



Economics 101: Today's Students = Tomorrow's Workforce



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Working at the intersection of policy and politics

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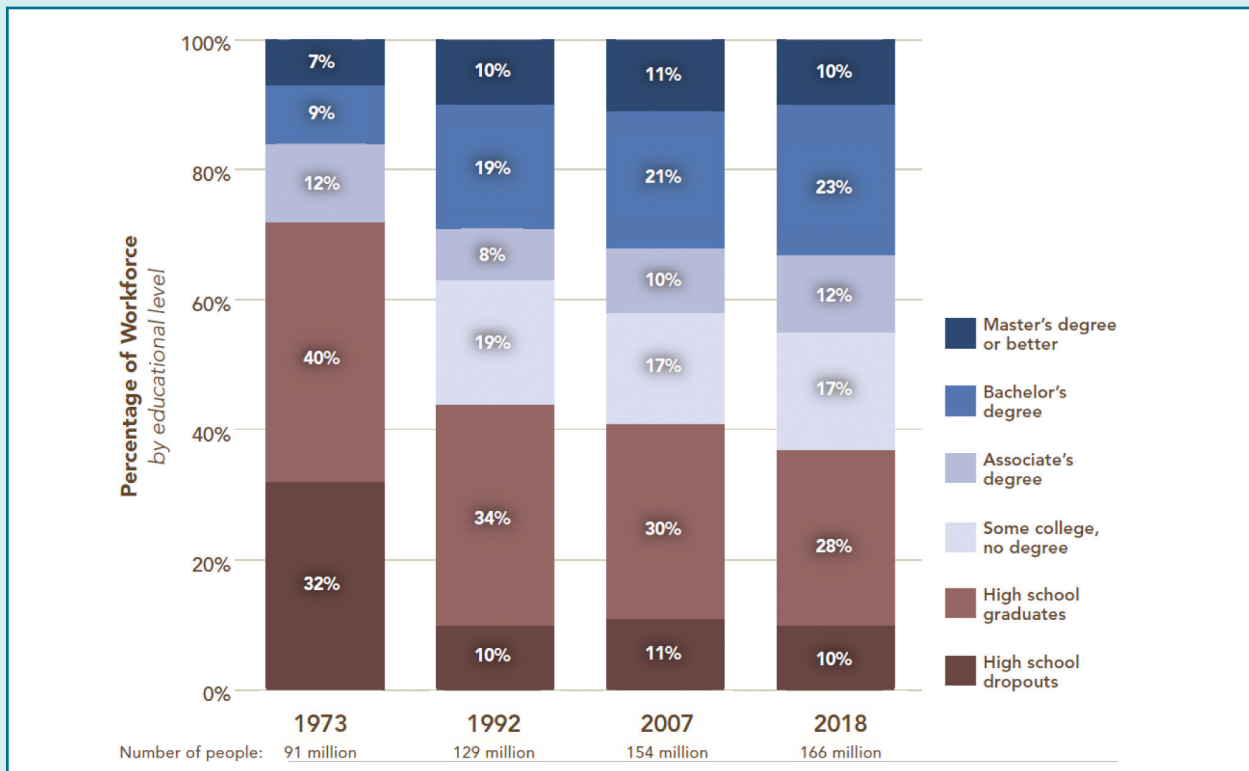
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The Georgetown Center on Education and the Workforce estimates that **63 percent of all jobs nationwide will require training or a credential beyond high school by the year 2018**. Unless we change our current trajectory, the U.S. will come up at least **3 million postsecondary degrees short of this demand**.¹

The Georgetown Center has **identified three pronounced trends in workforce education requirements** during the past forty years:²

- Increasing education requirements for jobs across industries and occupations;
- A strong relationship between postsecondary education and attainment of middle- and upper-class status; and
- Strong job growth among those occupations requiring the highest levels of postsecondary education.

Percentage of Workforce by Educational Level, 1973 through 2018



Source: Georgetown University Center on Education and the Workforce, 2010.

Workforce Needs in North Carolina

The Georgetown Center’s state-level analysis estimates that between 2008 and 2018, North Carolina will have 1.4 million job vacancies, including new jobs as well as jobs opening from retirement. By 2018, an estimated **59 percent of jobs in North Carolina will require some type of postsecondary training**. This is slightly below the national projection of 63 percent, but higher than many of our neighboring states in the South.³

While there will be more jobs in North Carolina for all education levels, **the increase in the number of jobs requiring training or a credential beyond high school is the greatest**, with almost three times as many new jobs requiring postsecondary training compared to those requiring a high school diploma.

Change in Jobs by Education Level, 2008-2018

Education Level	2008 Jobs	2018 Jobs	Difference	% Change
High school dropouts	550,000	593,000	42,000	7.8%
High school graduates	1,310,000	1,425,000	115,000	8.8%
Postsecondary	2,553,000	2,875,000	322,000	12.6%

Source: Georgetown University Center on Education and the Workforce, 2010.

Not only is postsecondary education essential to the workforce in general, but it is also necessary for individuals to move into and remain in the middle- and upper-income classes. In 1970, almost half (46 percent) of high school dropouts were found in the middle-income class (defined as the middle 40 percent of family incomes). By 2007, only a third (33 percent) were. Among high school graduates, the percentage fell from 60 to 45 percent.⁴

The national trend demonstrates that without some kind of postsecondary education, both the nation and its workers will be left behind: unemployed, underemployed, or likely stuck in jobs that don't provide middle-class wages. In 2008, 90 percent of workers with a high school education or less were found in occupational clusters (such as food and personal services and healthcare support) that do not provide family-supporting wages, and in other sectors and industries that continue to lose jobs.⁵

QUESTIONS TO CONSIDER

- Given this dramatic economic shift in our state and nation, what are the most cost-effective and timely ways to educate workers and prepare them for careers?
- What types of credentials or degrees will be most valuable to students as they seek employment in the changing workforce?
- How effective are various academic programs, degrees, and credentials in helping workers to find and keep good jobs in the North Carolina labor market?

SESSION II

Facts and Figures: Is the North Carolina Education Pipeline Leaking?

As policymakers consider how to increase the number of students who complete a credential beyond a high school diploma, it is necessary to understand where our state is currently. This brief provides a glimpse of several important data points to help inform the discussion.

The Education Pipeline in North Carolina

If North Carolina is to increase the number of students obtaining some sort of postsecondary credential, **it is imperative that we know where we are losing students.** While the numbers below are estimates extrapolated from the various reported rates in 2008, they help to give a clear idea that we are losing students at several different points.

According to the National Center for Higher Education Management Systems, in 2008 for every 100 ninth-graders in North Carolina:

- 66 graduate from high school in four years;
- 44 enter a two- or a four-year program directly;
- 30 are still enrolled in their second year; and
- 19 graduate with an associate's degree within three years or a bachelor's degree within six years.⁶

Postsecondary Education in North Carolina

- 36 percent of North Carolinians age 25-34 had at least an associate's or bachelor's degree in 2008.⁷
- In 2008, more than 80 percent of students enrolled in postsecondary education attended a public university or community college. Approximately half of those students attended a two-year community college and the other half attended a four-year university.⁸
- More than half of students enrolled in two-year programs attend part time, compared to only a fifth of students in four-year programs.⁹
- 27.1 percent of undergraduate students in North Carolina were over the age of 25 in 2008.¹⁰

Enrollment, by Institution Type, Fall 2008¹¹

Institution Type	Total Estimated Fall Enrollment	Percentage of Statewide Enrollment
Private For Profit	10,887	2.1%
Less than 2 year	2,440	0.5%
2 year	3,461	0.7%
4 year	4,986	0.9%
Private Not For Profit	87,123	16.4%
Less than 2 year	158	<0.1%
2 year	720	0.1%
4 year	86,245	16.3%
Public	431,971	81.5%
2 year	216,951	40.9%
4 year	215,020	40.6%
TOTAL	529,981	100.0%

Full-Time and Part-Time Enrollment, by Length of Program, Fall 2008¹²

Length of Program, Fall 2008	Full-Time Enrollment	Full-Time Percentage	Part-Time Enrollment	Part-Time Percentage
2 year	97,970	44.3%	123,162	55.7%
4 year	244,911	80.0%	61,340	20.0%
TOTAL	342,881	65.0%	184,502	35.0%

Fall Enrollment, by Demographic Group, 2008¹³

Demographic Group	Percentage of the Postsecondary Population
Men	40.6%
Women	59.4%
American Indian/Alaskan Native	1.2%
Asian/Native Hawaiian/Other Pacific Islander	2.7%
Black or African American/Black non-Hispanic	23.3%
Hispanic or Latino/Hispanic	3.1%
White/White non-Hispanic	62.8%

College Readiness

- While new efforts underway with the NC ACRE Initiative and the Common Core State Standards aim to improve student readiness for the workforce and college, **many students are not currently prepared to start college-level work upon enrollment at a postsecondary institution.**
- In 2008, **nine percent** of students in The University of North Carolina were enrolled in at least one remedial course.¹⁴
- The North Carolina Community College System, which has an open enrollment policy, found that **61 percent of first-time, credential-seeking students were enrolled in at least one developmental course and 33 percent were enrolled in two or more developmental courses** in the fall of 2009.¹⁵
- In the 2007-2008 academic year, **remediation courses cost The University of North Carolina \$2.5 million.**¹⁶
- In their 2006 report, *Paying Double*, the Alliance for Excellent Education estimated that a **reduced need for remediation in community colleges would add a total benefit of almost \$100 million to North Carolina's economy.**¹⁷

Persistence and Completion

- In North Carolina, **22 percent of students at four-year institutions do not return for their sophomore year. At two-year institutions, 46 percent of students do not return for their second year.**¹⁸
- **20 percent of first-time, full-time students attending a North Carolina community college graduated within three years.**¹⁹
- **59 percent of first-time, full-time students attending a four-year public university graduated within six years.**²⁰

QUESTIONS TO CONSIDER

- What other data points might be useful when considering policies around postsecondary completion?
- How can North Carolina decrease the number of students that are lost at each point in the P-20 pipeline?

SESSION III From Kindergarten to College: Ensuring Productivity in Our Education System

A high school diploma is not a guarantee that students are ready for college-level work. Too many students are enrolling in community colleges and universities only to find that they need to take one or more remedial courses before they can take credit-bearing classes. ACT estimates that as many as **60 to 70 percent of high school graduates are not well-prepared academically for college.**²¹ Those students who fail to meet a proficient level on college-entry or placement tests can easily become stuck in a cycle of remedial courses that significantly delay their academic progress and pose additional financial costs. According to the U.S. Department of Education, approximately 40 percent of new college students, and half of those at two-year institutions, need at least one remedial course.²²

If our students are to succeed in postsecondary education, **our K-12 and higher education systems must coordinate and cooperate to ensure that everyone is working towards the same definition of “college readiness.”** In their recent report, *No Time to Waste*, the Southern Regional Education Board makes three recommendations for state policy around college and career readiness:²³

- 1) Ensure that students take a **quality college-preparatory curriculum;**
- 2) Ensure that all public K-12 and postsecondary institutions adopt a **common set of specific college-readiness standards** with rigorous performance expectations in reading, writing, and mathematics that are emphasized in high school courses and for which students are assessed no later than their junior year; and
- 3) Develop and provide **supplemental transitional courses for 12th graders** who, based on the 11th grade assessments, are not college-ready.

Efforts in NC

By adopting the Common Core State Standards in the summer of 2010, North Carolina took a big step in the right direction. From the outset, the goal of the *Common Core State Standards Initiative* has been to apply the most advanced, current thinking on how to prepare young people for success in college and their careers. To begin, the Initiative developed a set of validated college- and career-ready standards. They then used these standards as the end point for mapping out grade-level standards.

North Carolina is also taking steps towards an assessment of college readiness. As part of the Department of Public Instruction’s *Accountability and Curriculum Reform Effort* (ACRE), the State Board of Education has adopted a new accountability model that will include an assessment of college readiness to be given in the 11th grade. This assessment will be used to show students where they are in terms of their readiness for college-level work and allow them time in the 12th grade to receive additional assistance if the assessment shows they are not ready.

Through the *Achieving the Dream Developmental Education Initiative* (DEI), the North Carolina Community College System is also taking steps in the right direction. The System has developed a state policy work plan for 2009-2012 that focuses on the following four priorities:

- **Aligned Expectations (P-16).** Work collaboratively with the NC Department of Public Instruction and The University of North Carolina to establish aligned standards for high school graduation and reduce the need for developmental education among recent high school graduates.
- **Assessment and Placement.** Implement appropriate measures for placement of students into developmental education.
- **Developmental Education Innovation/Redesign.** Develop policies and strategies that enable colleges to provide student-centered developmental education interventions that lead to successful completion of developmental education requirements.
- **Data and Performance Measurement.** Align developmental outcomes data with system/college performance accountability and funding.

This plan was developed by a state policy team convened by the NC Community College System President, Dr. Scott Ralls. This team includes representatives from the K-12 system, including the State Superintendent of Public Instruction and the executive director of the NC Education Cabinet.

QUESTIONS TO CONSIDER

- What does the K-12 system need to do differently to ensure that students graduate ready for college and careers?
- What do our postsecondary systems need to do to help ensure matched expectations with the K-12 system and provide support for students who do not meet those expectations?
- What steps can the General Assembly take to encourage more collaboration among the systems?

Ensuring that North Carolina has a strong postsecondary education system that will produce graduates capable of succeeding in tomorrow's economy requires **both better performance measures for postsecondary institutions and better data systems for collecting and tracking that information.** This issue brief will discuss some of the most common performance measures used and the crucial elements of a robust longitudinal data system.

Input Measures

Historically, the quality of a postsecondary institution has been largely judged on inputs, primarily access and enrollment. Selective four-year institutions are judged by how many students apply and are admitted, admitted students' high school grades and test scores, and other measures of academic merit. Both two- and four-year institutions are evaluated on the number of students they enroll and their enrollment growth. Recently, more attention has been given to how institutions attract and enroll diverse and underserved populations. Though these numbers are helpful in judging some of the functions of an institution, they don't provide information about the outcomes for students who enroll.

Outcome Measures

There is a growing focus nationally on **outcome or performance measures of postsecondary institutions,** particularly graduation or completion rates. There are several metrics related to outcomes that are measured by postsecondary institutions.

Graduation Rates

Under the *Student Right to Know Act* (SRK) passed in 1990, the federal government requires that any institution receiving federal funds measure and report a graduation rate. SRK set a requirement for reporting on the percentage of first-time, full-time students who receive a degree within 150 percent of normal time for a degree program (typically a six-year graduation rate for four-year institutions and a three-year graduation rate for two-year institutions or community colleges).

There are several issues, however, with how the SRK graduation rate is calculated and its applicability as a full measure of an institution's performance. The SRK rate only includes students who enrolled as first-time, first-year students at that institution. This group is only 48 percent of all four-year students and 32 percent of all two-year students in a given year, and these numbers are shrinking as more students attend part-time or move between institutions.²⁴ The SRK rate also fails to account for transfer students who ultimately graduate or the likelihood that part-time students, especially at community colleges, are likely to take more than 150 percent of time to complete their degrees. Lastly, there is a lack of consensus around the goal for an acceptable graduation rate.

Though graduation rates are important to measure, **just measuring and reporting a basic SRK graduation rate is insufficient.** The National Governors Association's *Complete to Compete Initiative* recommends measuring graduation rates, but doing so at both normal time (two or four years) and at extended time (three or six years), as well as disaggregating these rates for different student populations (by gender, race/ethnicity, income status, or transfer status).²⁵

Intermediate Measures

Policymakers and researchers are now advocating that schools should also measure and report on **intermediate outcomes for students**. The focus on intermediate measures is particularly important for community colleges where a large percentage of the student population might be pursuing a specific certificate or credential rather than an associate's degree. At four-year institutions, intermediate measures can help the institution target support programs to increase persistence to graduation. Some of the most frequently cited measures include:

- **Completion of developmental education courses.** Students who begin at community colleges are not always ready for college-level work and are required to take developmental courses.
- **Completion of first-year college courses.** Completing a college-level course in math and/or English is an important indicator of future success.
- **Completion of 12-15 college credits.** Completing 12-15 college-level credits in a semester can be a signal that a student is moving in the right direction and is likely to persist.
- **Retention into the second term and second year.** Generally, if a student makes it into the spring semester after starting in the fall semester, and then returns for a second year, they are much more likely to persist to degree completion.
- **Transfers to a four-year institution.** Measuring the number of students that successfully transfer from a community college to a four-year institution is an important measure of institutional performance.
- **Completion of a credential or certificate.** Even for those students on the path to a degree, achieving a credential or certificate along the way may be an important milestone.

Efficiency and Productivity Measures

There are also some less commonly discussed measures that focus on efficiency and productivity of an institution that may be important to include in any evaluation of a school. Institutions are measuring and reporting on things like the average number of credits a student takes to complete a degree; the average number of semesters of attendance it takes a student to complete a degree; the number of degrees being produced per 100 students; and the number of degrees produced overall and by individual degree programs.

Student Learning

All these measures are important, and, when combined, can likely tell us a great deal about how a community college, college, or university is performing. However, just measuring and tracking inputs and outcomes misses a key part of the mission of postsecondary institutions – student learning. Assessing learning can be extremely challenging. Some schools are measuring student engagement as a proxy for student learning and others are exploring the use of tests, such as the Collegiate Learning Assessment. This is a growing area of emphasis for many states and institutions.

Data Systems

Knowing what to measure is only half the battle in ensuring the efficiency and productivity of institutions of higher education. Institutions must also accurately measure that information, track it by student and school, and then provide it to policymakers and the public. To do so at the state level requires a sophisticated data system, and states have made significant progress over the last 10 years in designing and implementing data systems that can track student and institutional progress over time. **These longitudinal data systems ideally start with pre-kindergarten students and follow those individuals through the conclusion of their educational careers and into the workforce.**

Several groups are looking at the essential components of statewide data systems including the Data Quality Campaign which has released a list of 10 elements that should be included in an effective statewide longitudinal data system. Hans L'Orange of State Higher Education Executive Officers (SHEEO) and Peter Ewell of the National Center for Higher Education Management Systems (NCHEMS) built on this framework and included some additional elements of particular importance to postsecondary data systems.⁶ They break their fifteen components into four categories:

1. **Student Data.** Includes a unique student identifier that connects students across databases and years; student-level demographic, enrollment, transfer and completion data; and student-level financial aid data.
2. **Course Data.** Includes information on courses taken and performance in those courses; participation in remedial or developmental courses; and assessments of academic achievement.
3. **Operational Characteristics.** Includes privacy protection; the ability to match students records with K-12 and employment data; and a single student-level system for all public institutions in the state.
4. **Data Governance.** Includes having data audit systems, aligning data systems with state goals, and ensuring usability and sustainability of the system.

QUESTIONS TO CONSIDER

- What measures are already being collected and reported by postsecondary institutions in North Carolina?
- Should the community college and university systems be required to collect and report on a specific set of performance measures?
- Does North Carolina have a unified vision across all education systems for collecting and analyzing education data?
- How can data at all levels of education (P-20) and data on workforce outcomes be linked and made accessible?

Completing a postsecondary credential or degree is the ultimate goal for most students who enter higher education. However, in pursuit of this goal, students drop out all along the pipeline. From being underprepared academically when they enter, to stopping out (students who decide to take a break with the intent to return) or dropping out after their first years or just short of degrees, many students never achieve this ultimate goal. In North Carolina, only 20 percent of community college students have earned an associate's degree after three years, and only 59 percent of public four-year university students have earned a bachelor's degree after six years.²⁷ This brief will introduce the points at which students typically stop out or drop out of higher education.

Developmental & Remedial Education²⁸

Having a high school diploma in hand and directly enrolling in a two- or four-year institution does not guarantee that students are academically prepared for postsecondary work. Students who are underprepared often must take one or more developmental or remedial courses in English, reading, or math. **In the fall of 2009, nearly two-thirds (61 percent) of first-time, credential-seeking North Carolina community college students were enrolled in at least one developmental course in English, reading, or math; 33 percent were enrolled in two or more developmental courses.**²⁹ Nine percent of first-year students who began at a UNC institution in the fall of 2008 took at least one remedial course in the fall.³⁰

Many students who enter a community college, college, or university expect that every course they take will count towards their degrees; however, this is not the case with most developmental or remedial courses. When students find out they are required to take developmental or remedial courses, many leave before they attend their first classes or before the end of the term. According to an analysis of data on community colleges from the *Achieving the Dream Project*, **46 percent of students referred to developmental courses never completed their first courses.**³¹

Even for those students who continue with their courses, **taking developmental or remedial courses is strongly associated with a decreased likelihood of degree completion.** Nationally, less than 25 percent of students who begin in developmental education in two-year institutions ultimately complete a degree or certificate program, compared to 40 percent of those who do not take developmental courses. Only 17 percent of students in four-year institutions who take a remedial reading course and 27 percent who take a remedial math class eventually graduate.³²

However, developmental or remedial courses themselves may not be the problem. Research suggests that students who successfully complete their developmental sequence of courses are more likely to persist and graduate than those who don't or than those who should have taken developmental courses but opted not to.³³ **Ensuring that students are assessed correctly, placed in the minimum number of developmental courses possible, and receive advising about their options and the path to credit-bearing courses have all shown promise for helping students persist to graduation.**

Retention into the Second Year

Getting students in the door and ensuring they are prepared for college-level work is only the first step towards graduation. **Research suggests that one of the most common points of attrition in higher education is between the first and second years.**³⁴ Data from the North Carolina Community College System roughly mirrors national data – 72 percent of first-time students in 2007 persisted from fall to spring in the first year, and 52 percent were retained to the second year.³⁵ For UNC institutions, the overall retention rate for first-year students in 2007 returning for their second year was 81.2 percent,³⁶ better than the national average of 73.9 percent.³⁷ However, the percentage of students who returned for a second year varied among institutions from 96.2 percent at UNC-Chapel Hill to 67.3 percent at UNC-Pembroke.³⁸

There are a myriad of reasons that students do not persist in their education and/or fail to return for a second term or second year. A survey of 22- to 30-year-old students who failed to complete a postsecondary degree points out several reasons why students leave higher education.³⁹ Students who left did so because they:

- were also **working** to support themselves and could not manage both work and school;
- had **family responsibilities** that made it very difficult to finish school;
- **lacked financial resources** to afford tuition and fees (as well as books and other requirements);
- were more likely to have chosen their schools or programs based on proximity or convenience rather than for academic reasons; or
- were **less likely to understand** the importance of a degree and the **financial implications of the failure to complete their degrees.**

Persistence to Graduation

While some students drop out as soon as they arrive on campus and others drop out in their first two years, the majority of students do persist into their final year or years. However, even as students get close to the finish line, many still fail to complete their degrees. Neither national nor state data are available, but some institutional data suggest there are **large numbers of students just short of a degree that never finish.** A project at the University of New Mexico to identify these students has seen over 2,800 return since 1996 and adds an additional 200-300 students who fail to complete degrees each year.⁴¹ In just seven months, a pilot project at six community colleges has already identified more than 2,000 students who dropped out just nine credits or fewer short of an associate's degree.⁴²

Research suggests a number of reasons why students stop out or drop out short of completing their degrees, including monetary problems like the ones mentioned above. But there are also non-monetary reasons that students fail to complete their degrees. For example:

- some students in community colleges transfer to four-year institutions to pursue bachelor's degrees without first completing their associate's degrees, **but never complete those four-year degrees**;
- **closed courses** or difficulty getting the courses they need at times that are workable;
- inconsistent or **bad academic advising**; and/or
- **serious life issues** outside of school that force them to stop taking classes.

In the end, regardless of the timing or the reasons, too many students fail to complete the degrees they set out to attain. Many schools across the country and in North Carolina are using a better understanding of when and why students leave to develop innovative programs to address these issues.

QUESTIONS TO CONSIDER

- Does North Carolina have the right kind of data to determine which students are not completing their degrees and why? Are there particular populations that are more or less likely to persist to graduation?
- What are postsecondary institutions in North Carolina doing to address the loss of students at points along the pipeline?
- How can legislators support the scaling up of innovative programs at North Carolina institutions that successfully support students to completion of their postsecondary credentials?

SESSION VI Race to the Top: Where Are We?

The *Race to the Top* (RttT) grant program was established in 2009 as part of the *American Recovery and Reinvestment Act* (ARRA). The goal of this \$4.35 billion initiative is to incentivize states to implement comprehensive reforms and to create models for the rest of the nation. States that applied for RttT grant funds were asked to craft innovative plans in the following four areas, also the core “assurances” of the ARRA:

1. Adopt internationally benchmarked **standards and assessments** that prepare students for success in college and the workplace;
2. Recruit, develop, retain, and reward **effective teachers and principals**;
3. **Turn around low-performing schools**; and
4. Build **data systems** that measure student success and inform teachers and principals how they can improve their practices.

The RttT funds have been awarded in two phases. Forty-one states submitted applications for Phase 1 of the competition, and in April 2010 the U.S. Department of Education announced Delaware and Tennessee as winners. In Phase 2, thirty-six states applied for grants, and ten states, including **North Carolina**, were named winners in September 2010. The additional Phase 2 grant winners include the District of Columbia, Florida, Georgia, Hawaii, Massachusetts, Maryland, New York, Ohio, and Rhode Island. Please see the chart below for a breakdown of the rankings of the award winners based on the strength of their applications.

Table 1: Rankings of and Total Funds Awarded to Phase 1 and Phase 2 Race to the Top Winners

State	Phase 1 Ranking	Phase 1 Awards	Phase 2 Ranking	Phase 2 Awards
Delaware	1	\$100 million		
Tennessee	2	\$500 million		
Massachusetts			1	\$250 million
New York			2	\$700 million
Hawaii			3	\$75 million
Florida			4	\$700 million
Rhode Island			5	\$75 million
Maryland			6	\$250 million
District of Columbia			6	\$75 million
Georgia			8	\$400 million
North Carolina			9	\$400 million
Ohio			10	\$400 million

North Carolina will receive **\$400 million** for use over the next four years; all funds must be used by August 2014. RttT funding is expected to be distributed in December 2010, pending approval of the state and local plans by the U.S. Department of Education. The grant monies will be distributed in two parts:

- Half will be directed to support LEAs and their local initiatives. Roughly \$165 million will be given directly to districts and charter schools, and \$35 million will be used to fund the *Education Technology Cloud*.
- The other half (\$199 million) will support 15 statewide initiatives and RttT grant administration.

LEAs have the autonomy to determine how to budget their RttT funds over the course of the grant, but their plans must include a set of activities required by the state in the four core areas above. Before districts submitted their RttT plans to the state in November, the North Carolina Department of Public Instruction held eight regional technical assistance meetings to support districts in the crafting of their plans. All RttT activity will be overseen by the **Governor's Education Transformation Commission**, appointed by Governor Perdue and led by State Board of Education Chairman Dr. Bill Harrison. The Department of Public Instruction is also required to **submit monthly progress reports to the U.S. Department of Education**.

The state has set ambitious goals for increasing student achievement with the RttT funds, including:

- increasing the high school graduation rate from 74 percent to 85 percent by 2013;
- increasing the percentage of high school students enrolled in postsecondary programs; and
- reducing the proportion of college freshmen enrolled in remedial coursework.

The state plans to accomplish these goals through a broad range of local and state initiatives. The new *Education Technology Cloud*, expected to be phased in over the next two to three years, will use a “cloud computing” approach to provide technology resources to LEAs through centralized servers.

Other significant components of the state's RttT agenda include:

- incorporation of **student achievement growth data in teacher and principal evaluations**;
- implementation of a **new set of course standards and assessments**, including the Common Core State Standards in English-language arts and math; and
- **targeted interventions to the lowest five percent of schools statewide** and requiring them to use one of four models: school turnaround, restart, closure, or transformation. This turnaround plan will involve 66 elementary schools, 23 middle schools, and 23 high schools across the state.

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