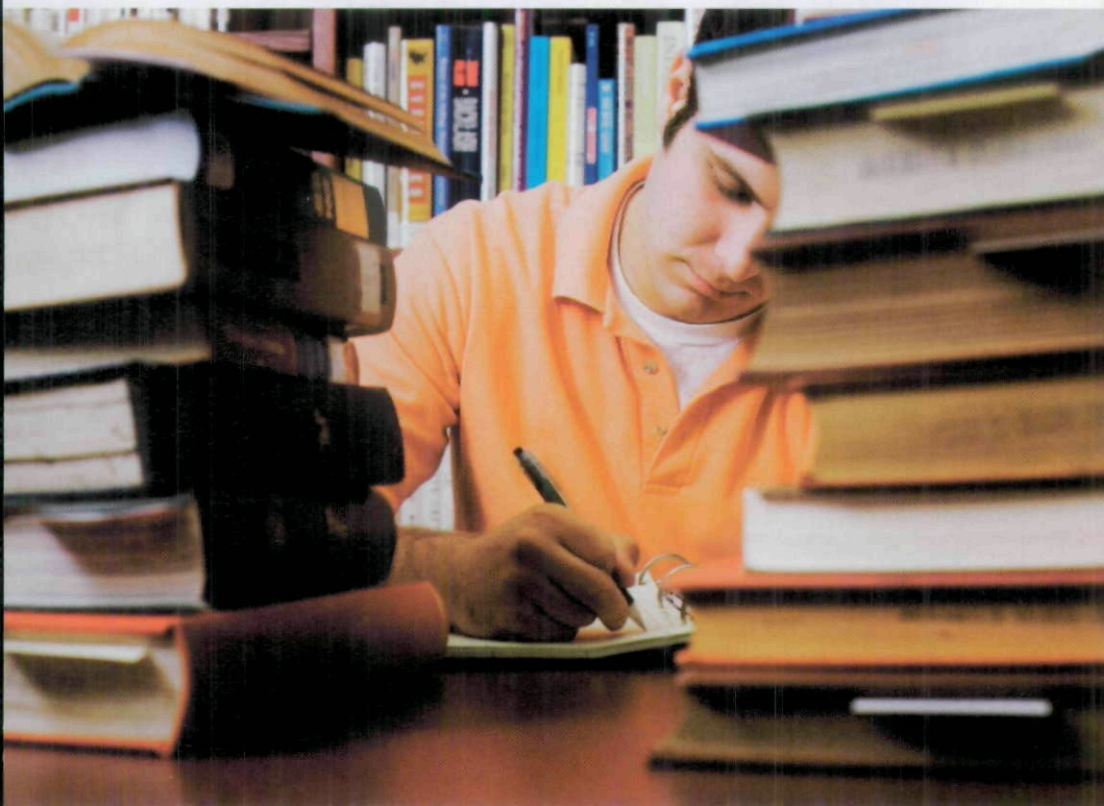


The Challenge of College Readiness

Research shows a mismatch between high school preparation and college expectations. How can high schools prepare students for college success?

David T. Conley

About 67 percent of U.S. students who graduated from high school in 2004 went on to enroll in college—a higher proportion than in any previous year (National Center for Education Statistics, 2005). Certainly, the rising college attendance rate is an accomplishment. But before we celebrate, we must consider how many of these hopeful, ambitious young people are likely to thrive in higher education. Here, the numbers are less encouraging. The most recent data available show that only about 35 percent of students who entered four-year colleges seeking a bachelor's degree in 1998 had earned their degree four years later, and only 56 percent



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had graduated six years later (Knapp, Kelly-Reid, & Whitmore, 2006).

Research suggests that one of the major reasons that students falter in college is the gap between their high school experiences and college expectations. Many first-year students find that their college courses are fundamentally different from their high school courses (Conley, Aspengren, Stout, & Veach, 2006). College instructors expect students to draw inferences, interpret results, analyze conflicting source documents, support arguments with evidence, solve complex problems that have no obvious answer, draw conclusions, offer explanations, conduct research, and generally think deeply about what they are being taught (National Research Council, 2002). College courses also move at a faster pace, often requiring students to read eight or nine books in the same amount of time it took them to read only one in high school (Standards for Success, 2003).

According to the National Survey of Student Engagement (2006), the vast majority of first-year college students are expected to work with others in and out of class on complex problems and projects. They are expected to make presentations and explain what they have learned. College courses require students to be independent, self-reliant learners who recognize when they are having problems and know how to seek help from professors, fellow students, or other sources. In these classes, students are expected to write multiple three- to five-page papers that must be well reasoned, well organized, and well documented with evidence from credible sources.

If we contrast these common college expectations with descriptions of high school learning, we see a consistent and potentially troubling picture. Several observational studies have found that high school students often complete prescribed tasks that require little cogni-

tive engagement. In discussions, many students consider their personal beliefs sufficient justification for their opinions and view any challenge as a personal attack. They resist solving problems with ambiguous or multiple solutions. When given two documents with conflicting conclusions, they freeze and ask which explanation is "right" instead of analyzing the texts for clues about the authors' motivations or the historical context. For these students, learning has been reduced to a form of sleepwalking, requiring no deep mastery or understanding (Angus & Mirel, 1999; Newmann & Associates, 1996; Oakes, 2005).

Of course, these descriptions do not apply to all high school students, any more than the description of college instruction applies to every college course. However, these two sets of characterizations highlight some fundamental differences that can make the transition to college difficult for the typical high school graduate. Unless high schools address this problem, simply requiring that students take more years of math, science, or language arts will not ensure that they are prepared for the academic demands of college.

Closing the Gap

Here are four strategies that can help high schools increase the numbers of college-ready students.

Align high school curriculum and instruction with college expectations.

High school leaders should begin by analyzing the content of their school's curriculum—perhaps by working in partnership with a local college, which

may end up revising its own instruction as well. In addition to comparing the content of each high school course with college readiness standards and state content standards, the high school can analyze how well courses in each content area progress in difficulty level during the four years of high school.

Several groups have developed college readiness standards that are available online and could serve as a starting point for a school or district to design its own comprehensive set of standards or expectations. For example,

■ The Standards for Success project, sponsored by the Association of American Universities, developed a comprehensive set of readiness standards in six subject areas (Conley, 2003). These statements of the knowledge, skills, and habits of mind necessary for success in research universities were sent to every U.S. high school in 2003 and have been licensed by the College Board as a resource to help inform the development of its assessments and programs.

■ The American Diploma Project (2004) worked with postsecondary and business leaders to develop standards for the English and mathematics skills needed for college and work.

■ Several states have published sets of college readiness definitions linked to state academic standards (for example, see Washington State's Transition Math Project, 2005).

Developing college readiness standards is the first step toward ensuring that the content and grading in high school courses are in sync with postsecondary expectations. Because state high school graduation standards are generally on a 10th grade level, a set of college-aligned expectations can

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also fill a void by helping to define the academic focus for the final two years of high school.

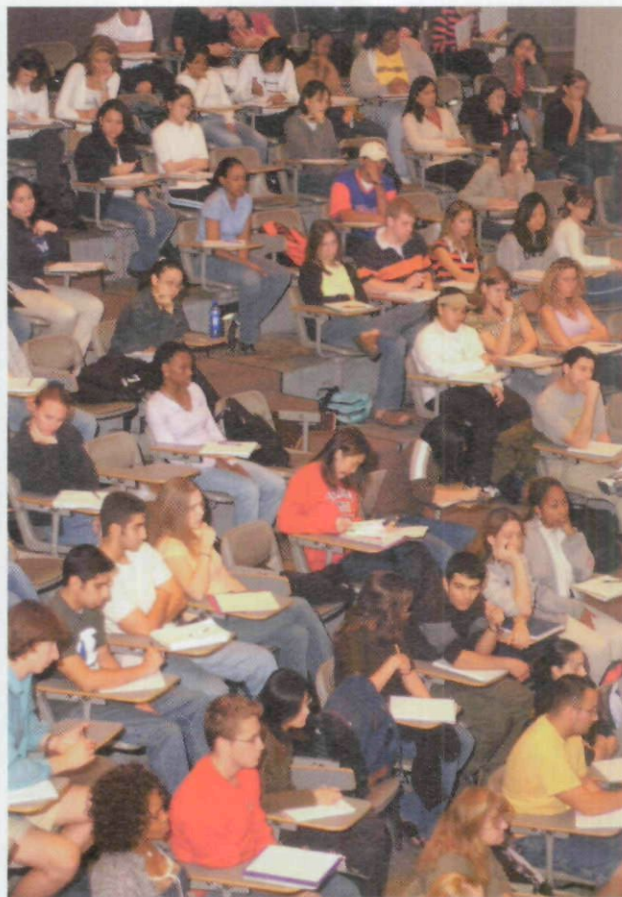
Develop high-quality syllabi in all courses.

Research suggests that the syllabi in high school courses are different from those found in college courses. High

school syllabi rarely undergo external review, as all college syllabi do. The content of high school syllabi tends to be eclectic, with teachers selecting class content largely on the basis of their own interests and skills rather than on what students need to succeed in college. The format and structure may differ dramatically from teacher to teacher.

By conducting a schoolwide syllabus review and development process, high schools can address several needs. First, the process ensures that all courses have up-to-date syllabi—an important building block for quality instruction. Second, the process of developing syllabi can bring teachers together to discuss how each course fits with the other courses in a department and across departments. Finally, the process can be a powerful vehicle for reviewing how well the curriculum aligns with college expectations.

For the past several years, teachers at Burlington High School in Massachusetts have used a faculty-designed template to create Teacher Expectation Handouts. These handouts describe course content, assignments, and grading. At the beginning of the school year, every student and his or her parents receive a handout for each course the student is taking. Creating the handouts encourages teachers to work together to develop a consistent curriculum and analyze coursework to increase rigor. One of the most important benefits has been the tremendous support from parents, who have reported enthusiastically that the handouts help them understand school expectations and support their children's learning.



Implement senior seminars.

Keeping students fully engaged academically throughout the senior year is key to college success (National Commission on the High School Senior Year, 2001). This engagement is not easy to create, given the credit-based high school diploma and the college admission system that allows students to stockpile credits from the early years in high school. The senior seminar offers a strategy to deal with the all-important senior year.

Senior seminars can create a college-like experience in high school without teaching college-level material. These seminars can be designed for any subject area. They focus on key issues

within the discipline and investigate them in depth. Elements that distinguish the senior seminar from a typical high school course include

■ *Pacing.* A senior seminar introduces material at a more rapid rate than a high school course does, focusing on consolidating and deepening understanding of material to which students have already been exposed rather than introducing new material. Paradoxically, this faster pace can actually keep students more involved than the slower pace of a regular class.

■ *Candid feedback.* Teachers give students honest feedback on how well their work approaches college readiness

levels. College instructors are in general much more candid (and impersonal) than high school teachers are, and the senior seminar helps prepare students to interpret this type of feedback and respond to it productively.

■ *Habits of mind.* The senior seminar focuses on developing the key ways of thinking that college courses emphasize—such skills as interpretation, problem solving, critical reasoning, analytic research, and accuracy.

In the past three years, the Center for Educational Policy Research at the University of Oregon has developed and designed a framework for senior seminars. Several high schools are beginning

What About Those Who Don't Go?

Paul E. Barton

The current high school reform movement focuses on beefing up curriculum to raise student achievement so that more students not only get into college, but also succeed there. This goal is a worthy one for high school students who go on to college, particularly in getting them ready for the more select institutions.

But what about students who don't go to college? Only 70–80 percent of students who enter high school get a diploma.¹ Of those, about 65 percent enter college the fall after graduation, and many of them fail to get a degree (National Center for Education Statistics, 2006). Only about 4 in 10 8th graders earn a bachelor's or associate's degree (National Center for Education Statistics, n.d.).

Comprehensive reform must have as its objective equipping all high school students for life beyond graduation. Yet the high school reform movement has made no attempt to look at



job requirements that high school graduates must meet if they do not go on to college.

In survey after survey, employers say they want employees with more than academic skills. The National Association of Manufacturers surveyed its members in 2001 and 2005, finding similar results both years. Seven out of 10 employers listed a lack of “employability skills”—such as attendance, timeliness, and a work ethic—as the top reason for turning down young applicants (National Association of Manufacturers, 2001). In a similar survey by the Conference Board and partners, the top four qualities that employers desired were a strong work ethic, teamwork, oral communication, and ethics. Reading

comprehension came next, with mathematics 14th and science 17th on the list (Casner-Lotto & Barrington, 2006). In 2006, the U.S. Chamber of Commerce created a new Work Readiness Credential (http://eff.cls.utk.edu/workreadiness/work_readiness.htm). The credential has four categories of skills: communications, interpersonal skills, decision making, and

to pilot the center's seminars on such topics as alternative fuels, media and culture, and natural disasters.

For example, David Douglas High School, an urban high school in Portland, Oregon, currently offers a forensic science course incorporating the key elements of a senior seminar. Students apply acquired knowledge from biology and chemistry and use the scientific method to examine crime scenes from fictional and nonfictional texts. Students conduct lab investigations and write technical, expository, persuasive, and thesis papers throughout the course, emphasizing the credibility of referenced sources and proper scientific

processes. Teacher Tara Hridel reports that students have responded positively to the increased rigor of the senior seminar, and she has noticed particular improvements in their reading comprehension, technical writing skills, and critical-analysis skills.

Add missing content to high school courses.

The Center for Educational Policy Research has analyzed thousands of syllabi from high schools all across the United States. These analyses reveal that much content necessary for college success is missing from high school instruction. To close the gap, high

schools should weave the following important knowledge and skills into the curriculum.

In language arts, increase the amount of time that students spend expanding vocabulary and learning word analysis skills, which are the building blocks of advanced literacy. Provide instruction in strategic reading, such as knowing when to slow down to understand key points, when to reread a passage, and how to underline strategically to highlight only the most important points in a text.

If we could institute only one change to make students more college ready, it should be to increase the amount and quality of writing students are expected

lifelong learning skills, which include taking responsibility for one's own learning and using technology.

My analysis of 13 million job openings projected by the U.S. Bureau of Labor Statistics through 2012 (Barton, 2006) and the analyses of others (Murnane & Levy, 1996) have found that in addition to these "soft skills," young job applicants need a basic 9th grade level of mathematics and reading skills to qualify for most jobs paying a middle-class wage. Employers also heavily weigh previous work experience—something a young person leaving high school may not have.

Education policymakers have a responsibility to pay attention to the kind of workforce preparation that employers value. We can prepare students for both college and work. Great advances have been made in integrating academics into career and technical education while keeping the option open to go to college. Arrangements that combine school with related work (such as internships, apprenticeships, and cooperative education programs) and courses in career and technical education can provide the preparation and work experience that employers want. Such programs also have the potential to reduce high school dropout rates by enabling the 20–30 percent of students who now drop out of high school to see the benefits of staying in school until graduation.

The U.S. Bureau of Labor Statistics tells us that only about 3 in 10 jobs required some form of postsecondary credential in 2004; this percentage is not expected to change substantially through 2014 (Mishel, Bernstein, & Allegretto, 2006). A one-size-fits-all high school curriculum does not fit all. We need to go back to the drawing board and redesign the whole building, not just a few rooms on the top floor.

¹This range is based on a half dozen statistical series and independent research studies.

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to produce. Develop student writing skills systematically in all classes and across a range of writing genres, especially expository, descriptive, and persuasive writing. To increase the amount of writing that high school students do, assign many short, three- to five-page papers that require careful reasoning supported by research and citations. Expect students to edit and revise these papers rather than submit them only once.

In mathematics courses, strive to develop students' problem-solving abilities. Instead of giving students the basic solution method beforehand, ask them to determine which principles and laws might apply to a particular problem, and require that they explain and defend their solutions. Give students practice doing mathematical work correctly and precisely. Encourage them to use calculators properly and not as a replacement for thinking mathematically. For example, teach students to make reasonable estimates and to check estimates through mental math instead of always relying on a calculator. Most important, ensure that students thoroughly understand the basic concepts, principles, and techniques of algebra. Much of the subsequent mathematics they will encounter draws on these principles.

In science courses, emphasize all facets of scientific thinking. In addition to teaching the steps of the scientific method, help students understand what it means to think like a scientist—the communication conventions scientists follow, how they use empirical evidence to draw conclusions, and how they subject such conclusions to challenge and interpretation. If students are able to grasp that scientists think in terms of models and systems as ways to comprehend complex phenomena, they will have an easier time making sense of the ideas and concepts they will encounter in entry-level college courses.

In social studies, emphasize the skills of interpreting sources, evaluating evidence and competing claims, and understanding historical themes and the importance of key events. Make students aware that the social sciences consist of certain big ideas that are used to order and structure all the detail that sometimes seems overwhelming—in other words, help them build mental scaffolds that lead them toward thinking



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like social scientists. Students will be expected to demonstrate this kind of thinking in entry-level college courses and throughout their college program of study.

College Preparation in Action

Few high schools have successfully and intentionally implemented all the elements necessary to align their programs for college success. One public school that has implemented major changes to improve student success in college is the University Park Campus School, a small urban public school currently serving 231 predominantly low-income students in grades 7–12. The vast majority of students entering the school are at least two grade levels behind in reading and math. More than 95 percent come from families in which no one has attended college.

The University Park Campus School, Clark University, and Jobs for the Future, a Boston-based education nonprofit, have partnered to form the UPCS/Clark Institute for Student Success. Supported by the Bill and Melinda Gates Foundation, the institute enables the school to share its success and serve as a model for other small schools across the United States. The school is designed around the goal of preparing every student for college by providing a powerful, accelerated, college-preparatory curriculum. Students in grades 9–12 take all honors classes, and students in grades 7–8 participate in a curriculum designed to address significant academic and English language skill gaps.

Despite the school's high standardized test scores and college acceptance rates, the school staff found that graduates still needed additional support when they entered college. The staff redesigned the senior year by incorporating principles of the senior seminar. They created senior classes with syllabi that have a pace, pedagogy, and assessments similar to entry-level college courses. Teachers focus on developing students' thinking skills. In addition, all seniors are required to take or audit at least one college course.

As a result of these changes and others, University Park students are experiencing increased academic success. Since the school opened in 1997, all students have passed the state's graduation examination. All members of its first three graduating classes have gone on to college, and more than 95 percent are first-generation college attenders.

In a district-level example, the Bellevue School District in Washington has designed initiatives to increase college readiness. The district established a goal of having all students complete an advanced placement course before graduation. To support this goal,

the district undertook a systematic analysis of its curriculum from kindergarten through 12th grade, comparing its program with college readiness standards. Using this analysis as a starting point, the district launched an ambitious curriculum development process. It created an online site where teachers could contribute ideas and materials and exchange lesson plans. The district instructional support staff then drew from these materials and combined them with the results of the analysis to create more coherent, properly

The evolving needs of students compel changes in the relationship between high schools and colleges.

sequenced curriculum frameworks districtwide.

The district also entered into a partnership with the local community college and a research university. Representatives from each level met to develop a shared definition of the type of writing students would be expected to produce in a freshman composition course. The high school used the resulting criteria and exemplar papers to design instruction that would help students reach the levels of writing proficiency that would enable them to succeed in first-year college writing courses.

Bellevue is instituting a process to track the performance of its graduates in college. This information will consist of quantitative measures, such as course grades and course-taking patterns in the first year of college, and more qualitative feedback from professors that provides insight into how well Bellevue students have mastered the habits of mind crucial to college success. The district will use this information to

revise its curriculum and provide professional development to its teachers.

Alignment to Meet Student Needs

Remaking high school to align better with college success standards will not be easy. Some people might legitimately argue that the two systems, secondary and postsecondary, should retain their distinct characters. Some might even question whether college instructors should be telling high school teachers what to teach.

As significant as these issues are, in the final analysis, the evolving needs of students compel us to make changes in the relationship between high schools and colleges. The proportion of students going directly from secondary to postsecondary education continues to grow. More and more students and their families believe that a college education is the key to success in the new economy. To respond to students' growing expectations, secondary schools and post-secondary institutions must bring their programs into closer alignment. **EL**

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