam. The policy specifies that schools and districts are to “use these assessments as diagnostic tools to provide academic assistance to students whose scores reflect the need for such assistance,” and to “provide guidance and direction for parents and students as they plan for postsecondary experiences.” (S.C. CODE ANN. § 59-18-350)

Florida likewise offers every public high school the opportunity to give 10th graders the PSAT or PLAN (students in a participating high school may choose not to participate in the exams). The Florida legislation requires districts to choose the PSAT or PLAN for districtwide administration. Test results are intended to give each high school the data needed to help guidance counselors identify students who are prepared, or who need additional work to be prepared, to enroll and be successful in AP courses or other advanced high school courses.

According to the most recent data, 67% of 10th graders in Florida took the PSAT in 2004, and 9% took the PLAN. In 1999, the year before the legislature began covering these testing costs, participation rates on the PSAT and PLAN were 21% and 3.8%, respectively. The largest gains in test-taking over this five-year period were seen among African American and Latino students, with the number of these students taking the PSAT increasing by 407% and 518%, respectively. By comparison, the number of white and Asian students taking the PSAT grew by 175% and 144% during the same period of time.

The department of education reports that in half the state’s districts, 75% or more of 10th graders took the PSAT, PLAN or both in 2004 (many districts offer both tests, at least in certain schools). In 26 schools, 95% or more of 10th graders took the PSAT. The number of PSAT or PLAN test-takers was below 50% in only five districts in the state.9 (FLA. STAT. ANN. § 1007.35)

Providing opportunities for middle and high school students to take the EPAS (Educational Planning and Assessment System) – the pre-ACT EXPLORE and PLAN assessments and the ACT

EPAS stands for Educational Planning and Assessment System and refers to the full complement of assessments – EXPLORE, PLAN and ACT. EXPLORE and PLAN have the same subject-area components as the ACT (English, math, reading and science), as well as additional components related to needs assessment, career exploration and more. EXPLORE is usually given in grade 8 or 9, while PLAN is administered in grade 10. PLAN additionally includes the Educational Opportunity Service (EOS), which gives students college and scholarship information on the basis of their responses. These assessments allow students, parents and teachers to determine pupils’ college readiness before grades 11 and 12, when students typically take the ACT or SAT.

Arkansas and Oklahoma have made the EPAS available since 1993, with Louisiana joining these states in 2001. The Arkansas Department of Higher Education, the Oklahoma State Regents for Higher Education and the Louisiana Board of Regents provide the EPAS to districts in their respective states at no cost. In the 2003-04 school year, 98% of Oklahoma 8th and 10th graders took the EPAS assessments10.

According to the Oklahoma EPAS page on the Oklahoma State Regents for Higher Education Web site, “Information provided by EPAS assessments is linked longitudinally to provide an academic information management system. These linkage reports can be used to monitor student progress over time, detect trends and evaluate instructional outcomes in support of school improvement efforts.”11 A 2003 ACT report states that 95% of public 8th and 10th graders in Oklahoma were participating in EPAS. Since the program’s implementation, more students in the state are taking the ACT, more African American and Native American students are completing a core curriculum, more students are planning on attending a two- or four-year postsecondary institution and are following through on those aspirations, and fewer students require remediation in college.12

Louisiana also has reported positive results since implementation of its program – but also suggests that for an EPAS program to be successful, the following components must be in place: (1) districts choose to participate in the program and the tests are not tied to any accountability system; (2) students take both EXPLORE and PLAN; (3) assessment “data are used to inform decision-making and to identify the most
critical needs”; and (4) “staff are trained in the implications, interpretations and use of EPAS information.”

PLAN is a component of Louisiana’s TOPS-Tech Early Start Award, which provides funds for students in grades 11 and 12 to pursue an industry-based occupational or vocational education credential at a Louisiana public postsecondary education institution. To be eligible for an award, students must meet five prerequisites, including having attained a score of “at least fifteen on the English subsection and fifteen on the mathematics subsection of the ACT PLAN assessment administered as part of Louisiana's Educational Planning and Assessment System.” (LA. REV. STAT. ANN. § 17:3048.5)

West Virginia requires all public school 8th graders to take the EXPLORE. Data generated by this assessment are to be used in developing an individualized student transition plan for each student. “With guidance during well-planned activities, second semester 8th-grade students, in consultation with their parents/guardian, advisor and counselor, will examine their EXPLORE results and determine the coursework and other requirements needed to achieve their postsecondary education and career goals. This is best accomplished by integrating these activities into an organized advisory program.” In addition, “during the 8th-grade year, each student's plan is developed for grades 9 and 10. The plan is based upon previous career awareness, exploration activities, and a review of the student's ACT EXPLORE results. The 8th grade guidance/advisement program will focus on teaching students and their parents to read the ACT EXPLORE student reports so that they may understand how to use the information provided within the Educational Planning and Assessment System (hereinafter EPAS) reports to transition to the level of performance required to meet the student's educational goals.”

In grade 10, all West Virginia public school students take the PLAN. (W. VA. CODE ST. R. § 126-14-4, § 126-14--8, § 126-42-5, § 126-42-6, § 126-42-10)

Minnesota legislation passed in 2005 allows districts and charter schools to elect to participate in EPAS “to provide a longitudinal, systematic approach to student educational and career planning, assessment, instructional support, and evaluation.” The legislation likewise requires the commissioner of education to “provide ACT Explore tests for students in grade 8 and the ACT Plan test for students in grade 10 to assess individual student academic strengths and weaknesses, academic achievement and progress, higher order thinking skills, and college readiness.” The legislation requires the state to pay the test costs for participating districts and charter schools, and requires the commissioner to establish an application procedure and a process for state payment of costs. (MINN. STAT. § 120B.128)

Through grant funds, South Carolina was able to pay for all 8th or 9th graders to take EXPLORE in the 2005-06 school year. The department has requested the legislature provide funding for this purpose in the 2006-07 school year, but the outcome of this request will not be known until the state budget is approved June 30, 2006.14

Again, the question arises, “Does administering EPAS work?” According to various reports, it does. Oklahoma testimony points to an increase in ACT scores, even while more students were taking the ACT in the state; an increase in the proportion of students taking the challenging core curriculum recommended by the ACT; progress in closing the achievement gap; and a growing number of students planning to attend college – and following through on those plans.15

Conclusion

Embedding college readiness indicators is becoming an increasingly common practice as state policymakers become aware of the larger segment of the future workforce that will need to complete a college degree, and of the current lack of alignment of high school exit and college entry expectations. There is no one “right path” for states to follow, but a variety of options in curriculum and assessment alignment have proven successful in better identifying students needing remediation or additional coursework before college, and inspiring students who didn’t consider themselves “college material” to go on to complete postsecondary education.
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Endnotes


5 New Mexico Higher Education Task Forces Web site. (Santa Fe: New Mexico Higher Education Department, accessed April 12, 2006). http://hed.state.nm.us/TaskForces/taskforces.htm


13 Louisiana Educational Planning and Assessment System Web site. (Louisiana Board of Regents, accessed on April 12, 2006). http://www.regents.state.la.us/EPAS/epashome.htm
