

Graduation Rates as a Measure of College Accountability

BY LAWRENCE GOLD AND LINDSAY ALBERT

A great deal of attention in public policy circles has been focused on the idea of using college graduation rates to measure institutional accountability. Lawrence Gold and Lindsay Albert examine the status of graduation-related accountability movements, cite shortcomings in the value of graduation rates as an accountability measure and suggest different approaches to address retention issues.

—Editors' note

Introduction

College graduation rates are often cited as an important way to judge the accountability of colleges and universities—or, as one “output” among others in evaluating institutional performance. The thinking goes as follows: the higher the graduation rate, the better the college’s performance—the lower the graduation rate, the poorer the college’s performance. Some observers suggest that we should reward colleges that do a good job (i.e., give them a financial reward) and conversely withdraw some funding to institutions which are not doing well by this measure. Sometimes, this thinking takes the more benign form of offering rewards for good performance but not punishing institutions for low graduation rates. Other observers suggest that institutional graduation rates should be publicized as a consumer measure.

Whichever option is chosen, the intention is to spur institutions to work harder to do a better job of graduating their students. As we will see, using graduation rates in this way has been under discussion in the states for some time. The issue also has figured in the current congressional process of reauthorizing the federal Higher Education Act. It is almost sure to arise again in the deliberations of a commission that U.S. Education Secretary Margaret Spellings has formed to look at the future of higher education.

This paper will raise serious questions about the value of using graduation rates, in the way they are currently calculated, as an accountability measure. We will demonstrate that the formula used to measure graduation rates at the federal level is far too limited and rigid to present an accurate picture of student retention. For example, the formula only counts students who begin college as full-time, first-time students and who graduate from the institution where they started. The calculation only covers a six-year period after admissions to a four-year institution. Therefore, the formula can not take into account students who transfer from one college to another, students who attend part-time at some point during their college careers, students who have financial responsibilities that prevent them from graduating quickly, or students who enter college to improve their job skills and not necessarily to obtain a degree. Furthermore, we believe that using graduation rates to reward or punish colleges and universities may have the perverse consequences of taking money away from the schools serving the neediest population of students or of encouraging grade inflation to produce more graduates.

At the same time, we will demonstrate that there are other, more important factors accounting for low retention. Existing data already indicates the major causes of low retention—student financial concerns, family responsibilities, under-preparation for college, getting “lost” in the system, etc. Drawing from this data, we will suggest a number of ways that the federal and state government, along with campus administration, can intervene successfully to improve retention and raise achievement—but merely counting caps and gowns presents an inaccurate and misleading picture of what is going on and how to cure the problems we face.

This article will examine arguments such as these, many of which were initially presented in *More Than Counting Caps and Gowns*, a 2003 report by the American Federation of Teachers, Higher Education Department.¹ The AFT report, developed with the assistance of policy analysts John B. Lee and Lawrence Gladieux, summarizes the shortcomings in federal graduation data, reviews factors that could tell us the real causes of retention problems, and suggests approaches that might help. Using *Caps and Gowns* as a starting point, this article will go on to offer new information on today’s graduation-rate policies at the state and federal levels. We will 1) examine graduation rates as an accountability measure; 2) suggest factors that truly affect retention and completion; 3) outline account-

ability measures at the state and federal level as they relate to graduation rates; and finally, 4) discuss strategies for increasing persistence and retention. We will keep in mind new data which suggest that four-year colleges and universities serving similar populations of students may display significant differences in their graduation rates.

Although we will cast a critical eye on the efficacy of using graduation rates to measure college accountability, we also want to make two things clear. First, we believe that institutions of higher education, particularly public institutions, must be—and, in fact, are—accountable for providing students with a quality education and for the proper management of federal funds. Second, we believe that student success—including college graduation—should be a matter of critical concern for government policymakers as well as college faculty, professionals and administrators. Graduation rates are not the be-all and end-all of collegiate achievement, but we do believe strongly that college persistence, particularly for minorities and first-generation-in-college students, is much lower than it should be and solutions to the problem must be found.

Pitfalls in Examining Graduation Rates

The following is a summary of the principal findings of the 2003 AFT report.

- 1. Judging college persistence and retention in terms of the current federal graduation rate formula is a mistake because the snapshot generated by that formula is completely out-of-focus.** Among many shortcomings, the institutional snapshot fails to account for part-time students, who represent more than 40 percent of the student population, and the large number of students who transfer from one institution to another during their academic careers. Moreover, many students get what they want from college in terms of job skills or personal enrichment without graduating. The snapshot labels such students as failures when they really are successes.
- 2. Focusing on the college graduation rate also confuses two separate issues—the issue of dropping out of college and the issue of simply taking a long time to get a degree.** Students all over the country are persevering in college up to and beyond the six-year snapshot period, even if they have not graduated yet. For example, some students are staying in college even though they had to switch from full-time to part-time attendance. Others have to drop out for a while to tend to a child or sick relative and then return. Both these situations show up as failures if the focus is on the six-year

graduation period, but such students are actually profiles in dedication and persistence.

3. **Rewarding or punishing colleges on the basis of their graduation rates may create a perverse incentive.** It may encourage the colleges to stop serving students who are likely to have problems in persistence; alternatively, it could create an incentive to lower academic standards to ensure that graduation rates stay high.
4. **More reliable data on college persistence can be found in a federal survey that followed postsecondary students over six years, Fall 1995-Spring 2001.** This survey provides data that is much superior to the institutional graduation rate formula because it tracks students through college transfers and other changes in enrollment. For example, under the federal graduation rate formula, 51 percent of all students received some sort of degree. However, the federal survey also contains data showing college persistence rates to be higher than they often are assumed to be. Table 1 identifies the percentage of students who received any degree or certificate and the percentage still enrolled in any institution after six years by the type of institution in which they started. The total is the sum of those who received a degree or certificate and those still enrolled somewhere.

Table 1: Percentage of Students Who Received Any Degree and the Percentage Still Enrolled After Six Years, By Type of Institution in Which They Started: 2001

	Any degree	Still enrolled	Total
Total	50.8	14.4	65.2
First type of institution			
Public 2-year	35.7	17.4	53.1
Public 4-year	60.2	17.3	77.5
Private 4-year	73.5	9.4	82.9
Private less-than-4-year	60.3	3.0	63.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study [BPS: 96/01]

Of students who started at four-year institutions, more than three-quarters had earned a bachelor's degree or were still enrolled in 2001. For students starting at public two-year institutions, the persistence rate is lower (53 percent) but not

surprisingly so, given the variety of objectives served by community colleges, their open admissions policies, and the diversity of students who attend them.

Factors That Do Affect Retention

The AFT report points to a variety of factors that can get in the way of students reaching their goals. It maintains that some students are at particular risk of dropping out and that there are wide gaps in completion rates—by family income, student aspirations and preparation, age and attendance pattern, and race.²

Full-time degree status

The report discusses the differences in graduation rates by a student’s goals and enrollment status. The following table shows the difference between following an individual institution’s graduation rates and following the individual student’s path towards a degree.

Table 2. Percentage of Students Beginning at a 4-year Institution Who Completed a Bachelor’s Degree Within Six Years: 2001

	Percent of total	Percent completing at first institution	Percent completing anywhere
<i>Total first-time students</i>	100.0	50.7	58.2
Started full-time	90.4	54.1	62.0
Had a B.A. goal	90.3	55.3	62.7
Started full-time and had a B.A. goal	82.9	58.0	65.6

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Post-secondary Students Longitudinal Study [BPS: 96/01]

Looking at the 1995-96 freshman cohort that started at a four-year college or university, 51 percent graduated from the institution at which they had started by the end of six years, but another 7 percent graduated from somewhere else. If students started full-time at a baccalaureate institution and had a goal of getting a bachelor’s degree, their odds of completion were better. Sixty-six percent of these students received a B.A. within six years. This result underlines the significance of students’ intentions when they enroll—intentions that can be determined by looking at student, as opposed to institutional, data.

Academic preparation

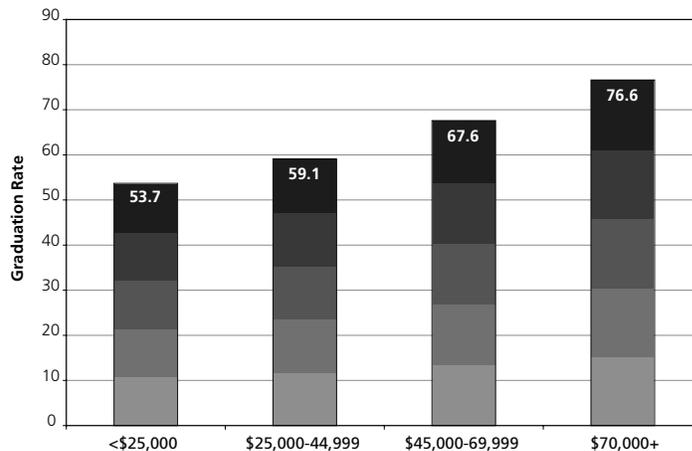
Students who have taken a rigorous high school curriculum and have high admission test scores will graduate more quickly and at a higher rate. ***In fact, according to NCES data, an institution's graduation rate can be predicted by knowing its selectivity in admission standards.*** Conversely, delaying entry into college, not having a regular high school diploma and not having taken a rigorous course of study in high school are all significant risk factors for persistence.

The first year is typically when the largest share of students leave college.³ Compared with students who continue their enrollment, the first-year dropouts have three attributes that may compound other risk factors: lower academic expectations, lower first-year grades and change in the number of dependents (for women).

Income

The report indicates that the higher the family income of a starting student, the greater are his or her chances of obtaining a baccalaureate degree. The following chart shows graduation rates for students who enrolled full time with the intent of graduating with a bachelor's degree. Again, colleges and universities that enroll lower-income students are likely to have lower graduation rates than those that enroll higher-income students.

Chart 1. Six-Year Graduation Rates by Family Income for Bachelor's Degree Seeking Students Who Began at a Four-year Institution: 2001



Source: U.S. Department of Education, National Center for Education Statistics, 1995-96, Beginning Postsecondary Students Longitudinal Study [BPS: 96/01]

Reports by the federal Advisory Committee on Student Financial Assistance have shown that unmet financial need, after loans, grants and other aid sources are counted in, is still considerably higher for low-income students than for middle- and high-income students, at all types of institutions.⁴ Students with unmet need often must make extraordinary efforts to persist in their programs, attending part time and intermittently, living off campus, working long hours and going into debt. Their probability of persistence and degree completion declines as a result of such patterns.

Older students

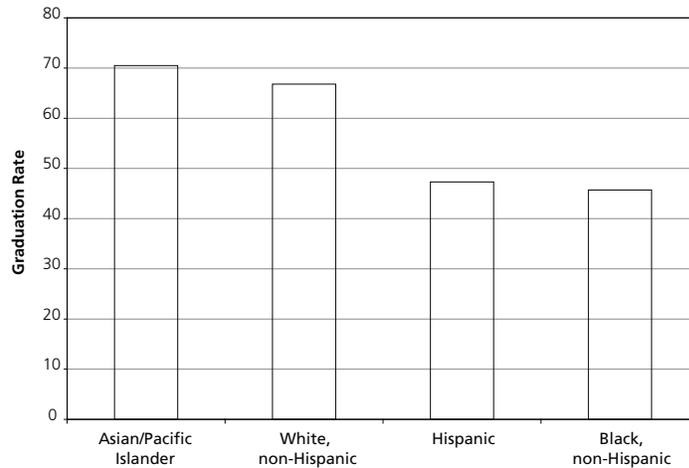
The report found that older students generally have family and job responsibilities that compete with college and extend the time to graduation or reduce the chances of graduating. Today, at least 57 percent of undergraduates are 22 or older.⁵ It is not age by itself that accounts for the higher dropout rate, but the associated risk factors common among older students: part-time enrollment, delaying entry into college, not having a regular high school diploma, having children, being a single parent, being financially independent of parents and working full time while enrolled.⁶

The effect of these risk factors is cumulative. The more risk characteristics a student has, the greater the chance that he or she will drop out of college. It also should be noted that many of these factors are clearly related to finances: having children, being a single parent, working full time while enrolled. According to the students participating in these surveys, the need to earn more money to support their families and/or to meet college expenses is a primary factor in their dropping out, working more or changing to part-time status.

Race and ethnicity

Hispanic and black students are less likely to complete college than are Asian and white students. Race and ethnicity are closely associated with family income, which makes it difficult to disentangle the two. The following chart shows the six-year graduation rates by race for students who started full time in a four-year institution.

Chart 2. Six-Year Graduation Rates by Race/Ethnicity for Bachelor's Degree Seeking Students Starting at a Four-Year Institution: 2001



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96, Beginning Post-secondary Students Longitudinal Study [BPS: 96/01]

Institutional factors

The data cited in the AFT report makes clear that institutional factors are much less important than student factors in determining persistence. Nevertheless, new data suggests that colleges may make a difference in whether nontraditional students succeed. The Education Trust's recent report, *One Step from the Finish Line: Higher College Graduation Rates are Within Our Reach*, makes this point strongly. Analyzing institutional graduation rates under the federal formula, the study finds that some institutions do better than others in graduating students with similar student populations. Even after taking into account financial resources, student demographics, institutional missions and other factors, these institutions still have higher graduation rates than their peers. The report goes on to list some of these successful colleges and to discuss how they, individually, have invested considerable resources and time into addressing student retention.

A follow-up study conducted by the Education Trust, the American Association of State Colleges and Universities, and the National Association of System Heads suggests that institutional leadership has a great deal to do with creating a culture of success on campus.⁷ The institutions that were successful in retaining

and graduating students each had a culture of high expectation for all students as well as a sense of inclusiveness and institutional mission. The leadership on these campuses were seen as coordinating these practices and keeping the institution moving forward.

Other case studies suggest a number of effective on-campus support strategies. Because students are most likely to leave during the first year, extra care early-on helps. This includes assisting students in developing study skills, learning how to manage their time and money, and planning for their careers. Fostering a sense of community may be important so students do not feel adrift. Study groups, class discussions and learning communities, where first-year students are enrolled in common sets of classes, have been considered helpful in generating a sense of community, even at commuter schools. Students need access to tutorial support, adequate student aid, faculty advisors, and counselors to help solve problems and help students stay in school. Students who have extra problems need extra help. Vigorous outreach and support can make a difference. Unfortunately, the institutions attended by students who need the most help, especially open-access colleges, are often badly underfunded and do not have the staff and resources to handle their students' needs.

State Accountability Policies Related To Student Persistence

When the federal government in 1990 made the reporting of graduation rates a condition for receiving Title IV aid for four-year institutions, it institutionalized graduation rates as a measurement for performance and quality. This, in turn, spurred state policymakers and higher education leaders to redouble their efforts to improve student retention and completion.

According to a recent survey by the State Higher Education Executive Officers (SHEEO), 41 states now use graduation rate data for state- and/or system-level accountability and quality assurance of its colleges and universities.⁸ No state has legislation that uses graduation rates as the sole measurement of institutional quality. Instead, states seem to be employing a number of strategies to foster student retention and degree completion, hoping to raise graduation rates.

There are several different types of accountability systems being tied to student performance at the state level: "unit-record" data, general performance reports, statewide goals assessments and performance funding.⁹ Each has state-level indi-

cators of institutional performance, designed to reach public audiences and used in discussions on strategic planning and national comparisons with peer groups.

Unit-record data

According to a recent survey from the National Center for Higher Education Management Systems (NCHEMS), 39 states maintain a unit-record (UR) database. States collect data on individual students, following them over many years at multiple institutions across the state. Data include information such as enrollment records, performance activity, retention and completion. States most commonly created these databases to have a consistent, centralized method for reporting on student enrollment and degree activity. Of the 39 states, all collect data on key elements such as sex, race, date of birth, degree granted/awarded and program major. Variation occurs when we look at elements such as high school, geographic and credit hours information. NCHEMS estimates that these databases contain information on 69 percent of the nation's full-time-equivalent students and 73 percent of total enrolled students.¹⁰ This information may be used for such state purposes as resource allocation systems based on enrollments, tracking retention and program completion among minority students, or ease in reporting to the federal government.

General performance reports

These “report cards” document activity on a wide range of measures. Most states (about three-fourths) using this approach use benchmarks to compare performance to other states or they look at changes in performance over time—progress is not measured against strategic goals or performance standards.

For example, legislation in California established an advisory committee to recommend performance indicators to the legislature. The legislature then approved annual indicators in five areas: population context, fiscal context, student preparation, student access and student outcomes. The 75 performance indicators essentially serve as a reporting mechanism for public institutions to the state. Currently there are neither negative consequences nor positive rewards for any individual district or college, or for the system.¹¹

Statewide goals assessment

Several states—Texas, New Jersey and Tennessee—are using accountability reports to document institutional progress towards a few strategic state goals.

The New Jersey system began as a broad-based report of performance indicators and then moved toward a goal-oriented system. Benchmarks include graduation rates, transfer and articulation success, efficiency and effectiveness, and diversification of revenues. In addition, Texas and Tennessee have both tied state goals to the regional initiatives of the Southern Regional Education Board's "Challenge 2000" agenda. Some of the SREB goals include:

1. The percentage of adults who have attended and earned a two-year, four-year or graduate degree will be at the national level or higher.
2. Quality and effectiveness of colleges will be regularly assessed—emphasizing undergraduate performance.
3. Teacher education programs will place primary emphasis on the knowledge and performance of graduates.
4. Salaries for teachers will be competitive, reach important benchmarks and be linked to performance measures and standards.
5. States will maintain or increase state tax dollars for schools and colleges while emphasizing funding aimed at quality.¹²

A growing number of other states are connecting graduation rates to performance funding. The 2002 SHEEO study found 18 states where graduation rates were used in performance funding, even if it was one of multiple indicators.¹³

South Carolina, for example, is attempting to base all state higher education funding on performance indicators and is experimenting with a system that connects 50 indicators with resources. Similarly, Florida requires the community college system to report its performance for budgeting purposes. Incentive funding is based on measures which will require significant new data collection and research on graduates after they leave the institution (i.e., graduation and retention rates, accumulated credit hours of graduates, percentage of graduates remaining in Florida and employed at \$25,000 or more). So far, in the community college system, which has the longest history with performance funding—10 percent of total institutional funding is performance based—there has been little change. The funding has been level with colleges getting neither less nor more funding under this program.

The trend of trying to find new ways to assess accountability, including the use of graduation rates, does not seem to be slowing. According to a survey of state higher education financial officers by the Higher Education Program at the

Rockefeller Institute of Government, performance reporting is becoming the preferred approach to accountability. State policymakers, especially legislators, see performance reporting as a “no cost” alternative to performance funding and performance budgeting.¹⁴

Although performance reporting has no formal connection to budgeting, the financial officers claim that coordinating or system governing boards consider their results when making campus allocations. A significant number of legislative leaders also see performance measures as important and increasing factors in state appropriations.¹⁵

In May of 2003, the U.S. General Accounting Office conducted a survey of the state higher education executive officers in all 50 states and the District of Columbia and Puerto Rico.¹⁶ Of the 52 states and territories surveyed, 48 responded. According to this study, 34 of the 48 states responding reported having at least one effort in place to increase bachelor’s degree completions. Efforts include: increasing the number of students entering higher education; helping colleges improve the retention and graduation of their students; and aiding individual students to encourage persistence and completion.

Eighteen states reported that they publish the state’s performance measures, including retention and federal graduation rates, believing that publication motivates colleges to improve their institutional quality. In Virginia and several other states, public institutions are required to measure and report retention and federally calculated graduation rates, as well as other student learning outcomes, in order to demonstrate their institutional value to their students.

Nine states have financial incentives for colleges and universities to improve performance in the areas of retention and completion. Tennessee has a performance funding program which provides institutions with an opportunity to earn a financial supplement of approximately 5.45 percent of its education and general budget. The college or university must carry out the following activities: 1) obtain accreditation; 2) test graduating students in their major fields and in general education, and demonstrate that student performance is at or above national averages on these standardized tests; 3) conduct satisfaction surveys; 4) conduct peer review of its academic programs; and 5) implement successful assessment activities.¹⁷

In Pennsylvania, the Board of Governors established a performance funding program to reward colleges and universities based on student achievement measures, university excellence and operational efficiency. Universities each year must demonstrate an improved level of performance on a series of “indicators” in order to receive a financial bonus. The indicators include student retention and graduation rates, degrees awarded and instructional cost per student. In order to qualify, a four-year institution in the state, whether public or private, must graduate more than 40 percent of in-state students within four years.¹⁸

Governors in their State of the State speeches have also used graduation rates as a way to emphasize accountability and direct public attention to their practices. In the 2005 New Mexico State of the State Address, Governor Bill Richardson stated, “we will link state funding to graduation rates to make sure our universities and colleges prepare New Mexicans for high-wage jobs.”¹⁹

Federal Use of Graduation Rates

As noted in the section above, the federal government began collecting graduation rate data in 1990. Under current law, the U.S. Secretary of Education can also exceed by ten percent the authorized levels of the Supplemental Educational Opportunity Program and the College Work-Study Program for distribution to institutions with graduation or transfer rates that exceed 50 percent with no limitation on time to degree. This provision was employed under the Work-Study Program in the late 1990’s some years ago but not since.

When Congress began considering the reauthorization of the Higher Education Act in 2003, staff members in both the administration and Congress talked about the possibility of imposing stricter accountability through graduation rates—providing more money to institutions that did well and reducing funds for those that did not. After a great deal of debate in the policymaking community, Congress decided not to impose an explicit requirement of this nature. However, there are provisions in the legislation now making its way through Congress that are related to graduation rates.

Under the bills being considered in US Congress, students at certain institutions may become eligible to receive “bonus” year-round Pell Grants if: 1) for four-year colleges, their graduation rates are above 50 percent for the four preceding years; and 2) for two-year colleges, they have graduation rates above the average

in one of the last three years. Congress is also considering a provision that would tie support for Tribal Colleges to the number of Pell Grant recipients and the college's completion rates. In each of these cases, the critics maintain that the real losers would be low-income students who are denied the wherewithal to obtain an accessible education.

Another provision under consideration is “consumer profile” legislation that would change the way the federal government computes graduation rates to include information about transfers from two-year institutions. However, Congressional committees soundly rejected, on privacy grounds, a proposal to track students on a longitudinal basis in addition to tracking institutional graduation rates. Remembering, as noted above, that student-based information seems to be a better way than institutional graduation rates to evaluate retention, Congress's rejection of this approach may present problems for clarifying the persistence issue in the future.

Recommendations

Clearly, there is widespread interest among government policymakers in tracking college graduation rates as a way of evaluating how well colleges and universities are educating students and preparing them for the workforce. There is also concern that some groups of students, particularly minorities, low-income and first-generation-in-college students, are not graduating in large enough numbers and that some institutions seem to be doing a better job than others in addressing this concern.

The problem, as we have attempted to present it here, is that graduation rates are not a particularly good way to assess college performance because the formula for calculating graduation rates presents a very misleading picture of student attainment. There is some promising new research on what institutions can do to improve graduation rates and there should be more of that kind of research. However, viewing graduation rates as primarily a college-generated problem, and therefore a problem for institutions to “fix,” can serve to obscure the factors that have been shown to be the most important in student persistence—such as finances, family obligations and academic preparation—and to absolve policymakers from recognizing that serious expenditures of public money are necessary to attack these deeper problems.

To close these gaps and ensure that all students have a fair chance of reaping the full benefits of postsecondary education, we need to reiterate the recommendations suggested in the previous AFT report. They are as relevant now, if not more so, in the current environment. We need “greater commitments from—and stronger collaboration among—institutions of higher education, the states and the federal government.”²⁰

Finances

We have seen that income is closely related to graduation rates. Students report that financial concerns—having to care for a relative, having a child, running out of money—often were crucial in their deciding to drop out. The data also show that one of the primary reasons students leave college before graduation is that they work too much while attending college. Again, it may be politically attractive to look for a nonfinancial solution to solve persistence problems, but that will not help nontraditional students meet their financial obligations. At the local and state levels, greater support for public institutions and a refusal to shift the funding burden to students in the form of tuition would be a tremendous help. At the federal level, increases in the Pell Grant would make a big difference.

Academic advisement and support

Institutions can do a number of things to foster the kind of supportive environment that helps nontraditional students succeed. The report calls for greater state and federal support, including more funding for the federal TRIO programs, which provide intervention and guidance for low-income, first-generation students. Policymakers should also look into the establishment of a new federal competitive grant program under which institutions with large numbers of nontraditional students could strengthen their efforts to identify and provide academic support to at-risk students.

School-college curriculum collaboration

As noted, one stumbling block is students’ failure to take rigorous high school courses that connect to the college curriculum. To help remedy this problem, the AFT has recommended that Congress institute a program to encourage school-college collaboration around high school curriculum development. The program might bring curriculum specialists from the high schools together with curriculum specialists from higher education in the same discipline. These specialists would

strengthen high school coursework for college-bound students to accurately reflect what students will be expected to know when they enter college.

“Bridge” programs

The states and the federal government also should consider instituting or expanding summer bridge programs for students from high schools that cannot provide all the resources necessary for a college prep curriculum.

Unanswered questions

This paper indicates there is a need for more and better student-centered research on the causes of persistence problems. What could such research tell us? It could tell us why students drop out. It could tell us whether publicizing graduation rates has any effect on institutional performance. It could also tell us whether rewarding or punishing institutions on the basis of their graduation rates would be likely to have any real effect on retention. It would suggest negative as well as positive consequences.

We also need to look at how graduation rates, if calculated under a broader formula, could serve as useful information for some colleges and universities. Every institution should be concerned with retention and persistence issues and aware that its graduation rate may signal a larger or deeper problem on campus. However, we must not jump to any immediate conclusions about what is reflected in the graduation rates. Instead, the institution must look into the core problems of retention and persistence for all students and address those concerns. The tracking and use of graduation rates as an accountability measure is a relatively new process. Many of the states are just now collecting information and getting trend data on their state higher education institutions.

ENDNOTES

¹ *Student Persistence in College: More Than Counting Caps and Gowns* (Washington, D.C., American Federation of Teachers, August 2003).

² There are also gender gaps in rates of persistence and completion. Although women now receive a majority of associates and bachelor's degrees, they have not yet reached parity with men in gaining Ph.D.s and professional degrees. We do not include a full analysis of gender gaps in this report. For more information, see *The Growing Gender*

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³ Ellen M. Bradburn, *Short-term Enrollment in Postsecondary Education: Student Background and Institutional Differences in Reasons for Early Departure, 1996-98*, (Washington, D.C.: U.S. Department of Education National Center for Education Statistics, 2002) NCES 2003-153.

⁴ Advisory Committee on Student Financial Assistance, *Access Denied: Restoring the Nation's Commitment to Equal Educational Opportunity*, (Washington, D.C.: U.S. Department of Education, 2001).

⁵ Figure based on a Census Bureau survey of 60,000 households conducted in October 2003.

⁶ Lutz Berkner, Shirley He, and Emily Fox Catladi, *Descriptive Summary of 1995-96 Beginning Postsecondary Students: Six Years Later* (Washington, D.C.: U.S. Department of Education, National Center for Education Statistics, 2002), NCES 2003-151.

⁷ Peter Ewell, *Student Success in State Colleges and Universities* (Washington, D.C.: American Association of State Colleges and Universities, 2005).

⁸ American Association of State Colleges and Universities, *Accountability and Graduation Rates: Seeing the Forest and the Trees* (Washington, D.C.: American Association of State Colleges and Universities, October 2002).

⁹ Peter Ewell et al., *Following the Mobile Student* (Washington, D.C.: National Center for Higher Education Management Systems, September 2003).

¹⁰ Ibid.

¹¹ Jane V. Wellman, "Assessing State Accountability Systems". *Change*, (March/April 2001).

¹² Ibid.

¹³ Joseph C. Burke and Henrik Minassians, *Performance Reporting: the Preferred 'No Cost' Accountability Program* (New York: Higher Education Program, The Nelson A. Rockefeller Institute of Government, 2002).

¹⁴ Ibid.

¹⁵ Joseph C. Burke and Henrik Minassians, *Linking State Resources to Campus Results: From Fad to Trend* (New York: Higher Education Program, The Nelson A. Rockefeller Institute of Government, 2001).

¹⁶ United States General Accounting Office, *College Completion* (Washington, D.C.: GAO, May 2003), GEO-03-568.

¹⁷ Tennessee Higher Education Commission, *Performance Funding Standards 2000-2001 through 2004-2005*. Available online at www.state.tn.us/thec.

¹⁸ Pennsylvania State System of Higher Education (Washington, D.C.: GAO, May 2003). Available online at www.passhe.edu.

¹⁹ Bill Richardson, “New Mexico State of the State Address” (2005). Available online at www.stateline.org.

²⁰ *Student Persistence*, 17.