PERSPECTIVES

Graduation Rates and Student Success
Squaring Means and Ends

Overview

In the field of higher education accountability, few metrics have attracted as much attention—or controversy—as the institutional graduation rate. Since the establishment of a graduation rate definition in the federal Student Right to Know Act of 1990 (SRTK), campus and system leaders, state and federal policymakers, and researchers have extensively analyzed and debated this indicator of student success. Policymakers cite graduation rates of less than 50 percent in bemoaning institutional effectiveness, the higher education community questions the legitimacy of such a metric, and analysts probe methodological limitations. As one of the only comparable and widely recognized outcome measures in postsecondary education, the graduation rate deserves scrutiny as well as improvement.

Despite claims that the graduation rate lacks validity as an institutional performance measure because it relies heavily on student characteristics and actions, AASCU maintains that it is a legitimate accountability indicator. Research has demonstrated that campus and system policy, practice, and culture do affect student persistence and completion, making institutions an important stakeholder in the promotion of student success. At the same time, it is important for advocates of this measure to recognize that graduation rates represent just one part of a broader outcomes picture and should not be viewed as the sole indicator of student success or campus performance.

Perhaps more importantly, stakeholders must recognize the serious and significant limitations of a graduation rate methodology that results in a single indicator of institutional performance based on first-time, full-time (i.e. "traditional") students over a limited time period. Such an approach fails to recognize the diversity of higher education institutions, changing demographics, and complex attendance patterns. These limitations have serious public policy consequences, particularly as policymakers place more emphasis on outcome measures in holding colleges and universities accountable.

Recent initiatives at the state and national levels reveal that options exist for improving the utility of this measure, both for institutional management and public accountability. Alternative methodologies for tracking student progress and success, enabled by technologies such as unit record data systems, offer more comprehensive information about the full range of student outcomes, as well as the student and institutional factors affecting those outcomes. By exploring and adopting one or more of the tools and methodologies outlined here, public higher education's stakeholders will be better equipped to answer questions that have remained elusive since the graduation rate entered the mainstream accountability lexicon.[1]

Campus and system leaders, working with federal and state policymakers, should commit to developing a transparent, multi-faceted approach to analyzing and communicating student completion data. Failing to do this will perpetuate a status quo in which important questions about what happens to students will remain unanswered, and the drive for higher completion rates among first-time, full-time students could come at the expense of opportunities for part-time and adult students. These outcomes do not represent a satisfactory response to the dual challenges of maintaining international competitiveness in educational attainment and meeting student demand with limited public resources.

Options for Enhancing and Improving the Graduation Rate

If colleges and universities are to be held truly accountable, outcomes measures must better reflect institutional performance in relation to the demographic characteristics and attendance patterns of the students they serve. These measures also must capture a larger share of what is

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[1] The National Center for Education Statistics' longitudinal surveys offer some insights into these questions, but this information cannot be interpreted at the institutional level. For example, the National Education Longitudinal Study found that 53 percent of students entering college in 1992 graduated from the same school within six years. However, if one adds in those who transferred to another institution and lengthens the time frame to 8.5 years, the completion rate increases to 69 percent.

happening in light of contemporary student behavior, characterized by more part-time, sporadic, and multi-institutional enrollments. In short, it is time to build on what is known about students today and to seek a more sophisticated, truly meaningful picture of their success in the modern postsecondary world.

Options for improving measures of student success fall into two general categories: (a) those that work within the definitions set by the National Center for Education Statistics' Graduation Rate Survey (GRS) and include contextual information to make the rates more meaningful, and (b) those that move beyond GRS definitions to better reflect the reality of new enrollment patterns.

Option 1: Incorporate Contextual Information to Make Graduation Rates More Meaningful

There is an abundance of data documenting that the characteristics of beginning students are strongly correlated with their likelihood of graduating from college within a six-year time frame or graduating at all. Put simply, the data document that student success in college depend largely on (1) academic preparation and college readiness[2] and (2) various aspects of socioeconomic status.[3] Here it is important to note that the characteristics of entering students vary from institution to institution, with the most selective institutions enrolling fewer "at risk" students and open admissions institutions enrolling the most. To derive the most meaning from graduation rate measures within the GRS framework, it is possible to use statistical methods that separate institutional and non-institutional factors impacting student success. This will allow campus and system leaders and policymakers to focus more directly on how well institutions are doing with the mix of students they enroll.

While there are a number of ways to develop such a model, three approaches have gained some credence to date:

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[2]Research from ACT, Inc. and from the U.S. Department of Education has documented this for over two decades. For example, *The Toolbox Revisited: Paths to Degree Completion From High School Through College* (2006) showed that the academic intensity of high school courses was the most important pre-collegiate factor in predicting college success.

[3]Data from NCES' Beginning Postsecondary Students Longitudinal Study identified seven primary risk factors that affect student persistence and completion: GED instead of a high school diploma, delayed enrollment into postsecondary education, independent status, one or more children, single parent, part-time attendance, and working full-time. ACT, Inc. has found socioeconomic status (parents' educational attainment and family income) to have "moderate strength" in predicting college retention. See *The Role of Academic and Non-Academic Factors in Improving College Retention* (2004).

1. **Actual-to-expected graduation rate model.** This model was developed by the Higher Education Research Institute at the University of California at Los Angeles, using data from the Cooperative Institutional Research Program (CIRP) Freshman Survey. By studying degree completion data from 262 participating institutions, researchers were able to identify those factors that distinguished completers from dropouts, such as high school grade point average and parental education. By weighting these factors according to how much impact they had and averaging the estimates for all students at a given institution, they were able to calculate an "expected" completion rate for each institution. A comparison of the "actual" to the "expected" rate provides an indicator of institutional performance.

   The Institute found that about two-thirds of the variation in institutional degree completion rates was due to differences in beginning student characteristics. That is, most institutions have an actual rate that is close to the expected rate, but this is not always the case. To illustrate, researchers noted that a public university and a private liberal arts college both have actual completion rates of about 55 percent, and a simple GRS-type presentation would suggest that they are equally effective in graduating their students. When characteristics of beginning students are considered, a different picture emerges. Research suggests that the liberal arts college would be expected to graduate 68 percent of its freshmen while the public university would be expected to graduate only 40 percent. According to this model, the public university is performing better, given its enrollment profile, than the more selective college.

2. **Actual-to-peer graduation rate model.** The Education Trust developed this model in 2004, the first year that GRS data were released to the public. Researchers conducted an analysis of graduation rates and looked at institutional factors that might explain the wide variation in graduation rates that they found. By performing statistical calculations that take into account some of these factors—including SAT/ACT scores, institutional mission, financial resources, and others—analysts were able to assess how well specific institutions were doing relative to peer institutions that enroll similar students. Some institutions were identified as high performers overall, high performers in terms of effectively serving minority students, and high performers in terms of having made rapid gains over a five-year period. [see Table 1]

3. **Disaggregated graduation rate approach.** This approach calls for the development of a series of graduation rates for each institution, where the overall rate is disaggregated into separate rates for categories of students known to graduate at different rates. For example, it is known that socioeconomic status correlates with expectation of college graduation and that institutions vary as to the socioeconomic

Table 1. Public Masters-Granting Institutions That Perform Very Well Relative to Their Peers

Name	State	Six-Year Grad Rate	Median Six-Year Grad Rate For Similar Institutions	Difference
Troy State University	Ala.	54.3%	35.7%	18.6
Rutgers University-Camden	N.J.	58.3%	42.4%	15.9
Millersville University of Pennsylvania	Pa.	65.9%	53.3%	12.6
Murray State University	Ky.	56.5%	44.6%	11.9
University of Northern Iowa	Iowa	65.1%	53.3%	11.8
Longwood University	Va.	61.3%	51.4%	9.9
Clarion University of Pennsylvania	Pa.	54.4%	44.7%	9.7
SUNY College at Plattsburgh	N.Y.	58.9%	49.8%	9.1
Montclair State University	N.J.	55.8%	47.8%	8.0

Source: Education Trust, *One Step from the Finish Line* (2005).

make-up of their enrolled students. Though precise indicators are not readily available, federal student aid eligibility could be used as a proxy measure for socioeconomic status, and graduation rates could be calculated for four subsets of students: those with full Pell Grant eligibility, partial Pell Grant eligibility, subsidized loan eligibility, and no eligibility for Pell Grants or subsidized loans. These disaggregated rates could be compared across institutions rather than a single graduation rate for institutions that vary tremendously in their student bodies.

Option 2: Move Beyond the GRS Framework to Better Reflect Contemporary Student Behavior

All of the options above retain the basic GRS framework of examining only first-time, full-time students, limiting study to a six-year time frame, and focusing only on graduation (as opposed to transfer or continued enrollment). While these approaches greatly improve upon the current simplistic approach, they still cannot capture the full range of contemporary student behavior, particularly at less selective institutions. At these colleges and universities, an increasingly large proportion of students enroll part-time, persist for more than six years, and/or enroll in multiple institutions on their way to successful graduation. If institutional leaders and policymakers want a more comprehensive understanding of the full dimensions of institutional performance, they need accountability measures that correct the shortcomings of GRS. New tools are needed to analyze and communicate a wider range of student outcomes and new means to capture them.

1. New methodologies. In the mid-1990s, AASCU, the American Association of Community Colleges, and the National Association of State Universities and Land-Grant Colleges sponsored the Joint

Commission on Accountability Reporting (JCAR) that proposed a new template for accountability reporting. Specifically taking into account the fact that many students attend part-time, "stop out," transfer, and take longer to graduate, JCAR developed a comprehensive methodology for measuring student advancement designed to promote accurate comparisons among institutions. In 1997, the U.S. Department of Education authorized the use of JCAR conventions as an acceptable form of Student Right to Know Act compliance.
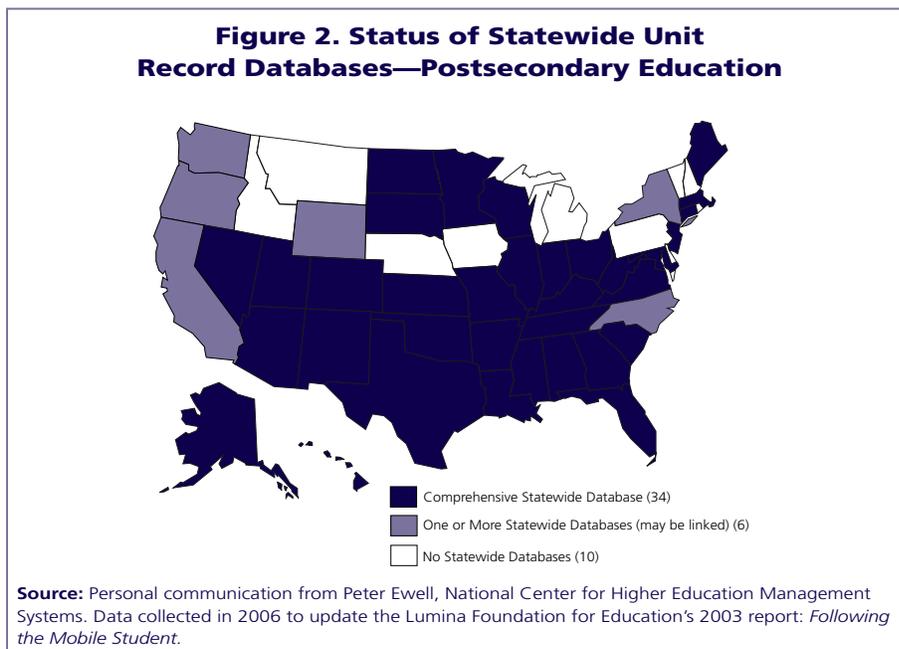
JCAR went beyond GRS in several dimensions. First, while GRS considers the simple graduation rate as the only indicator of student success, JCAR considers that students are successfully advancing if (1) they have graduated, (2) they have transferred, or (3) they are still enrolled at the institution. The rationale is that all of these outcomes, in contrast to non-enrollment, represent positive steps toward degree attainment rather than negative commentary on the institution. Second, while GRS looks at a single point of time—six years for a baccalaureate degree—JCAR calls for measures to be taken at three points in time: (1) catalog award time (four years for a bachelor's degree), (2) extended award time (six years for a baccalaureate degree), and (3) eventual award time (allowing part-time and discontinuous enrollments more time to complete). Third, while GRS looks at first-time, full-time freshmen only, JCAR includes all students new to the institution in a given fall term, including part-time and transfer students. It does recommend that separate measures be reported for all first-time students (including part-time), transfer students, and the standard GRS cohort of first-time, full-time freshmen only. [see Figure 1]

Figure 1. Student Advancement—Sample State College
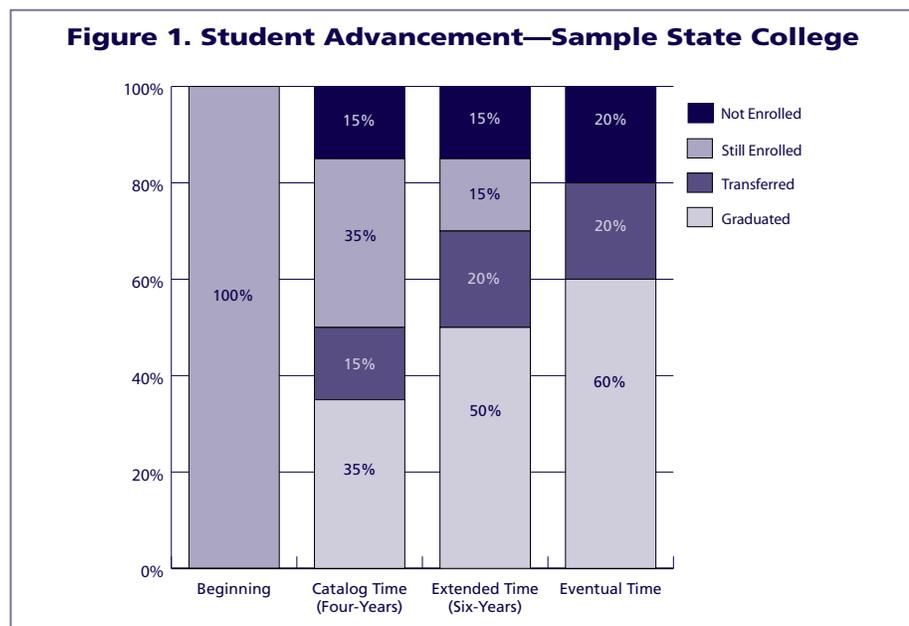
2. New means. In order to implement a JCAR or similar model that goes beyond the current scope of GRS, comprehensive data systems are needed that cross institution, system, and state boundaries and that track students for longer periods of time. Much progress has been made in this direction, but much more needs to be done.

Specifically as a result of the Student Right to Know Act and GRS, many state higher education agencies and system offices have made tremendous investments in student unit record data systems over the past 15 years. These data systems contain student-level data from multiple campuses and terms, and can link individual student progress through a unique identifier such as a Social Security number. Many unit record data systems currently track students across institutions in a particular state or system, and have the ability to capture transfer behavior among public institutions within the state. Comprehensiveness and capabilities vary widely across states and tracking students across state borders, as well as to private institutions, are the exception rather than the rule.

To the extent that state and system databases can talk to one another, it is possible that in the future, these databases could be linked into regional or national networks that would greatly enhance analytical capabilities. In 2003, the Lumina Foundation for Education conducted a study of state- and system-level unit record databases to determine the feasibility of linking existing databases to achieve better student progression data. The study concluded that there are obstacles to developing such a network, but they are not insurmountable and the resulting network would provide a much more comprehensive picture of student progress. [see Figure 2]

Figure 2. Status of Statewide Unit Record Databases—Postsecondary Education

Comprehensive Statewide Database (34)
One or More Statewide Databases (may be linked) (6)
No Statewide Databases (10)

Source: Personal communication from Peter Ewell, National Center for Higher Education Management Systems. Data collected in 2006 to update the Lumina Foundation for Education's 2003 report: *Following the Mobile Student*.

AASCU supports taking this effort to the next level and has provided leadership for the move to develop a national unit record database, with appropriate privacy safeguards, that would allow the tracking of students across state lines. This would build on the progress of inter-institutional databases made recently and could generate the kinds of data needed to implement fully the JCAR or another methodology that goes beyond the GRS. Support for this concept is evident in the final report of the Secretary of Education's Commission on the Future of Higher Education. The report calls for "the development of a privacy-protected higher education information system that collects, analyzes and uses student-level data as a vital tool for accountability, policy-making, and consumer choice."

Analysis

In considering where to go from here, the simple truth about graduation rates is that there is no simple truth. The issues of student progression and completion are complex, and the reasons for wanting to measure them are varied—public accountability, institutional improvement, and consumer information, to name the most important. As a result, different tools may be needed to meet the needs of different stakeholders.

Clearly, some approaches offer more potential than others, but the costs may be greater as well. Accordingly, state colleges and universities and policymakers need to carefully weigh the strengths and limitations of the various approaches detailed above. They need to think in terms of long-term strategies for building better measures, as well as short-term needs for relevant information. It is important to recognize that the optimal approach will not consist of a single metric, but a combination of metrics based on stakeholder priorities and available data.

Public Accountability. This is the most frequently and prominently cited application of completion data, but it is clearly not the only application. In the long run, the strongest contribution to this objective would be from the JCAR methodology, backed by a national unit record data system. This would provide the most comprehensive information regarding institutional return on the public's investment. Currently, some states and systems have unit record data systems with sufficient capacity to develop JCAR measures and are encouraged to explore these possibilities. For states or systems that lack these capabilities, using an income-based disaggregation of existing GRS data or the CIRP actual vs. expected calculation would offer an interim alternative. The primary goal is to communicate key data regarding institutional performance relative to mission and admissions selectivity.

Institutional Improvement. This objective is frequently overlooked in stakeholder discussions regarding student success measures, but student success measures can—and should—serve as a core part of the feedback loop for campuses and systems. While all of the approaches outlined above (both GRS and non-GRS) would provide better data regarding differences in persistence and completion among particular groups, the JCAR/unit record methodology represents the most robust approach, as it encompasses a range of advancement indicators and allows for the tracking of students across institutional boundaries. States and systems with adequate data system capacity could produce such information to aid campus-level analysis and decision-making. Without that, disaggregating and/or peer benchmarking of existing GRS data (using the Education Trust model) could provide the means to analyze problem areas among subsets of the student body and identify top institutional performers for further study. Participation in the National Survey of Student Engagement, combined with this, would help in identifying and addressing problem areas.

Consumer Information. Though the federal Student Right to Know Act has been on the books for nearly two decades, communication with students and families about completion has been more of an afterthought or a means of compliance than a primary objective. Once again, the JCAR methodology promises the most complete information to prospective and current students. In the meantime, the peer comparison approach using existing GRS data and the Education Trust model would provide relevant and readily understandable information for comparing similarly situated institutions.

These applications indicate that unit record data systems offer the greatest potential to satisfy the broadest range of stakeholder objectives regarding student completion data. At the same time, such systems come at a significant price and even states that have some form of unit record system do not have the capacity to generate all of the data specified here. Privacy safeguards in a unit record environment also surface as a legitimate concern, particularly given the number of recent data security breaches at colleges and universities across the nation.

State policymakers and higher education leaders must consider the added value of such data system enhancements relative to other policy priorities. Additionally, they need to explore viable short-term alternatives.

Recommendations

Policymakers

- Establish relevant student success measures (including definition of purpose and policy application) by working collaboratively with the higher education community. These should include student graduation and progression indicators as well as indicators of student learning.

- Audit state and system data infrastructures, focusing specifically on existing data gaps, remedies for those gaps, and potential costs and benefits of proposed remedies.

- Identify and evaluate policy levers significantly impacting student access and success (early outreach, admissions, financial aid, transfer/articulation, etc.), with an emphasis on policies that may be working at cross-purposes.

Presidents and Chancellors

- Assess the institution's or system's past, current, and projected student population, focusing on the percentage of students presenting one or more risk factors for non-completion and the nature of those risk factors.

- Perform institutional and system graduation rate calculations using the HERI/CIRP and Education Trust models and compare with the institution and/or system GRS rate.

- Audit institutional and state data systems, focusing on the identification of untapped existing capacity and options for enhancement or improvement.

- Evaluate institutional and/or system applications of student success data (including student learning), with an emphasis on how the institution performs relative to peers and exemplars. If the institution is performing better than expected, identify the reasons for this success, commit to continued investment in these programs or factors, and share the findings. If the institution is average or under-performing, seek explanations and ways to improve, and develop and share proposed strategies for improvement.

Conclusion

The growing focus on the efficacy of the postsecondary student pipeline makes it clear that the graduation rate is here to stay as a higher education outcome measure. In light of that reality and recent advances in research and technology regarding student enrollment and progression, the time has come for a concerted effort to enhance and improve this measure. State colleges and universities must be prepared to play a leadership role in such an effort, as they have much to gain from a fuller picture of student completion and much to lose from the continuation of an incomplete, simplistic status quo.

At the same time, a national policy conversation about student success must not end with the graduation rate. As students approach higher education institutions with an expanding array of degree and non-degree objectives, colleges and universities and their stakeholders must take a broader view of what constitutes success in postsecondary education and consider appropriate metrics for measuring it. For example, the higher education community must take a closer look at the learning outcomes of the college-educated population, not just at completion rates. With more and better information about the paths students take toward their higher education goals and about the knowledge and skills they obtain along the way, cracks in the college pipeline can be sealed, giving the United States a stronger competitive advantage in the unfolding knowledge-driven economy.

Resources

AASCU, American Association of Community Colleges, and National Association of State Universities and Land-Grant Colleges Joint Committee on Accountability Reporting (JCAR). JCAR's primary objective was to develop reporting conventions for higher education accountability information that would promote accurate comparisons among institutions. *The JCAR Technical Conventions Manual* provides a new conceptual framework and a uniform methodology for measuring "student advancement," a concept that includes, but is broader than, the current graduation rate. **aascu.org/pdf/jcar_technical.pdf**

AASCU/Education Trust. AASCU teamed up with The Education Trust to produce *Student Success in State Colleges and Universities: A Matter of Leadership and Culture*, an in-depth study of 12 public colleges and universities with higher than expected graduation rates. The study concluded that institutional leadership and campus culture surrounding student success are essential variables in efforts to boost student completion. **aascu.org/GRO/docs.htm**

Astin, Alexander W. "To Use Graduation Rates to Measure Excellence, You Have to Do Your Homework" (*The Chronicle of Higher Education,* October 22, 2004) discusses why current graduation rate measures are misleading and presents a model for comparing actual to expected rates that was developed at the University of California at Los Angeles's Higher Education Research Institute. **chronicle.com/weekly/v51/i09/09b02001.htm** (subscription required)

Education Trust. The Education Trust has developed a methodology for comparing an institution's graduation rate with those of similar institutions and for identifying high-performing institutions. Reports include: *A Matter of Degrees: Improving Graduation Rates in Four-Year Colleges and Universities* (2004), *Choosing to Improve: Voices of Colleges and Universities with Better Graduation Rates* (2005), and *One Step From the Finish Line: Higher College Graduation Rates are Within Our Reach* (2005). The Education Trust has created College Results Online, a tool that allows users to examine rates by race/ethnicity and gender and to compare an institution's graduation rate with those of similar institutions. **edtrust.org**
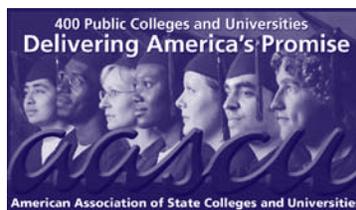
Lumina Foundation for Education. *Following the Mobile Student: Can We Develop the Capacity for a Comprehensive Database to Assess Student Progression?* (2003) describes the extent and characteristics of existing state unit record databases and explores the feasibility of linking them together into a comprehensive network. **luminafoundation.org/publications/researchreports/NCHEMS.pdf**

National Center for Education Statistics (NCES). In response to growing interest
in more accurate measures of graduation rates and net price of college, NCES
initiated a study to examine the feasibility of implementing a national student
unit record data system to replace parts of the Integrated Postsecondary
Education Data System (IPEDS). The report *Feasibility of a Student Unit
Record System Within the Integrated Postsecondary Education Data System*
(2005) outlines issues and challenges and concludes that such a system is
feasible. **nces.ed.gov/pubs2005/2005160.pdf**

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