COLLEGE READINESS

Aligning Postsecondary Expectations and High School Practice: The Gap Defined

Policy Implications of the ACT National Curriculum Survey® Results 2005–2006

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Overview

What is the ACT National Curriculum Survey®?

The ACT National Curriculum Survey is a one-of-a-kind nationwide survey of educational practices and expectations conducted by ACT every three to five years. This survey tells us what postsecondary institutions believe is important and necessary for their entering students to know and what middle and high school teachers are teaching. It focuses, therefore, on identifying the gap between postsecondary expectations and high school practice. ACT surveys thousands of middle school, high school, and postsecondary teachers in English/writing, reading (including English language arts and social studies teachers), mathematics, and science (see Table 1) for the purpose of determining what skills and knowledge are currently being taught that are considered important for college readiness from grade 7 through the first year of college. ACT uses the results of the ACT National Curriculum Survey to ensure that its curriculum-based assessments (i.e., EXPLORE®, PLAN®, and the ACT®) are measuring the knowledge and skills that are important for success in postsecondary education.

ACT also used this data to help identify and define for educators and policymakers the content and skill alignment and gaps that currently exist in the important transition from high school to college. It is important for high school course outcomes to be aligned with postsecondary expectations. A rigorous high school core curriculum must teach students the essential knowledge and skills they will need to be successful in college and work.

Table 1
ACT National Curriculum Survey 2005–2006*

Grade level	Number of surveys
Middle school/junior high school	6,800
High School	
Teachers	10,800
Guidance counselors	1,200
Postsecondary	12,992
Remedial-course	3,873
Total	35,665

* The title of this table is also the title of the technical report for the 2005–06 study.

The ACT National Curriculum Survey collects a wealth of information about what middle school, secondary, and postsecondary educators believe entering college students should know and be able to do—including information about similarities and differences in the opinions of these various stakeholders.

In this report, the key findings of the survey are highlighted, followed by the implications of the survey results for education policy and practice. The final section presents action steps suggested by the results. The Appendix contains additional information about the survey sampling process.

Highlights of Survey Results

1. What postsecondary instructors expect entering college students to know is far more targeted and specific than what high school teachers view as important.

High school teachers in all content areas (English/writing, reading, mathematics, and science) tended to rate far more content and skills as "important" or "very important" than did their postsecondary or remedial counterparts (see Figure 1). Postsecondary instructors selected fewer topics and skills as important prerequisites for success.

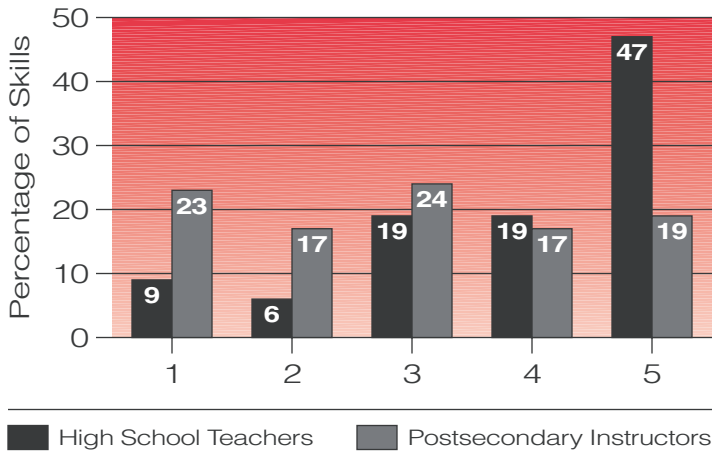

Figure 1: Percentages of Skills Rated "Not Important" to "Very Important" by High School and Postsecondary Teachers (1 = Not Important; 5 = Very Important)

This finding is consistent with recent evaluations of state standards raising concerns that some states require too many standards to be taught and measured, rather than becoming more selective in identifying the most important state standards for students to attain. The long lists of content topics and skills defy teachers' efforts to teach them in detail within the confines of a single school year. It may be that the extensive demands of state standards are forcing high school teachers to treat all content topics as important, sacrificing depth for breadth.

2. Remedial-course teachers' ratings of mathematics and reading skills tend to align more closely with those of postsecondary instructors than with those of high school teachers.

When individual content and skill importance ratings were examined, the responses given by remedial-course teachers in both mathematics and reading aligned much more closely with postsecondary instructors' responses than with high school teachers' responses. This finding is consistent with the intent of remedial programs, which is to prepare students for success in postsecondary coursework. The closer alignment of remedial-course teachers' and postsecondary instructors' views of what their students need to know points to a continuing gap between what high schools are teaching and what postsecondary educators expect of their entering students. And it is likely that this gap feeds the ever-increasing remediation rates as well.

3. While most high school teachers across subject areas believe that meeting their state's standards prepares students for college-level work, most postsecondary instructors disagree.

State standards describe the knowledge and skills that each state identifies as important and necessary for students to learn. Schools, teachers, and students are being held accountable for meeting state standards by No Child Left Behind legislation. Although standards differ from state to state in content, specificity, and levels of proficiency expected, one thing they have in common is that they are the foundation for each state's curriculum and assessment efforts. Given the far-reaching impact of state standards, ACT collected data on how aware postsecondary and high school teachers were of their state's standards as well as how well they thought their state's standards were preparing students for college-level work. The majority of these teachers (95 percent of high school teachers and 59 percent of postsecondary instructors) indicated that they were at least moderately familiar with their state's standards. Figure 2 summarizes how well teachers believed their state's standards prepared students for college-level work.

High school teachers believe state standards are preparing students well for college-level work; however, roughly 65 percent of postsecondary instructors responded that their state's standards prepared students poorly or very poorly for college-level work in English/writing, reading, and science. This finding strongly suggests that a gap still exists between what colleges believe is important for college readiness and what state standards are requiring teachers to teach.

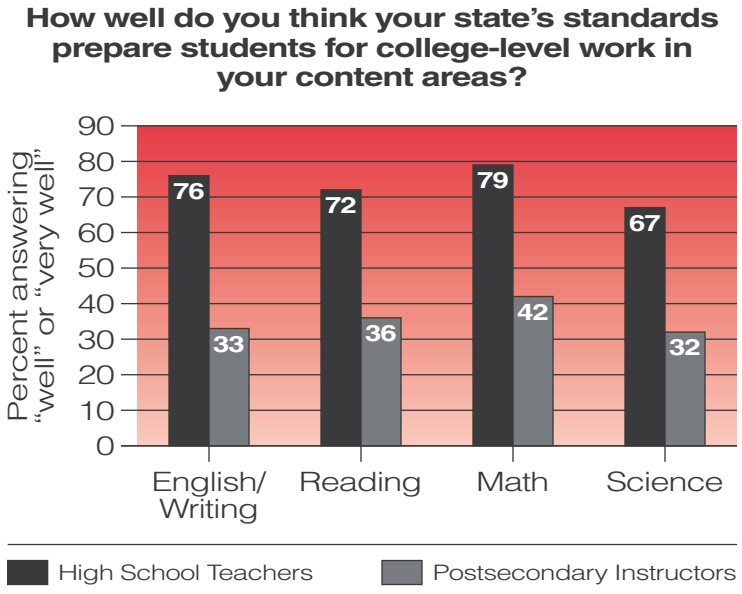

Figure 2: High School and Postsecondary Responses About State Standards

Bridging this gap does *not* necessarily involve adding more state standards. In fact, the finding that high school teachers rate so many more content topics as important than do postsecondary instructors suggests that perhaps fewer and more targeted state standards, focused on the essential knowledge and skills in each content area instead of many standards covering a broad array of topics and skills, might bring state standards more in line with what postsecondary instructors identify as prerequisite for postsecondary success in school and work. Whether such an approach would be appropriate in a particular state would need to be considered as part of ongoing P–16 dialogues among the state's elementary, middle/junior high, and high school teachers, postsecondary instructors, and other stakeholders.

4. High school teachers believe that today's high school graduates are less well prepared for postsecondary education and work than graduates in previous years, while postsecondary instructors perceive no difference.

ACT asked educators their opinions as to "How prepared for college-level work are today's graduating seniors (or incoming first-year students) compared with graduating seniors (or the first-year students) in the past 5–10 years?"

As Figure 3 shows, a plurality of high school instructors across disciplines (42 percent) believes that students are not as well prepared today for college-level work as were students in the past, while a majority of postsecondary instructors (51 percent) believes that student preparation today is neither better nor worse than that of students in the past. At the same time, 32 percent of high school teachers think students today are better prepared for college-level work—a percentage nearly two and a half times greater than that of postsecondary instructors who believe this.

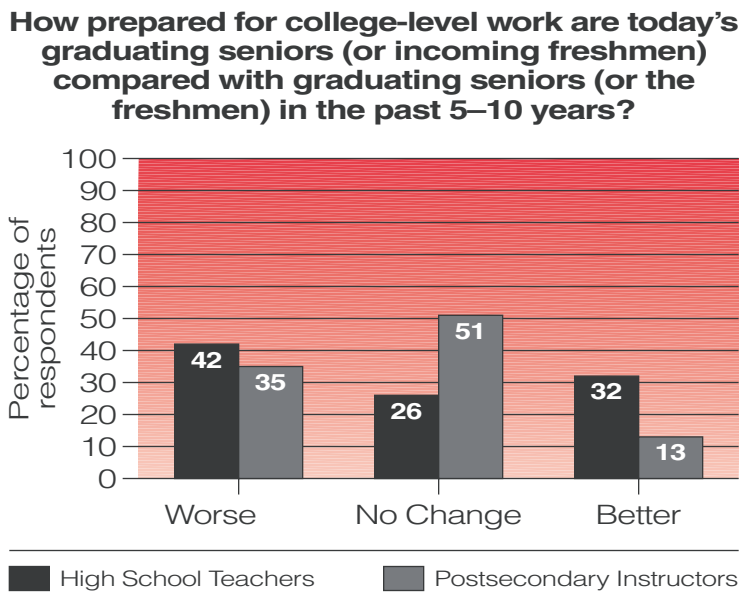

Figure 3: 2006 Students' College Preparation Compared With That of the Past 5–10 Years

Despite the apparently conflicting beliefs of high school teachers, clear majorities of both high school (68 percent) and postsecondary (86 percent) teachers think that student preparation today for college-level work is the same or worse than student preparation 5 to 10 years ago.

These results can be interpreted in a number of ways. Because so much discussion has revolved around the current state of student readiness, educators may be more acutely aware than in the past that many graduating seniors (or incoming first-year students) are not well prepared for college. Another interpretation might be that expectations for students entering college have increased over the past 5 to 10 years, in which case educators are responding to a question asking about a moving target. Or the data may reflect an increased sense that student preparation is declining. In any case, the results clearly reflect that the majority of respondents do not believe today's students are better prepared than their predecessors, despite explicit attempts toward this end.

5. There are specific differences between high school instruction and postsecondary expectations in every major curriculum area.

English/Writing:

High School: Focus on Idea Development
Postsecondary: Focus on Writing Mechanics

Survey results suggest that high school and postsecondary teachers differ in the relative importance they ascribe to the basic mechanics of writing (Sentence Structure and Formation, Usage, and Punctuation) as compared to more global skills that deal with rhetoric or the development of arguments (Topic and Idea Development). Postsecondary instructors ranked mechanics more frequently among the most important groups of skills for success in an entry-level, credit-bearing postsecondary English/writing course, while high school teachers' rankings of these strands were generally lower. In contrast, high school teachers ranked Topic and Idea Development (e.g., considering the appropriateness of expression in relation to purpose, audience, unity, or focus; or determining the effect of adding, revising, or deleting supporting material) higher than did postsecondary instructors.

Mathematics:

High School: Focus on Advanced Mathematics Content
Postsecondary: Focus on Developing a More Rigorous Understanding of Fundamentals

High school mathematics teachers gave more advanced topics greater importance than did their postsecondary counterparts. In contrast, postsecondary and remedial-course mathematics instructors rated a rigorous understanding of fundamental underlying mathematics skills and processes as being more important than exposure to more advanced mathematics topics. These results suggest that high school mathematics instruction concentrating on understanding and rigorously applying fundamental principles will likely better prepare students for college-level mathematics than will instruction that covers many content topics less rigorously.

Reading:

High School: Decreased Focus on Reading Strategies after Ninth Grade
Postsecondary: Focus on Reading Strategies with Complex Text

The survey results indicate a general lack of reading courses in high school and a decline in the teaching of targeted reading strategies after ninth grade. Meanwhile, remedial-course teachers rate such strategies as being of high importance and devote a large percentage of time to teaching them in order to get their students ready for entry-level college coursework. These findings suggest that more instruction in reading and reading strategies—including reading texts with greater complexity across the curriculum—is needed throughout the high school years. All courses in high school, not just English and social studies but mathematics and science as well, must challenge students to read and understand complex texts. Students must have the opportunity to improve their reading skills and strategies at a time when they need to build upon the foundational skills in reading that they developed when they entered high school. They must be given more opportunities to read challenging materials across the curriculum so that they are better positioned to comprehend complex texts in all subjects once they enter college or the workplace.

Science:

High School: Focus on Science Content
Postsecondary: Focus on Process and Inquiry Skills in Science

High school science teachers consistently rated science content as more important to student success than science process/inquiry skills. These responses are in direct contrast to those of middle school and postsecondary science teachers, who consistently rated science process skills higher in importance than science content. These results are reflected in state standards for science, which often describe detailed strategic content standards but only provide one overall group of "process standards" that frequently apply across courses, or sometimes across all of the high school grades. Survey results suggest that the emphasis on science content in high school science instruction does not align with postsecondary expectations for college readiness in science.

6. ACT's Educational Planning and Assessment System (EPAS™) tests are aligned with the content and skills that postsecondary educators identify as important for college readiness.

ACT's EPAS test specifications are continually refined to reflect the knowledge and skills currently needed for college readiness. The results of the ACT National Curriculum Survey affirm that the knowledge and skills postsecondary instructors identify as important for readiness and success in college are reflected in the three EPAS components: EXPLORE, PLAN, and the ACT test.

The knowledge and skills being measured by the tests and the relative emphasis accorded to each are consistent with those rated as important and necessary by postsecondary teachers (see Figure 4). ACT uses importance rating results to guide decisions about the knowledge and skills to be measured on EPAS tests and in what proportions. When postsecondary and high school instructors' importance ratings disagree, we use the postsecondary instructors' ratings, to ensure that EPAS tests measure skills and knowledge these experts identify as important for college readiness. If a particular skill currently on the EPAS tests falls into the Unimportant range, or if a currently untested skill is rated as important, the ACT National Curriculum Survey results give us the validity evidence to justify modifying our test specifications accordingly. We also use the importance rating results to help guide us in evaluating the overall emphasis that various topic knowledge and skills receive in each test.

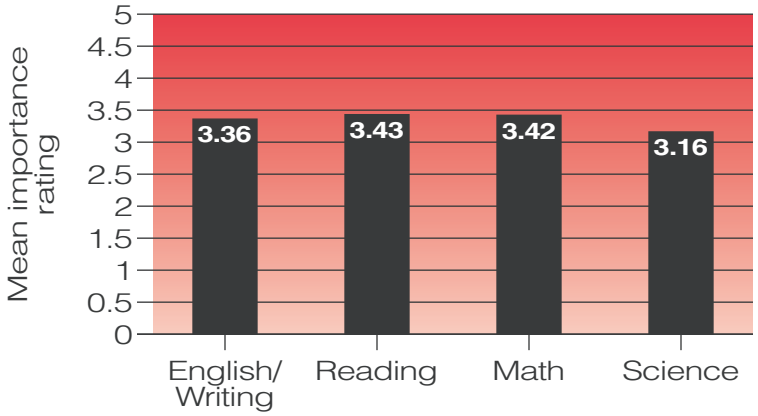

Figure 4: Postsecondary Mean Importance Ratings of EPAS Content and Skills
(1 = Not Important; 5 = Very Important)

Implications of Survey Results

The primary results of the ACT National Curriculum Survey 2005–2006 have a number of implications for educational policy and practice.

FIRST, the finding that many postsecondary instructors believe that their state's standards are not preparing students for college-level work across content areas is of particular significance. These survey results also suggest that states tend to have too many standards attempting to tackle too many content topics. Rather than defining, in an overall articulated design that builds systematically from the ninth through twelfth grades, the essential knowledge and skills students must have to be ready for college, state standards are often lists of all possible content topics teachers may want to expose students to in a course or grade. A further concern is that if state standards are not focused ultimately on college readiness, then the state assessments designed to measure attainment of those standards likely aren't going to focus on college readiness either. States should seek empirical evidence that their standards and assessments are actually preparing and measuring student readiness for postsecondary work as validated by actual student success data in college.

SECOND, high school teachers are being held accountable to teach students all of the content and skills listed in state standards. Given those expectations, it is not surprising that high school teachers tend to rate more content and skills with higher importance at greater frequency than do their postsecondary counterparts. Although the majority of high school teachers feel that state standards are preparing students well for postsecondary work, the majority of postsecondary instructors across content areas responded that state standards do a poor or very poor job of preparing students for postsecondary work. These results give evidence of the continuing articulation gap between K–12 practice and postsecondary expectations.

THIRD, in English/writing, mathematics, and science, we see additional signs of articulation problems. Many postsecondary English and writing instructors value punctuation and grammar more highly than do high school teachers. Postsecondary science and mathematics instructors indicate that they rate a rigorous understanding of fundamental concepts as substantially more important than the number of content topics a student has been exposed to. High school teachers, on the other hand, believe detailed content knowledge is most important.

Action Steps for Policymakers

Align the high school curriculum with postsecondary expectations.
High school and college leaders must work together to align state standards to postsecondary expectations. Many states have formed P–16 councils to address this need. There are still substantial gaps between what high school teachers believe is important for college readiness and success and what postsecondary institutions require of their entering students in entry-level courses.

Focus state standards on the essentials for college and work readiness.
State standards should focus on communicating the essential knowledge and skills needed for postsecondary education and not try to define all content and skills covered by the high school curriculum. It is less important for state standards to reflect all of what students are exposed to in high school and more important to focus on the most essential knowledge and skills for college readiness.

Define course standards.
States should use their validated state standards to drive high school course standards by defining the important knowledge and skills students need to acquire in high school core courses. This helps to ensure that state standards are being accurately translated into course expectations and that teachers are teaching the essentials for college readiness in each and every course.

Measure student progress with college readiness assessments.
Once state standards are validated for college readiness, states need to align their assessments to the state standards. Because assessments cannot measure all state standards in depth, the assessments should measure the most important knowledge and skills in proportions that are consistent with their relative importance for college readiness.

Establish core course requirements for high school graduation.
In addition to establishing high school course standards, states should make sure that their high school graduation requirements specify the core courses necessary for college readiness. Working collaboratively with postsecondary institutions, states can identify the right set of core courses that will help ensure that students are prepared for credit-bearing college coursework.

Begin measuring college readiness earlier.
Because college readiness is a process and not a point in time, student progress in becoming ready for college should be measured beginning in at least the eighth grade and continuing through the twelfth grade.

Teach higher-level reading skills across the high school curriculum.
Teachers in all high school subjects should devote time to teaching reading strategies that help increase students' comprehension of complex materials across the curriculum, especially in eleventh and twelfth grades.

Make sure that students attain the skills necessary for effective writing.
The survey responses of postsecondary English/writing instructors suggest that high school language arts teachers should focus more on punctuation and grammar skills to better prepare their students for college-level expectations in college composition courses.

Make sure that students learn science process and inquiry skills.
The survey responses of postsecondary science instructors suggest that high school science teachers should more strongly emphasize rigorous understanding of science process knowledge and inquiry skills rather than specific science content knowledge.

Monitor student progress.
High schools and colleges can learn a lot from each other by sharing data about student success. Colleges, especially, can provide helpful data to high schools about how well their students are performing in college, particularly in the first year. These data can be helpful in improving the quality of high school courses. Using a longitudinal college-readiness system can help identify not only those students who are not on target to becoming college-ready but also the programs and curriculum areas in which their graduates had difficulty once they got to college.

Each of these actions will bring U.S. schools closer to meeting the goal of ensuring that a high school education prepares its graduates for the challenges of postsecondary education and the workforce. By working together to focus the high school curriculum on the essential knowledge and skills needed for postsecondary success; to align state standards, graduation requirements, important high school course outcomes, and assessments; and to share useful data with one another, high schools and colleges can narrow and ultimately eliminate the gap between the two education systems—a gap that has for far too long been an obstacle to student success after high school.

The time for action is now.

Appendix

Description of Survey Sample and Process

For the 2005–2006 ACT National Curriculum Survey, we sent more than 35,000 surveys to a national representative sample of middle school, high school, and postsecondary teachers who teach courses in English/writing, reading (including English language arts and social studies), mathematics, and science (including biology, chemistry, physics, and Earth/space science) in public and private institutions across the United States. We also included a sample of high school guidance counselors and teachers of college remedial courses. The response rates by content area ranged from 16 percent to 30 percent, and the overall response rate was 19 percent.

All teachers were asked to perform two primary tasks. First, teachers were asked to **rate** *individual* content knowledge and skills with respect to how important each is to student success in the content area (specifically, high school teachers were asked to rate the importance of the content or skill in the class they teach; postsecondary instructors were asked to rate its importance as a prerequisite to success in their class). These results allow for comparison of high school teachers' views of the importance of course outcomes with postsecondary instructors' expectations of what incoming first-year students need for success in their courses. Second, teachers were asked to **rank** *groups* of content and skills, known as strands, with respect to their relative importance for student readiness for college. In contrast to ratings, rankings ask teachers to choose which strand is the most important group of content or skills for college readiness in their content area and which is least important. In addition, all teachers (except for postsecondary) were asked to indicate whether they teach that particular strand in their course. Finally, teachers were asked to provide additional information specific to the courses they teach (e.g., textbooks used, calculator policies in mathematics, course requirements in science, texts featured in English and social studies courses, impact of state standards).

High school guidance counselors were surveyed to provide information such as what kinds of courses are typically offered in their schools, general course-taking patterns of students, and at what grade level a student in their district typically takes certain courses.

We also surveyed a sample of teachers who teach remedial courses at the postsecondary level in reading, writing, and mathematics.[1] According to the National Center for Educational Statistics (NCES), in the fall of 2000, 28 percent of all incoming first-year students were enrolled in at least one remedial course. By collecting data on both the critical skills and knowledge that students were missing and the set of knowledge and skills that resulted in successful remediation in a content area, we believe the National Curriculum Survey will help to identify the knowledge and skills that students are not attaining in high school.

To help schools derive maximum benefit from their participation in ACT programs and services, ACT maintains a staff of consultants in regional offices. If you need additional ACT information or assistance, please contact the ACT office that serves your state.

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