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METRICS THAT MATTER: MEASURING AND TRACKING POSTSECONDARY STUDENT SUCCESS

By Jason C. DeRousie, Program Coordinator

To increase economic development around the state, North Carolina policymakers have invested heavily in the state's public community colleges and universities over the past 50 years. In fact, North Carolina is currently the fourth highest-ranked state in expenditures for postsecondary education.[1] As a result, the state has done a commendable job in ensuring that students have access to an affordable and high-quality postsecondary education. Sixty-six percent of high school graduates in North Carolina enroll in a community college or university after graduation each year, making the state 16th in the nation.[2]

Access, however, is only the first step. Unfortunately, too few of the students who enroll in postsecondary education in North Carolina actually complete their degree or credential. Fifty-nine percent of students at the state's public four-year institutions graduate in six years — only 20 percent of students in the state's community colleges earn a degree within three years.[3]

To ensure that more students graduate with a high-quality, workforce-relevant degree or credential, postsecondary institutions must focus on student outcomes in addition to access. State policymakers and education leaders can play a pivotal role in shifting the focus to student outcomes. Policymakers in several states around the country — notably Indiana and Ohio — have worked with higher education leaders to devise a set of clear performance measures for postsecondary institutions and have put in place formal accountability systems, including performance-based funding, to hold institutions accountable for their students' performance. These initiatives have shown promise in moving the focus in postsecondary education beyond access to success.

Fortunately, North Carolina legislators and leaders from the state's higher education systems are working together to put in place the tools and systems to measure student success and improve outcomes. In the fall of 2010, the Program Evaluation Division of the NC General Assembly issued a report to the Joint Legislative Program Evaluation Oversight Committee recommending that enrollment growth funding for The University of North Carolina (UNC) be tied to performance measures. Though no legislation was passed during the 2011 session that directly applies to this recommendation, two bills were introduced in the House and the Senate that sought to implement the report's

recommendations. In addition, the UNC Board of Governors proposed a system that would link enrollment growth at UNC institutions to performance. The North Carolina Community College System (NCCCS) has already instituted a performance funding system, and the final 2011 state budget bill included a provision that it provide recommendations to revise its current accountability measures and "incorporate these revised accountability measures and performance standards into regular formula funding."[4] The NCCCS State Board has been engaged over the past several months in a year-long process to review and revise NCCCS's performance metrics.

These are important steps to help ensure that more students attain degrees, but policymakers must continue to focus on measuring student success as a way to improve North Carolina's postsecondary institutions' outcomes. This issue of *coNCepts* will examine some widely accepted and recommended performance measures used to evaluate postsecondary education institutions, and also explore the components of a strong accountability system.[5]

The Movement from Measuring Inputs to Measuring Outcomes

Historically, the quality of a postsecondary institution has been judged primarily on inputs. Those institutions at the top of the list were the ones that received the most applications, accepted the fewest students, and enrolled the "best" freshman class — students with the highest test scores, best grades, most awards, etc. To increase public funding — another key input — public colleges and universities have often sought to increase the number of applicants and the number of students enrolled. More recently, the focus has turned to attracting and enrolling diverse populations — students of color, low-income students, and adult or returning students — particularly in community colleges.

North Carolina's postsecondary education systems have done a commendable job on many of these input measures. North Carolina's enrollment rate exceeds both the national and regional average, though that rate has remained flat for the past 10 years.[6] North Carolina is also exceeding the regional and national averages in the postsecondary enrollment growth of African-American and Hispanic students. Fifty-eight percent more African-American and Hispanic students enrolled in postsecondary education in 2007 than in 1997.[7] The state also ranks 20th in the nation on the college participation rate of low-income students and consistently has some of the lowest tuition costs for public four-year and two-year postsecondary institutions.[8]

Though input measures are helpful in judging some aspects of an institution, they do not tell policymakers anything about performance — what happens after students enroll. The President, the National Governors Association, and a number of public policy and philanthropic organizations, have all begun to focus on increasing postsecondary degree completion. Accompanying this call is a growing national focus on measuring and holding institutions accountable for student outcomes. There are five frequently mentioned categories of outcome measures:

1. **Graduation rates:** the most commonly used outcome measure;
2. **Productivity and efficiency measures:** generally focus on how many degrees, certificates, and/or credentials an institution is producing and how much time and resources it takes to produce them;
3. **Intermediate measures:** metrics that track success at key milestones along a student's path from enrollment to graduation;
4. **Measures of student learning:** focus on the knowledge and skills a student gained during his or her postsecondary program; and
5. **Workforce success measures:** focus on employment, salary, and workplace performance of graduates. These are gaining increased attention.

Table 1: Key Postsecondary Indicators for North Carolina

		NATIONAL RANK
State appropriations for public higher education (2010)[a]	$3.77 billion	4th
State appropriations for public higher education per FTE (2010)[a]	$9,007	3rd
Percent of high school graduates going directly to college (2008)[b]	66%	16th
6-year graduation rate for four-year institutions (2009)[c]	59.9%	18th
3-year graduation rate for two-year institutions (2009)[c]	20.5%	39th

[a] From Illinois State University's Grapevine website (http://grapevine.illinoisstate.edu/index.shtml)
[b] From the Postsecondary Education Opportunity website (http://www.postsecondary.org/)
[c] From the National Center for Education Statistics (http://nces.ed.gov/)

Graduation Rates

Under the *Student Right to Know Act* (SRK), passed in 1990, the federal government requires that any postsecondary institution receiving federal funds must measure and report a graduation rate. SRK set a requirement for reporting the percentage of first-time, full-time students who receive a degree within 150 percent of *normal time* for a degree program. For four-year institutions, this is a six-year graduation rate. Community colleges report a three-year graduation rate since most associate degree programs are designed to last two years.

The growing national emphasis on outcomes and graduation rates is a

positive step, as it gives policymakers and the public a metric to judge whether an institution is doing a good job enrolling students and producing graduates. There are some issues, however, with how the SRK graduation rate is calculated and its applicability as a full measure of an institution's performance. For example:

- **The SRK rate only includes students who enrolled as first-time, first-year students on a full-time basis at that institution.** Therefore, this rate accounts for only 48 percent of all four-year students and 32 percent of all two-year students in a given year — these numbers are shrinking as more students attend part-time or move between institutions.[9]
- **150 percent of time is not a realistic or accurate timeframe for measuring student success, especially in community colleges.** The majority of postsecondary students today do not fit the traditional model of high school graduates who enroll in college immediately and go full time at one institution until they graduate. For many students, three or six years is not a realistic time frame for completing a degree.
- **There is a lack of consensus around the goal for an acceptable SRK graduation rate.** Even the institutions with the most resources and the most prepared students don't graduate 100 percent of their students in three or six years. States and institutions have been struggling with what an exemplary, or even an acceptable, SRK graduation rate would be.
- **Graduating with a bachelor's or associate's degree is not the ultimate goal for many students.** Some students enter a community college to pursue a credential or certificate that will provide them with a set of skills or help them gain access into a specific industry. Yet, completion of these types of programs is seldom considered when looking at graduation rates.

Taking in to account these variables, it becomes clear that measuring and reporting a basic SRK graduation rate is helpful but insufficient to fully understand how postsecondary institutions are performing. A deeper review and analysis of graduation rates is needed. The National Governors Association's *Compete to Complete Initiative* recommends measuring graduation rates, but doing so at both normal time and over a more extended time period. It also recommends including data such as transfer and part-time students, providing disaggregated graduation rates for underserved student populations, and measuring completion or graduation rates for certificates or credentials in addition to graduation rates for associate's or bachelor's degrees.

For many students, three or six years is not a realistic time frame for completing a degree.

Productivity and Efficiency Measures

Graduation rates are an important outcome measure that can be used to judge the performance of an institution, but they aren't the only outcome measure that states are using. In recognition of severely constrained state budgets, community colleges, colleges, and universities are not only being asked to produce more degrees, but to do so more efficiently. Productivity and efficiency measures, such as the following, allow states to judge how institutions are performing at these tasks.

- **Numbers of degrees produced** — This metric can be especially important for high-need areas like science, technology, engineering, and math (STEM) fields. If a local economy depends on having highly qualified nurses, but the schools in that region aren't producing many nursing degrees, it may suggest that the schools are not focusing on the right career fields. The number of degrees produced may also signal whether a degree program is worth continuing. If a specific program only produces one or two degrees per year, it may not be an efficient use of funds.
- **Number of degrees per 100 students** — An institution can be very productive (graduating a large number of students with degrees), but not very efficient (requiring a large pool of enrolled students to produce those degrees). If an institution is doing a good job of educating students, its ratio of degrees to matriculating students will be high. Alternately, it is clearly inefficient if that ratio is low.
- **Credits-per-degree** — The number of credits a student must take to complete a degree is a measure that may show how efficient an institution or program is in guiding students to timely completion. If a degree requires 120 credits, and the average student takes 135 credits to complete that degree, a school or a program may not be very efficient.
- **Semesters-to-degree** — The number of enrolled semesters it takes an average student to complete a degree is often a useful metric because many college students "stop out" at various times during their matriculation. It may take a student seven years to graduate, but he or she may only be enrolled for eight semesters during those seven years. The SRK graduation rate does not take these circumstances into account.

Intermediate Measures

While inputs in the form of enrollment are important, and outcomes in the form of degrees provide a glimpse of institutional performance, there is a great deal that occurs between enrollment and completion — or non-completion— of a degree program. Measures that focus on the progress and success of students at intermediate points along their degree pathway can tell a great deal about institutional performance. A focus on intermediate measures is particularly important for community colleges where earning an associate's degree in three years or less may be the ultimate goal for only a very small percentage of students. Some of the most frequently cited intermediate metrics include:

- **Completion of developmental or remedial education courses —** The success and promotion rates of students who need to take developmental or remedial education courses.
- **Completion of first-year college courses —** The success rate on common first-year courses in English and math.
- **Successful completion of 12-15 college credits —** The rate of successful completion in a semester of what is considered a full-time course load.
- **Retention into the second term and second year —** A measure of the number of first-year students who return the next semester or the next year.
- **Transfers to four-year institutions —** The number of students who successfully transfer from a community college to a four-year institution.
- **Completion of a credential or certificate —** The success rate of students achieving a credential or certificate.

Each of these metrics has a strong relationship to student success, and postsecondary institutions that are doing well on each of these should also have strong graduation rates.[10] A focus on intermediate measures also allows institutions to use data for improvement. These measures can provide community college and university leaders with information that can be used to improve their academic pathways, student support practices, and institutional culture.

Student Learning

There is growing demand to document what and how much students actually learn while enrolled in community colleges and universities. Just measuring and tracking inputs and outcomes misses a key element of the postsecondary institution mission to educate students. This has become particularly apparent with the release of *Academically Adrift*, a study by two higher education researchers that examines the growth in students' critical thinking and analytical skills during college. The study found that almost half of students included in the analysis did not demonstrate any significant gains in their first two years, and more than a third did not demonstrate any significant gains over four years.[11]

Though some may argue that producing graduates is a measure of how students are learning (i.e., if they receive their degrees, then they must have learned something), to get a full indication of how effective an institution is, some metric of student achievement should be included. The diverse missions, natures, and compositions of postsecondary institutions and programs, however, make it very difficult to produce a clear, consistent measure of student learning.

Six states currently require that all public postsecondary institutions measure student engagement using the National Survey of Student Engagement for four-year institutions and the Community College Survey of Student Engagement for two-year institutions.[12] While not directly measuring learning, these assessments focus on student behaviors that are linked with learning, like the amount of effort that students are putting into their studies or how challenged they feel in their classes. Five states currently require all their public postsecondary institutions to directly examine undergraduate learning outcomes through assessments like the Collegiate Learning Assessment (CLA), the Collegiate Assessment of Academic Proficiency (CAAP), the College Basic Academic Subjects Exam (College BASE), and the Measure of Academic Proficiency and Progress (MAPP).[13]

Table 2: States That Measure Student Learning and Engagement

States that require their public postsecondary institutions to survey *undergraduates*	States that require their postsecondary institutions to measure *student learning*
Georgia	Kentucky
Kentucky	Oklahoma
Minnesota	South Dakota
Rhode Island	Tennessee
South Dakota	West Virginia
Tennessee	

Source: *State Policies on the Assessment of Student Learning Outcomes: Results of a Fifty-State Inventory*, (2010) National Center for Higher Education Management Systems.

Many postsecondary institutions in other states — including North Carolina - are also *voluntarily* utilizing one or both of these types of assessments to directly or indirectly measure student learning gains.

Workforce Success Outcomes

Another element that can be used to examine institutional performance or outputs is how well prepared employers deem newly graduated employees. It is essential to link those measures back to individual institutions and programs. For community colleges and some four-year programs, evaluating pass rates on licensure exams and industry-created credentials can reveal a lot about the performance of the institution. One common example that is already occurring in a few states across the country is the attempt to report on the performance of teachers from specific colleges of education. For instance, Kentucky since 2001 has been reporting on various performance measures from the state's college-based teacher preparation programs, including student pass rates on the PRAXIS, the licensure exam that the state uses. Louisiana, through its Value-Added Teacher Preparation Assessment Model, is the first state in the nation to use student achievement data from new teachers to measure the effectiveness of the state's teacher preparation programs.

Producing students who are well-educated and prepared for the global workplace is one of the primary goals of public postsecondary institutions in

Looking at Indiana

In 2007, the Indiana Commission for Higher Education released its strategic plan, *Reaching Higher: Strategic Directions for Indiana*. This document "outlines a set of aspirations and specific goals that, taken together, will ensure that Indiana has the higher education system it needs and its citizens deserve."[14] **Indiana chose to focus on six key action items for the state with the ultimate goal of producing 10,000 additional bachelor's degrees each year by 2025:**

1. Moving from college access to success;
2. Preparing K-12 teachers, school leaders, and students for college success;
3. Ensuring that college is affordable;
4. Focusing the role of the community colleges;
5. Strengthening Indiana's major research universities; and
6. Embracing accountability.

These action items were then translated into 10 key indicators for the state, each of which has measurable components that can be reported and tracked over time to document the progress the state's postsecondary systems are making. For example, one of the indicators notes that, "Indiana will rank in the top 10 states in each point of the education pipeline by 2015."[15] To measure this, the state reports on each dimension of the education pipeline — high school graduation, college entry, college persistence, on-time college completion, and college completion within six years — as well as whether or not Indiana is making progress towards the indicator.

In addition to the statewide focus on accountability, Indiana also requires its public postsecondary institutions to produce progress reports on specific institutional performance measures that include measures of goals and quality, their progress on those metrics, and performance of peer institutions for comparison. Though there is no specific list of measures that are required, institutions must justify how each of the measures they chose related back to the overall state goals. Indiana has also taken the next step to directly tie performance to institutional funding. In the 2009-11 budget biennium, the state based approximately one-to-two percent of the postsecondary education budget on institutional performance on degree completion, on-time graduation, and two-to-four-year transfer activity. Additionally, when budget cuts needed to be made in 2010, the cuts were not applied equally across the board at each institution, but instead were made based, in part, on performance.

North Carolina. Measuring outcomes in the form of graduation rates, intermediate milestones, and student learning can only take the state so far in evaluating the success of higher education institutions. To fully recognize their performance, it is also important to consider measures of the success of graduates after they complete their programs.

What Metrics Are Reported in North Carolina?

A number of reports are generated by the postsecondary education systems in North Carolina. Both UNC and the NCCCS collect and report on a wide range of performance metrics. Every year, the University of North Carolina General Administration (General Administration) collects information from all postsecondary institutions in the state — public and private, two- and four-year — and produces the *Statistical Abstract of Higher Education in North Carolina*. Primarily, the report focuses on the data that have historically been used to judge institutional performance — enrollment counts, degrees conferred, and costs.

The University of North Carolina

UNC also produces several reports that provide additional input and outcome information. In December 2010, General Administration produced a report titled *UNC Profile: Key Trend and Accountability Data* that included data on enrollment, retention and graduation, degree production, tuition and financial aid, faculty diversity and research production, facilities utilization, and institutional endowments. Unlike previous reports, this report did address graduation rates for disaggregated groups of students, and for more than just the full-time, first-time cohort of undergraduates. It also included productivity and efficiency data such as: bachelor's degrees per 100 FTE; average number of registered semesters for undergraduates who completed their degree in six or fewer years; and degree production by institution, level, gender, field of study, and in high-need areas. The intent is to continue providing this UNC snapshot annually.

Less well represented are metrics related to intermediate measures, student learning, and workforce success. The *UNC Profile* includes retention rates from first-to-second year for undergraduates, but does not include other intermediate measures. While not a requirement from the state, each individual UNC institution participates in the Voluntary System of Accountability, a national initiative among four-year institutions to provide clear, comparable, and accessible information on undergraduate institutions for potential students and parents. As a result, several UNC institutions, including UNC-Charlotte, UNC-Asheville, and UNC-Pembroke, administer either the National Survey of Student Engagement, the Collegiate Learning Assessment, or both, and report on student outcomes from these assessments. These data are not reported, however, on a system-wide basis.

The North Carolina Community College System

The NCCCS produces multiple reports each year, covering a wide range of topics that include the commonly reported enrollment and graduation statistics. Of particular note is the focus on intermediate measures. As part of its *Critical Success*

Factors report, which contains the eight performance metrics required by North Carolina General Statute 115D-31.3, NCCCS reports on the progress of basic skills students; the passing rates of students in developmental education courses; and the retention, transfer, and/or graduation of curriculum students. NCCCS does not focus on productivity and efficiency measures in its reports and has a limited spectrum of student learning measures — though they do report on the pass rates of students on multiple licensure and certification examinations and on the academic success of transfer students to a UNC system school.

As mentioned earlier, the NCCCS State Board is currently reviewing and revising the system's performance metrics and is expected to approve the new metrics in Fall 2011. NCCCS plans to report on performance on the new metrics, which will be similar to the existing measures but will better track the performance of cohorts of students, in 2013.

Structuring a Strong System for Accountability

While both UNC the NCCCS are moving forward and providing large amounts of data to policymakers and the public, and individual institutions measure, collect, and report on many of the metrics recommended in this brief, **what is lacking is a unified and structured system of accountability for public postsecondary education in the state**. To judge how the state's public institutions are performing, to hold them to any particular standard, and to seek improvement, requires a statewide system of metrics, goals, and accountability.

The specific metrics that are included in any **accountability** system will have a direct impact on the behavior of postsecondary institutions, but picking the right metrics is only one element of designing a strong **accountability** system. The following are essential questions that must be answered in order to meet that objective:

1. **What is the Goal?**
   As exemplified by the accountability systems in Ohio and Indiana, everything in a strong system stems from a discussion about the state's postsecondary institutions' goals. As Dennis Jones, president of the National Center for Higher Education Management System pointed out at the 8th Annual *North Carolina Legislators Retreat (NCLR)*, postsecondary institutions can play many different roles in a state's education system — from awarding bachelor's and advanced degrees, to conducting research, to providing industry certifications and workforce development programs. For any accountability system to be successful, policymakers and postsecondary education leaders must first come to agreement about the role the state's postsecondary institutions should play and the goals for educating the state's citizens and developing its workforce. This process is perhaps more important than the specific goals.
2. **What Are the Metrics?**
   Once state goals have been established, North Carolina policymakers can proceed to **choose the metrics** that will be used to judge performance. In many cases, this process is as valuable as the numbers themselves. There are several key questions that should be asked when selecting metrics:

   What measures should be included? This issue of *coNCepts* has covered the most commonly recommended and used outcome measures. A strong system

Looking at Ohio

With the March 2008 release of the *Strategic Plan for Higher Education 2008-2017*, Ohio set out to redesign both the way public postsecondary education in the state functioned, as well as the level of accountability under which they operate.[16] **The *Strategic Plan* focused on raising educational attainment in Ohio as the key economic driver for the state.** To accomplish this primary goal, the plan set out three main focuses:

- Graduating more students from Ohio community colleges, colleges, and universities;
- Keeping more postsecondary graduates in Ohio; and
- Attracting more degree holders from out of state.

The accountability measures, and the accompanying metrics enacted as part of the Strategic Plan, were specifically focused on the first goal, increasing educational attainment in the state by producing more graduates.

Ohio decided to concentrate on 20 metrics culled from four broader goals — access, quality, affordability and efficiency, and economic leadership. The metrics, called "measurements of success," include typical input metrics like total enrollment, number of first-time enrollees in the top 20 percent on the SAT or ACT, and average out-of-pocket cost for students. In addition, it includes more innovative and directed metrics like total STEM degrees awarded; improvement in actual graduation rates over the expected graduation rate; percentage of first-time enrollees under the age of 21 with the equivalent of one semester or more of college credit earned during high school; and invention disclosures filed plus university startups attracting more than $1 million.

Like Indiana, Ohio has also tied these metrics and their accountability system to the funding their public institutions receive. While the performance model has some uniform features and provides incentives for graduating low-income and at-risk students to every institution, it also recognizes the diversity, type, and mission. It includes a different set of metrics and emphases for each of the three public postsecondary education sectors in the state — the university main campuses, the regional university campuses, and the community colleges.

should include a range of metrics that include access, intermediate, and outcome measures that have a clear relationship to the goals for the state's postsecondary institutions.

How many measures should be included? It is unlikely that any one or two measures of institutional performance can be used to fairly judge a community college, college or university. Too many metrics is just as bad as having one or none, according to Eric Fingerhut, former Chancellor of the Ohio State Higher Education System and panelist at the 8th Annual *NCLR*. "We knew that if we had 100 metrics, then we had nothing," he said, "We had to have a focused set of goals."

Does one size fit all? While some measures may be applicable to all institutions, the diversity of postsecondary community colleges and universities, and their distinct missions, must also be recognized. Different measures should be selected in many cases for different institutions, and different weights may be placed on some of these measures depending on the type of institution.

3. **What is Acceptable Performance**? Regardless of the metric or metrics that are chosen as elements of an accountability system, the choice of how to judge institutional and system progress on those measures is key. In looking at graduation rates, for example, the expectation could be that an institution achieves a specific goal, improves over previous years, or ranks in the top 10 of some comparison group, or some combination of all three. Using both national and state institutions as benchmarks is important to establish a baseline performance level, and to provide comparisons for equivalent institutions.

4. **When and How to Track Students?** Nationally, with fewer and fewer students entering postsecondary education directly after high school and going full time until graduation, we must rethink the way we look at higher education and workforce progression. Large numbers of students today attend multiple postsecondary institutions, often at the same time, and work both part-time and full-time during and in between periods of enrollment at community colleges, colleges, and universities. Student progress on the postsecondary pathway, and into and out of the workforce, can only be measured and understood with the ability to identify unique individual students and to follow them from pre-K into postsecondary education and on into the workforce and back again as their situations warrant.

Nationally, with fewer and fewer students entering postsecondary education directly after high school and going full time until graduation, we must rethink the way we look at higher education and workforce progression.

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[5] At the 8th Annual *North Carolina Legislators Retreat* in Pinehurst, NC, a session was held titled *Metrics That Matter: Measuring and Tracking Postsecondary Success*. The session was moderated by Doug Lederman, Editor of Inside Higher Ed and included panelists — Eric Fingerhut, then Chancellor of the Ohio Board of Regents; Dennis Jones, President of the National Center for Higher Education Management Systems; and Hans L 'Orange, Vice President for Research and Information Resources at the State Higher Education Executive Officers. Legislators had the opportunity to learn about measuring success in institutions of higher education and were provided with information on metrics at the postsecondary level, creating and linking data systems across all sectors of education and the workforce, and accountability at the state level.

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[16] Shortly after the swearing in of a new Ohio Governor in 2010, the Chancellor that oversaw Ohio's Strategic Plan for Higher Education, which introduced the accountability and performance-funding system, decided to resign his position. The Strategic Plan is currently under review and so it remains to be seen whether Ohio's accountability system and priorities for its public university system will change.

Created by the University of North Carolina Board of Governors in 2001, the James B. Hunt, Jr. Institute for Educational Leadership and Policy collaborates with policymakers to secure America's future through quality education. Working at the intersection of policy and politics, the Hunt Institute connects leaders with the best strategies for developing and implementing policies and programs to improve public education. An affiliated center of the University of North Carolina at Chapel Hill, the Institute is a non-partisan, non-profit entity that does not lobby for, or take positions on, state and federal legislation.

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