

Readiness and Success: Statewide Implementation of EXPLORE and PLAN

Introduction

States are increasingly implementing college readiness assessments as part of statewide efforts to increase student awareness of, preparation for, and access to higher education. Since Oklahoma first made PLAN[®] available statewide during the 1994–1995 school year, for example, nine other states have followed suit, and eight of the same states also offer EXPLORE[®] statewide. This brief outlines the long-term impact and benefits of statewide implementation of EXPLORE and PLAN, two elements of the longitudinal-assessment program within ACT's College Readiness System.

EXPLORE, PLAN, and the ACT[®] test measure student achievement in English, mathematics, reading, and science. The assessments measure achievement because each is firmly based in the curriculum of the grade level for which it is intended. Every 3 to 4 years, we conduct the ACT National Curriculum Survey[®], in which we ask more than 20,000 educators nationwide to identify the knowledge and skills that are important for students in grades 7 through 14 to know to be ready for college-level work. We examine the objectives for instruction for grades 7 through 12 for all states that have published such objectives. We also review textbooks on state-approved lists for courses at these grade levels. We then analyze the information to refine the scope and sequence for each section of EXPLORE, PLAN, and the ACT. In this way, the three assessments represent a consensus among educators and curriculum experts about what is important for students to know and be able to do.

The knowledge and skills measured by the ACT (for students in grade 11 or 12) are closely aligned with success in college. The higher a student's score on the ACT, the more likely that student is to be ready for college, to achieve higher grades in college, and to persist to a college degree. EXPLORE and PLAN are early measures of college readiness in the eighth and tenth grades, respectively. EXPLORE, PLAN, and the ACT allow teachers, counselors, and students to track academic progress from eighth through twelfth grades on skills directly related to college preparation.

Moreover, though the skills are described differently for different contexts, many of the skills most important for both college and workforce training readiness are comparable (ACT, 2006c). All of these skills can be acquired through rigorous high school courses, regardless of the context (academic or career focused) within which they are taught.

In conjunction with assessing academic progress, EXPLORE, PLAN, and the ACT help students plan for the future by providing information on careers that match their interests and skills. Encouraging students to think about possible careers early on allows them to plan more effectively to take the academic courses they will need to achieve their career goals.

Previous ACT research (e.g., ACT, 2006a, 2006b, 2006d) has shown repeatedly that students, schools, and states benefit from participating in EXPLORE, PLAN, and the ACT. Use of these assessments is associated with student increases in:

- educational achievement in high school and in college
- the number of core-curriculum courses taken during high school
- college and career readiness, including among underrepresented minority students
- college enrollment and retention

In the present study, trends over time were examined among public school students in Arkansas, Oklahoma, and West Virginia, states that have used EXPLORE and/or PLAN on a state-funded voluntary basis in their public schools for more than ten years. Outcomes before and after statewide implementation were compared.¹

Table 1 gives the years of EXPLORE and PLAN state implementation for each state and the percentages of its eighth and tenth graders tested in 2004–2005.

Table 1: Summary of Statewide EXPLORE and PLAN Implementation in Arkansas, Oklahoma, and West Virginia

State	Statewide Implementation Year ^A for EXPLORE	% EXPLORE-tested in 2004–05 ^B	Statewide Implementation Year ^A for PLAN	% PLAN-tested in 2004–05 ^B
Arkansas	1995–96	62	1995–96	69
Oklahoma	1996–97	85	1994–95	78
West Virginia	1996–97	88	2002–03	84

^A “Statewide Implementation Year” is the school year in which statewide implementation was fully implemented.

^B Denominators based on numbers from each state’s Department of Education Web site, except for Oklahoma, where the numbers were obtained from Oklahoma’s State Board of Regents for Higher Education.

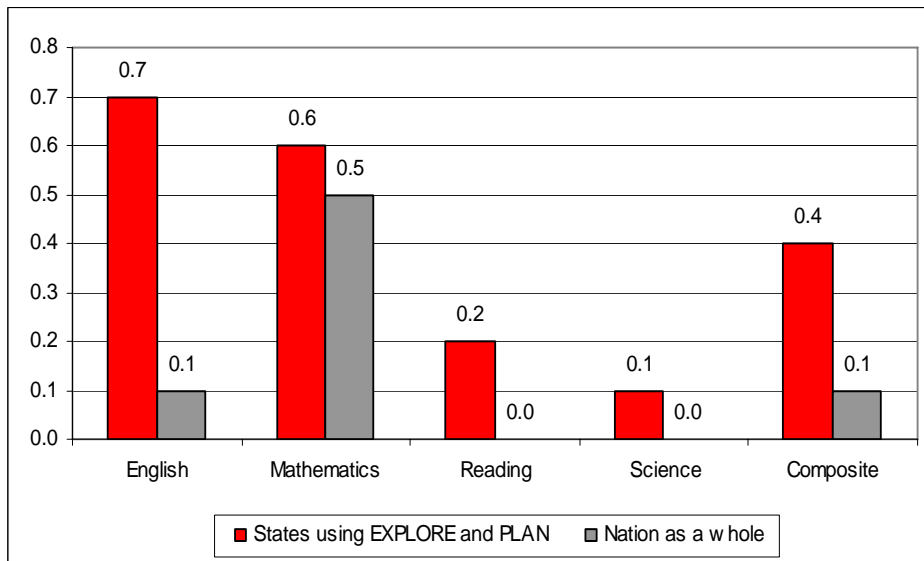
This study looked at several educational indicators:

1. Student academic achievement
2. High school core coursetaking
3. Achievement gaps
4. College and career readiness
5. Remediation rates
6. Student success in college
7. Economic return on investment

1. States saw improvements in students' academic achievement.

Implementation of EXPLORE and PLAN was associated with increases in students' average ACT Composite and subject-area test scores. These increases were also seen for underrepresented minority students (i.e., African Americans, American Indians, and Hispanics) and low-income students.² Figure 1 shows the average score increases for all students in Arkansas, Oklahoma, and West Virginia in comparison to the average achievement test score increases seen nationally over the same time period.

Figure 1: Average Increase in ACT Scores for States Using EXPLORE and PLAN and for the Nation as a Whole³



For each ACT subject—English, mathematics, reading, and science—the average score increases between the pre- to post-implementation periods in the states using EXPLORE and PLAN exceeded those in the nation as a whole.

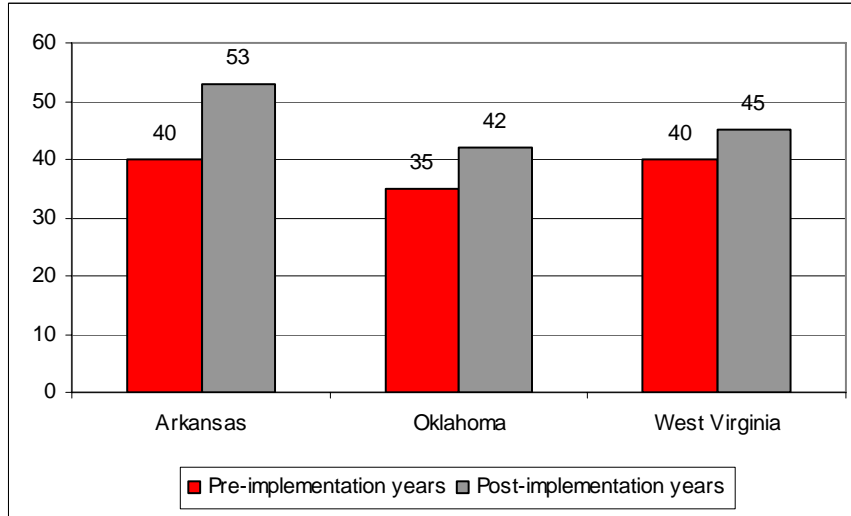
2. States saw improvements in core coursetaking in high school.

From pre- to post-implementation, Arkansas and Oklahoma saw increases in the percentage of students taking the ACT-recommended core curriculum.⁴ All three states saw increases in the percentage of students taking mathematics courses beyond Algebra 2 (Figure 2). In general, slightly larger increases in core coursetaking were seen for underrepresented minority and low-income students, particularly in mathematics and science (Radunzel, 2007, 21–27).

For each ACT subject, average score increases in the states using EXPLORE and PLAN exceeded those in the nation as a whole.

Students taking a core curriculum in high school are more likely to enroll and succeed in college, particularly in mathematics and science.

Figure 2: Increases in the Percentage of Students Taking Mathematics Courses beyond Algebra 2 in States Using EXPLORE and PLAN, Before and After Implementation⁵



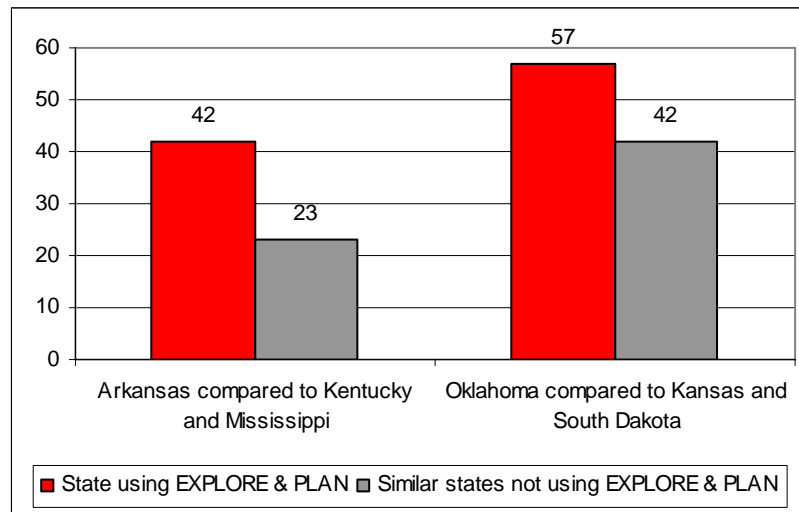
Students taking a core curriculum in high school are more likely to enroll and succeed in college, particularly in mathematics and science.

3. States saw reductions in participation gaps and achievement gaps.

The ACT participation rate indicates the extent to which students are encouraged to consider, and are provided opportunities to prepare for, postsecondary education. The three states saw an average increase of 4 points in the percentage of their high school students taking the ACT after EXPLORE and PLAN had been implemented statewide.⁶

In Arkansas and Oklahoma, the percentages of underrepresented minority students taking the ACT rose after statewide implementation (Figure 3).⁷ In Arkansas the number of participating minority students increased by 42 percent. In comparison, in the demographically similar states of Kentucky and Mississippi that did not have statewide implementations of EXPLORE and PLAN, the average increase in minority student participation was 23 percent.

Figure 3: Percentage Increases in ACT Participation for Underrepresented Minority Students from Pre- to Post-Implementation Years, by State



EXPLORE and PLAN exposed some students to readiness tests who may not otherwise have been considering college.

Similarly, the percentage increase in minority student participation was 57 percent in Oklahoma. In comparison, the average increase in minority student participation in the demographically similar states of Kansas and South Dakota was 42 percent.

In each case, EXPLORE and PLAN exposed some students to readiness tests who may not otherwise have been considering college. Apparently, some of these students also took the ACT and thereby opened a window of opportunity.

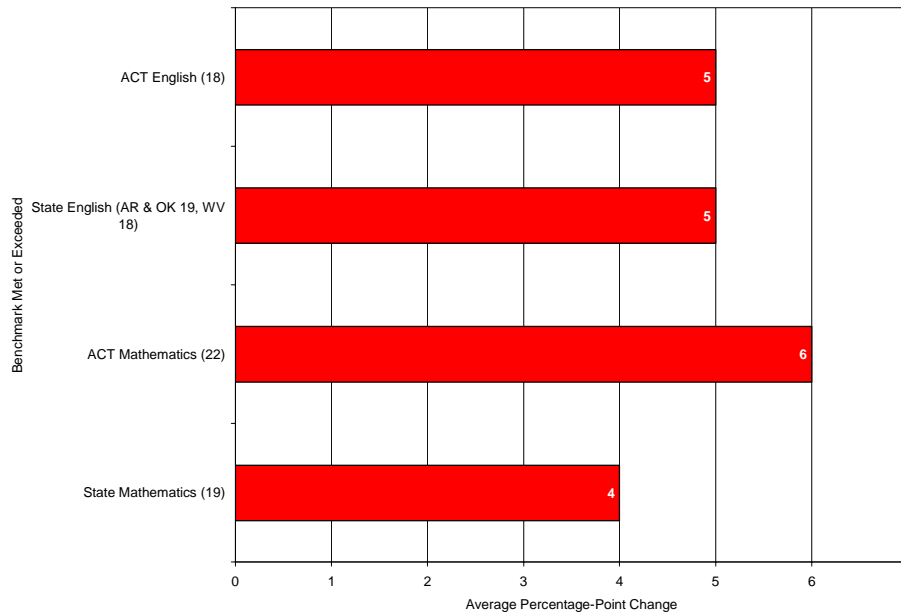
4. States saw improvements in students' college readiness.

From pre- to post-implementation, states adopting EXPLORE and PLAN experienced increases in the percentages of students who were college and career ready⁸ in all four subject areas, with the exceptions of social science in Arkansas and science in West Virginia. The three states also experienced notable decreases in the percentages of students who were not ready for college or career in any of the four subject matter areas.

Improvements in readiness in English and mathematics were especially notable. Figure 4 shows the average increases in English and mathematics for the three states (as measured by both the ACT College Readiness Benchmarks and state-specific benchmarks). A similar pattern of increases was found for underrepresented minority and low-income students.

Increases in college and career readiness, and in students' awareness of their readiness, eventually translate into more college students and graduates and more highly-skilled state citizens.

Figure 4: Average Increase in Percentage of Students Meeting Selected ACT College Readiness Benchmarks and State Benchmarks after Statewide Implementation



West Virginia, with statewide testing of EXPLORE for more than ten years and statewide testing of PLAN for five years, saw the largest increase of any U.S. state in the percentage of students college and career ready in English, and the largest decrease in the percentage of students not ready in any subject matter area.

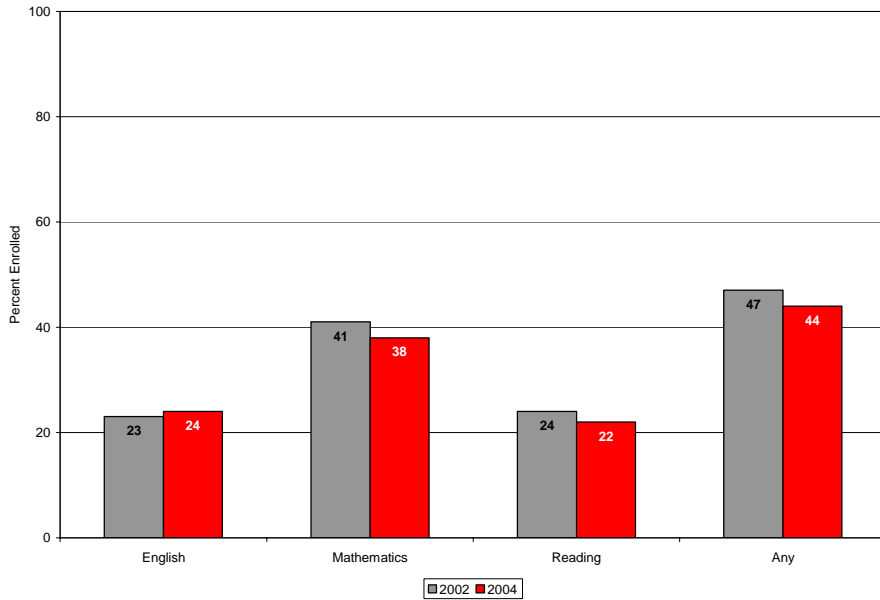
Between 2003 and 2006, all three states saw increases in average PLAN Composite and subject area scores.

Increases in college and career readiness, and in students' awareness of their readiness, eventually translate into more college students and graduates and more highly-skilled state citizens.

5. States saw declines in students' need for remedial coursework in college.

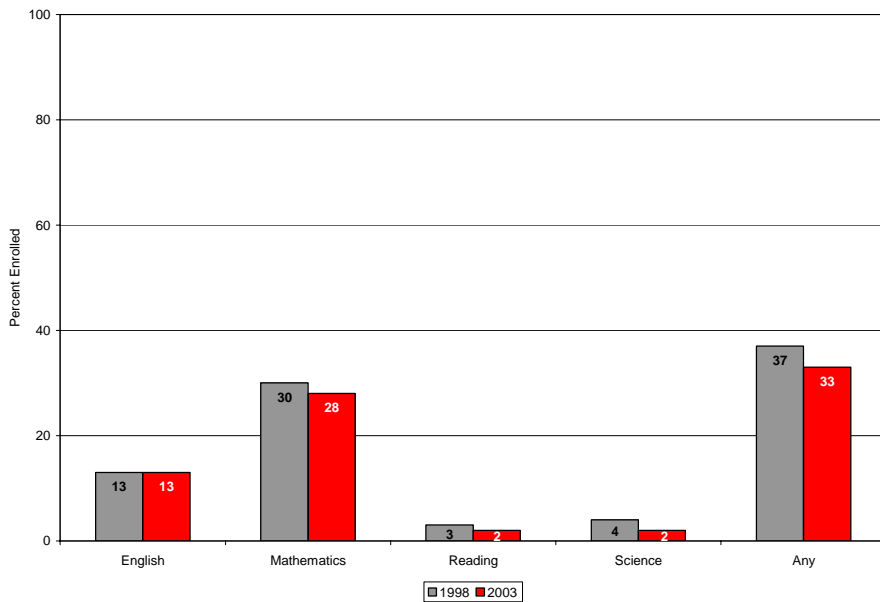
Percentages of students taking remedial courses during their first year of college decreased over time in Arkansas and Oklahoma, the two states for which data were available. This was also true for underrepresented minority and low-income students in the two states. Figures 5 and 6 compare the percentages of entering college students taking remedial courses over a two-year period in Arkansas and a five-year period in Oklahoma, respectively. This is particularly noteworthy because this happened when the percentage of high school graduates enrolling in state postsecondary institutions increased slightly in both states over the same time periods (from 57 to 59 percent for Arkansas and from 57 to 60 percent for Oklahoma).

Figure 5: Remediation Rates for 2002 and 2004 ACT-Tested Arkansas Public High School Graduates Enrolled in an In-State Postsecondary Institution^A



^A The percentages shown for each subject area represent all students who took remedial coursework in that subject, even if they also took remedial coursework in either or both of the other two subjects. The percentage shown for “Any” represents all students who took any remedial coursework in English, mathematics, or reading.

Figure 6: Remediation Rates for 1998 and 2003 ACT-Tested Oklahoma Public High School Graduates Enrolled in an In-State Postsecondary Institution^A



^A The percentages shown for each subject area represent all students who took remedial coursework in that subject, even if they also took remedial coursework in any of the other three subjects. The percentage shown for “Any” represents all students who took any remedial coursework in English, mathematics, reading, or science.

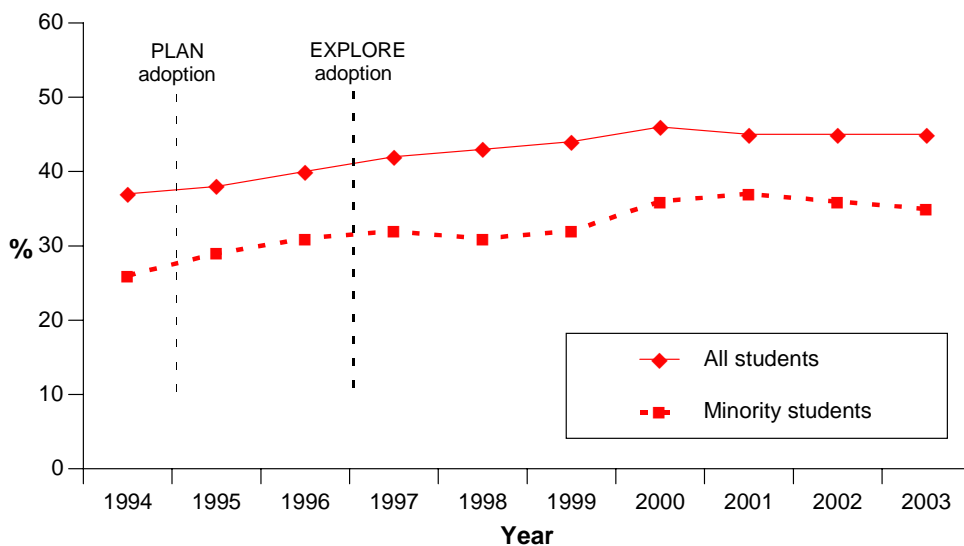
Remedial coursework can benefit those who need it but, without question, students are better off if they do not need it. Remedial education costs time and money and, because even perfect mastery of a remedial course provides a student with no credits toward a degree, it delays completion of a degree. A decline in the need for remedial education will eventually translate into more college graduates.

Some researchers estimate the savings in direct instructional expenditures from *not* having to remediate underprepared college students ranges from \$1,300 to \$1,800 per student per year per subject area (Breneman & Haarlow, 1998). (Also considering an array of *indirect* benefits [e.g., students' increased probability of college completion and higher future income] could double or triple those estimates [Alliance for Excellent Education, 2006].) Combining these per-student savings in instructional expenditures at the state level implies total savings for Arkansas of between \$421,000 and \$583,000 per year, and for Oklahoma of between \$781,000 and \$1,040,000 per year.⁹

6. States saw improvements in the rate of student success in college.

Longitudinal data series that address indicators of college success were available from Oklahoma. The percentage of ACT-tested college students earning a first-year grade point average (GPA) of 3.0 or higher from an in-state postsecondary institution rose from 37 percent of Oklahoma public high school graduates in 1994–1995 to 40 percent in 1996–1997 and then to 45 percent in 2003–2004. Similar trends in percentages were observed for underrepresented minority students (Figure 7). This improvement occurred as the percentage of Oklahoma public school graduates enrolling in in-state colleges the fall following graduation increased slightly over the same time period (from 58 percent in 1994 to 60 percent in 2003).

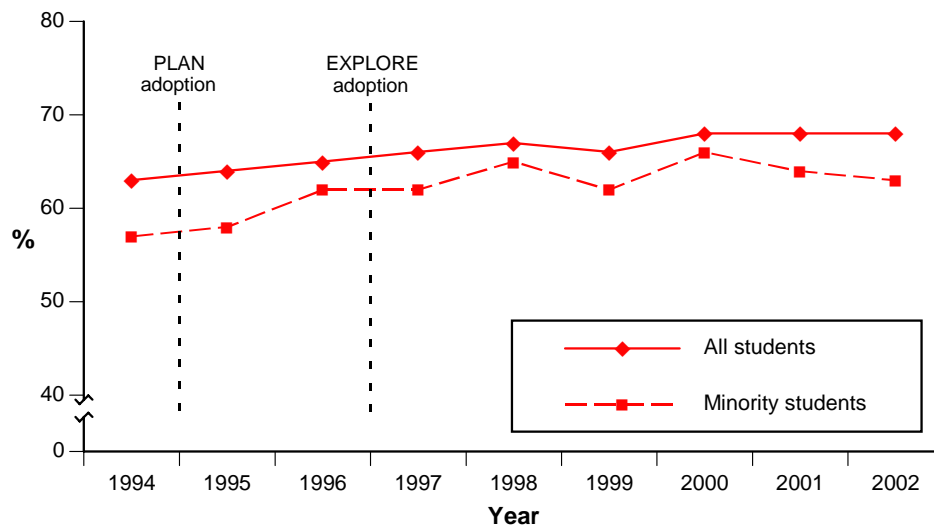
Figure 7: Percentage of ACT-Tested Oklahoma First-Year College Students with GPAs of 3.0 or Higher, before and after Statewide Implementation



The percentage of ACT-tested college students who re-enrolled in the same in-state college for a second year rose from 63 percent of Oklahoma public high school graduates in 1994–1995 to 65 percent in 1996–1997 and then to 68 percent in 2002–2003. Similar trends in percentages were seen for underrepresented minority students (Figure 8). This improvement occurred at the same time that there was a slight increase in public high school graduate in-state college enrollment over the same time period (from 58 percent in 1994 to 60 percent in 2003).

First-year college grade-point average and second-year re-enrollment represent indicators of college success.

Figure 8: Percentage of ACT-Tested Oklahoma First-Year College Students who Re-Enrolled for a Second Year, before and after Statewide Implementation



First-year college GPA and second-year re-enrollment represent indicators of college success. The higher the first-year GPA, the more likely a student will continue their college career. Higher rates of second-year re-enrollment will translate into more college graduates, and highly-skilled state citizens, a few years later.

7. States saw increased economic return on educational investment.

Since implementation of EXPLORE and PLAN on a state-funded voluntary basis Arkansas, Oklahoma, and West Virginia have seen increases in the percentages of their students who are college ready—ready for credit-bearing college coursework without remediation.

Some researchers estimate institutional costs of remediating underprepared college students to range from \$1,300 to \$1,800 per student per year per subject area (Breneman, 1998; Breneman & Haarlow, 1998; Parsad, Lewis, & Greene, 2003). In contrast, it costs these states less than \$10 per student per year to administer PLAN on a state-funded voluntary basis, or less than \$18 per student per year to administer both EXPLORE and PLAN on a state-funded voluntary basis.

A combination of the former savings with the latter costs indicates benefits for postsecondary institutions in excess of \$1,000 for each student who no longer requires remediation. The students themselves would benefit, as well, if they can more quickly enter credit-bearing courses and reduce their tuition and fee burden.

Conclusion

Comparisons of student academic performance in three states before and after statewide implementation of EXPLORE and PLAN reveal that, after implementation:

- ACT and PLAN Composite and subject-area scores increased.
- More high school students took core curriculum courses.
- More underrepresented minority students took the ACT.
- More students became college and career ready.
- In states for which data were available, college freshman remediation rates declined and the percentage who obtained GPAs of 3.0 or higher and re-enrolled for a second year increased.
- Participating states are estimated to have saved over \$1,000 in foregone expenses for each additional college ready student (who no longer required postsecondary remedial coursework) after taking EXPLORE and/or PLAN.

Each of these indicators shows a positive trend, as each is associated with increased social benefits in the form of a better-educated and more highly-skilled and productive citizenry. Postsecondary education institutions clearly benefit if fewer of their students require remedial coursework and, instead, enroll in credit-bearing coursework earlier. Students clearly benefit if they accelerate their progress toward degree by eliminating time spent in non-credit courses and attaining higher grades in the credit-bearing courses. Finally, society benefits by reducing ethnic- and income-based gaps in educational achievement and productively employing a larger proportion of its human resources.

Statewide adoption of EXPLORE and/or PLAN appears to benefit states by enlarging the pool of students who consider college and career and then take the necessary steps to prepare themselves for them. The implications for state economic development are profound. Human capital is any state's single most important resource. Converting a few percent of a state's population from high school leavers to college students, and another few percent from college remedial students to credit-earning college students, will transform the character of a state's workforce and, in turn, raise the state's economic potential.

APPENDIX

As of February 2009, ten states had adopted EXPLORE and/or PLAN statewide (see Table 2). Adoption can take any one of several forms: some states require one or both tests to be administered to all students at one or more grade levels; some states do not require that all school districts administer one or more tests but provide financial support to those that do; and some states require that a college admission test must be administered to all students at one or more grade levels but allow school districts to choose which one.

Table 2: Statewide Adoption Years for EXPLORE and PLAN, by State

State	Statewide adoption year for EXPLORE	Statewide adoption year for PLAN
Arkansas	1995–1996	1995–1996
Florida ^A	n/a	1999–2000
Illinois ^B	2008–2009	2008–2009
Kentucky	2006–2007	2006–2007
Louisiana	2001–2002	2001–2002
Minnesota	2005–2006	2005–2006
Oklahoma	1996–1997	1994–1995
South Carolina ^A	2006–2007	1999–2000
Tennessee	2007–2008	2007–2008
West Virginia	1996–1997	2002–2003

n/a = not adopted statewide.

^A South Carolina and Florida have adopted PLAN or the PSAT on a statewide basis. In Florida, districts choose which to administer.

^B Prior to 2008–2009, Illinois had not adopted EXPLORE and PLAN statewide, but the Chicago Public Schools (CPS) had adopted both citywide. In 2000–2001 PLAN was administered to all CPS juniors; from 2001–2002 PLAN has been administered to all CPS sophomores. From 2001–2002 to 2004–2005, EXPLORE was administered to all CPS freshmen; from 2005–2006 EXPLORE has been administered to all CPS eighth graders.

Notes

¹ For each state, averaged data for the three years immediately prior to initial statewide implementation (pre-implementation period) of either EXPLORE or PLAN were compared to averaged data for the three years 2003 through 2005 (post-implementation period). The pre-implementation years were 1993–1995 for Arkansas, 1992–1994 for Oklahoma, and 1994–1996 for West Virginia. Analysis limited to public school students.

² Underrepresented minority students are defined here as African American, American Indian, and Hispanic students combined. Low-income students are defined here as students whose annual family income was less than \$24,000 (during the years 1991–1994), less than \$30,000 (during the years 1995–1998), or less than \$36,000 (during the years 1999–2005). By contrast, the median family income during the periods 1991–1994, 1995–1998, and 1999–2005 averaged \$37,063, \$43,554, and \$57,226, respectively (SOURCE: U.S. Census Bureau, Income: Historical Income Tables – Families, Table F-7 Type of Family, All Races by Median and Mean Income: 1947 to 2006, Retrieved July 1, 2008, from <http://www.census.gov/hhes/www/income/histinc/f07ar.html>).

³ The comparison “pre-implementation years” used for the nation as a whole are 1993–1996.

⁴ The ACT-recommended core curriculum includes four or more years of English and three or more years each of mathematics, science, and social studies (4-3-3-3). Because most students take PLAN and the ACT before the end of their school career and, thus, before they have completed a core curriculum, we count PLAN-tested students as taking a core curriculum if they respond that they either “have completed or am now enrolled in this course” or “have not taken this course, but plan to take it prior to graduation” for the appropriate courses. Similarly, we count ACT-tested students as taking a core curriculum if they respond that they either “have taken or am taking” or “have not taken but will take” the appropriate courses.

⁵ Counting mathematics courses taken by time of ACT testing. Calculations include only those students who completed the Mathematics portion of the ACT Course Grade Information Section.

⁶ Estimated numbers of high school graduates per state and year were obtained from *Knocking at the College Door: Projections of High School Graduates by State, Income and Race/Ethnicity*. © 2003 by the Western Interstate Commission for Higher Education.

⁷ The lack of similar increases in West Virginia may be explained by a 17 percentage-point decrease in the number of all West Virginia public high school graduates from pre- to post-implementation. However, the *percentage* of underrepresented minority students in West Virginia who took the ACT did increase during this period.

⁸ ACT has developed its College Readiness Benchmarks to identify students who are prepared for college-level coursework. The ACT Benchmarks (English = 18, Mathematics = 22, Reading = 21, and Science = 24) reflect at least a 50 percent chance of achieving a B or higher grade, or at least a 75 percent chance of a C or higher grade, in entry-level, credit-bearing college English Composition, College Algebra, social science, and Biology courses, respectively.

⁹ 324 fewer college students were remediated in Arkansas in 2004 than in 2002. 578 fewer college students were remediated in Oklahoma in 2003 than in 1998.

References and Data Sources

ACT. (2004). *Crisis at the core: Preparing all students for college and work*. Iowa City, IA: Author.

ACT. (2006a). *The benefits of statewide use of the ACT*. Iowa City, IA: Author.

ACT. (2006b). *EPAS: A system that works*. Iowa City, IA: Author.

ACT. (2006c). *Ready for college and ready for work: Same or different?* Iowa City, IA: Author.

ACT. (2006d). *Statewide administration of the ACT: A key component in improving student preparation for college and work*. Iowa City, IA: Author.

- Alliance for Excellent Education. (2006, August). *Paying double: Inadequate high schools and community college remediation*. Washington, DC: Author.
- Breneman, D. W. (1998). Remediation in higher education: Its extent and cost (pp. 359–383). In D. Ravitch (Ed.), *Brookings papers on education policy 1998*. Washington, DC: Brookings Institution.
- Breneman, D. W., & Haarlow, W. N. (1998). *Remedial education: Costs and consequences*. Washington, DC: Thomas P. Fordham Foundation.
- Noble, J. (2003). *The effects of using EPAS programs on PLAN and ACT performance*. (ACT Research Report No. 2003-2). Iowa City, IA: ACT, Inc.
- Parsad, B., Lewis, L., & Greene, B. (2003). *Remedial education at degree-granting postsecondary institutions in Fall 2000*, NCES 2004-010. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Radunzel, J. (2007). Benefits associated with state adoptions of EXPLORE and/or PLAN. Unpublished manuscript. Iowa City, IA: ACT, Inc.
- Williams, N. J., & Noble, J. P. (2005). *School-level benefits of using PLAN over time*. (ACT Research Report No. 2005-1), Iowa City, IA: ACT.
- Woodruff, D. J. (2003). *Relationships between EPAS scores and college preparatory course work in high school*. (ACT Research Report No. 2003-5), Iowa City, IA: ACT