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Raising the Bar: A Baseline for College and Career Readiness in Our Nation's High School Core Courses

Policy Report

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How well are our nation's high schools preparing students for college and career? Recent analyses by ACT show low rates of college and career readiness among United States high school graduates. Data from postsecondary institutions reveal high remediation rates and low second-year retention rates among first-year college students. Employers lament the difficulty of finding entry-level employees with the necessary skills for success on the job. All of these suggest disparities between students' high school preparation and the level of readiness required for postsecondary education, training, and the workplace.

A new ACT report, *Raising the Bar: A Baseline for College and Career Readiness in Our Nation's High School Core Courses* (ACT, 2012), examines the degree to which core courses, as they are currently taught in a nationally representative sample of US high schools, are effective in preparing our nation's high school graduates to enter some form of postsecondary education (a two-year, four-year, trade, or technical school) without remediation or to enter workforce training programs ready to learn job-specific skills. The study examined eight high school core courses in three main subject areas: English (English 10, English 11, and English 12), mathematics (Algebra I, Geometry, and Algebra II), and science (Biology and Chemistry).[1]

Two critical questions are at the heart of this study:

1. How much are today's high school core courses increasing students' knowledge and skills in course subject matter?
2. How much are today's high school core courses increasing those particular skills that students need to become ready for college and career?

The simple answer to these questions is this: students and schools are making some progress, but not enough.

[1]For detailed information about the study design, please see the Appendix.

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The study's key findings:

1. **Gains in course achievement and in college and career readiness across all courses studied were modest at best.** Science and mathematics courses showed the greatest gains. Smaller gains—and even decreases—were noted in the English courses.
2. **In almost all courses studied, a majority of the schools are demonstrating at least some gain in course achievement and college and career readiness.** With the exception of English 11 (53 percent of schools) and English 12 (24 percent of schools), 90 percent or more of the schools showed at least some gain in course achievement; in Algebra I, Biology, and Chemistry, all of the schools in the study demonstrated gains. With the exception of English 12 (31 percent of schools), a majority of schools—from 54 percent to 97 percent, depending on the course—demonstrated some gain in college and career readiness.
3. **Too many schools are not making progress at raising students' college and career readiness through the core courses they are offering, particularly in English.** An average of 7 percent of the schools in the study showed no change or decreases in student readiness in mathematics, 11 percent showed no change or decreases in student readiness in science, and 47 percent showed no change or decreases in student readiness in English.
4. **In mathematics and English, successive courses in a sequence may add progressively less value to student achievement.** In mathematics, growth in course achievement was greatest in Algebra I and lower in Geometry and Algebra II, suggesting a possible concern regarding the rigor of the latter two courses. And while course material in English typically does not follow a clear sequential structure in the same way that mathematics does, both the course achievement results and the college and career readiness results in English indicate the possibility of a steep decline in students' growth as they progress from English 10 through English 12.

What do these findings tell us about the likelihood of increasing students' college and career readiness in our nation's high schools?

We need to improve student performance at the typical school at much higher rates.

Using the results of this study, we examined the rate of growth toward college and career readiness to determine whether the current rate of growth is reasonable and sufficient to ensure that most, if not all, students will be ready for college and career by high school graduation. To do this, we established reasonable growth targets that differ depending on how close different groups of students already are to being ready for college and career.

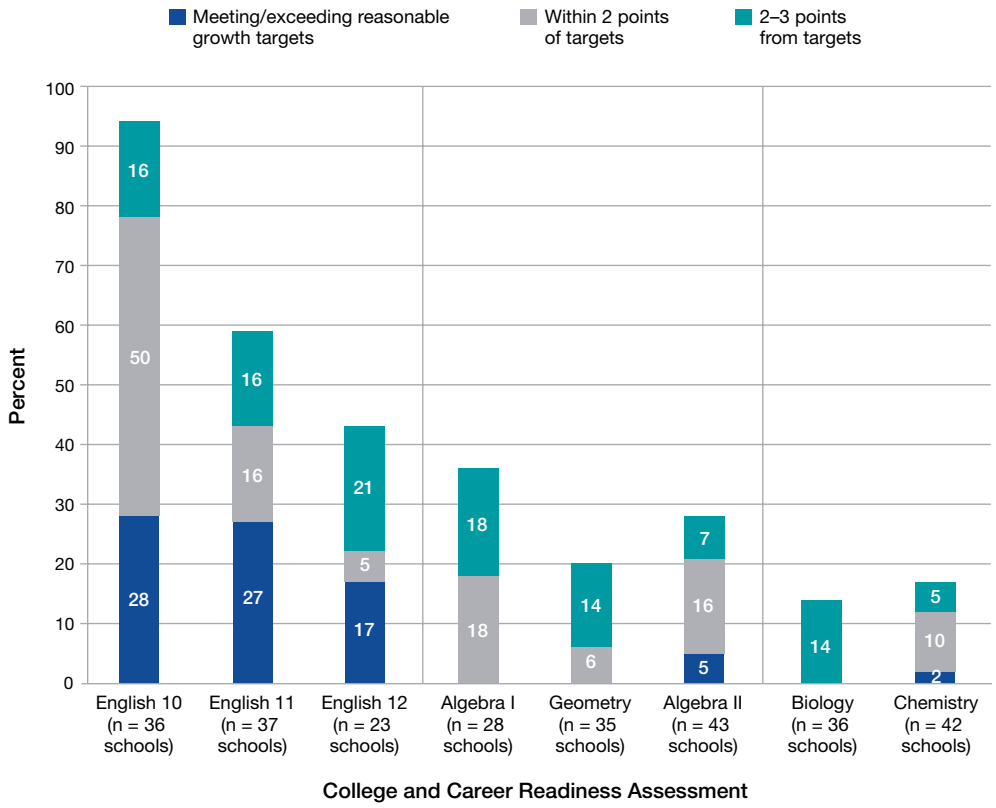
We then calculated the average score increases that would be required in order for 75 percent of the students in each course at a typical school to achieve their growth targets—an ambitious but reachable goal—and compared them to the actual score changes by course observed in the study.

Helping students at the typical high school meet their growth targets will be challenging. In English 10 and Chemistry, the required increases are about double the observed increases, while in the mathematics courses and Biology, the required increases are roughly three times the size of the observed increases. In English 11, the required increase is about eleven times as large as the observed increase; and in English 12, where the observed change was a decrease, the required change is an increase slightly larger than the absolute value of the observed decrease.

It can be done.

A number of the schools in the study are already seeing 75 percent of their students demonstrating reasonable growth in college and career readiness. And an additional number of schools are achieving gains with their students that come within 2 or 3 points of those needed to demonstrate reasonable growth. These categories of schools are shown in Figure 1.

Figure 1: Percentages of Schools[2] in Which 75 Percent of Students Are Achieving or Approaching Reasonable Growth on College and Career Readiness Assessments



ACT is currently studying these schools that are raising the bar by helping to prepare students for college and career at the projected rates. Using what takes place in these schools as models of effective practice, other schools can learn to reach these levels of achievement as well—all of which works toward the goal of making sure that all students are prepared for college and career.

[2]Some schools were excluded from this analysis because the numbers of their students in a given score category were too small to make reliable calculations.

Policy Recommendations

Preparation for college and career is determined substantially at the individual course level. What is occurring academically in our nation's high school classrooms has tremendous impact on students' potential for readiness and success after high school graduation. It is clear from the results of this study that many of our nation's schools need to improve the rigor of their core courses. With respect to both course achievement and college and career readiness, there is ample room for improvement in the high school core courses, particularly in English.

But by the same token, the study demonstrates that it is possible for schools to teach core subjects at a high level, and to ensure that their students have learned the material necessary for success in college and workforce training. How do we help ensure that more schools are engaged in overhauling their curricula so courses are more rigorous and are able to prepare more students for college and career? Based on the results of this study, we offer the following recommendations:

1. **Schools must use data to evaluate the rigor and impact of core courses and adopt best practices that have been shown to further student growth in these courses.**

   Recent national initiatives such as the proposed reauthorization of the Elementary and Secondary Education Act focus the criteria for high school accountability squarely on improvements in students' college and career readiness. This both emphasizes the importance of, and serves as the foundation for, school-based efforts to ensure that core courses are rigorous enough to prepare all students for success in college and career after graduation. By means of data gathered from monitoring student progress in core courses (at the start and end of each school year at a minimum, and ideally on a more frequent formative basis), schools can determine which of their courses are adding value to student readiness and which are in need of improvements.

   We can also help ensure that more students graduate ready for college and career by observing and learning from the practices of schools and classrooms that are currently achieving high levels of growth toward student readiness and by applying these practices at all high schools in the country. Schools can also pay particular attention to those courses that empirical research (such as that described in this report) suggest are most in need of focused improvement efforts.

2. **Core course content must be aligned with the requirements of postsecondary educational institutions and workforce training programs, and the courses within each subject area must be progressively sequenced.**

   High school core courses must, as a priority, focus on the essential knowledge and skills for college and career readiness. Adopted as of this writing by 45 states and the District of Columbia, the Common Core State Standards—for the first time in the nation's history—detail the knowledge and skills that all students need to learn in their coursework (not just in high school but also in grades 3 through 8) to graduate ready for college and career. It is therefore imperative that high schools effectively implement the Common Core standards so their graduates are prepared to succeed in postsecondary education and targeted workforce training.

   In too many cases, course syllabi in a given subject area rely too heavily on re-teaching from year to year and do not capitalize on what students have already learned (ACT, 2011). By presenting core course content in English language arts and mathematics according to clear learning progressions, the Common Core can also help ensure that students continually build on what they have learned in earlier courses, thereby adding steadily to their readiness for college and career.

3. **Effective teachers must be recruited, mentored, developed, and retained to teach the new rigorous curriculum and to reinforce the rigor of core course content.**

   Teachers are the crucial link to the implementation of college- and career-ready standards. Rigorous standards such as those outlined in the Common Core State Standards are only a blueprint: it is the critical task of teachers and administrators to serve as the bridge between curriculum content and student learning by translating the rigorous standards into coherent curricula, syllabi, and assignments that clearly and directly reflect the priority of college and career readiness skills. Schools must recruit effective new teachers and train experienced teachers to teach to the new standards, especially in the upper-level courses that this study identifies as particularly in need of improvement. Schools also must:

   - mentor new teachers so they learn the practice and craft of teaching from the best and brightest veteran teachers,
   - offer teachers professional development opportunities in support of a rigorous curriculum,
   - and offer teachers incentives to continue to pursue the challenging, rewarding work of helping all students to meet higher educational standards.

All students need to graduate from high school ready for college and career. To do so, they must have the opportunity to take rigorous core courses that teach the essential knowledge and skills for college and career readiness. Knowing the value that core courses are currently offering students, we will be able to effectively determine the impact of course improvement efforts and measure the progress that schools, districts, and states need to make if we are to prepare all students for college and career.

There is rigor in the core courses at some schools now. Let's work to ensure that all core courses are of sufficient rigor so more graduates are prepared to take advantage of educational and career-training opportunities after high school. In addition, curricula in elementary and middle school must be strengthened in order to prepare all entering high school students to benefit from rigorous high school courses (ACT, 2008; National Center for Educational Achievement, 2009). Failing to provide high school graduates with the help they need is to fail at the very mission of education: preparing our children for a successful life.

The time to begin is now.

References

ACT. (2008). *The forgotten middle: Ensuring that all students are on target for college and career readiness before high school.* Iowa City, IA: Author.

ACT. (2011). *Raising the bar: A baseline for college and career readiness in our nation's high school core courses.* Iowa City, IA: Author.

National Center for Educational Achievement. (2009). *Preparation matters.* Austin, TX: Author.

Appendix: Study Design

A nationally representative sample of more than 35,000 students in public and private US high schools participated in the study. Table 1 reports characteristics of the 62 participating schools, and Table 2 reports characteristics of the student sample.

Table 1: School Characteristics (n = 62)

Characteristic		Percentage of Schools
Type	Public	88
	Private	12
Size	400–799	43
	800-plus	57
Region	East	38
	Midwest	41
	Southwest	14
	West	7

Table 2: Student Characteristics (n = 35,228)

Characteristic		Percentage of Students
Gender	Female	53
	Male	47
Race/ethnicity	African American	7.0
	American Indian	0.4
	Asian American/Pacific Islander	2.0
	Hispanic	8.0
	Multiracial	5.4
	White	67.4
	No Response	9.7

To measure changes in students' knowledge and skills attributable to a given course, an ACT QualityCore® end-of-course examination was administered as a pretest at the beginning of each course and as a posttest at the end of the course. QualityCore examinations focus on the knowledge and skills a student should learn in rigorous high school courses. Although QualityCore is an instructional improvement program, no interventions to improve teaching or learning were made in any of the courses. This kept the baseline measure free of confounding systematic efforts to improve student growth in achievement. QualityCore scores are reported on a scale from 125 to 175.

To measure progress in students' overall level of readiness for college and career in a given subject area, ACT's PLAN® or ACT® test for that subject area was also administered as a pretest and posttest. The college and career readiness assessment used depended on the grade level of the course: PLAN, which is intended for students in grade 10, was administered in English 10, Algebra I, and Biology, while the ACT, for students in grades 11 and 12, was administered in English 11, English 12, Geometry, Algebra II, and Chemistry.[3] PLAN and ACT scores are reported using a common scale: 1 to 32 for PLAN and 1 to 36 for the ACT.[3]

[3]Although PLAN and the ACT contain tests in both English and Reading, only the English tests were used in the English courses.

ACT's College and Career Readiness System

The examinations and assessments used in this study are part of ACT's College and Career Readiness System, an integrated system that measures student progress at becoming ready for college and career. The longitudinal assessment component of the system consists of three aligned programs sharing a common score scale: EXPLORE®, for students in grades 8 and 9, provides early information on the academic preparation of students that can be used to plan high school coursework; PLAN, for students in grade 10, provides a midpoint review of students' progress toward their education and career goals while there is still time to make necessary interventions; and the ACT test, for students in grades 11 and 12, measures students' academic readiness to make successful transitions to college and career after high school.

QualityCore offers end-of-course examinations, benchmark formative assessment pools, model instructional materials, and professional development training in twelve high school core preparatory courses. QualityCore is intended to increase student achievement in high school core preparatory courses and to improve the effectiveness of curriculum, instruction, and assessment in these courses.

ENGAGE™ helps evaluate students' academically-related behaviors, such as motivation, self-regulation, and social engagement; determine their level of academic risk; and identify interventions to help them persist in their studies and achieve academic success. ENGAGE is offered at two levels: for students in grades 6 through 9, and for students in grades 10 through 12.

Standards and Benchmarks: The Foundations of ACT's College and Career Readiness System

The content of EXPLORE, PLAN, and the ACT is reflected in the ACT College Readiness Standards™, sets of statements detailing what students who score in various ranges on the assessments know and are able to do, and what they are ready to learn next.

ACT's empirical research defines college readiness as acquisition of the knowledge and skills that students need in order to enroll and succeed in credit-bearing first-year courses at a postsecondary institution, such as a two- or four-year college, trade school, or technical school. Simply stated, readiness for college means not needing to take remedial courses in college.

The ACT College Readiness Benchmarks are the minimum scores required on the ACT English, Mathematics, Reading, and Science Tests for high school graduates to have approximately a 75 percent chance of earning a grade of C or better, or approximately a 50 percent chance of earning a grade of B or better, in selected courses commonly taken by first-year college students: English Composition; College Algebra; social sciences courses such as History, Psychology, Sociology, Political Science, or Economics; and Biology. ACT has also established College Readiness Benchmarks for EXPLORE and PLAN that indicate whether eighth- and tenth-grade students are on target to be ready for first-year college-level work by the time they graduate from high school.

ACT research also shows that career readiness requires the same level of knowledge and skills in mathematics and reading that college readiness does: the majority of the jobs that require at least a high school diploma, pay a living wage for a family of four, are projected to increase in number in the 21st century, and provide opportunities for career advancement require a level of knowledge and skills comparable to those expected of the first-year college student.
