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Measuring Student Achievement at Postsecondary Institutions

Executive Summary

Existing measures of student achievement exclude far too many students and track too few student milestones. These exclusions can penalize institutions for serving disadvantaged students by understating these students' performance.

This Issue Brief offers state leaders a formula for measuring systemwide student achievement at postsecondary institutions. Although many areas of postsecondary performance must be measured, student learning is core to the mission of the postsecondary system and instructional costs are the single largest expense for public postsecondary institutions.¹ For these reasons, this Issue Brief focuses on measuring student achievement as a crucial indicator of postsecondary performance.

Governors can take four steps to design a postsecondary education data system that meets the needs of their state:

- Step 1:** Select appropriate student milestones to measure remediation, retention, and attainment.
- Step 2:** Determine which students to count.
- Step 3:** Select appropriate benchmarks.
- Step 4:** Group achievement rates by student population and institution.

The four key student achievement milestones all states should track are:

- Successful completion of remedial and core courses;
- Advancement from remedial to credit-bearing courses;
- Transfer from a two-year institution to a four-year institution; and
- Credential attainment.

Improving the performance of postsecondary institutions, including community colleges, has increasingly taken center stage in state economic recovery plans. Nationwide, governors, state higher education officers, foundations, industry leaders, and education advocacy groups are partnering with President Barack Obama and the U.S. Department of Education to ensure the economy has the highest percentage of college-educated workers in the world.²

Achieving this goal will require easily accessible postsecondary data systems with well-defined performance measures, yet many state leaders have inadequate or misleading data on the performance of their postsecondary institutions. With 4,352 degree-granting postsecondary institutions in the United States—including private, public, two-year, and four-year institutions—reliably measuring postsecondary performance is no easy task.³

Why Current Measurements Are Inadequate

Although many states continue to improve their postsecondary data systems, uneven data quality and imprecise performance measures have stalled the improvement of postsecondary education. Governors need reliable measures to allocate funds appropriately, measure the progress of postsecondary performance over time, encourage successful practices and discourage waste in the postsecondary system, and protect the future of the state economy by maintaining a healthy postsecondary system.

Current measurements of postsecondary student achievement are inadequate because:

- Federal data exclude too many students;
- Many important student milestones are not measured; and
- Data are not disaggregated enough to reveal appropriate points of intervention.

Federal Data Exclude Too Many Students

The most commonly cited statistics on student completion are collected through the Student Right to Know and Campus Security Act of 1990 (SRK). The SRK graduation rate is calculated by counting all first-time, full-time students who earn a degree or certificate at the college they first enrolled at within 150 percent of the expected completion time and dividing that count by the total cohort with which the graduates first enrolled.

This outdated and narrow federal graduation rate excludes nearly half of community college and public university students, because it does not count part-time students and students who transfer among community colleges. According to the Community College Research Center, up to 40 percent of community college students enroll in multiple institutions during the six years they are tracked, but students who transfer will often not be counted even if they complete their degree at a new institution.⁴ Moreover, more than one-third of all community college students also are part-time enrollees, so SRK data is an incomplete measure of student achievement.

Many Important Student Milestones Are Not Measured

The most commonly used measure for public higher education funding formulas is total student enrollment. This measure creates no incentive to see students through to completion—year to year, semester to semester, or even to the end of a single course. Attempted credits, rather than completed credits, are all that matter for state funding so, not surprisingly, little investment is made in improving student completion rates.

Alternatively, strict graduation rate formulas can penalize schools that serve disadvantaged students because these schools will inevitably have lower graduation rates. Moreover, a singular emphasis on graduation can discourage open-enrollment policies, because skimming top students will improve institutional performance despite excluding students who may benefit most from postsecondary education.⁵ Graduation rate funding formulas may also pressure schools to lower their graduation standards if they are desperate for funds and are not meeting graduation targets.

Clearly, neither enrollment totals nor graduation rates are adequate as sole indicators of institutional performance. Intermediate student milestones that have consistently been linked to student completion are necessary for determining at what points in the education pipeline postsecondary students are dropping out and where education policymakers could intervene.

Data Are Not Disaggregated Enough to Reveal Appropriate Points of Intervention

Many states also lack the ability to compare student subpopulations or institutions.⁶ The absence of cross-institutional data systems with student-level information and compulsory reporting requirements prevents governors from identifying failure *or* success at the postsecondary level.⁷ Many states cannot compare individual institutions within a statewide system, or make comparisons across public and private institutions. Comparing the performance of at-risk student

populations (e.g., students with limited English proficiency) with state averages also is important for policymakers, but too often these subpopulations are not tracked by existing data systems.

How States Can Improve Their Measurements

The following four steps offer state leaders a template for developing postsecondary student achievement measures (see, also, the appendix). Because many states are at different stages in adopting postsecondary data systems, each step is broken down into key measures and more advanced measures for states with greater capacity. States also have distinct privacy laws that may limit the type of data that can be collected, distinct governance structures for decision making, and distinct financial constraints; this template was designed with such broad differences in mind.

Step 1: Select appropriate student milestones.

Step 2: Determine which students to count.

Step 3: Select appropriate benchmarks.

Step 4: Group achievement rates by student population and institution.

Step 1: Select Appropriate Student Milestones

The National Governors Association Center for Best Practices (NGA Center) recommends that all states track four key student achievement milestones.⁸ The NGA Center has selected these milestones based on their proven relationship to student persistence and success. Governors can then use the milestones to target resources to the most effective institutions. Student achievement milestones also enable postsecondary institutions to explain their own productivity gains to state leaders and add credibility to their requests for funding.

The four key student achievement milestones all states should track are:

- Successful completion of remedial and core courses;
- Advancement from remedial to credit-bearing courses;
- Transfer from a two-year to a four-year institution; and
- Credential attainment.

Remediation Milestones. Remediation milestones measure the incremental achievements of students en route to degree attainment, focusing on the advancement of students who begin at community colleges unable to complete college-level work. This characterization applies to a majority of community college students—59 percent of them require at least one remedial course during their first year.⁹ Completion of remedial courses is crucial for credential attainment, because remedial courses, often called developmental courses or basic skills courses, do not count toward an associate degree or a bachelor's degree. By measuring student remediation, states also assess the ability of their K–12 system to prepare students for college-level work.

The NGA Center's recommended remediation milestones are selected based on their association with future success and degree completion; for example, students who move from part-time to full-time enrollment are more likely to complete their degree programs.¹⁰ This makes advancement from part-time to full-time status a valuable remediation milestone that can be incentivized through state funding formulas. In Tennessee, the Higher Education Commission tracks the percentage of students who enroll in developmental courses and successfully complete college credit-bearing coursework the following year. The Wyoming Community College Commission tracks the percentage of students who enroll in remedial courses and the percentage of students who pass remedial courses.¹¹ Wyoming is then able to determine whether its K–12 system is adequately preparing high school graduates for college-level work.

The key remediation milestones are pass rates in remedial and core courses and advancement from remedial to credit-bearing courses. A more developed measurement system will also track advancement from English language learner courses to mainstream courses.

Retention Milestones. Retention milestones track student persistence, a prerequisite for student success. Persistence can be demonstrated through enrollment status—part time or full time—as well as sustained enrollment over multiple semesters rather than intermittent enrollment. Enrollment status and semester-to-semester enrollment are both crucial indicators of time to degree. Moreover, the rise in national time-to-degree averages dramatically increases the cost of providing each degree, because the state must fund college or university overhead for five or six years, rather than four years, per bachelor’s degree.

The **Ohio** Board of Regents reports student retention not only at the institution level, but also across the state higher education system, so students who transfer from their original institution are not dropped from the database. **Texas** tracks students who leave school but return within one to two years, as does **North Carolina**. Setting student census reporting deadlines at the end, rather than at the beginning, of the academic year also creates strong incentives for institutions to improve course completion rates.¹²

The key retention milestone is transfer from a two-year institution to a four-year institution. A more developed measurement system will also track semester-to-semester continuous enrollment, year-to-year continuous enrollment, and advancement from part-time to full-time status.

Attainment Milestones. Attainment milestones measure degree completion and certificate completion. These milestones are the most commonly used markers of student achievement. Although credential attainment should not be the only measure of student achievement, it is nonetheless the ultimate goal for most postsecondary students. Both students and states benefit from degree completion, because enrollment without completion has negligible effects on earnings and, therefore, tax revenues.¹³ States with higher percentages of adults with postsecondary credentials also show higher rates of workforce participation, higher rates of volunteerism, superior health outcomes, and reduced participation in Medicaid.¹⁴

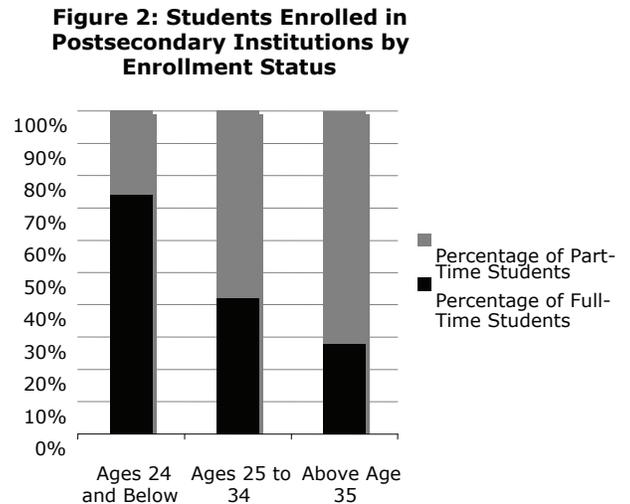
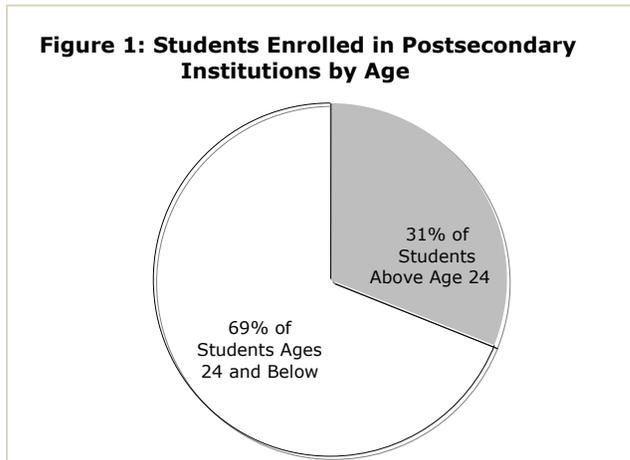
Current measures of credential attainment can be improved by adopting longitudinal data systems that link degree or certificate attainment with future employment and changes in earnings. Longitudinal data would also enable cohort studies that follow students over time. Estimated snapshot graduation rates simply divide the current year’s graduates by the size of the freshman class four years prior.

The key attainment milestones are attainment of a bachelor’s degree, attainment of an associate degree, and attainment of a credential below an associate degree. A more developed measurement system will also track obtainment of a job in the field of study or obtainment of a job that requires the most recently attained credential.

Step 2: Determine Which Students to Count

Many long-held stereotypes about college students—that they live on campus, enroll full-time, and graduate in four years—fail to describe the U.S. college student population and exclude most community college students. Understanding the changing demographics of postsecondary students is necessary for choosing appropriate student achievement milestones and benchmarks. Meaningful data on postsecondary students should track part-time students, full-time students, first-time students, transfer students, and students pursuing education for non-credential purposes.¹⁵

Thirty-one percent of all part-time and full-time students seeking an associate degree or a bachelor’s degree are above age 24 (see Figure 1). These older students are less likely to be enrolled full time (see Figure 2).



Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, spring 2007.

Although part-time enrollment makes it nearly impossible to complete a bachelor’s degree in four years, 37 percent of all students seeking an associate degree or a bachelor’s degree are enrolled part time.¹⁶

Nearly one out of every two students enrolled at a public postsecondary institution is in a two-year college, but both state and federal data are misleading when applied to two-year colleges.¹⁷ Students at two-year colleges often transfer among community colleges or take time off between community college and transferring to a four-year institution, so reliable data on institutional performance should not drop these students.

Step 3: Select Appropriate Benchmarks for Each Milestone

Each remediation, retention, and attainment milestone should be benchmarked against an agreed-upon standard of achievement. Currently, the most common benchmark used to assess student achievement is a 100 percent student graduation rate within four years; little or no attention is focused on identifying or benchmarking remediation and retention milestones. Successful benchmarks enable state policymakers to compare student achievement at in-state postsecondary institutions with student achievement at peer institutions outside the state, with student achievement averages in other states, and with national student achievement averages.

Michigan uses a variety of criteria, such as SAT score and percentage of Pell recipients, to select 15 peer institutions outside the state and then compares its postsecondary achievement rates with those of the peer institutions. **Nebraska** compares the performance of its public postsecondary institutions with that of 10 peer-level institutions. **Massachusetts** compares institutional performance in two contexts: peer institutions across the United States and national averages.

An institution’s prior performance can also be a valuable benchmark for rewarding institutional improvement across diverse institutions. To increase the total number of bachelor’s degrees awarded each year, **Indiana** provided additional incentive dollars for institutions that surpassed their prior year’s total number of graduates.¹⁸ In this instance, Indiana used the prior year’s performance as the benchmark and then rewarded institutions an additional fixed amount of funding for each additional graduate.

Two benchmarks should be used when measuring student achievement: the performance of peer institutions, as determined by enrollment, average SAT score, faculty size, and percentage of student body eligible for Pell grants; and the institution's prior-year performance.

Step 4: Group Achievement Rates by Student Population and Institution

Aggregate student performance indicators—such as the average graduation rate in a state—often conceal the low academic performance of disadvantaged subpopulations. State-level data that cannot be broken down by student subpopulation or institution also prevent state leaders from identifying appropriate points of intervention. High-quality performance measures should reflect the diversity of the postsecondary student population by disaggregating data into a variety of subpopulations.

In **Kentucky**, disaggregation enables state leaders to see the achievement rates by gender, ethnicity, transfer status, and credits earned at each public institution, including two-year colleges and technical colleges. **Washington** is one of many states that disaggregate student achievement by Pell eligibility, a useful indicator of student socioeconomic status. These breakdowns of student achievement enable state leaders to identify problem areas within the postsecondary system and develop policy options to address these deficits.

States should disaggregate attainment measures by:

- Part-time and full-time students;
- Transfer students;
- Students beginning in remedial courses;
- Students with limited English proficiency;
- Pell-eligible students;
- Underrepresented ethnic minorities;
- Students in science, technology, engineering, and mathematics (STEM) fields;
- Students above age 21 when first enrolled; and
- Students with disabilities.

What Obstacles Remain to Improved Measurement

Introducing a new system of postsecondary student achievement measures can pose several implementation challenges, including institutional resistance, the diverse array of institutions, manipulation of data, and legal obstacles.

Institutional Resistance

Many postsecondary institutions, both public and private, are accustomed to more autonomy than is afforded the K–12 system and will be reluctant to change this arrangement. Moreover, declining state funding for public higher education has further deteriorated governors' influence over higher education. Although states remain the largest single contributor to public higher education, tuition payments continue to replace state funding—a trend that is expected to continue.¹⁹ At public universities, only 24 percent of all revenue comes from state government, considerably less than state funding for public K–12 education.²⁰

The Diverse Array of Institutions

A mixed market of public and private institutions—including for-profit and nonprofit organizations as well as two-year and four-year institutions—weakens the value of using only one measure of student achievement. Many of these institutions have separate goals, ranging from large universities that prioritize faculty research and graduate education to technical and vocational colleges that offer accelerated certification programs. Despite the appeal of using a single measure, such as the federal Student Right to Know graduation rate, comparing such diverse institutions requires different measures.

Manipulation of Data

Graduation rates can easily be inflated or manipulated and often require diligent state oversight.²¹ Small technical decisions, such as not counting part-time students, can have dramatic effects on graduation rates. Many public offices do not have the capacity to oversee large postsecondary student data systems. Moreover, many state staff lack the expertise to interpret postsecondary student achievement data. Some states may require third-party providers to meet these needs.

Legal Obstacles

Varying state privacy laws and local interpretations of the Family Educational Rights and Privacy Act and other federal privacy protections can create red tape for state collection of student-level data. Each state will need to consult its legal advisors before pursuing an ambitious data campaign that links student-level data across institutions or ties student-level data to workforce data. Although tracking individual students over time is enormously valuable for informing state policy choices, creating unique student identifiers to facilitate analysis can be a contentious legal issue.

How to Overcome Implementation Challenges

Improved measurement of postsecondary student achievement is necessary for identifying the successes and failures of the postsecondary system. Measurement will more likely be embraced if these principles and strategies are followed:

- Emphasize shared goals instead of accountability;
- Use different milestones and benchmarks for two- and four-year schools;
- Make data more accessible; and
- Link data systems.

Emphasize Shared Goals Instead of Accountability

State policymakers should emphasize shared goals with the leadership of postsecondary institutions—such as high performance, improved student outcomes, and increased institutional capacity—to establish more willing collaboration. Confrontational messages of accountability and state intervention will be met with resistance from postsecondary leadership. The language of reform used in the K–12 system cannot easily be extended to the postsecondary system given the two systems’ radically different funding and governance structures.

Use Different Milestones and Benchmarks for Two- and Four-Year Schools

Separate milestones and benchmarks for two-year and four-year institutions make institutional data more meaningful.²² This Issue Brief has detailed many of the ways that states can customize student achievement measures by selecting appropriate remediation, retention, and attainment milestones. Two-year institutions should prioritize remediation milestones, while four-year institutions should prioritize attainment milestones. States can also use different benchmarks for different types of institutions. One approach is to benchmark against an institution’s prior-year performance so each institution is competing against itself; this can help prevent unrealistic comparisons between elite four-year institutions and open-enrollment colleges.

Make Data More Accessible

Student achievement data should be publicly accessible so students and their families can make informed choices about the institutions in which students enroll. Currently, most students and their families are unaware of the remediation, retention, and graduation rates of the institutions in which students are interested in enrolling—information that would likely affect their choice of school. By enabling students and their families to know such performance measures, institutions will be pressured to improve their student achievement outcomes in an effort to attract students. Making data more accessible is a market-driven solution to improving the performance of postsecondary institutions.

Link Data Systems

Many of the current gaps in postsecondary student achievement data result from a diffuse reporting system that fails to follow individual students across institutions over time. Consolidation would streamline the development of longitudinal student-level data systems and could also increase access to student achievement data.²³ Consolidating postsecondary data systems with K–12 data systems can also reduce the administrative costs of storing and reporting data.

Conclusion

Existing measures of student achievement exclude far too many students and track too few student milestones. Because current measures were originally designed for four-year institutions, two-year institutions are often penalized and have underreported successes. Governors need reliable measures to allocate funds appropriately, measure the progress of postsecondary performance over time, encourage successful practices, and discourage waste in the postsecondary system.

This Issue Brief provides guidance to state leaders on how to design student achievement measures that meet the unique policy priorities of their state. To remedy the lack of accurate data on public postsecondary institutions, governors can take these four steps to design a student achievement data system:

- Step 1:** Select appropriate student milestones to measure remediation, retention, and attainment.
- Step 2:** Determine which students to count.
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The four key student achievement milestones all states should track are:

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- Credential attainment.

This Issue Brief was written by Jeremy Bearer-Friend, a Ph.D. student at the University of California, Berkeley, who served as an intern in the NGA Center.

Endnotes

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- ¹ U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, winter 2007–2008.
- ² President Barack Obama, “Remarks by the President on the American Graduation Initiative,” posted July 14, 2009, http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-on-the-American-Graduation-Initiative-in-Warren-MI/.
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- ⁵ Thomas Bailey, Davis Jenkins, and D. Timothy Leinbach, “Is Student Success Labeled Institutional Failure?” (New York, N.Y.: Community College Research Center, Columbia University, 2005); Scott Jaschik, “Alternative Measures of Success,” *Inside Higher Ed* (October 22, 2008); and Scott Jaschik, “Challenging the Measures of Success,” *Inside Higher Ed* (June 6, 2007).
- ⁶ Brian Fabes and Richard Mattoon, *Measuring Community College Performance* (Chicago, Ill.: Federal Reserve Bank of Chicago, 2007).
- ⁷ Kevin Carey and Chad Alderman, “Ready to Assemble: Grading State Higher Education Accountability Systems” (Washington, D.C.: Education Sector, 2009).
- ⁸ Achieving the Dream, *Test Drive: Six States Pilot Better Ways to Measure and Compare Community College Performance* (Boston, Mass.: Jobs for the Future, 2008).
- ⁹ Thomas Bailey, “Challenge and Opportunity: Rethinking the Role of Developmental Education in Community College” (New York, N.Y.: Community College Research Center, Columbia University, 2008).
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- ¹¹ Carey and Alderman.
- ¹² Ibid.
- ¹³ W. Norton Grubb, “Learning and Earning in the Middle: National Studies of Pre-Baccalaureate Education,” *Economics of Education Review* 21, no. 4 (August 2002): 299–321.
- ¹⁴ National Center for Higher Education Management Systems, “Linking Higher Education with Workforce and Economic Development” (paper presented to the Education Commission of the States Steering Committee, Minneapolis, Minn., April 22, 2009).
- ¹⁵ Although this is a contentious choice, it is well documented that first-generation and low-income students are less likely to state postsecondary degree attainment as their education goal. By excluding them from performance measures, one is disproportionately excluding poor and first-generation college students.
- ¹⁶ U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, spring 2007.
- ¹⁷ U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, spring 2007.

¹⁸ Midwestern Higher Education Compact, “Completion-based Funding for Higher Education” (Minneapolis, Minn., 2009).

¹⁹ Delta Project, “Who Pays for Higher Education?” (Washington, D.C.: Delta Project, 2009).

²⁰ U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, winter 2007–08.

²¹ Daniel Losen, Gary Orfield, and Robert Balfanz, “Confronting the Graduation Crisis in Texas” (Cambridge, Mass.: Harvard University Civil Rights Project, 2006).

²² California Postsecondary Education Commission, “Moving Forward: the Evolving Performance Assessment Framework” (Sacramento, Calif., 2008).

²³ Data Quality Campaign, *10 Essential Elements of a State Longitudinal Data System*, <http://www.dataqualitycampaign.org/survey/elements> (accessed July 7, 2009).

Appendix: Four-Step Formula for Measuring Postsecondary Student Achievement

STEP 1 SELECT APPROPRIATE MILESTONES	Pass rates in remedial and core courses. Advancement from remedial to credit-bearing courses. Transfer from a two-year institution to a four-year institution. Credential attainment.
STEP 2 DETERMINE WHICH STUDENTS TO COUNT	Part-time students. Full-time students. First-time students. Transfer students.
STEP 3 SELECT APPROPRIATE BENCHMARKS	Institution's prior-year performance. Peer institutions.
STEP 4 GROUP ACHIEVEMENT RATES BY STUDENT POPULATION AND INSTITUTION	Part-time and full-time students. Students beginning in remedial courses. Students with limited English proficiency. Pell-eligible students. Underrepresented ethnic minorities. Students in science, technology, engineering, and mathematics (STEM) fields. Students above age 21 when first enrolled. Students with disabilities.