



HOLSHOUSER LEGISLATORS RETREAT

FOR A STRONGER EDUCATION | NORTH CAROLINA

SESSION I : Education and the Economy

Economic outcomes depend on educational achievement

The health and productivity of North Carolina's economy depends on the health and productivity of North Carolina's education system. Students in class today will enter the workplace tomorrow – a workplace that increasingly requires the critical thinking and adaptability that a postsecondary education can, and must, provide.

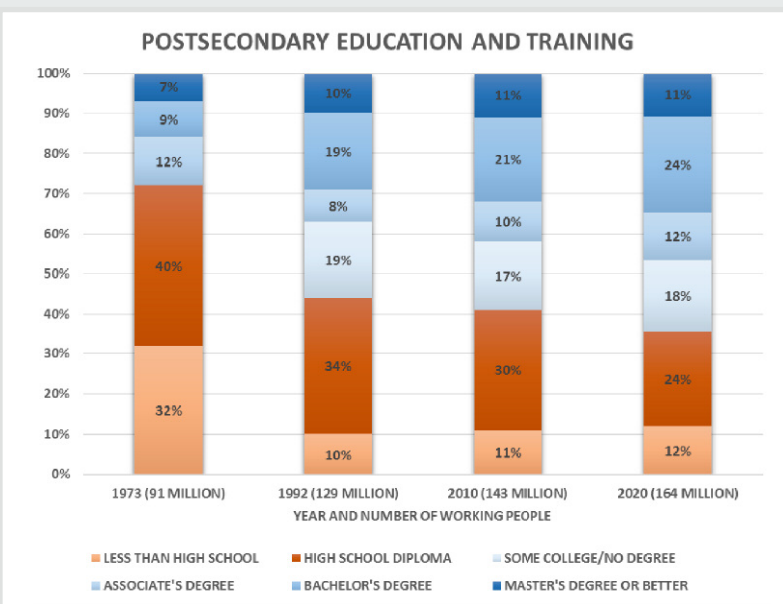
In 1973, only 28 percent of jobs required postsecondary education. According to recent projections, by 2020, **65 percent of all jobs will require postsecondary education and training.**¹ A traditional four-year college degree – while providing an excellent return on investment – is by no means the only path that leads to better job prospects.² Nearly half of the American jobs that pay middle-class wages require something less than a bachelor's degree. Associate degrees, certifications, certificates, apprenticeships, and employer-based training all improve employment and earning prospects.³ The demand for jobs that are routine and manual is falling while demand for those requiring complex communication and expert thinking is rising.⁴ **America and North Carolina are becoming an education economy.**

Between 2008 and 2018, North Carolina will create **1.4 million job vacancies**, both from new jobs and from job openings due to retirement. Eight hundred and thirty-three thousand of these job vacancies will be for those with postsecondary credentials, 413,000 for high school graduates, and 172,000 for high school dropouts.

Source: Carnevale, A. P., Smith, N. and Strohl, J. (2010). *Help Wanted: Projections of jobs and education requirements through 2018.*

"Too often we neglect a key ingredient of our nation's economic future – the human capital produced by our K-12 school system. An improved education system would lead to a dramatically different future for the U.S., because educational outcomes strongly affect economic growth and the distribution of income."

George P. Shultz and Eric A. Hanushek.
Education Is the Key to a Healthy Economy.
The Wall Street Journal, 2012.



Carnevale, A., Smith, N., & Strohl, J. (2013). *Recovery: Job Growth and Education Requirements through 2020.* Washington, DC: Georgetown University Center on Education and the Workforce.

Employer Needs

Education beyond high school is increasingly required to compete in the workforce. What particular knowledge and skills do employers say they need? The tables below provide some insight:

ABILITIES MOST HIGHLY VALUED THROUGHOUT THE ECONOMY

- 1 Oral comprehension** Listen to and understand information and ideas presented through spoken words and sentences.
- 2 Oral expression** Communicate information and ideas so others will understand.
- 3 Written comprehension** Read and understand information and ideas presented in writing.
- 4 Problem-sensitivity** Recognize when something is wrong or likely to go wrong. Does not involve solving the problem.
- 5 Deductive reasoning** Apply general rules to specific problems.
- 6 Written expression** Communicate information and ideas in writing so others will understand.

Carnevale, A., Smith, N., & Strohl, J. (2013). *Recovery: Job Growth and Education Requirements through 2020*. Washington, DC: Georgetown University Center on Education and the Workforce.

FROM THE NORTH CAROLINA 2014 EMPLOYER NEEDS SURVEY



▶ Forty-five percent of North Carolina employers had hiring difficulty in 2013.

North Carolina Association of Workforce Development Boards and Labor & Economic Analysis Division, North Carolina Department of Commerce (2014). *2014 Employer Needs Survey*.

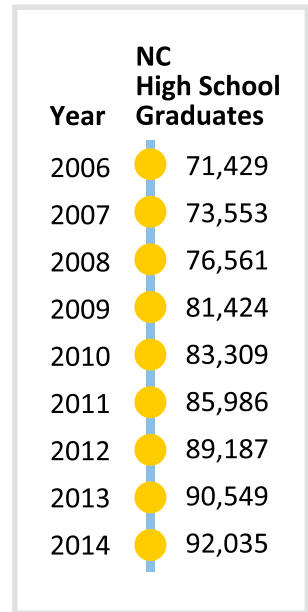
A PK-12 education that prepares students for postsecondary education

An increasing number of students in North Carolina are positioned in one important way to pursue postsecondary education: they graduate from high school. Graduation rates in North Carolina have shown steady improvement, **moving from 68.3 percent in 2006 to 83.9 percent in 2014.**⁵ Many North Carolina students recognize the opportunity that pursuing additional education after high school affords them. In 2012, 83 percent of graduating seniors in North Carolina intended to enroll in postsecondary education programs – 45 percent in four-year institutions and 38 percent in two-year institutions.⁶

While many students enroll, far fewer complete programs. Approximately 40 percent of students enrolled in the University of North Carolina System graduated within four years of enrolling and approximately 61 percent within six years.⁷ Forty-three percent of students who enroll in the NC Community College System graduate, transfer, or are still enrolled after six years.⁸

Many students struggle in postsecondary education because they arrive underprepared for the rigors of community college and university courses. A little more than five percent of freshmen in the UNC system require at least one remedial class; however, enrollment in remedial classes across schools ranged from zero percent to 62.2 percent. Fifty-two percent of students in the NC Community Colleges System were enrolled in at least one remedial course in 2013-2014 school year.⁹

In 2011, the North Carolina General Assembly began, requiring all 11th-graders to take the ACT college entrance exam. ACT results indicate the majority of 11th-graders are not prepared for credit-bearing community college or university courses.¹⁰



PERCENT MEETING ACT COLLEGE READINESS BENCHMARKS

African-American	American-Indian	Asian	Hispanic	Pacific Islander	White
7%	8%	44%	15%	20%	36%

The number of students meeting three of four college readiness benchmarks in North Carolina in 2014. ACT (2014). *The Condition of College and Career Readiness 2014: North Carolina.*

Many North Carolina students fall behind early. One in four students in North Carolina live in poverty.¹¹ An extensive body of research indicates that living in poverty influences the preparedness of students for kindergarten;¹² students unprepared for kindergarten are often never able to close the gap between themselves and their more prepared peers.¹³ Almost 40 percent of North Carolina students did not score proficient on the 3rd-grade Reading End-of-Course test.¹⁴ Researcher David Hernandez has found that students who can't read on grade level by 3rd-grade are four times more likely to leave school without a diploma than children who can read at grade level at the end of 3rd-grade.¹⁵

SESSION II : Observation and Coaching to Improve Practice

Research has established that classroom teachers are the most important school-based factor affecting student achievement.¹⁶ One estimate indicates teachers have two to three times the impact of any other school-based factor, including services, facilities, and leadership.¹⁷ Many states, districts, and schools are focusing on strengthening the practice of current teachers; principals are expected to be instructional leaders, and teachers are expected to constantly refine, improve, and deepen the effectiveness of their practice.

In his influential 2006 research, psychologist K. Anders Ericsson found that the development of expert performance is dependent on deliberate practice with “high-fidelity feedback.”¹⁸ Recently, many districts and schools have applied this idea to teaching by increasing teacher observation and coaching as a means to improve teacher practice. According to a 2011-2012 survey, more than 50,000 schools in America have dedicated specialists or coaching positions. More than half of North Carolina schools employed specialists or coaches.¹⁹

The model of job-embedded observation and coaching is seen as a stronger model for improvement than what has traditionally been employed: the one-time workshop. Models in which an outside trainer comes into the school library for an afternoon and conducts a workshop offer little in terms of reinforcement and guided practice. Often, there is no accountability for applying what was learned back in the classroom. Job-embedded observation and coaching focus on the specifics of a particular teacher’s classroom and his or her particular students, and provide *ongoing* support of professional learning.

The North Carolina Teacher Evaluation System requires pre-observation, observation, and post-observation conferences for all teachers.²⁰ Probationary teachers are also required to be observed by a peer. Beyond this, many school districts are trying to build a culture of regular observation, feedback, and coaching that ensures all teachers grow and improve.

In *How People Learn: Brain, Mind, Experience, and School*, the National Research Council asserts that teachers learn better in environments that are:

- **Learner-centered.** Learning environments are built on the individual strengths, interests, and needs of the teacher.
- **Knowledge-centered.** Learning environments help teachers think about discipline-specific content knowledge for teaching, rather than learning generic teaching approaches (i.e., cooperative learning groups). In many cases, teachers are asked to rethink their subject matter and to participate as learners themselves.
- **Assessment-centered.** Learning environments encourage teachers to test new approaches to teaching and to receive feedback; teachers use the feedback to reflect on their practice and improve their instruction.
- **Community-centered.** Learning environments involve norms such as collaboration and learning; teachers are encouraged to create communities of practice and to collaborate to improve.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.) (2000). *How people learn: Brain, mind, experience, and school (Expanded ed.)*. Washington, DC: National Academies Press.

QUICK FACTS: EARLY CHILDHOOD SUCCESS

“Experimental evidence on the positive effects of early interventions on children in disadvantaged families is consistent with a large body of non-experimental evidence showing that the absence of supportive family environments harms child outcomes.” Nobel Prize-winning economist Dr. James Heckman²¹

Earlier support, larger returns

The work of Nobel Prize-winning University of Chicago economist Dr. James Heckman indicates that early intervention programs (between birth and age five) are often more cost-effective and efficient than later interventions, such as adult literacy services or prisoner rehabilitation programs.²² According to Heckman’s recent analysis, one such program serving disadvantaged three- and four- year olds, the HighScope Perry Preschool Program, returned 7 to 12 dollars back to society for every dollar invested: this suggests that early intervention programs stand to benefit society significantly. These economic gains are realized through reduced rates of retention, dependence on welfare, and crime.²³

Quality matters in early intervention programs

Quality in early intervention programs varies widely; high-quality programs can lead to improved outcomes for students. Studies of early intervention programs indicate that programs that have a greater positive impact include a focus on literacy, extensively involve parents, and ensure staff are well-trained.²⁴ The NC Pre-K program in North Carolina uses the [North Carolina Foundations for Early Learning and Development standards](#) to establish expectations for high-quality programs. The standards focus on five domains:

- Approaches to play and learning
- Emotional and social development
- Health and physical development
- Language development and communication
- Cognitive development

A 2011 report from Duke University found higher third-grade math and reading scores in North Carolina counties that had received higher allocations for Smart Start and More at Four (now NC Pre-K). Additionally, the investment in early education reduced placement into special education.²⁵

Early intervention programs have the most impact on at-risk students

Early childhood programs offer the most benefit to the highest risk children; improving early learning outcomes for at-risk children can lead to long-term benefits for the children themselves and society as a whole.²⁶ Students who start out behind often suffer from compounding effects year after year. According to Dr. Heckman, *“Life cycle skill formation is dynamic in nature. Skill begets skill; motivation begets motivation. Motivation cross-fosters skill, and skill cross-fosters motivation. If a child is not motivated to learn and engage early on in life, the more likely it is that when the child becomes an adult, he or she will fail in social and economic life.”*

NORTH CAROLINA DATA

Number of children
ages 0-4:

612,295²⁷

Number of children enrolled in
licensed child care programs:

249,654²⁸

Number of children served
by NC Pre-K:

32,142²⁹

Poverty rate of children
under age 6:

28.1%³⁰

QUICK FACTS: BUILDING A CULTURE OF ACHIEVEMENT AND SCHOOL TURNAROUND

At a time when postsecondary education is increasingly required for a career that is likely to be both financially secure and rewarding, some schools continue to struggle to prepare most of their students for the future. In order for students to reach high school well-prepared to graduate, they must show progress and achieve each year. Too often it is students of color, English language learners, and low-income students that fall behind in low-performing schools. The urgency around improving outcomes has led to efforts, both locally and nationally, to dramatically change the educational environment in struggling schools – to “turnaround” those schools. The *Race to the Top* and *School Improvement Grant* programs outlined models for dramatically reshaping chronically low-performing schools, including: the **turnaround model** in which the principal is replaced and no more than 50 percent of the staff are rehired; the **restart model** in which the school is reopened under a charter school operator or other rigorously reviewed management organization; and the **school closure model** in which students enroll in other high-achieving schools in the district.

North Carolina’s own **District and School Transformation model** is built on a conceptual framework that identifies schools, comprehensively assesses the educational environment, develops a framework for action based on the assessment, and then supports schools and districts with coaching, professional development, and ongoing progress monitoring. In North Carolina, 294 schools across 40 districts are in school transformation.³¹ Results from a 2013 evaluation of North Carolina transformation districts suggest transformation efforts are having a positive influence on student achievement and graduation rates.³²

Research indicates that leaders have a significant impact on student achievement.³³ As evidenced in the above turnaround model, **leadership plays a central role in school turnaround**. Many turnaround models rely on giving carefully-selected leaders increased autonomy to make personnel, budgeting, and instructional decisions. On a more local level, many school leaders are tasked with significantly improving outcomes in struggling schools. One instructive set of leadership standards, recently adopted by the *National Policy Board for Educational Administration*, identifies six principles for educational leadership:

1	2	3	4	5	6
Setting widely shared vision of learning.	Developing a school culture and instructional program conducive to learning and staff professional growth.	Ensuring effective management of the organization, operation, and resources for a safe, effective, and efficient learning environment.	Responding to diverse community interests and needs and harnessing community resources through staff and community collaboration.	Acting fairly, ethically, and with integrity.	Understanding, influencing, and responding to the social, legal, and political context.

Source: Council of Chief State School Officers (2008). *Educational Leadership Policy Standards: 2008*. As Adopted by the National Policy Board for Educational Administration.

QUICK FACTS: ► STEM EDUCATION**NATION**

- There is expected to be a 17% increase in jobs in STEM fields by between 2010 and 2020.³⁴
- U.S. is ranked 27th in math and 20th in science among industrialized countries.³⁵
- 43% and 37% of 2014 high school graduates met the ACT College Readiness benchmarks in math and science, respectively.³⁶
- Science and engineering occupations are expected to grow at more than double the rate of the U.S. STEM labor force.³⁷

NORTH CAROLINA

- 7.8% of graduating seniors in the class of 2013 scored a three or higher on a mathematics or computer science AP Exam.³⁸
- 7.6% of graduating seniors in the class of 2013 scored a three or higher on a science AP Exam.³⁹
- 39% and 28% of 2014 NC high school graduates met the ACT College Readiness benchmarks in math and science, respectively.⁴⁰
- More than 70,000 net new STEM jobs will be created by 2020.⁴¹

North Carolina has a number of existing programs in the state that support high-quality STEM education. For example, the **NC New Schools Project** has partnered to support nearly 40 STEM-themed high schools in the state. NC New School's vision for STEM education includes a focus on inquiry and exploration – a practice that is also at the heart of the work of the **North Carolina Science, Mathematics and Technology Education Center (SMT)**. SMT has [defined the attributes](#) of high-quality STEM programs, which include a focus on integration, community and industry engagement, and aligning to postsecondary high-quality STEM programs.

QUICK FACTS: ► RURAL EDUCATION

- North Carolina enrolls more than **700,000** students in rural school districts.
- North Carolina has the **second largest rural** enrollment rate in the country (after Texas).
- More than **one-third** of all public school students in North Carolina are in rural schools.
- North Carolina has more rural students than Montana, North Dakota, South Dakota, Wyoming, Colorado, Nebraska, Kansas and Oklahoma – combined.
- More than **one-third** of all rural students are students of color.
- North Carolina is among 12 states with the lowest percentage of rural adults with a high school diploma.
- North Carolina is in the top 13 states with highest unemployment (8.6%).
- North Carolina is one of 16 states with rural free and reduced lunch rates above 50 percent.
- Rural students' performance on NAEP is near the national average in math and significantly below the average in reading.

Excerpted from *Why Rural Matters, 2013-2014: The Condition of Rural Education in the 50 States*.

SESSION III : Teacher Preparation and Recruitment: Ensuring All Teachers Are Ready

Improving teacher preparation is critical to long-term improvement in teacher quality. More than 200,000 new teachers enter classrooms each year. Increasing student enrollment, the retirement of baby boom generation teachers, and high attrition in their first five years (between 40 and 50 percent of new teachers leave the profession) have transformed the teacher workforce. As a result, first-year teachers are now the single largest cohort each year.

Source: Ingersoll, R. (2012). Beginning Teacher Induction: What the Data Tell Us. *Phi Delta Kappan*, 93(8): 47-51.

The North Carolina Teacher Supply

Each year, North Carolina hires approximately 10,000 new teachers.⁴² In 2012, 6,155 students completed teacher preparation programs at North Carolina public and private colleges of education – approximately 61 percent of the teachers needed to fill our classrooms.⁴³ At the same time, enrollment in teacher education programs is declining: From 2011-2013, enrollment in UNC system teacher preparation programs has dropped by 17 percent.⁴⁴

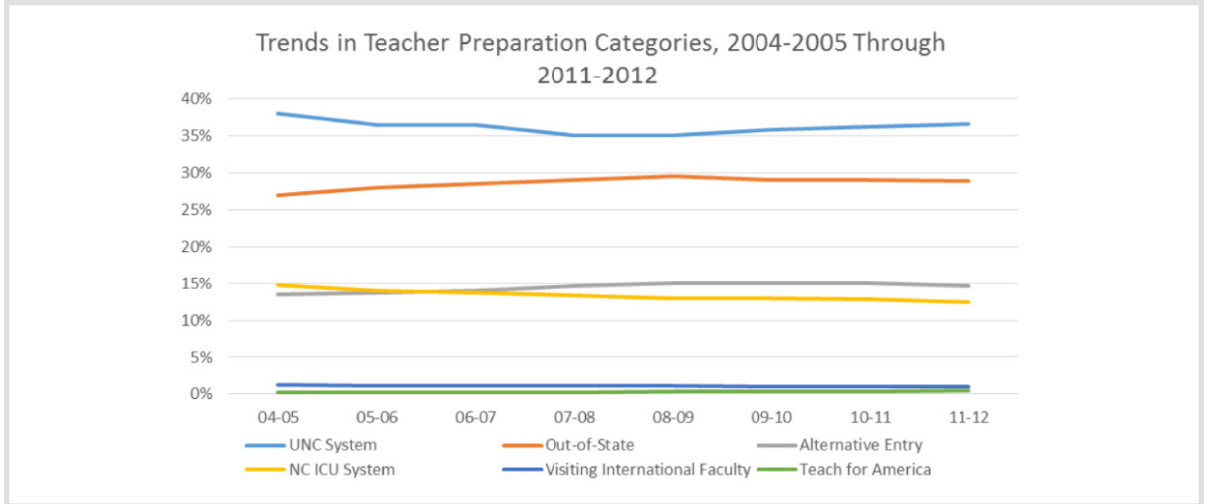
A 2014 report to the North Carolina General Assembly – prepared by the North Carolina State Board of Education and the NC Department of Public Instruction – indicated that **supply will not meet demand**.⁴⁵ Reliance upon teachers from other states moving to North Carolina will not fill the gap of the impending teacher shortage. Out of state teachers make up a smaller percentage of our teacher workforce and persist at lower rates than teachers prepared in-state.⁴⁶

As state policymakers consider remedies to this projected shortage, they have the opportunity to rethink and refashion recruitment and preparation for future teachers. Because state policymakers set rules and guidelines for program content, determine requirements for certification and licensure, and have the power to approve both traditional and alternative preparation programs, the means to transform teacher preparation is well within reach.

Preparation

The readiness of candidates to enter classrooms and schools varies from program to program across states, within states, and even within preparation providers. In other words, within the same institution or organization, candidates from some licensure areas are much better prepared than candidates in other licensure areas. For a variety of reasons, the range of program quality is wide. The varieties of routes and programs through which teachers enter classrooms and principals enter schools have different requirements for coursework and clinical practice and set different standards for quality.⁴⁷

Excerpted from *Our Responsibility, Our Promise: A Report by the CCSSO Task Force on Educator Preparation and Entry into the Profession*.



NOTE: This figure displays the percentage of teachers in each preparation category from 2004-2005 through 2011-2012.

Source: Bastian, Kevin C. and Kristina M. Patterson. (2014). *Teacher Preparation and Performance in North Carolina Public Schools*. Education Policy Initiative at Carolina.

What makes a high-quality preparation program? The National Research Council's report, *Preparing Teachers: Building Evidence for Sound Policy*, highlights the importance of three key aspects of teacher preparation programs: the **quality of teacher candidates**, their **subject content knowledge** and the application of it in teaching, and the quality of their **practical teaching or clinical experiences** (e.g. student teaching).⁴⁸ Likewise, the Council for the Accreditation of Educator Preparation (CAEP) released [revised standards](#) in 2013 that also emphasize high admission requirements and selectivity, deep content knowledge, and a focus on clinical practice.⁴⁹

Greater efforts are also underway to identify which programs are preparing teachers well. A recently released report from the *Institute of Education Sciences* studied how seven states are evolving their evaluation of teacher preparation programs, often with a focus on the performance of program graduates.⁵⁰ This report summarized some of the measures of program outcomes being considered, they include: teacher knowledge and skills, teacher perception of the program, teacher placement, teacher persistence in the profession, employer perceptions of the teacher, teacher evaluation results, and student achievement results. Consideration of additional measures often requires advances in statewide data systems and data collection methods. With the U.S. Department of Education's release of proposed new rules for teacher preparation programs, **North Carolina** was highlighted as one of the first states to collect and report information about teacher preparation programs and their graduates.⁵¹

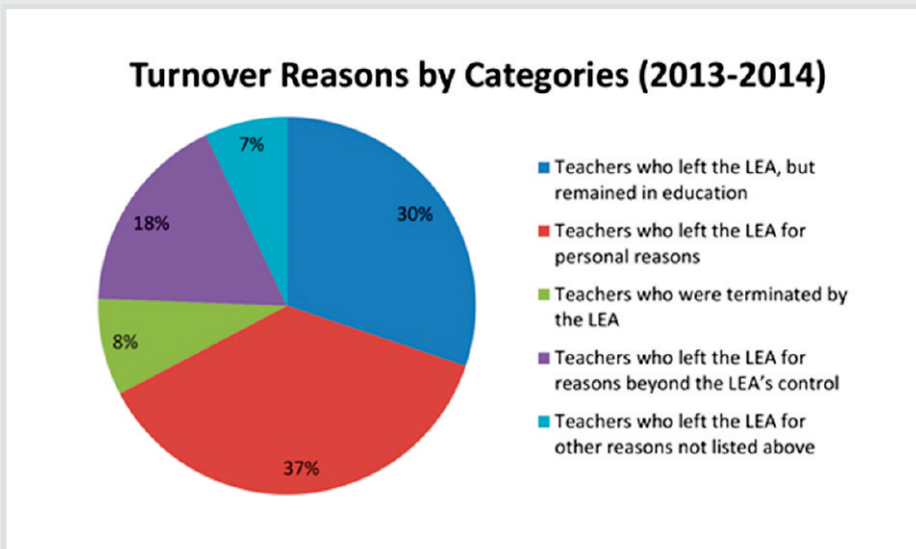
For more, see The Hunt Institute's publication: [Getting Teachers Learner-ready: Reforming Teacher Preparation](#).

SESSION IV : Methods for Retaining and Advancing the Careers of High-Performing Teachers

A talented, well-trained, and committed workforce is the foundation of any enterprise. The most successful organizations spend considerable time, energy, and resources to identify, recruit, and hire the best and the brightest; then they work at keeping them through optimal working conditions. The field of education has not yet fully or consistently operationalized this concept. **We are not retaining high-performing teachers in the way that we need to.** Research finds that many teachers leave the profession because they feel stifled by a flat career trajectory that prevents them from making a difference beyond their classrooms.⁵²

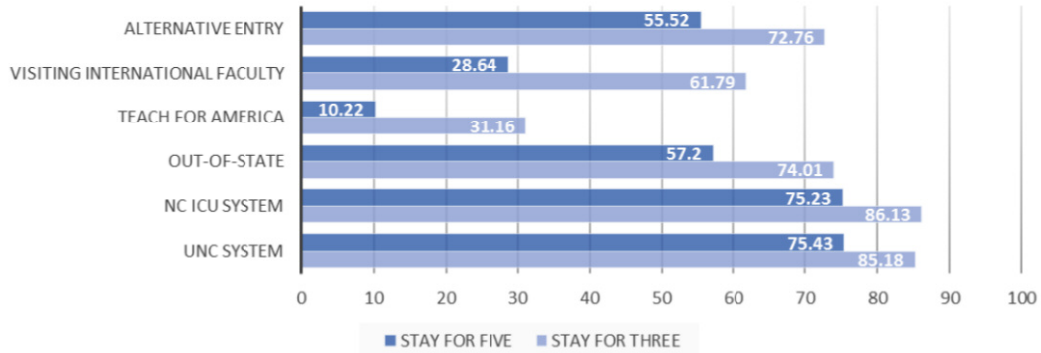
In many existing organizational structures, classroom teachers must pursue opportunities in school or district administration in order to advance within the profession. Remaining in the classroom does not afford them the opportunity to extend their reach. Using highly effective teachers in ways outside of the classroom, while allowing them to remain connected to the classroom, improves instruction in the school and promotes a culture of shared responsibility for improving student learning.

There is a need to redesign teaching roles to extend the impact of high-performing teachers. Models that help to retain teachers are those designed to increase teacher pay and provide new career paths within teaching. The return on investment is a high-quality teacher workforce, which results in high-quality student outcomes.



G.S.115C-12(22) 2013-2014 Annual report on Teachers Leaving the Profession Report to the North Carolina General Assembly.

Teacher Persistence in NC: New Teachers Employed for 3 Years and 5 Years



Source: Bastian, Kevin C. and Kristina M. Patterson. (2014). *Teacher Preparation and Performance in North Carolina Public Schools*. Education Policy Initiative at Carolina.

Teacher Turnover

Teacher turnover is expensive. The average cost of turnover is 150 percent of the departing employee's annual salary.⁵³ While this should cause concern, it ignores the most important part of turnover, which is the loss of "intellectual capital." The most talented teachers have the best chance of being hired away by other systems and organizations. The information on teacher turnover representing the reasons why teachers report that they leave is illustrative for policymakers. In 2013-2014, 13,557 teachers left their local school districts, resulting in an overall state turnover rate of 14.12 percent. This was marginally down from the 14.33 percent reported in 2012-2013 but still alarming.

Advancing Careers through Career Ladders

A recent survey of Generation Y teachers (i.e. those born between 1977-1995) found that nearly all Generation Y teachers planned to remain in the education field for life, but only half of them wished to remain classroom teachers for life.⁵⁴ Their view is that the only upward career trajectory resides outside of the classroom. Career ladders are one approach that allows for an extended scope of responsibility and recognition of professional growth, while allowing teachers to remain in the classroom.

Providing career growth ladders for teachers has multiple meanings in policy and practice. Developing a comprehensive strategy is critical to long-term success and sustainability, and ultimately improving student achievement.

Some states are addressing the issue through a change in policy, for example:

- **Iowa** | Policy includes steps for initial teacher, career teacher, model teacher, mentor teacher and lead teacher, and established the Commission on Educator Leadership and Compensation to monitor implementation and fidelity of the program across districts.
- **District of Columbia** | *Leadership Initiative for Teachers* (LIFT) is a five-stage career ladder that provides high-performing teachers with opportunities for advancement inside the classroom, as well as additional responsibility and increased recognition and compensation. Steps include teacher, established teacher, advanced teacher, distinguished teacher and expert teacher.
- **Idaho** | The legislature appropriated \$20,000 in 2014 to establish a committee to study the structure and funding of K-12 public schools including career ladders.⁵⁵
- **Minnesota** | The legislature enacted a law requiring the Board of Teaching and the Commissioner of Education to jointly convene and facilitate an advisory task force to develop recommendations for a statewide tiered licensure system.⁵⁶

In the 2012 MetLife survey, 51 percent of teachers responded that they were extremely or somewhat interested in taking on new roles and responsibilities.

Source: The MetLife Survey of the American Teacher: Challenges for School Leadership (2013).

Teachers who assume leadership roles perform a range of tasks, including observing colleagues in the classroom and providing feedback, leading professional development, and sharing curricular materials. Deploying highly effective teachers in this way improves instruction in the school and promotes a culture of shared responsibility for improving student learning. It also frees up valuable time for principals to fulfill other responsibilities. **These approaches represent rethinking and repositioning of teacher duties in schools.** Clearly articulated standards can assist in defining these roles and inform teacher-leader policy development. For example, the *Teacher-Leader Model Standards*, released in 2011, were designed to “encourage professional discussion about what constitutes the full range of competencies that teacher-leaders possess.”⁵⁷

For more, see The Hunt Institute’s publication: [Building Leadership in Schools](#).

- ¹ Carnevale, A., Smith, N., & Strohl, J. (2013). *Recovery: Job Growth and Education Requirements through 2020*. Washington, DC: Georgetown University Center on Education and the Workforce. Available at: <https://georgetown.app.box.com/s/tll0zxt0puz45hu21g6>
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- ⁹ UNC System data accessed from <https://old.northcarolina.edu/ira/ir/analytics/fresh.htm>. Selecting Freshman Performance Measures. Community College Data from North Carolina Community College System.
- ¹⁰ ACT. (2014). *The Condition of College and Career Readiness 2014: North Carolina*. Available at: <http://www.act.org/newsroom/data/2014/states/pdf/NorthCarolina.pdf>
- ¹¹ Kids Count Data Center. (2013). *Children in Poverty*. (Data Table) Baltimore, MD: Annie E. Casey Foundation. Available at: <http://datacenter.kidscount.org/data/tables/43-children-in-poverty-100-percent-poverty?loc=1&loct=2#ranking/2/any/true/36/any/322>
- ¹² Heckman, James. (2008). The Case for Investing in Disadvantaged Young Children. *Big Ideas for Children: Investing in Our Nation's Future* (pp. 49-58). Available at: <http://www.heckmanequation.org/sites/default/files/Heckman%20Investing%20in%20Young%20Children.pdf>
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