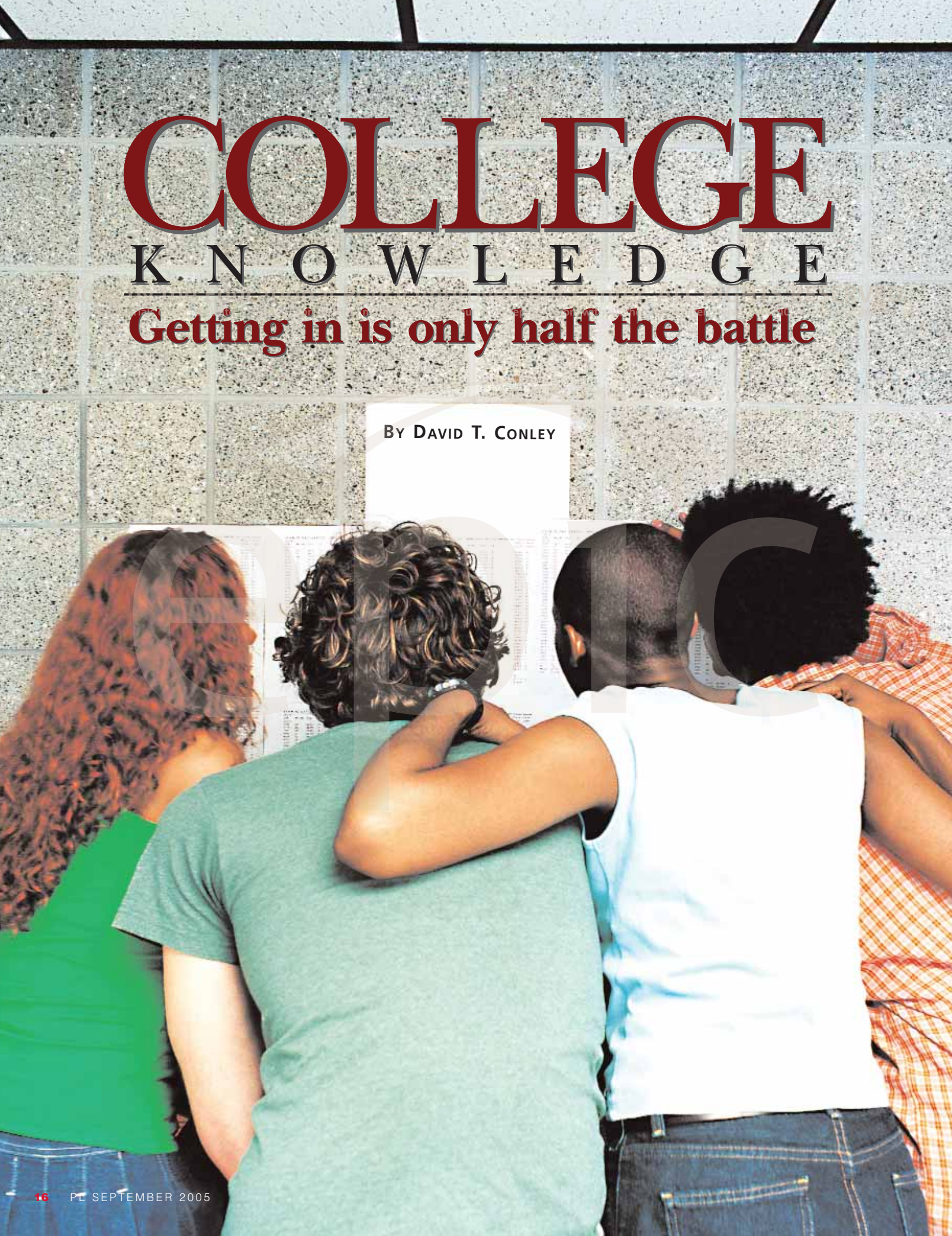
COLLEGE KNOWLEDGE

Getting in is only half the battle

By David T. Conley



PREVIEW

To help students meet the intellectual demands of college, secondary schools must create a sequenced curriculum that is aligned with college course work.

Such a curriculum can be developed jointly by postsecondary and secondary school faculty members.

A series of questions can help secondary schools ensure appropriate and challenging course sequencing.

It's time for high school and college educators alike to come to grips with the fact that high school and college are not nearly as well aligned as they need to be. As a result, many high school students who have set attending college as a goal never get there, and many who do make it struggle to succeed once they arrive. Merely taking college-prep courses in high school and achieving the GPA required for admission are not sufficient to ensure student success in college. The current system functions to get high school students into college, but there is much less concern on either side of the divide about whether what they are learning is what they need for postsecondary success. Further, high school teachers receive little guidance regarding the knowledge and skills that students should be developing to be ready for entry-level college courses.

Most parents and high school students believe, or at least hope, that the high school curriculum is carefully designed to ready students for success in postsecondary education. Parents would likely be shocked to learn that only a relatively small proportion of students who graduate from high school each year are truly college ready. Many students who are admitted to college require remediation or drop out during their first year; others struggle mightily in entry-level courses until they figure out what college really expects of them. Many transfer to another institution because they are not prepared for the challenge level they encounter. Almost all see their high school GPAs drop precipitously during their freshman year in college (Adelman, 1999).

Perhaps one-third of U.S. high school students end up meeting the not particularly challenging college readiness levels of four years of English; three years of math; two years each of natural science, social science, and foreign language; and a "basic" level of performance on the National Assessment of Educational Progress (NAEP). Far fewer meet the more rigorous standard of four years of English, math, science, social science, and a foreign language and a "proficient" level on NAEP (Greene & Forster, 2003).

Given the fact that approximately 80%–90% of entering high school freshmen profess the desire to go on to college (Kirst & Venezia, 2004), how must high schools change to enable more students to be college ready? What are some of the principles and practices that must be followed to ensure that students are not only admitted to college but are also prepared to succeed once they arrive?

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Factors That Limit Success

Although many teachers do strive to challenge students to engage at rigourous levels, the overall structure of the high school curriculum tends to emphasize completing required courses rather than mastering necessary skills and developing intellectually. As a result, students often enter college expecting all assignments and tests to have clear right or wrong answers. For example, when students are required to interpret material in high school, they may assume that any kind of interpretation is acceptable. When they reach college, they are surprised and even offended when they are told that they must apply certain disciplinary rules of thinking and analysis for their argument to be considered worthwhile or correct (Conley, 2003). In other words, they may have successfully completed the course in high school without developing the habits of mind necessary to engage fully in the study and understanding of that discipline in college.

Using an agreed-upon set of standards, cross-level teams can review materials and examples of actual student work taken from high school and college classes to determine how the expectations for students are complementary and how they are not.

In today's high schools, course sequences may do little more than teach new and often unconnected material to each succeeding grade level without consciously and deliberately increasing cognitive challenges or introducing new and higher expectations for students. Essential attributes of college success—such as critical and analytic thinking, inquiry, skilled writing, and high-quality work—are not necessarily nurtured with progressively more-challenging assignments that are scored consistently against uniform high standards. The vast majority of high schools provide learning in discrete units with little connection during the day or across the years.

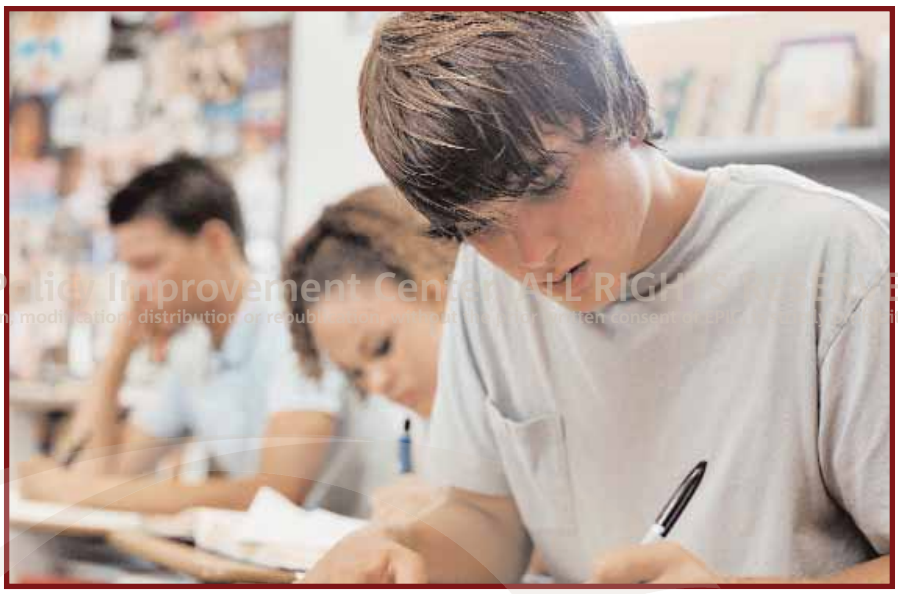
English courses. High school English, for example, tends to be four unrelated, consecutive courses in which students read a variety of pieces of literature that have no obvious connection among them. After reading this literature, students sometimes are required to write and sometimes are not. As a result, writing skills do not develop systematically during high school. In fact, the 1998 NAEP found that the percentage of 12th-grade students who reached the proficient level in writing, about 25%, was identical to the proportion of 8th-grade students who had reached this level (Donahue, Voelkl, Campbell, & Mazzeo, 1999).

Mathematics courses. At first glance, mathematics courses may seem to be better sequenced than English courses. In practice, such essential skills as mathematical reasoning and problem solving are not always developed consistently over the four years of high school. Instead, each course largely follows the same pattern of introducing new material, algorithms, or methods; having students practice them in homework; and then reviewing the homework in class. Examinations may be limited to ascertaining whether material has been understood and whether students can apply what they have just learned to a range of problems that were previously introduced and practiced (Third International Mathematics and Science Study [TIMMS], 1995). Although the material may be quite different, what senior math students are expected to do and how they are expected to think is little different than what was expected of them as freshmen.

TIMMS revealed that when U.S. math teaching is compared to mathematics instruction in other nations that excel in international comparisons, students in U.S. classes do not engage actively in problem solving or develop a deep understanding of mathematical concepts. U.S. mathematics courses also cover far more topics and spend less time on each topic (TIMMS, 1995). As a result, few students come away from high school with the basic realization that mathematics is a symbolic language that is used to understand the natural world. Students may emerge from four years of high school mathematics with the ability to factor equations and graph quadratics, but they may have little insight into the underlying processes and phenomena that these procedures can represent, why this knowledge is important to know, and how this knowledge might be put to use.

Science courses. The college-prep science curriculumconsists almost exclusively of biology, chemistry, and physics, often with a choice between regular and AP versions. The critique of these courses is that, once again, they tend to emphasize terms and vocabulary over the understanding of concepts (Rutherford & Ahlgren, 1990). Although basic nomenclature is certainly important to mastering the sciences, most of the terminology is reintroduced and re-explained in entry-level college courses. In addition, general education science requirements in college may be fulfilled by courses in a wide range of scientific fields beyond biology, chemistry, and physics. For example, general principles of scientific inquiry and scientific thinking are as important as or more important than specific content knowledge in these three subject areas because they prepare students for entry-level college science courses in geology, astronomy, and the environmental sciences.

In sum, the purpose of the high school science sequence is unclear. Is it to prepare students for additional study in biology, chemistry, or physics? Is it to introduce these disciplines as stepping-stones to other scientific disciplines? Is it simply to cover terminology and topics? How do the three science subjects most commonly taught in high school relate to one another or to parallel concepts taught in the mathematics curriculum? And where do students learn to think like scientists? Where do they develop the key understandings of the scientific method as a mode of inquiry, not as an algorithm to be followed in a mechanical, step-by-step fashion?



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High school courses must be sequenced to develop intellectual maturity, improve critical thinking skills, and increase rigor as students approach college entry.

Strategies for Aligned Instruction

To design a high school instructional program that systematically prepares students for success in postsecondary education requires clear agreement on the high school exit and college entrance standards that students are expected to meet. Once such agreement is achieved, the high school faculty can design an intellectually coherent, developmentally sequential program of study.

One strategy is to design or improve culminating activities during the senior year. Although many high schools have recently adopted the culminating project or senior-project model, many of these projects have unfortunately devolved into show-and-tell presentations that are not grounded in challenging academic standards and judged using rigorous, consistent scoring criteria.

One way for high schools to develop culminating activities that require student mastery of challenging content and higher order thinking skills is to develop a joint working group with local community college and university faculty members. Although this can be difficult to do for a variety of reasons, an increasing number of schools are connecting successfully across the high school–college boundary. Community colleges are often the most willing partners, but postsecondary institutions of all types have increased their connections to high schools and their interest in improving alignment.

Such groups can review academic content knowledge standards for high school exit and college entrance. For example, the American Diploma Project's *Ready or Not* report (available at www.achieve.org) outlines English and math standards that students should meet to graduate from high school. The Association of American Universities' *Understanding University Success* study (available at cepr.uoregon.edu) documents the knowledge and skills expected in entry-level university courses in six academic subject areas. Together, these two studies enumerate what students should have mastered by the end of high school and what will be expected of them in entry-level college courses. These highly complementary documents create a clear vision of the ultimate goal of a high school education that leads to postsecondary success.

Using an agreed-upon set of standards as a common point of departure, cross-level teams can then review course outlines, assignments, grading criteria, and examples of actual student work taken from high school and college classes to determine how the expectations for students are complementary and how they are not. After developing sequenced grading criteria that connect expectations across high school and college, members of a joint working group comprising high school and college faculty members can rate one another's papers to determine that the level of challenge is properly sequenced between high school and college. Although this type of joint calibration activity remains the exception rather than the norm, when it does occur, faculty members in both institutions then know what their colleagues are thinking and what they expect of their students. These commonly held definitions can then serve as cognitive frameworks for planning courses at each institution, which help lead to a more seamless transition from high school to college. Such articulated courses connect the exit level of high school with the entry level of college so students are able to continue to build more complex skills continuously throughout high school and into college.

The Culminating PROJECT

Many schools and even some states have instituted culminating projects that generally take place during the senior year and are also known as senior projects. Here are some resources to help schools interested in instituting such projects:

- The Senior Project Center bills itself as "the only comprehensive, nationally recognized" site for information on senior projects and provides "focused Senior Project research, technical assistance, and resources to high schools across the nation." Its detailed Web site can be found at www.seniorproject.net
- The State of Washington will require all students to prepare a culminating project beginning in 2008. A description of guidelines along with examples of culminating projects can be found at www.sbe.wa.gov/culminating%20projects/guidelines.htm
- The Mercer Island (WA) School District has prepared a detailed handbook outlining the procedures and components of a culminating project that can be downloaded from www.misd.k12.wa.us/schools/hs/sip/culm_proj_handbook.pdf

Improving Course Sequencing

After a basic agreement on exit and entrance expectations is in place, the high school curriculum can be better sequenced over four years. To create improved course sequencing, a series of important questions must be asked about each course:

- How does this course help students acquire the relevant knowledge and skills that are necessary to meet the exit standards?
- How does this course help develop the intellectual maturity of students?
- How does this course connect with the courses that came before and will come after it? How does it identify and reinforce key concepts and knowledge that were previously learned? How does it anticipate skills that have yet to be mastered?
- Is the challenge level of the material appropriate for developing the intellectual maturity of students at this age level?
- Is the pace of the work and the expected student production on a trajectory to have students ready for what will be expected of them in college?
- Does the course help students develop at least one of the foundational skills—such as writing, reasoning, problem solving, or analytic thinking—that are necessary for college success?

Aligning the High School English Curriculum

Let's look at an example of how a high school English program could be redesigned to prepare students for entry-level college courses. To accomplish this goal, a high school English department will need to agree on the types of texts taught at each grade level, the purpose of teaching each type of text, the analysis that students will do on these foundational texts, how the specific texts will connect with one another, how students will make links among them, what genres the texts represent, and what themes and archetypes the texts illustrate and develop.

In addition, the school's faculty members as a whole will have to come to agreement on expectations and standards for student writing, starting with examples of the type of work students are expected to produce by the time they graduate. These exemplary papers will be created for all the major writing genres that students will encounter in college and be accompanied by a common scoring guide with adaptations for specific genres. The scoring guide will span "freshman-to-freshman" performance levels from high school to college. Teachers will agree to use the appropriate version of the scoring guide as the baseline instrument for evaluating all student writing. Teachers will also agree on the number of pages of writing they will assign in each course and the quality of feedback on the writing they will provide. Students and parents should know the overall number of pages students will be expected to write during their four years in high school.

Schools should also adopt formal guidelines for proofreading and editing along with expectations for correct grammar and spelling. All teachers will agree to apply these guidelines to all student writing. In essence, the school will produce an explicit set of writing standards that results in all students having the same general expectations applied to their writing. These standards should be designed so students are expected to write in a progressively more complex and technically accurate fashion each year. This developmental progression simply serves to emphasize that expectations for writing proficiency are high in college and that such abilities take time to develop.

In a coherent program, research projects become a more central part of the curriculum in English and in other subject areas. Here again, a developmental sequence will lead students from relatively simple, straightforward research projects to more complex ones that allow them to develop the skills needed for college success. Although the resulting research papers need not become ever longer, they should become progressively more complex. According to data

collected by the National Survey of Student Engagement (2004), college research papers are most frequently in the five-page range. Providing students with extensive experience in writing many 5-page papers over four years is better than having them write one 20-page paper during their senior year.

The culmination of this program of study in English is a senior-level, seminar-type course specifically designed to emulate the demands of college classrooms. This concept is a radical departure from the current high school structure and, as a result, would be among the more difficult practices to implement. However, given the current critiques of the senior year and the need to try something different to keep students more engaged during their final year of high school, it may be time to consider this type of fundamental change.

The senior seminar in English might be team taught with a writer, a poet, or a faculty member from a local postsecondary institution. Its content would emphasize analytic thinking, student writing critiques, and the free exchange of ideas among students and instructors. The pace of reading and writing assignments would be consistent with what students would encounter in a typical college course, and students would be expected to write and rewrite pieces regularly and present them for discussion and debate. Papers would be three to five pages in length.

The senior seminar would yield information about a student's skill level and intellectual development and establish the work habits necessary for college success. The performance of students in this course during the first semester of their senior year could help students and their families assess the type of postsecondary institution that is the best fit for each student. For these reasons, the final course evaluation should contain a narrative component in addition to any letter grade assigned that would help students understand their strengths relative to college readiness in English and indicate areas where they need to add skills or change behaviors.

Ensuring Postsecondary Success

High schools that are designed to prepare large numbers of students for college success look dramatically different from those that prepare only a small proportion of their students for college success. The most important, and perhaps the most often overlooked, difference between these two types of schools is that the high-performing high school almost invariably has a more intellectually coherent program of study based on a curriculum that grows progressively more challenging from the freshman to the senior year. At high-performing schools, faculty members agree, either implicitly or explicitly, on the standards and expectations for students and on what constitutes a college-ready student.

A high school program that prepares students for college success requires intentionality and a commonality of purpose for students and staff members. The program must be geared toward a clear goal: to create a level of intellectual and skill development that connects seamlessly with what will be expected of students in college. Few high schools have attempted to create such an integrated, coherent, intellectually definable, and defensible program that is based on how a successful student would think, act, and learn after completing the school's program of instruction.

In such a school, it is virtually impossible for students to make bad decisions about which courses to take because all courses have been designed and articulated in a framework of common goals and expectations. When a school has such a carefully designed and connected instructional program, students can plan their course of study with high confidence that it will prepare them for college. Students may find different paths through the program, but they will all be headed in the same overall direction—toward intellectual growth that is consistent with readiness for and success in postsecondary education. In a time when the notion of reinventing the high school is taking hold across the country, let us bear in mind what most students say they want from high school and create an education that helps them achieve that goal. PL

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