Crisis at the Core

Preparing All Students for College and Work

Executive Summary

Our nation is in a college readiness crisis. Too few of our students are prepared to enter the workforce or postsecondary education without additional training or remediation when they graduate from high school. And far too many have to take remedial courses as part of their postsecondary educations. As a consequence, first-year students are dropping out of school in alarming numbers: one in four freshmen at four-year institutions and one in two freshmen at two-year institutions fails to return for a sophomore year.

ACT research shows that far too few members of the graduating class of 2004 are ready for college-level work in English, math, or science—or for the workplace, where the same skills are now being expected of those who do not attend college. This deficiency is evident among both males and females and among all racial and ethnic groups. And, at present, it does not look as though students already in the pipeline are likely to fare much better.

Improving college readiness is crucial to the development of a diverse and talented labor force that is able to maintain and increase U.S. economic competitiveness throughout the world. What can be done to remedy the situation? How can we help to ensure that more of our students are ready to make the most of the college experience?

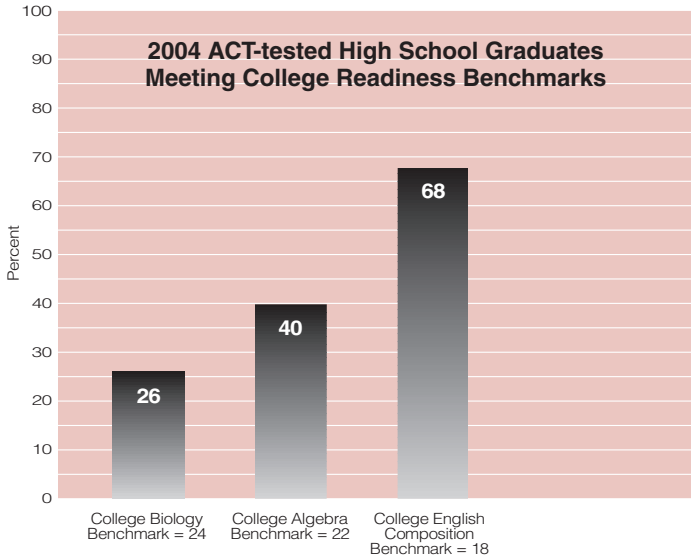
ACT research confirms the results and benefits of a rigorous core preparation curriculum for all students, whether they plan to go on to college or to work after high school. However, our research has also led us to rethink whether the core curriculum—as traditionally defined in terms of numbers of courses—adequately prepares students for success after high school.

Despite the overall stasis or decline in college readiness over the last decade, a strong positive relationship exists between the amount and kind of high school coursework students take and their readiness for college. The more courses students take and the more challenging those courses, the more likely these students will be college ready and will persist to a college degree.

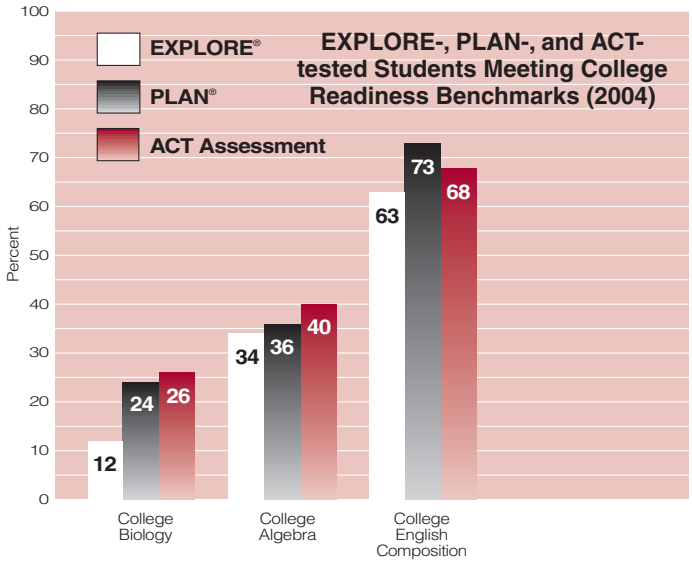
Furthermore, certain specific courses—such as Biology, Chemistry, Physics, and upper-level mathematics courses beyond Algebra II—have a startling effect on student performance and college readiness. ACT calls these courses the *Courses for Success*, and recommends that every high school student who is heading to college or the workplace take the *Courses for Success*. Our reasons for making this recommendation appear in brief on the following pages and in detail in the report entitled *Crisis at the Core: Preparing All Students for College and Work*.

1. Most of America's high school students are not ready for either college or work. We've made virtually no progress in the last ten years helping them to become ready. And from everything we've seen, it's not going to get better any time soon.

- **Too few students are ready for college-level coursework, based on ACT's national readiness indicators.** A mere 26 percent of ACT-tested high school graduates met ACT's College Readiness Benchmark demonstrating their readiness for their first credit-bearing college course in Biology, based upon the 2003–2004 results of the ACT Assessment®. Just 40 percent are ready for their first course in college Algebra, and, while better, still only 68 percent are ready for college coursework in English Composition.

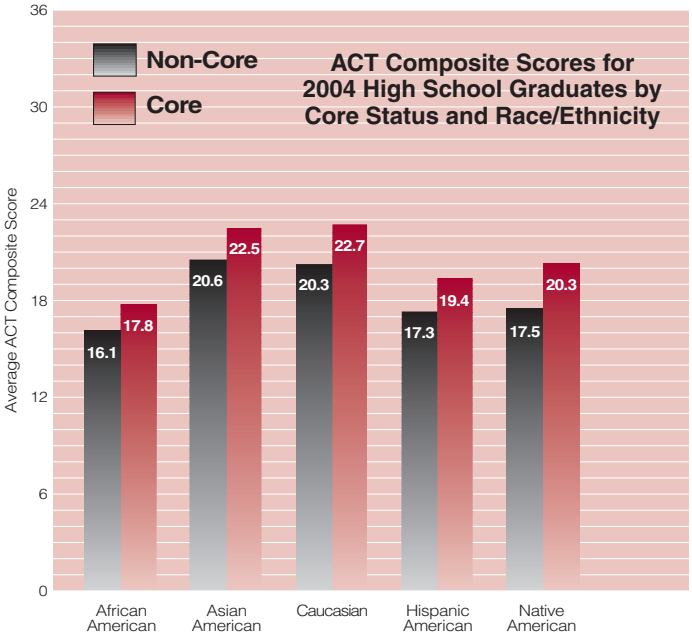


- **Minority students are much less likely to be college ready.** Native Americans and Hispanic Americans are only about half as likely as the total population to be ready for college Biology, and African Americans are about five times less likely to be ready. For college Algebra, the percentages of these groups meeting the benchmark were only slightly higher. And while Caucasians and Asian Americans met the ACT Benchmark for college English Composition in greater numbers than the total population, Native Americans, Hispanic Americans, and African Americans were about one and a half times less likely to meet this benchmark than the total population.
- **Even fewer students are ready for college and work in all three academic areas—English, mathematics, and science.** The percentage of ACT-tested high school graduates who met or exceeded all three College Readiness Benchmarks is alarming—a mere 22 percent of the 1.2 million students tested in 2004.
- **The students currently at or near the end of the college preparation pipeline will be no more ready for college than the class of 2004.** The percentages of eighth and tenth graders demonstrating likely readiness for college coursework in 2006 and 2008 are roughly similar to those of this year's graduates, based on results from ACT's early college readiness preparation system, EPAS®.



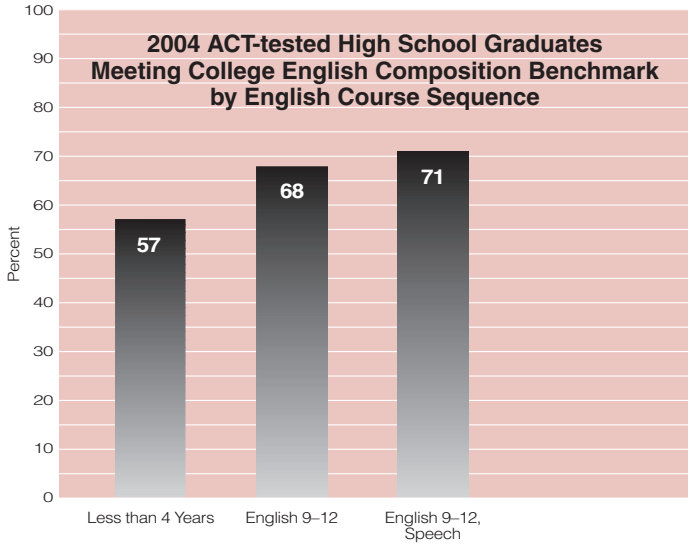
2. For nearly two decades, we've recommended that, to be ready for college, students take a specific minimum number of high school courses: four years of English and three years each of math, science, and social studies. But not enough students are taking this recommended core. And we now know that simply taking core is not enough. It's the nature and the quality of the courses students take, not only the number, that determine if they will be ready for college and work.

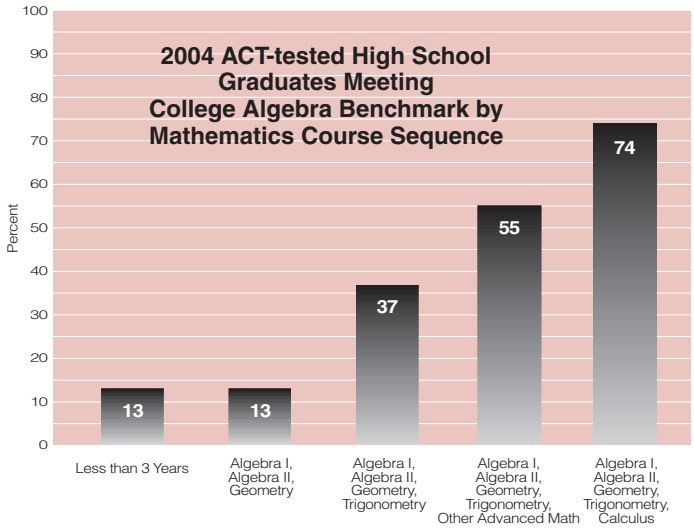
- **Students who reported taking the minimum core curriculum score consistently higher on the ACT Assessment than those who reported taking less than core.** ACT has long championed the benefits of the core curriculum, in particular its salutary effect on

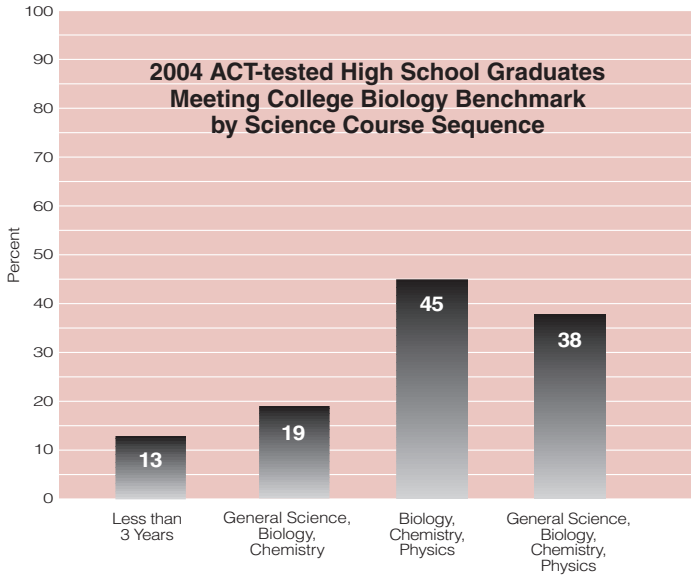


ACT Assessment performance. The results for the class of 2004 continue to bear this out: students who take a minimum core curriculum or more attain higher average ACT Assessment composite scores than those who take less than core. The benefits of the minimum core curriculum hold true for racial and ethnic groups.

- **Despite the long-recommended benefits of taking a core curriculum, not enough students take a core curriculum or are required to take it**. Since 1994, the overall percentage of students taking a core curriculum has remained relatively stable, showing only a two-percent increase, from 54 to 56 percent. The percentages of males and females and of each racial-ethnic group taking a core curriculum have also remained relatively stable, with no group changing by more than 5 percentage points between 1994 and 2004.
- **Even if students take the minimum number of courses as defined by the core curriculum, it will not guarantee that they are college ready.** While taking a core curriculum certainly helps students raise their level of academic preparation and meet high school graduation requirements, it does not necessarily mean that a student is ready for college-level work. Obviously, the rigor of these courses is a strong determiner in preparing students for college and work. ACT Assessment results show the benefits of taking the core curriculum over taking less than the core. But they also show the even greater benefits accrued by students who take *more* than the core curriculum. As shown in the following figures, students who took one or more courses beyond core met or exceeded the College Readiness Benchmarks in significantly greater percentages than students taking only core or less.







- **Students gain from taking more rigorous courses regardless of their achievement level.** The value-added results of particular courses when student achievement is held constant, or controlled, are shown on the next page. Cumulatively, the potential average score increase for students on the Science Test is about 2.6 score points, and on the Mathematics Test is nearly 6 score points, *regardless of the level of student achievement.*

What does this mean? Students who take a minimum core curriculum are more likely to be ready for college-level work than are students who do not take the core. But students who take rigorous courses beyond the recommended minimum number of core courses are even more likely to be ready for college. And students whose beyond-core coursework includes courses in advanced mathematics beyond Algebra II (such as Trigonometry), as well as Biology, Chemistry, and Physics, are *likeliest of all* to be college ready. And this is true of students at all levels of achievement, not just the high achievers.

We are not saying that a concerted effort to improve the rigor of the core courses wouldn't help. It most certainly would. However, our data are based on the realities of the

Note: The percentages expressed in the figures in this summary are percentages of all students who took a particular test.

quality and content of the core courses as they currently exist. Without any improvement in the rigor of the core courses, additional higher-level courses are necessary for students to be prepared.

Value Added by Mathematics Courses When Achievement Is Controlled

Math Course	Average Math Score	Value Added by Course
Calculus	25.0	→ +2.3
Trigonometry	22.7	→ +1.9
Advanced Math	20.8	→ +1.7
Algebra I, Algebra II, & Geometry (Core)	19.1	→ +1.8
Less than 3 courses (Less than Core)	17.3	

Value Added by Science Courses When Achievement Is Controlled

Science Course	Average Science Score	Value Added by Course
Physics	21.2	→ +1.3
Chemistry	19.9	→ +1.3
Biology	18.6	→ +0.6
General Science	18.0	

3. To be ready for college and work, every high school student should be prepared and encouraged to take and do well in rigorous *Courses for Success* that include one or more advanced mathematics courses beyond Algebra II (e.g., Trigonometry) as well as Biology, Chemistry, and Physics.

- **Students who are ready for college-level work are more successful in college than those who are not.** Our research consistently shows a strong, positive relationship between performance on the ACT Assessment tests and college success. Students who obtain higher scores on the ACT Assessment are more likely to earn higher grade-point averages in college and stay in college. Moreover, our research shows that when students meet or exceed *all three* of the ACT College Readiness Benchmarks, a clear majority of these students (83 percent) returns to college after the first year—the year in which the national collegiate dropout rates are the highest. And when students take one or more *Courses for Success*, including advanced mathematics courses beyond Algebra II as well as Biology, Chemistry, and Physics, they have the best chance to be ready to enter college and work without need for remediation.
- **All students should be prepared and encouraged to take the *Courses for Success*.** The high school core curriculum, defined in terms of minimum numbers of courses students need to take to be ready for college and work, is not sufficient given the quality and the intensity of the core courses students are now taking in high school. Our research data show that when students take the *Courses for Success*, they all benefit, regardless of achievement level, and are much better prepared for college and work. Students don't have to take honors or advanced placement courses to be college ready.

Something can be done for each and every student.

- **Approximately 1 in 5 students *are succeeding*.** Twenty-two percent of the ACT-tested students met or exceeded all three College Readiness Benchmarks. These students likely entered high school with the requisite foundational skills, took rigorous courses, worked hard in those courses, and are now ready to enter college and work.
- **Nearly half of students *can succeed, but aren't now preparing to succeed*.** Approximately 50 percent of the ACT-tested students met one or two of the benchmarks but did not meet all three. By doing just a little bit more—taking an additional math course beyond Algebra II and taking Chemistry and Physics in addition to Biology—they will be much better prepared to succeed in college or work.
- **Approximately 3 in 10 students *aren't yet, but could be, ready to succeed*.** We estimate that there are still far too many students—at least 29 percent who took the ACT Assessment and did not meet any of the benchmarks, plus an undefined percentage who did not take the ACT Assessment—who are not ready for college or work. These students likely lack the foundational skills when they enter high school and do not take either an adequate number or kind of core courses. These students need to be identified for intervention much earlier, certainly before middle school, so that they can strengthen their foundational skills in English, mathematics, and science before they enter high school.

What, then, can be done to encourage more students to take and do well in the critical *Courses for Success*? Clearly, the actions that are necessary for change will neither happen overnight nor should they be the responsibility of educators alone. To ensure that all students have the opportunity to be ready for college and work will take the efforts of educators and policymakers, business and community leaders, and parents. All of us have crucial roles to play in helping our students prepare for college and the workplace. Action plans for selected audiences, as well as a brief description of ACT's demonstration project **Ready to Succeed**, are available in the full *Crisis at the Core* report.

Together, we *can* make it happen.

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