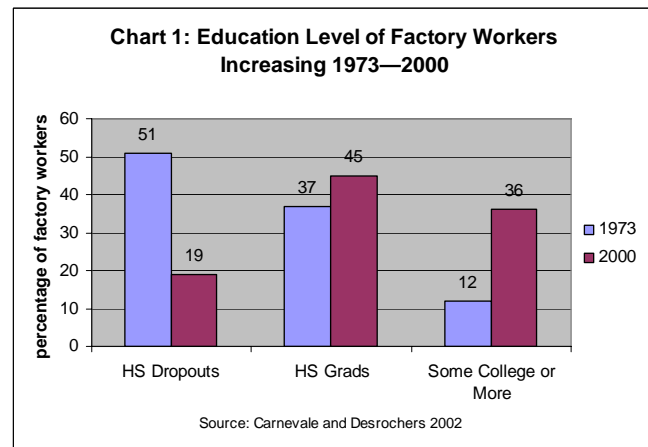


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## High School Teaching for the Twenty-First Century: Preparing Students for College

To prepare students for postsecondary education, educators and policymakers must perform two tasks at the same time: restructure high schools so they are aligned to the expectations of colleges and revamp instruction so that college readiness is the goal, measure, and substance of good teaching.<sup>1</sup> The research is clear: the key to preparing students for college is rigorous high school course work (Adelman 1999; ACT 2005). Therefore, high schools and teachers must set college-ready expectations for students, teach rigorous content so that students can apply knowledge in new situations, and use teaching methods that engage students in learning to reason, write, and use information in complex ways. The conditions of high school teaching must also change because teachers cannot solve all problems on their own. Teachers need the help of standards, assessments, curricula, pre-service preparation, and professional development aligned to college readiness if they are to succeed in the classroom.

In the twenty-first century, most students need at least some postsecondary education to earn a decent wage. An estimated 85 percent of current jobs and almost 90 percent of the fastest-growing and best-paying jobs now require some postsecondary education (Business-Higher Education Forum 2003; US Department of Labor 2006). Over the past three decades, options have quietly diminished for those who do not go to college (see chart 1). Most manufacturing jobs, long a good option for high school dropouts to earn a living wage, now require postsecondary training and skills (Barth 2003; American Diploma Project 2004). High school students know this. That is why 80 percent plan and expect to go to college (Ingels, et al. 2005; MetLife 2000). And that is why record numbers of students are preparing to go to college by taking advanced courses and college entrance exams; for instance, in 2007, a record-breaking 1.5 million students took the SAT (College Board 2007a).



<sup>1</sup> This brief focuses on policy-related issues concerning college readiness—meaning the course work and teaching needed to prepare students for most four-year and two-year programs that lead to a bachelor’s degree. It is important to recognize that not all students will attend a four-year university and that rigorous career and technical education programs are important elements in reforming high schools. However, this paper focuses on college readiness, not because career preparation is unimportant or secondary, but because an in-depth exploration of one topic was preferable to covering many topics superficially—a mistake often ascribed to high school standards. Additionally, recent studies, though not undisputed, have shown that the skills needed to succeed in college are similar to skills needed for good-paying jobs (ACT 2006b; American Diploma Project 2004). An exploration of college readiness, therefore, may yield valuable data that can inform the work of all high school teachers, not just those who teach college preparatory courses.

Unfortunately, high schools are failing students by not preparing them for college. Nationally, only 70 percent of students graduate from high school on time, and a mere 34 percent graduate ready for college (*Education Week* 2007; Greene and Winters 2005). These rates are even lower for poor and minority students. Overall, only 18 percent of freshmen graduate in four years, go to college, and earn an associate's degree in three years or a bachelor's degree in six (National Center for Public Policy and Higher Education 2004). A third of those who make it to college must take remedial courses, costing the nation over \$1.4 billion every year at community colleges alone (NCES 2004; Alliance for Excellent Education 2006a). Routinely, professors report that freshmen arrive unprepared for the rigors of college work (ACT 2007). Given that many high school standards, assessments, and curricula are not aligned to college, the blame for poor student performance does not lie only with teachers. However, the impact a teacher makes on student learning is tremendous, and high school teachers have much to offer in preparing more students for college.

## **The Disconnect Between High School and College**

Policymakers should not assume that the biggest obstacle to preparing students for college is poor-quality teachers. Rather, the biggest problem may be the lack of alignment between the structure of high schools and what colleges expect.

### **Standards, assessments, and course requirements are not aligned to college.**

Sixty-five percent of college professors do not believe high school *standards* prepare students for college, perhaps because they believe standards cover too many topics without targeting the essential knowledge and skills required for college readiness (ACT 2007a). High school *assessments* administered for state accountability purposes often measure ninth- or tenth-grade level knowledge and skills and rarely ask students to explain their reasoning or to apply knowledge to new situations, giving teachers and students little useful feedback about college readiness (Callan, et al. 2006; Conley 2003). Furthermore, high school *course requirements* are poorly aligned to college expectations, so that it is common for students to graduate from high school without taking the right courses to get into college (Wagner 2006; Barth 2003). This disconnect is particularly troubling because most students do not know what courses are required for college admission (Venezia, et al. 2003).

Furthermore, few teachers have formal ways to inform their teaching with college expectations such as up-to-date admission and placement information or access to systematic data on what college professors expect students to know and be able to do (Venezia, et al. 2003; Callan, et al. 2006). Plus, due to the large size of most high schools, a crowded and complex master schedule gives teachers scant time for updating their content knowledge to a college level or for collaboration with colleagues to discuss how students are progressing toward college readiness.

### **High school teaching is not aligned to college.**

A recent report from ACT finds that a large majority of high school students took core math and science courses but did not gain college-ready skills (60 percent and 74 percent, respectively), suggesting that the course title may be right but the content and instruction are not (2007a). Similarly, the Illinois Education Research Council discovered that, course titles being equal, high school students with higher-quality teachers (as measured by a variety of factors) were more likely to be college ready (Presley and Gong 2005). Clearly, college-aligned *teaching*, in conjunction with aligned standards, assessments, and courses, is a major factor in preparing students for college.



High school *teachers often value and teach different things than college instructors expect*, due in part to poorly aligned standards and curriculum. Community college and university professors expect students to know fewer but more targeted topics and to have mastered fundamental skills. High school teachers, on the other hand, rate the need to teach far more content and skills as important, and they focus students on topics that professors do not deem as critical (ACT 2007a). For example, high school teachers say their biggest goals are to expose students to advanced math topics like calculus, and increasing numbers of students are taking calculus courses (ACT 2007a; College Board 2007a). Yet college instructors prefer that students develop fundamental skills (like basic operations) and learn advanced content later (ACT 2007a).

Likewise, a significant gap exists with *reading comprehension*, a key skill for college (ACT 2007a). In general, high school teachers rarely teach reading comprehension strategies in the upper grades, and high school teachers do not require reading-heavy assignments or expose students to complex texts as often as students need to prepare for college-level work (ACT 2007a; ACT 2006a; Education Trust 2005). The lack of focus on reading is not always the fault of individual teachers. Few preservice preparation programs require secondary teachers to complete adolescent literacy course work, and the longstanding culture of high schools is that teachers are responsible for teaching content, not for teaching reading (Heller and Greenleaf 2007). The lack of preparation and an impoverished culture of literacy must change if more students are to graduate with the literacy skills needed to succeed in college.

## **First Things First: Defining College Readiness**

Making college readiness the goal of high school teaching begs the question of what college readiness means and how it can be integrated into teaching. A basic definition of college readiness is simply the knowledge and skills students need to succeed in entry-level college course work without remediation (Conley 2007). But what, exactly, constitutes that knowledge and those skills?

### **Three Ways to Define College Readiness**

One of the first definitions used on a broad scale was developed by Jay Greene of the Manhattan Institute in 2003. His definition measured the minimum qualifications a student needed to meet to be considered for the least-selective four-year colleges—earning a regular high school diploma, mastering basic reading skills, and completing the least burdensome course requirements. Even using that low threshold, Greene’s latest calculation finds that only 34 percent of US students had graduated college ready, with even lower rates for African American (23 percent) and Hispanic students (20 percent) (Greene and Winters 2005).

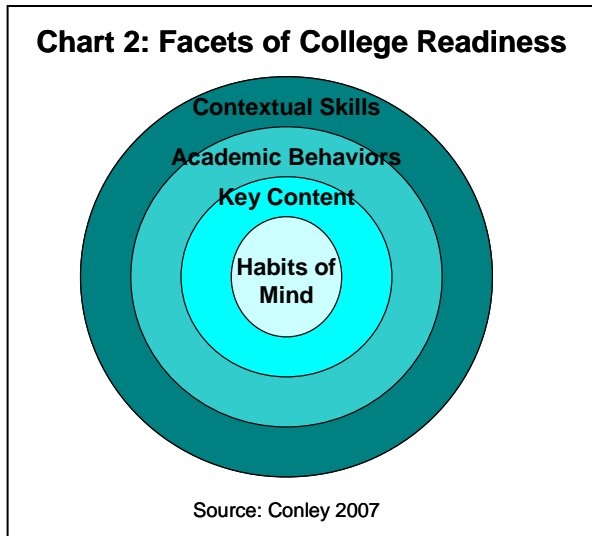
ACT has created a benchmark for college readiness by linking actual college performance to student scores on its high school assessment and by surveying instructors at community colleges and four-year institutions about what they expect college freshmen to know and be able to do (2006a). Combined with its national survey of high school curriculum, analysis of reading skills required for college readiness, and observation of college preparatory high school teaching, ACT has collected comprehensive data on what course work, content, reading skills, and teaching practices prepare students for college (2006a; 2006c; 2007a).

A third definition of college readiness also begins with college expectations and maps backwards. This four-part definition (see chart 2) was developed by David Conley at the University of Oregon.

- First, *habits of mind* are what professors consistently identify as the skills needed for learning college-level content, including critical thinking skills such as analysis, interpretation, problem solving, and reasoning (National Research Council 2000; Lundell, et al. 2004).



- Second, **key content knowledge** is the essential knowledge of each discipline that prepares students for advanced study, the “big ideas” of each content area. Numerous organizations and initiatives have carefully outlined those big ideas in core subjects (see below), and organizations like ACT and the Education Trust have identified thinking skills and teaching practices that lead students to develop college preparatory knowledge and skills (ACT 2006d, Education Trust 2005).



- The third facet, **academic behaviors**, includes general skills, such as reading comprehension, time management, and note-taking, which students need to engage in college-level work. Metacognition, or self-awareness of how one is thinking and learning, is also a critical academic behavior for high school students to master, because they will no longer be able to count on teachers or on parents to keep track of their progress once they get to college.

- Finally, **contextual skills** are practical skills for getting into and succeeding in college (“college knowledge”). These include understanding the admissions process, placement testing, financial aid, and the academic norms and expectations of college life, such as how to communicate with professors and peers in an academic setting (see Lundell, et al. 2004). Contextual skills are not generally the responsibility of classroom teachers, but they are key to a successful college transition, and disadvantaged students are less likely to possess them (Venezia, et al. 2003; Conley 2005). That is why organizations like the College Board have created courses like CollegeEd, an academic and career advisory course for grades seven through twelve that informs students about careers and college majors and what knowledge and skills students need to prepare for them (College Board 2007b).

## Teaching Aligned to College Readiness

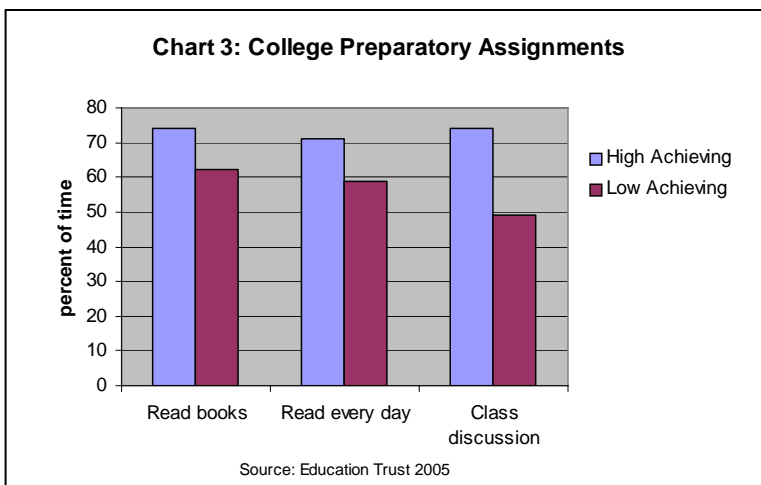
Policymakers and educators have a variety of sources from which to draw to develop a definition of college readiness. Once that task is accomplished, however, the primary responsibility of high school teachers and leaders is to integrate that definition into teaching.

### Setting High Expectations

First, high school teachers must **believe that all students can learn** to high standards in order to help them master a college preparatory curriculum. Teachers working with students of color especially need high expectations; research shows that high school teachers tend to have lower expectations for students in high-minority schools unless they have strong preparation for teaching there (MetLife 2001; Ladson-Billings 1999). But beliefs are not enough. To maintain high expectations and deliver on them, teachers need teaching skills that include the ability to make content accessible to a wide range of learners (Darling-Hammond and Bransford 2005; Wenglinsky 2002).



**Student work assignments** must also set high expectations for students. In a 2005 study of higher-achieving and lower-achieving high schools, the Education Trust finds a gap in the rigor of assignments (see chart 3). Teachers in higher-achieving high schools were much more likely to ask students to engage in college-preparatory activities like reading books, reading every day, completing reading-heavy assignments, and participating in classroom discussion (Education Trust 2005). Learning to set high expectations for college and assigning rigorous work should begin in teacher preparation programs in which candidates get their first introduction to aligning curriculum with standards. However, high expectations are also absorbed from fellow teachers and school leaders, in addition to springing from a teacher’s own attitudes (Chase 1991).



### Measuring High Expectations

Organizations such as Teach for America and the New Teacher Project, which help districts recruit top-flight talent into low-performing schools, rigorously screen for candidates that strongly believe in student potential, and they reinforce that core belief during training. The same is true for the National Board for Professional Teaching Standards (NBPTS), which credentials accomplished teachers. To earn certification, teachers must demonstrate that, among many other things, they believe all students can learn and that they are dedicated to making knowledge accessible to all students. A study of the NBPTS standards finds some knowledge and skills associated with greater teacher effectiveness in math and science, including preparation for teaching students with diverse learning needs and preparation for teaching higher-order thinking skills using hands-on methods like laboratory investigations (Wenglinsky 2002). All three models illustrate the importance of setting high expectations, communicating them constantly to students, and providing teachers with skills that engage all students in college preparatory work.

Sources: Kopp 2004, New Teacher Project 2007, NBPTS 2007

### Delivering Rigorous College Preparatory Content

The key task for increasing the rigor of course work is for teachers to **know their content at a college level** and to **update that knowledge regularly**. Research shows that secondary math and science teachers with strong content knowledge make a greater impact on student learning; training in how to teach that content knowledge is also beneficial (Walsh and Tracy 2004; Allen 2003; Monk 1994). Research in other disciplines is spotty, but it stands to reason that teachers need the capacity to impart the “big ideas” of each discipline to their students in a way that stretches students toward college readiness (Allen 2003; Presley and Gong 2005).

High school teachers also need to teach students **thinking skills essential to each content area**. Each academic discipline has its own set of practices that define what good and bad thinking looks like for that



discipline (see Heller and Greenleaf 2007). For example, students in history class should not just memorize facts like the causes of the Civil War; instead, they learn that history is about interpretation of events and how to engage in that interpretation critically and responsibly. Research suggests that students learn more when teachers use teaching methods that require students to apply appropriate disciplinary processes to the subject matter they are learning (e.g., use of scientific inquiry) (Newman, et al. 1996; Lee, et al. 1995). High school students need to learn these ways of thinking in addition to the “big ideas” so they can analyze and synthesize new knowledge once they get to college (ACT 2006d).

Teachers should first develop content knowledge and the capacity to teach disciplinary thinking skills in their teacher preparation program. Ongoing professional development in the content area is also needed. A chemistry teacher, for example, must keep pace with changing views of atomic structure and how chemists practice their trade (Heller and Greenleaf 2007). To highlight the importance of content knowledge in pre-service preparation, the American Association of Colleges of Teacher Education developed profiles of preparation programs that prepare teachers with strong content knowledge in science, technology, engineering, and math (STEM) fields since policymakers have placed so much emphasis on STEM (AACTE 2007).

Numerous studies and organizations have developed *college-ready content standards* that can inform high school teachers once they are in the classroom. Each resource has its own merit and application, so teachers and administrators together should weigh them carefully. The American Diploma Project outlined high school math and English standards, reading lists, and typical assignments that are aligned to both college and work expectations (2004). The Standards for Success Project, sponsored by the Association of American Universities, has developed college readiness standards in six core subject areas that outline the knowledge, skills, and habits of mind required for success in research universities (Conley 2003b). Starting with data on student performance in college and mapping backward to what students need to learn, the College Board developed SpringBoard, a program for grades six through twelve. SpringBoard provides curriculum guides, diagnostic and formative assessments, and professional development for secondary teachers to prepare students for college (College Board 2007c). And in fall 2007, ACT will release QualityCore, a program designed to improve the rigor of fifteen high school courses. For each course, based on course work that has prepared students for college, the program will offer model instructional units, course blueprints, guidelines for creating benchmark assessments, and end-of-course exams that are tied to college-readiness standards (2007b).

### **Strengthening the Preparation of Future Teachers**

The Teachers for a New Era initiative aims to strengthen K–12 teaching by developing state-of-the-art programs at schools of education. The eleven participating institutions are focused on three principles of redesign. First, a teacher education program should be guided by a respect for evidence, including attention to pupil learning gains. Second, to strengthen the content knowledge of future teachers, arts and sciences faculty must be fully engaged in the education of prospective teachers, especially in the areas of subject matter understanding. Finally, teacher education should be understood as an academically taught clinical practice profession, requiring close cooperation between colleges of education and actual schools, master teachers as faculty in the college, and residencies for beginning teachers during a two-year period of induction. Strengthening content knowledge and modeling good practice in the classroom are key to increasing the rigor of high school teaching (Darling-Hammond 2006).

For more information, visit <http://www.teachersforanewera.org/>.



## Teaching Reading and Writing Skills for College

Most students enter high school struggling to learn the “big ideas,” or content of each discipline, because they struggle to understand their textbooks or to communicate what they have learned (Biancarosa and Snow 2006; Snow and Biancarosa 2003). Seventy percent of eighth graders and 65 percent of twelfth graders do not read at proficient levels (NCES 2007, 2006). Moreover, almost all college freshmen discover, regardless of their performance in high school, that college courses demand a new level of reading and writing skill in all subject areas. High school teachers must prepare students to read and write for each major discipline, not just for English class, so that students are ready to take on college assignments. A chemistry teacher, for instance, needs both preservice training and professional development in the classroom to help students learn to read a text and to apply the material in a lab report as a chemist would—by engaging in precise analysis with exact answers (Heller and Greenleaf 2007).

A host of major reports have identified classroom and school-level strategies for improving adolescent literacy (Graham and Perin 2007; Center on Instruction 2007; IRA 2007; Biancarosa and Snow 2006; NASSP 2005). Numerous reports have also outlined recommendations on the topic for federal, state, and local policymakers (Alliance for Excellent Education 2006b; NSBA 2006; NGA 2005; NASBE 2005). A handful of states, notably Florida and Alabama, have launched statewide initiatives to train middle and high school teachers in all subject areas to support the literacy development of students. In addition, a number of teacher preparation programs have begun to incorporate literacy instruction into their content-area curricula and course work requirements for middle and high school teacher candidates (see below).

### Preparing Content Teachers to Teach Reading and Writing

Teachers College at Columbia University, in collaboration with the National Academy for Excellent Teaching, has designed two courses for middle and high school teacher candidates in science and social studies. The courses combine existing student-teaching seminars in science and social studies with a focus on adolescent literacy that is specific to the content area. The adolescent literacy course is now required for all science education students and, beginning in fall 2007, will be required for all social studies education students. The courses are designed so that preservice teachers learn the literacy techniques in the fall and implement them when they student teach in the spring. To solidify what is learned in the fall, student teachers are supported by a mentor teacher in their subject area and a content-area supervisor from Teachers College. “When you fragment literacy and subject matter, it gets very confusing for the learner,” said Dolores Perin, associate professor of psychology and education and coordinator of the Reading Specialist Program. “Combining the two offers a twofold benefit. One is the transfer of learning—I would expect that the literacy skills would transfer to the subject matter. The second is that the students see an authentic reason for literacy.”

For more information, visit <http://www.tc.columbia.edu/news/article.htm?id=6274>.

## Motivating and Engaging Students for College

Motivation is the key to learning in the upper grades, even more than in the earlier grades (National Research Council 2004). Motivation may be particularly important for disadvantaged students for whom college has not been presented as a real option (Irvine 1990). However, a focus on motivation should not be separated from teaching students rigorous content and higher-order thinking skills. Instead, these skills should be taught and modeled through the teaching of rigorous content (Center for Research on Learning 2001).



Decades of research in *literacy and math* reveal some motivation strategies that high school teachers can learn in their preservice preparation and hone once in the classroom (National Research Council 2004). In terms of literacy, researchers have found that giving older students some choice in reading materials is a helpful motivator, as is allowing adolescents to draw on their interests and abilities outside of school to complete reading and writing tasks (Guthrie and Humenick 2004; Moje 2006). In general, students are motivated when given *tasks that are challenging but achievable* and when given opportunities to *apply knowledge* in real-world situations (National Research Council 2000). Students, especially struggling students, need “scaffolded” support from teachers, such as having extensive opportunities to practice and revise their work in response to feedback, so that they learn how to reach high standards by applying purposeful effort over time (National Research Council 2000).

## Teaching Conditions Aligned to College Readiness

In addition to knowledge and skills, teachers need support and conditions that set them up to succeed in preparing students for college (Center for Teaching Quality 2007). Yet if conditions like out-of-field teaching or the lack of college-ready assessments persist, teachers will find their ability to impact college readiness stymied.

### Making Appropriate Teaching Assignments

It is fair to ask that students be taught by teachers who demonstrate subject matter competency and knowledge of how to teach their content (Darling-Hammond 2006). However, teaching a subject for which one is not trained (otherwise known as out-of-field teaching) is a significant problem in the upper grades, particularly in math (Jerald 2002). On top of that challenge, high school teachers are most likely not to be “highly qualified” as defined by NCLB<sup>2</sup> (Stullich, et al. 2006). Both problems compound in low-performing high schools, causing administrators difficulty in staffing classrooms with well-trained teachers. Only a comprehensive approach to recruitment and retention will allow administrators to make appropriate assignments so that students can learn college preparatory material from teachers trained in their discipline.

On the supply side, high schools need a large pool of candidates to select from, including getting an early jump in the hiring process to have the best shot at recruiting trained teachers. A 2003 study by the New Teacher Project finds that the lengthy, bureaucratic hiring process in most districts discourages higher-quality candidates, and they exit the process faster than lower-quality candidates (Levin and Quinn 2003). High schools also need smart incentives to attract candidates with the right content knowledge for the right classroom, and teaching struggling students must change from being a hazing period for rookies into a rewarding challenge for veteran stars. Routinely, new teachers are given the most difficult assignments, in the most struggling schools. If they are to use their knowledge and skills to prepare students for college, then they will need a better transition into teaching, like induction, than the current sink or swim model.

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<sup>2</sup> According to NCLB, a secondary teacher is deemed “highly qualified” after meeting three requirements: 1) obtaining a bachelor’s degree, 2) earning certification or licensure to teach in a state, and 3) demonstrating subject matter competency.





## Finding the Right Incentives to Improve Teaching Assignments

Clark County, NV, the fastest growing school district in the country, includes seven hundred thousand students and eighteen thousand teachers in 327 schools. On average, the district opens one new school per month, and 75 percent of teachers are recruited from outside the state. To cope, Clark County has generated several recruitment and retention strategies so that administrators can make appropriate teaching assignments. Low-performing schools are given a two-month head start in hiring and receiving transfers. In partnership with the teachers' union, the district treats new highly qualified teachers as third-year teachers to attract them with higher salaries. Teachers who attend the district's Urban Teacher Academy are moved up the salary schedule, trained for five weeks before school starts, and offered the chance to work with master teachers and full-time mentors in professional learning communities. Clark County has also experimented with principals' salaries, awarding bonus salary points for challenges a principal may face in struggling schools (e.g., poverty-level schools or low-achievement schools). Thus, working in a challenging school is now at the top of the pay ladder, not at the bottom.

Source: Presentation by Dr. George Ann Rice, retired associate superintendent, Human Resources Division, Clark County School District, at the 7<sup>th</sup> Annual NCTAF Symposium, July 10, 2007.

## Focusing Induction and Professional Development on College Readiness

If rigorous college preparatory teaching is the goal for high school teachers, then brand-new teachers will need help in delivering content in ways that engage students, especially since new teachers are more likely to work with poor and minority students (Peske and Haycock 2006). New teachers need **comprehensive induction** support in their early years to keep them in the profession and to improve their skills (Alliance for Excellent Education 2004). Unfortunately, high school teachers are less likely than teachers in lower grades to receive induction (Ingersoll 2007). Since many new teachers wrestle with what content to teach and how to teach it (Kauffman, et al. 2002), mentoring from an expert veteran in the novice's subject area is crucial to making induction work in a college-readiness setting (Alliance for Excellent Education 2004). Moreover, the focus of high school induction should be on curriculum and should include regularly scheduled common planning time with colleagues centering on students' academic growth toward college; otherwise, the induction may offer emotional support but is unlikely to improve teaching skills (Education Trust 2005).

For all the criticism of one-day disparate workshops that pass for **professional development**, current practice remains largely incoherent and sporadic (NCES 2001). But professional development is more effective and better promotes college readiness when it is delivered at the school building and driven by clear goals, useful data, and teacher input.

The **clear goal** is to focus teaching on college readiness. Setting goals is usually achieved by strong school leaders who set the tone and culture of a school and who ensure that professional development keeps its eye on the prize: improved student learning and college preparation (NASSP 2004). Research shows that school leaders must keep professional development focused on student learning so that meeting time does not degenerate to procedural matters like the bell schedule or complaining about pep rallies (Supovitz and Christman 2003). **Helpful data** comes not from a single test at the end of the year—however important that assessment may be for accountability purposes—but from ongoing benchmark assessments, aligned to college readiness standards and administered at regular intervals. The best leaders carve out time for teachers to collaborate, and they gather them regularly to ask, “What are we doing well, and how can we improve so that students learn more?” (NASSP 2004; Education Trust 2005). From that point on, **teacher input** is needed because teachers themselves have much of the expertise they need, and they can strategize



about ways to improve instruction (Education Trust 2005). Teachers may discover the need to update their content knowledge in certain areas or to home in on a certain teaching strategy. Regardless, that decision is made with strong teacher input, driven by classroom data on college readiness, rather than made by administrators isolated in the central office.

In this way, finding time in the master schedule and leveraging college readiness data become the means to target and strengthen professional development at the high school level, rather than coming up with money to send teachers to workshops.

### **Professional Development Driven by Data**

In 1998, barely 70 percent of students at Norview High School in Norfolk, VA passed the state reading exam, and only 30 percent passed algebra or geometry. In every subject, African American students performed worse than their white peers. In response, Norview teachers mobilized to improve achievement. Teachers grouped into teams by subject area, adopted shared curriculum guides and common assessments, and met regularly as teams around assessment data in order to review student progress. To evaluate their effectiveness as teachers, teams focused on three central questions: “What am I teaching well?”; “What am I not teaching well?”; and even “Why do your students perform better than mine?” Struggling teachers then observed successful teachers in the classroom. Six years later, the results were clear: Norview raised achievement and narrowed gaps. In 2004, 93 percent of students passed the reading exam, 94 percent passed the algebra exam, and just under 90 percent passed in geometry. Remarkably, in reading and algebra, Norview no longer had a black-white achievement gap. Three years later, Norview continues to post high achievement, to narrow gaps, and to outpace the average performance of high schools across the state. In 2006, all subgroups of students made AYP, 90 percent of students passed the reading exam, and 87 percent of students passed the math exam.

For more information, go to [www.all4ed.org/publications/ReadingNext/NorfolkReadingCaseStudy.pdf](http://www.all4ed.org/publications/ReadingNext/NorfolkReadingCaseStudy.pdf).

### **Leveraging Assessments and Data to Improve College Readiness**

High school teachers need a range of assessments that measure and inform their students’ preparation for college, not just one test score at the end of the year. But teachers must be willing to use those assessments; otherwise, data will remain in a report instead of informing classroom practice. In comparing high-achieving and low-achieving high schools, the Education Trust finds that teachers in the former embraced assessments and even created them if they did not exist, whereas teachers in the latter merely tolerated them (2005).

In terms of *content knowledge*, high schools have long used Advanced Placement (AP) and International Baccalaureate (IB) exams to focus high school teaching on college preparation; over time, the College Board has created AP exams for thirty-five courses in twenty subject areas (College Board 2007d). A growing number of states are beginning to embed college-ready assessments into their statewide assessment systems. New York is the only state currently using end-of-course exams for college admission and placement decisions, but eighteen other states are pursuing this strategy (Achieve 2007). Another approach, taken by California and Texas for freshman course placement, is to create comprehensive high school assessments that are taken by students in eleventh grade; five additional states plan to create such assessments in the future (Achieve 2007). And six states (Colorado, Idaho, Illinois, Kentucky, Maine, and Michigan) have incorporated the ACT or SAT into their state assessments systems to inform high schools about how well students are prepared for college (Achieve 2007).



**Thinking skills**, or habits of mind, can also be measured. Oregon’s Proficiency-Based Admission Standards System collects a variety of evidence from high school students to determine their readiness for college (Oregon University System 2007). Similar measurements have been developed by Washington state and New York City (Conley 2007). A growing number of schools, districts, and some states have developed portfolio assessments that require students to demonstrate mastery of skills they will need to apply in college and the workplace. Such portfolios include research papers, science investigations, mathematical models, or senior projects that call on students to analyze and present information in ways that are expected in college. Rhode Island and Pennsylvania now use such assessments as part of their high school graduation requirements (Darling-Hammond, et al. 2005).

Assessing **academic behavior** like motivation or study skills may be more difficult and subjective. As Conley has pointed out, however, if certain behaviors like “hard work” are clearly defined and measured through survey instruments, then some useful information can be gleaned (Conley 2007). The Center for Evaluation and Education Policy conducted extensive surveys of high school students and teachers and compared that data to survey data of first-year college students and professors. It measured, for example, the amount of time high school students spend preparing for class compared to college freshmen or how challenged both sets of students feel by course assignments and its correlation to grades earned (Center for Evaluation and Education Policy 2005). Such academic surveys could yield valuable comparisons between teacher efforts, student responses, and college-level outcomes, revealing what is influencing and improving academic behavior.

## **Recipe for Success: Improve Instruction and Improve Conditions**

Setting the high goal of college readiness will require nothing less than an intensive, sustained effort to reform high school teaching. Many positive reforms in some states and districts have led to raising high school standards, aligning them with college expectations, and increasing course requirements for graduation; such reforms must happen everywhere. But what also remains is to systematically increase the rigor of *instruction* so that high school *teaching* is aligned with college expectations.

Policymakers must recognize the critical role teachers play in preparing students for college and must ensure that teachers get the assistance and resources they need. Teachers, after all, are the ones who make the greatest impact on students’ learning for college by setting high expectations, teaching rigorous content and college preparatory skills, and motivating more students to set their sights on college. But they also deserve, and must receive, the supports and conditions necessary for success—their own and that of their students headed to college.

## **MetLife Foundation**

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