

74%

Percentage of ACT-tested 2011 high school graduates took a core curriculum in high school (ACT 2011).

Among those taking coursework within a given subject area, only

68%

of students are ready for college English Composition,

47%

are ready for College Algebra,

54%

are ready for introductory college social sciences courses, and

33%

are ready for college Biology (ACT 2011).

Educators, administrators, and policymakers are seeking effective solutions to increase student achievement and reduce achievement gaps as schools, districts, and states continue to work to demonstrate accountability and school improvement. While about three-quarters of high school graduates enroll in postsecondary education within two years of graduation, slightly more than half of students entering four-year institutions complete a degree, with an even lower completion rate at two-year colleges (US Department of Education, National Center for Education Statistics, 2008). An important factor contributing to these outcomes is the inadequate preparation of students for college: only 74 percent of ACT-tested 2011 high school graduates took a core curriculum in high school (ACT, 2011). Even among those taking core coursework within a given subject area, only 68 percent are ready for college English Composition, 47 percent for College Algebra, 54 percent for introductory college social sciences courses, and 33 percent for Biology (ACT, 2011).

The problems are clear and very well documented. ACT research strongly supports the need for an integrated, longitudinal data-driven system to inform and encourage coherence in school, district, and state efforts to prepare all high school graduates for college and career. Our high schools must provide rigorous courses that are aligned with college and career readiness standards, and more students must be prepared and have the opportunity to take these core courses. All students must also have systematic guidance and feedback about their progress, and get that feedback early and often.

The following research uses three ACT solutions, EXPLORE[®], PLAN[®], and the ACT[®] test, to provide a multidimensional framework focused on the attainment of college and career readiness by students, as measured by the ACT College Readiness Standards[™]. These College Readiness

KEY FINDINGS:

The most important findings show the relevance and importance of early monitoring of students. In particular, the data support that early monitoring:

- is associated with increased college and career readiness,
- promotes taking more college-preparatory courses in high school,
- promotes educational and career planning, and
- is associated with increased college enrollment, achievement, and persistence.

Standards were key contributors to the development of the Common Core State Standards, and reflect what students know and are able to do in grades 8 through 12. The content of EXPLORE and PLAN are aligned with that of the ACT, and thus are aligned with the Common Core State Standards. The assessment results, which are reported on a single score scale across all programs, are designed to inform students, parents, and educators about students' academic strengths and weaknesses. This information is provided initially in 8th grade with EXPLORE and continues throughout high school (with PLAN in grade 10 and the ACT in grade 11 or 12), while there is still time to intervene with students who are not on target to be college and career ready.

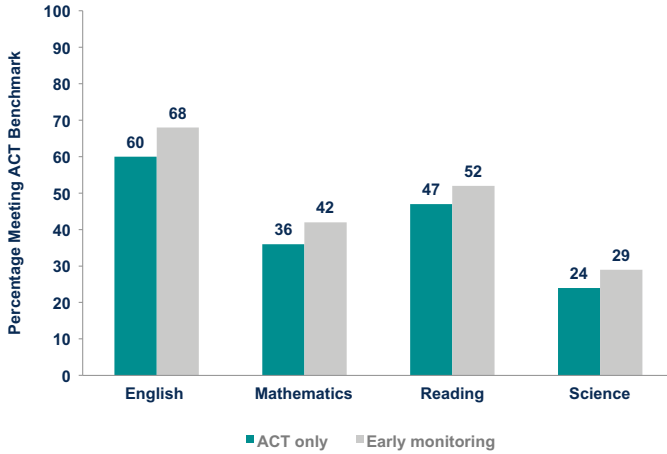
EXPLORE, PLAN, and the ACT also help students plan for further education and explore career options based on their own skills, interests, and aspirations. The solutions give high schools and districts a way to engage students in planning their own futures. When students are aware of what they need to know and be able to do to succeed after high school, they can use their own information to help make a smooth transition to postsecondary education or training.

The following sections highlight the research-based benefits of the early monitoring offered by EXPLORE and PLAN when used in addition to the ACT. Unless otherwise noted, a group of students who took either all three assessments or just PLAN and the ACT is being compared to students who took the ACT only. In the charts, these groups are referred to respectively as "Early Monitoring" and "ACT only."

Early monitoring is associated with increased college and career readiness.

Students need to begin planning for college early, take rigorous courses, and monitor their progress toward becoming college and career ready. The ACT College Readiness Benchmark scores correspond to students' chances of success in college English Composition, College Algebra, social sciences, and Biology. The EXPLORE and PLAN College Readiness Benchmark scores are based on the ACT Benchmarks and students' expected growth from one component to the next. The Benchmarks for EXPLORE and PLAN provide indicators of students' likely success in college by the time they graduate from high school, assuming that they maintain their current levels of academic work throughout high school. The Benchmarks allow students and schools to monitor students' progress and determine whether they are on target for being college and career ready by the time they graduate.

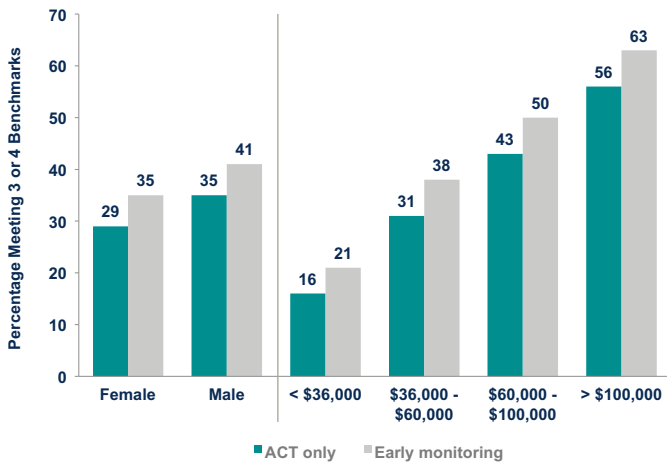
Percentages of students meeting the ACT College Readiness Benchmarks by program participation



Students who are monitored early before taking the ACT are more likely to be college and career ready than those not monitored early (i.e., who take the ACT only), regardless of their background.¹

The percentages of students meeting the ACT English, Mathematics, Reading, and Science Benchmarks are 5 to 8 percentage points higher for students who are monitored early than for those who are not.

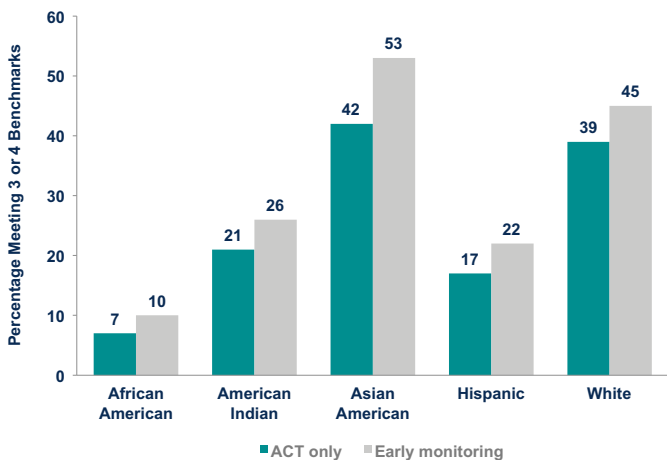
Percentages of students meeting 3 or 4 ACT College Readiness Benchmarks by gender, family income, and program participation



Students who are monitored early are more likely to meet three or all four of the ACT College Readiness Benchmarks than students who are not monitored early, regardless of gender or annual family income.¹

Students from higher-income families are more likely to meet three or all four ACT College Readiness Benchmarks. However, early monitoring benefits all students, regardless of gender or family income.

Percentages of students meeting 3 or 4 ACT College Readiness Benchmarks by race/ethnicity and program participation



Students of all racial/ethnic backgrounds who are monitored early are more likely to meet three or all four of the ACT College Readiness Benchmarks than similar students who are not monitored early, regardless of their background.¹

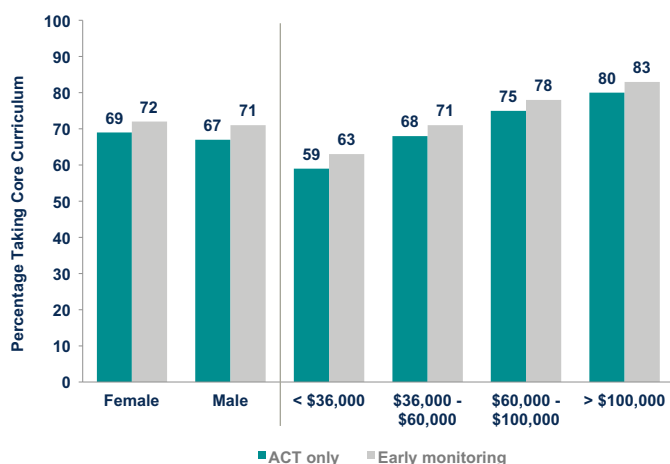
The percentages of students meeting three or all four ACT College Readiness Benchmarks are 3 to 11 percentage points higher for students who are monitored early than for those who are not.

Students who are monitored early take more college-preparatory courses in high school

Students who are monitored early are more likely than those who are not monitored early to take a core curriculum² and thus are more likely to be ready for college-level work, regardless of their background.¹

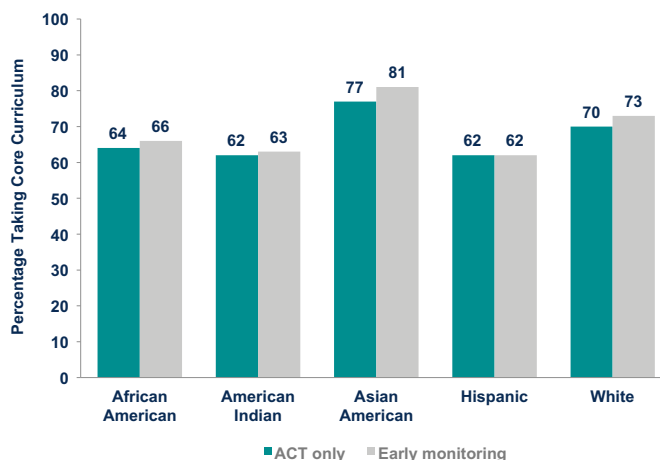
Percentages of students taking core curriculum by gender, family income, and program participation

Across gender and family income groups, the likelihood of taking a core curriculum is consistently higher for students who are monitored early, compared to those who are not.¹



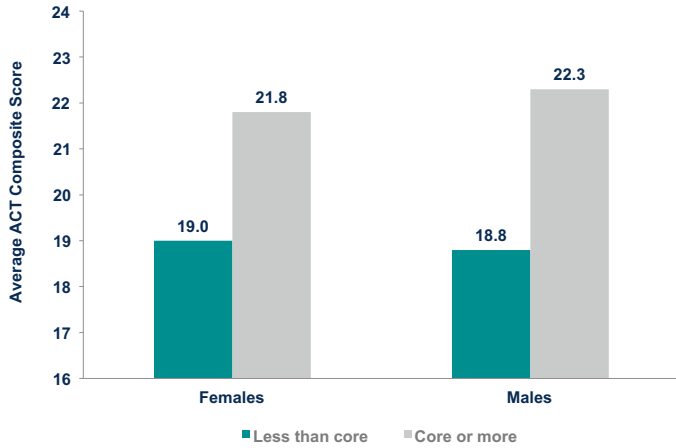
Percentages of students taking core curriculum by race/ethnicity and program participation

With the exception of the Hispanic group, the likelihood of taking a core curriculum is consistently higher for students who are monitored early, compared to those who are not.¹



Students benefit from taking upper-level high school courses and working hard in them. As students take more upper-level courses in high school, the increases in their proficiency are reflected in higher PLAN and ACT scores.

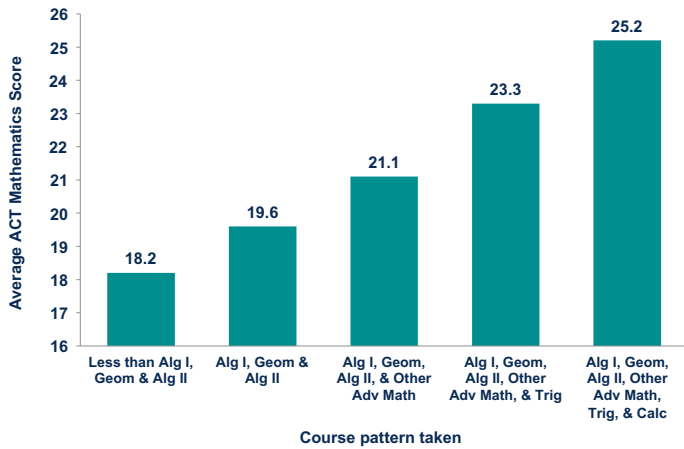
Average ACT Composite scores earned by gender and core curriculum



Students who take the core curriculum in high school attain significantly higher scores on the ACT than those who do not.³

The average ACT Composite scores of male and female students who take the core curriculum are about 2.5 points higher than those of male and female students who take less than the core.

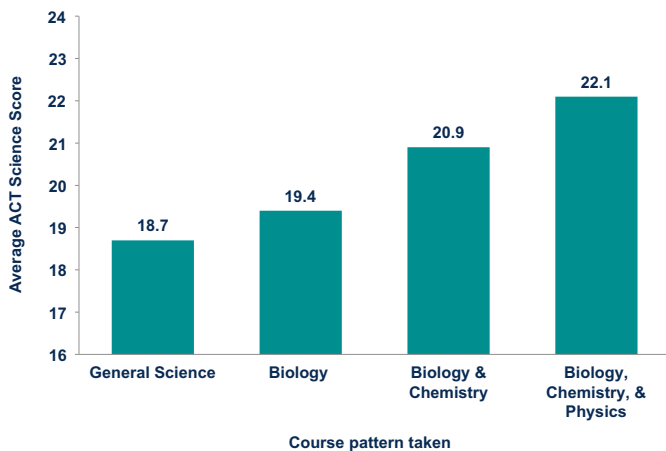
Average ACT Mathematics scores by mathematics courses taken, regardless of prior achievement



Students who take upper-level high school courses in mathematics or science attain significantly higher scores on PLAN and the ACT than those who do not.³

Average ACT Mathematics scores of students taking mathematics courses beyond Algebra II are 1.5 to 5.6 points higher than those of students taking only Algebra I, Geometry, and Algebra II.

Average ACT Science scores by science courses taken, regardless of prior achievement



Average ACT Science scores of students taking Biology and Chemistry, or Biology, Chemistry, and Physics, are 1.5 and 2.7 points higher than those of students taking only Biology.³

Early monitoring promotes educational and career planning.

Students develop and crystallize their educational and career interests during high school. EXPLORE, PLAN, and the ACT provide individualized feedback to students about their interests, which encourages them to choose educational majors and career paths that are consistent with their interests and academic strengths.

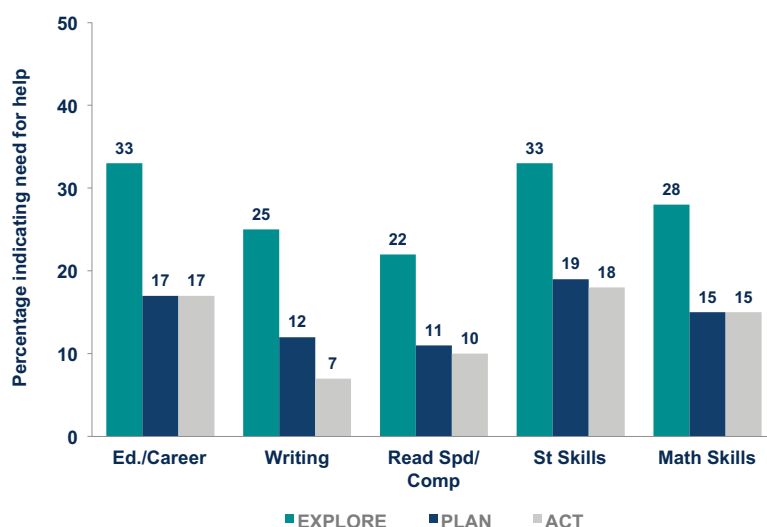
Students who have interests that are consistent with their choice of college major are more likely than other students to have higher college GPAs, persist in college, persist in their major, and graduate from college (Allen & Robbins, 2010; Leuwerke, Robbins, Sawyer, & Hovland, 2004; Tracey & Robbins, 2006).

Students who are monitored early have somewhat higher college aspirations than students who do not participate, regardless of their background. The odds of planning to complete at least a two-year college degree are 23 percent higher among students who are monitored early than among those who are not monitored early. The increase in odds is 22 percent with regard to planning to complete at least a four-year degree.

Among students who are monitored early and indicate needs for educational or career guidance in grade 8, fewer indicate needs for help in grades 10 and 12.⁴

Decreases across PLAN and ACT of EXPLORE-tested students indicating needs for help

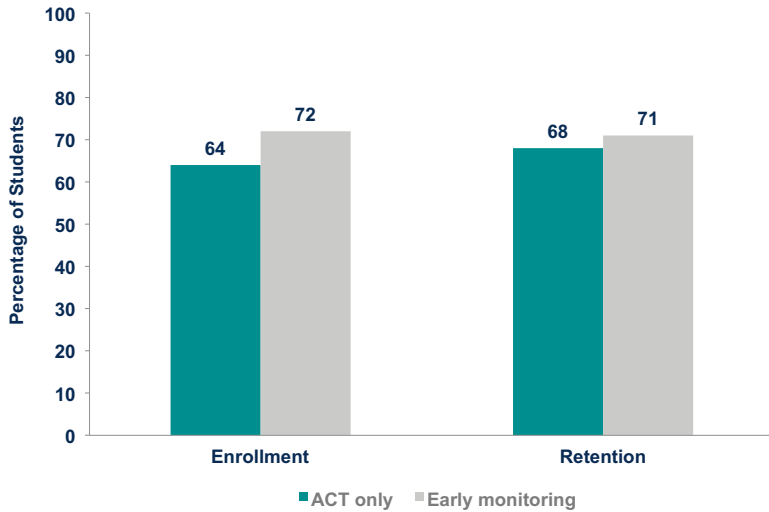
Of students needing help at grade 8, between 40 to 50 percent fewer need help at the time of PLAN testing and, for writing, reading speed/comprehension, and study skills, even fewer need help at the time of ACT testing.⁴



Early monitoring is associated with increased college enrollment, and with educational achievement and persistence in college.

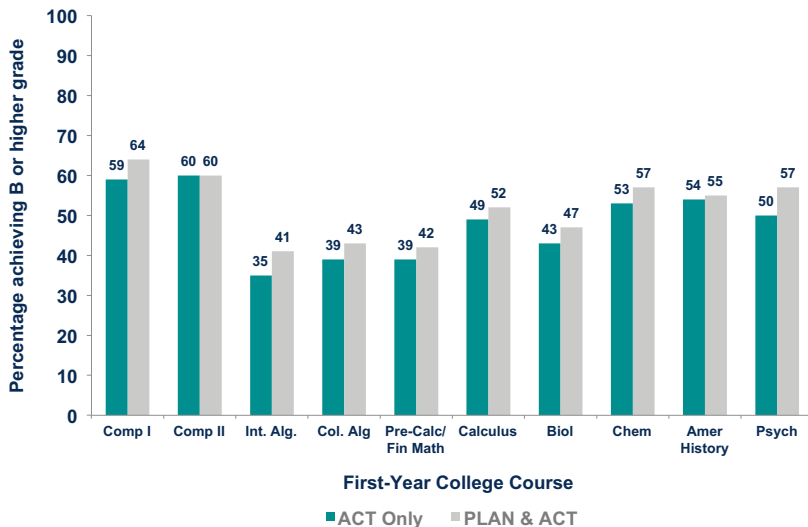
Students who participate in PLAN and the ACT are more likely to achieve a B or higher grade in selected first-year college courses in college than students who participate only in the ACT.^{4,5,6}

College enrollment and retention rates by program participation



Students who are monitored early are more likely to enroll in college and re-enroll in the same college their second year than students who are not monitored early, regardless of their background.¹

Percentages of students achieving a grade of B or higher in selected first-year college courses, by program participation



Students who participate in PLAN and the ACT are more likely to achieve a first-year college GPA of 3.0 or higher than students who participate only in the ACT (by 4 to 5 percentage points).⁵

Putting It All Together: Using EXPLORE, PLAN, and the ACT

The National Agenda

Forty-five US states and the District of Columbia have adopted the Common Core State Standards.⁷ These standards are based on the principle that educational standards for all students should be rooted in the goal of college and career readiness. The development of the Common Core State Standards was guided by ACT's definition of college and career readiness: the acquisition of the knowledge and skills a student needs to enroll and succeed in credit-bearing, first-year courses at a postsecondary institution (two- or four-year college, or trade or technical school) without the need for remediation. This connection was illustrated in a recent study in which ACT provided a baseline summary of student college and career readiness on the Common Core State Standards, based on students' performance on the ACT (ACT, 2010).

As the Common Core State Standards are implemented, monitoring growth toward college and career readiness takes on greater importance for schools, districts, and states. Schools and districts are still required to comply with the requirements of the No Child Left Behind Act (NCLB) and to demonstrate adequate yearly progress. The reauthorization of the Elementary and Secondary Education Act also has major implications for school accountability and assessment activities. With EXPLORE, PLAN, and the ACT, schools, districts, and states can assess student achievement in grades 8, 10, and 11 or 12 while monitoring student and school growth toward college and career readiness. Together, EXPLORE, PLAN, and the ACT can be used as the basis for state accountability systems (ACT, 2009).

Local Implementation

In recent years many schools, districts, and states have observed encouraging improvements in the college and career readiness of their students. However, there are still many students who are not ready for college and career.

EXPLORE, PLAN, and the ACT provide extensive information to schools and districts about the academic achievement and college and career readiness of their students, as well as information about how well the school or district as a whole is preparing its students for college and career. This information, however, is of little value if it is not put into action. ACT's research supports the following actions for schools and districts seeking to improve the college and career readiness of their students:

1. **Use EXPLORE and PLAN results to intervene early with students who are not on target for college and career readiness at graduation and/or do not plan to complete some postsecondary education.**

Recent ACT research (*The Forgotten Middle*, 2008) emphasizes that students' academic achievement level at grade 8 is a critical indicator of whether students will reach college and career readiness by the time they graduate from high school. Although high school coursework and grades contribute to students' achievement, their academic readiness for high school has the single most significant impact on their degree of college and career readiness later on. The College Readiness Benchmarks and College Readiness Standards for EXPLORE allow schools, districts, and states to identify grade 8 students who are not on target for college and career readiness, intervene with them early in high school, and increase the likelihood that they will be ready by the time they graduate.

A user-friendly data management system for school districts, designed to make student performance data readily available to teachers, administrators, and parents (as described above), can be used to monitor student progress as well as collect indicators of how well the transition is being implemented at the local level. Such systems are essential in ensuring that the formative years of the implementation of the Common Core produce student-, classroom-, and school-level data that educators can use to quickly diagnose implementation problems and adjust appropriately.

2. **Evaluate the rigor and content of high school courses in mathematics, reading, and science. Align local curricular content, rigor, and learning progressions with the ACT College Readiness Standards and the Common Core State Standards.**

When students have the opportunity to take rigorous core courses and when their course achievement is reliably assessed, the prospects of their being ready for college and career increase dramatically. The benefits of rigorous coursework are reflected in student and school score gains across EXPLORE, PLAN, and the ACT.

ACT research shows that high school courses can be made rigorous, and that rigorous content can be effectively taught and learned. Alignment of local curricula with the College Readiness Standards for EXPLORE, PLAN, and the ACT will first identify the strengths and weaknesses of current curricula. Revising the curriculum to increase rigor and appropriate course content will position schools and districts

ALSO IMPORTANT:

CoreWork® Diagnostics is a research-based online service for strengthening and sustaining teaching and learning improvement in a school system. Through this service, educators have continuous access to interactive data and tools that help them connect student performance to educational practice. School systems can use CoreWork Diagnostics to analyze student performance data, study and compare educator practices, and inform school improvement planning.

QualityCore® provides instructional resources and end-of-course assessments for schools and districts seeking to improve the rigor of their high school courses and increases the likelihood of their students graduating college and career ready. QualityCore also includes a variety of professional development resources and workshops to help teachers expand their skills and knowledge and benefit from effective practices used by other teachers.

for the transition to the Common Core State Standards and increase the likelihood of students being ready for college and career by high school graduation. Grade-by-grade curriculum guides should be developed that clearly define learning progressions within and across subjects, establish relationships between standards across grades and courses, and illustrate desired performance standards for college and career readiness in each subject and grade. Such frameworks should provide in-depth descriptions of the Common Core State Standards by including suggestions for how they can be taught and measured in the classroom, by illustrating the performance of students who are on target for college and career readiness, and by providing illustrative rubrics that include the important components of the Common Core for use by teachers in evaluating student work on a daily basis.

3. Maximize the uses and benefits of the information provided by EXPLORE, PLAN, and the ACT to promote college and career readiness in schools and districts.

EXPLORE, PLAN, and the ACT provide results that benefit schools and districts at multiple levels. The results paint a comprehensive picture for school and district staff of individual students' educational achievement, college and career readiness, educational and career plans, career interests, and needs for help. Staff can integrate this information to assist students early in high school to align their educational plans, career goals, and high school coursework; to help students consider pursuing some postsecondary education and identify ways to remove or ameliorate barriers to obtaining that education; and to monitor and intervene with students at risk of not being ready for college or career by the time they graduate.

In aggregate, the assessment results show the effectiveness of the high school curriculum for preparing students for their post-high school experiences, the college-going plans of high school graduates, and the overall readiness of students for college and career. They can also be used to evaluate the success of school and/or district goals and initiatives.

To assist schools, districts, and states in maximizing the use of their assessment information, ACT is working to provide enhanced support materials for teachers and leaders through CoreWork Diagnostics, QualityCore, and workshops and training materials.

Future workshops and professional training programs will provide enhanced information to EXPLORE, PLAN, and ACT users about effective strategies for implementing and using test data to inform, evaluate, and modify school practices to promote college and career readiness.

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. (2009). *Using ACT data as part of a state accountability system*. Iowa City, IA: Author.

ACT. (2010). *A first look at the Common Core and college and career readiness*. Iowa City, IA: Author.

ACT. (2011). *ACT profile report—national*. Iowa City, IA: Author.

Allen, J., & Robbins, S. (2010). Effects of interest-major congruence, motivation, and academic performance on timely degree attainment. *Journal of Counseling Psychology*, 57(1): 23–35.

Leuwerke, W., Robbins, S., Sawyer, R., & Hovland, M. (2004). Predicting engineering major status from mathematics achievement and interest congruence. *Journal of Career Assessment*, 12, 135–149.

Tracey, T., & Robbins, S. (2006). The interest-major congruence and college success relation: A longitudinal study. *Journal of Vocational Behavior*, 69, 64–89.

US Department of Education, National Center for Education Statistics. (2008). *Digest of education statistics, 2007*. Washington, DC: Author.

Notes

¹ Based on ACT-tested high school graduates of 2010 from states where at least 50% of the graduates took the ACT, some of whom also participated either in EXPLORE in grade 8 and PLAN in grade 10, or only PLAN in grade 10 (overall N = 714,268 from 8,440 high schools). Of these students, 59% took PLAN or both EXPLORE and PLAN. College enrollment and re-enrollment data were obtained from the National Student Clearinghouse for students entering college in fall 2010. Weighting based on propensity scores was used to balance the early monitoring and ACT-only groups. Propensity scores were based on state, high school poverty level, family income, racial/ethnic group, and gender.

² Four years of English and three years each of mathematics, social studies, and science, as recommended by *A Nation At Risk*, 1983.

³ Data based on 2011 ACT-tested high school graduates.

⁴ Data based on 2009 and 2010 ACT-tested high school graduates who also participated in EXPLORE in grade 8 and PLAN in grade 10.

⁵ Based on data across multiple years from institutions participating in ACT's Course Placement Service. Approximately 99,000 students were included in the analysis for English Composition I; 10,000 for English Composition II; 6,500 for Intermediation Algebra; 17,500 for college Algebra; 7,500 for Pre-Calculus/Finite Math; 5,500 for Calculus; 6,500 for American History; 7,000 for Psychology; 4,000 for Biology and Chemistry.

⁶ Based on data across multiple years from institutions participating in ACT's High School to College Success Report service.

⁷ As of June 2012 according to www.corestandards.org.