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Sound Basic Education for All: An Action Plan for North Carolina

Educator Supply, Demand, and Quality in North Carolina: Current Status and Recommendations

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I. Introduction

The *Leandro* court decision emphasizes children's rights to qualified teachers and principals who can provide a sound basic education that prepares students for college and careers and meets the needs of those placed at risk. Providing such high-quality educators for each child demands an adequate supply that is equitably distributed, along with supports for ongoing professional learning that enables educators to meet children's needs.

This study documents the current status of educator supply, demand, and quality in North Carolina for teachers and school leaders. It also examines current and past policies that influence teacher and leader development and supply in the state and makes recommendations for how to ensure that all children have access to well-prepared educators. In response to the *Leandro* tenets, this study focuses on:

» **Well-prepared teachers:** The research team evaluated the current levels and sources of teacher supply and demand in North Carolina schools. This includes mobility and attrition of teachers from different pathways and in different types of schools and parts of the state and the extent of access to fully prepared and experienced educators for all students, in particular those who have been historically underserved. The study also examines the qualifications and distribution of North Carolina teachers to schools/districts serving different populations of students, how these have changed over time, and what strategies for improving teacher capacity and effectiveness are available and most likely to be effective.

  In related papers, the research team examines learning opportunities for teachers and the professional environment for teaching as these relate to teachers' development, retention, and individual and collective effectiveness (Berry, Bastian, Darling-Hammond, & Kini, 2019; Minnici, Beatson, Berg-Jacobson, & Ennis, 2019).

» **Well-prepared leaders:** The research team examined the supply, demand, mobility, and attrition of principals and the extent to which they feel prepared for the challenges of leading schools that can reach and teach North Carolina's diverse students effectively. The study also identifies gaps in professional learning that can be addressed by state investments. Similar to the well-prepared teachers study, this study examines the state of equitable access to well-qualified leaders for all students, in particular those who have been historically underserved. Further, the study examines the qualifications and distribution of North Carolina leaders to schools/districts serving different populations of students, how these have changed over time, and the policies and conditions that appear to influence the supply and attrition of leaders.

A related paper digs more deeply into how school principals feel about their work, compensation, learning opportunities, strategies for school improvement, and current policies, with analysis based on a principal survey and focus groups and interviews of school leaders (Koehler, Peterson, & Agnew, 2019).

Data and Research Methods

The research methods for this study included analyses of existing administrative data sets, collection of perceptual data from teachers and principals through interviews and focus groups, and administration of a survey to a sample of all North Carolina principals. Since extensive state data are readily available, the researchers relied on several existing datasets as well as previous research for the analysis. Where possible, the research team used over 10 years of data to be able to examine changes over time and identify trends in educator workforce supply and demand.

Existing data sets included the following:

» The **North Carolina Education Research Data Center** (NCERDC) at Duke University houses data on every student, teacher, school, and district in the state since the mid-1990s. Many of these datasets are derived from administrative records collected by the North Carolina Department of Public Instruction (NCDPI), but the NCERDC also houses public-use datasets from other sources, such as the U.S. Census and U.S. Department of Education. These datasets include millions of students and teachers identified with unique identification numbers. The research team obtained NCERDC datasets from 2006 to the most recently available year (often 2016–2017) that include the following data:

- *Student and teacher demographics:* race, ethnicity, age, grade, limited English proficiency status, migrant status, homelessness status, free/reduced-price lunch eligibility;
- *School characteristics:* pupil-teacher ratio, counts of students eligible for free/reduced-price lunch, and the count of students by race, ethnicity, and grade;
- *School learning opportunities and resources:* Per-pupil expenditures, access to materials and technology, and access to student support staff;
- *Indicators of educator quality:* educational attainment, licensure type, experience, National Board certification;
- *Indicators of school working conditions:* Teacher Working Conditions Survey results, educator salary; and
- *Student outcomes:* End-of-Grade (EOG) and End-of-Course (EOC) exam achievement and growth, graduation rates, exclusionary discipline experiences.

These data allowed us to identify trends in teacher and leader supply and demand and the conditions in a range of districts and schools.

» The **Education Policy Initiative at Carolina** (EPIC) at the University of North Carolina (UNC) conducts research on educator quality, school effectiveness and equity, and post-secondary readiness, access, and completion. EPIC provided state data on preparation pathways, retention, and mobility of teachers,

as well as measures of school leader preparation, experience, supply, and mobility. These data allowed researchers to analyze student access to well-prepared teachers and leaders and also contributed to analyses of learning opportunities for economically disadvantaged students.

The research team also incorporated findings from a **survey of North Carolina principals**, developed by the Learning Policy Institute (LPI) and WestEd and administered in fall 2018. (See Appendix A for methodological details.)

The research team augmented these quantitative analyses with evidence from focus groups and interviews of teachers in a range of communities across North Carolina.

II. What Matters for Educator Recruitment and Retention

There is an extensive literature on the human capital system in North Carolina, including the quality and effectiveness of teachers who enter through different pathways, as well as those who are National Board certified (Clotfelter, Ladd, & Vigdor, 2007, 2010; Horoi & Bhai, 2018; Henry et al., 2014); the nature of working conditions across schools (Burkhauser, 2016; Clotfelter, Ladd, Vigdor, & Wheeler, 2007; Heissel & Ladd, 2016; Jackson & Bruegmann, 2009); and factors affecting attrition, including salaries (Mahler, 2018), working conditions (Clotfelter, Ladd, & Vigdor, 2011; Ladd, 2011; Ost & Schiman, 2015), and the effects on teacher turnover of the state's accountability system (Clotfelter, Ladd, Vigdor, & Aliaga-Diaz, 2004).

This literature underscores the findings of a broader national body of research that teacher experience and qualifications influence student achievement, especially with respect to the achievement of students of color and those from low-income families (Goldhaber, Quince, & Theobald, 2018; Ladd & Sorensen, 2015; Xu, Özek, & Hansen, 2015), and that it is both inequitably distributed and influenced by state policies.

There is also an extensive literature on the factors that influence teacher supply, demand, and shortages, which notes that a major influence on supply is the recent decline in teacher education enrollments, and a major influence on demand is attrition from the profession, accounting for nearly 90% of annual hiring needs (Sutcher, Darling-Hammond, & Carver-Thomas, 2016). A recent review of research on attrition underscores the importance of teachers' preparation and mentoring, on the one hand, and their salaries and working conditions, on the other, in predicting tenure in teaching (Carver-Thomas & Darling-Hammond, 2017). Among working conditions, teacher decision-making, collaboration, and administrative support stand out as critical factors influencing retention (Berry, Bastion, Darling-Hammond, & Kini, 2019; Carver-Thomas & Darling-Hammond, 2017).

Successful strategies for addressing shortages include policies that address teachers' costs of entry and quality of preparation, as well as their compensation (in various forms, ranging from wages and benefits to loan forgiveness and housing supports) and teaching supports, including coaching and mentoring, as well as the availability of necessary materials and supplies (Podolsky, Kini, Bishop, & Darling-Hammond, 2016).

There is a similar literature on recruiting and retaining principals. A recent summary of this research (Levin & Bradley, 2019) points to five reasons that principals leave their jobs, aside from retirement, much aligned with research on teacher attrition:

1. **Inadequate preparation and professional development.** Several elements of professional learning opportunities are associated with principal retention: high-quality preparation programs that carefully select and deeply prepare principals for challenging schools; access to in-service training, mentoring, and coaching programs that continue to support and develop principals; and collaborations between professional learning programs and school districts.

2. **Poor working conditions.** A number of conditions can influence principals' decisions about employment including: access to support; the complexity of the job and amount of time needed to complete all necessary activities; relationships with colleagues, parents, and students; and disciplinary climate.

3. **Insufficient salaries.** Salaries matter to principals in choosing new positions and in deciding whether to stay. Low salaries that do not adequately compensate principals and are not competitive with other jobs lead to higher rates of principal departure.

4. **Lack of decision-making authority.** Principals are less likely to leave their positions when they believe they have greater control of their work environment and the ability to make decisions across a range of issues, such as spending, teacher hiring and evaluation, and student discipline.

5. **High-stakes accountability policies.** Counter-productive accountability policies that create disincentives for principals to remain in low-performing schools can influence principals' mobility decisions.

This research points us to these factors as critical elements of the current North Carolina landscape to examine and address.

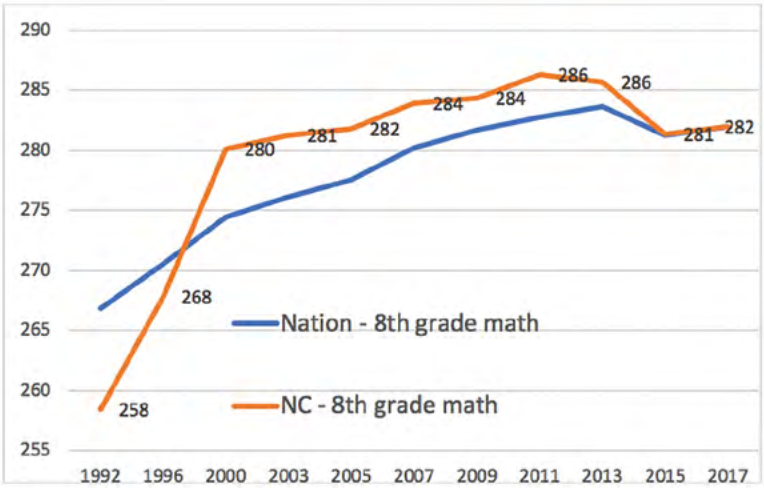
III. Context: An Historical Perspective

North Carolina was recognized during the 1980s and 1990s as an example of how state policy makers could turn a state around by making strong investments in teachers' knowledge and skills, along with standards for students and teachers, and in early childhood support and education. It was extensively studied by the National Education Goals Panel when its efforts resulted in sharp increases in student performance and reduction in the achievement gap.

During the 1990s, North Carolina posted the largest student achievement gains of any state in mathematics, and it realized substantial progress in reading, becoming the first southern state to score above the national average in fourth grade reading and math, although it had entered the decade near the bottom of the state rankings. Of all states during the 1990s, it was also the most successful in narrowing the minority-White achievement gap (National Education Goals Panel, 1998). In 2007, it remained the top-scoring southern state in mathematics, ranking on a par with states like Idaho and Maine, which had many fewer economically disadvantaged and minority students. (See Exhibit 1.)

However, cutbacks that began during the recession after 2008 and much deeper legislative cuts over the last few years have eliminated or greatly reduced many of the programs put in place during this time and have begun to undermine the quality and equity gains that were previously made. Declines in achievement have occurred since 2013 in mathematics and reading on the National Assessment of Educational Progress (NAEP), and achievement gaps have widened.

Exhibit 1. North Carolina achievement trends (8th grade mathematics)



For example, on the NAEP, between 2015 and 2017 the gap between Black and White students in both eighth grade mathematics and reading grew. In math, the gap increased substantially, from 29 to 37 points.[1] In reading, the gap grew from 24 to 28 points as both groups of students declined, but Black students' scores fell further.[2]

Investments in Teaching[3]

North Carolina's reforms were launched with omnibus legislation in 1983, toward the end of Governor James B. Hunt's first two-term stint in office, as part of his strong commitment to lift North Carolina up from the status of a low-spending, low-achieving state, like others in the Southeast at that time. The Elementary and Secondary School Reform Act, which enhanced school funding, also upgraded curriculum expectations for students; increased standards for entering teaching and school administration; increased standards for educator certification and for the approval of schools of education; created expectations for local schools for staffing, evaluation of personnel, class sizes, and instructional time; established the principle of salary differentiation by teachers' education and performance, as well as seniority; authorized a new scholarship program to recruit talented individuals into teaching; and encouraged expanded professional development. This bill laid the groundwork for a series of initiatives throughout the 1980s, which were expanded further in the 1990s.

Following the omnibus act in 1983, the state increased licensing requirements for teachers and principals, requiring tests of subject matter and teaching knowledge, as well as stronger training. It also required all publicly funded schools of education to become professionally accredited by the National Council for the Accreditation of Teacher Education, which caused many colleges to have to improve their curriculum and increase their investments in preparing teachers in order to stay in business.

1 White student scores increased from 292 to 295, whereas Black students' scores decreased from 263 to 258.

2 White students' scores fell from 272 to 271, whereas Black students' scores fell from 248 to 243.

3 This section draws on *The Flat World and Education: How America's Commitment to Equity Will Determine Our Future* (Darling-Hammond, L, 2010).

The state also developed teacher development initiatives like the Mathematics and Science Education Network (NC-MSEN), which was aimed at improving the quality of mathematics and science teaching and learning through a variety of programs. Through ten centers located on campuses of The University of North Carolina and one center located at The North Carolina School of Science and Mathematics, NC-MSEN trained teacher leaders and coaches as well as offered annual institutes.

While NC-MSEN has been defunded, the NC-MSEN Pre-College Program continues to operate today and supports enrichment for middle and high school students to increase the pool of students who graduate from North Carolina's high schools prepared to pursue careers that require mathematics and science. The state's strong achievement gains in mathematics are often attributed to this and other initiatives. Professional development initiatives were also undertaken across subject areas, including instructional support for reading, the National Writing Project, and supports for using technology.

To ensure that good candidates could be recruited and could afford to enter teaching, the state launched an aggressive fellowship program to recruit hundreds of able high school students into teacher preparation each year by entirely subsidizing their college education. The highly selective North Carolina Teaching Fellows program — launched in 1986 and still in operation in a modified form at a reduced level today — paid all college costs, including an enhanced and fully funded teacher education program, in return for several years of teaching. The program expanded the teaching pool by bringing a disproportionate number of males, minorities, and math and science teachers into the profession. One study found that, after seven years, retention rates in teaching for these recruits exceeded 75%, with many of the other alumni holding positions as principals or central office leaders (National Commission on Teaching and America's Future, 1996). Another found that Fellows were among the most effective teachers in North Carolina, even more than other effective graduates of the UNC systems (Henry, Bastian, & Smith, 2012).

To keep teachers in the profession, North Carolina also launched one of the nation's first beginning teacher mentoring programs, in the 1980s, offering support to new teachers and financial incentives for mentor teachers. This program was expanded during the 1990s. The state was recognized in a 1998 report by the National Education Goals Panel for having made among the greatest gains in teacher mentoring of beginning teachers as well as the greatest achievement gains for students (National Education Goals Panel, 1998). These efforts were supplemented by professional development academies and a North Carolina Center for the Advancement of Teaching (NCCAT), which offers additional help to novice teachers for learning to teach the state curriculum. To make teaching a more attractive profession and to recruit individuals who could meet the new, higher standards, North Carolina boosted salaries in the mid-1980s and again in the 1990s.

In another major round of reform, the 1997 Educational Excellence Act furthered efforts to upgrade the quality of teacher preparation and of teaching quality, pouring hundreds of millions of dollars into a new set of initiatives. The act created a professional standards board for teaching and required that all colleges of education create professional development school partnerships as the sites for yearlong student teaching practicums. It also funded a more intensive beginning teacher mentoring program, further upgraded licensing standards, created pay incentives for teachers who pursue master's degrees and National Board certification, and authorized funds

to raise teacher salaries to the national average, which was once viewed as dauntingly far off, but which the state was able to achieve.

With a statewide minimum salary schedule, North Carolina was able to make sweeping changes within the schedule and was the first state to add an increase of 12% to the base salary of all teachers who were able to achieve the distinction of Board certification — a ground-breaking initiative to establish performance pay based on teachers' competence in the classroom.

National Board certification, an accomplishment for which veteran teachers are eligible, is awarded based on the submission of a structured portfolio of evidence about practice — including videotapes illustrating specific practices, student work samples, and teacher commentaries that provide analyses of teaching intentions, rationales, and outcomes — as well as tests of content and pedagogical knowledge in the area of the certification. In addition to the fact that teachers' performance on this measure has been found in most studies to predict their effectiveness in supporting learning gains for students (Bond, Smith, Baker, & Hattie, 2000; Cavaluzzo, 2004; Goldhaber & Anthony, 2007; Smith, Gordon, Colby, & Wang, 2005; Vandevoort, Amrein-Beardsley, & Berliner, 2004), teachers often find it one of the most powerful professional learning experiences they have ever had (Haynes, 1995; Bradley, 1994; Areglado, 1999; Buday & Kelly, 1996). North Carolina introduced the most wide-ranging set of incentives in the nation for teachers to pursue National Board certification and now boasts more Board-certified teachers than any other state.

A North Carolina study joined studies in several other states finding that student achievement gains were significantly greater for students whose teachers were National Board certified, as well as for those whose teachers had the strong academic and teaching preparation and lengthier experience in teaching that the state's policies have tried to leverage (Clotfelter, Ladd, & Vigdor, 2007).

Investments in School Leadership

In its second wave of reforms, North Carolina also launched one of the nation's most ambitious programs to improve school leadership training. The state's Principal Fellows Program was launched in 1993 to attract outstanding aspiring principals. The program provides competitive, merit-based scholarship loans to individuals seeking a master's degree in school administration (MSA) and a principal position in North Carolina public schools. In their first year, Fellows receive $30,000 to assist them with tuition, books, and living expenses while they study full-time. In their second year, Fellows receive an amount equal to the salary of a first-year assistant principal, as well as an educational stipend, and undertake a full-time internship in a school where they work under the supervision of a veteran principal who serves as a coach and mentor (N.C. Gen. Stat. § 116-74.41-43 (2017); University of North Carolina Academic and University Programs Division, 2015). Fellows' yearlong internships can provide meaningful and authentic learning opportunities that research indicates are critical in principal development (Sutcher, Podolsky, & Espinoza, 2017). Fellows are required to maintain employment as a principal or assistant principal in North Carolina for four years to repay their scholarship loan.

As of 2015, 1,300 Fellows had completed the program. Research on the effectiveness of graduates who go on to serve in schools found that Fellows have more positive impacts on student absences, teacher retention, and school working conditions than other UNC MSA graduates and all other North Carolina principals (Bastian & Fuller, 2015; University of North Carolina Academic and University Programs Division, 2015). Nearly 90% of principal Fellows graduated and completed their four-year service commitment (Bastian & Fuller, 2015). Currently, the state plans to invest $3.2 million a year over the next two years in the North Carolina Principal Fellows Program (North Carolina Office of State Budget and Management, 2017).

The Principal Fellows Program supplemented existing state investments in the Principals' Executive Program (PEP), which provided a stable source of learning opportunities for school leaders over a quarter century beginning in 1984. Located at UNC-Chapel Hill, PEP offered continuing education for principals in North Carolina through residency programs as well as topical courses, seminars, and conferences. In a national study of leadership development, North Carolina's principals rated the helpfulness of the university courses and research opportunities they experienced as extraordinarily helpful and significantly more highly than their peers nationally (Darling-Hammond, Meyerson, LaPointe, & Orr, 2010).

A study of high-minority, low-income schools that were rapidly closing the achievement gap found that key factors included collegial leadership providing instructional focus and extensive professional development supports, especially in writing; regular diagnostic assessments, with data analyzed for different grade levels and groups of students at the school level to focus improvement efforts; use of technology resources in teaching core academic skills; and one-on-one tutoring, as well as small-group work in classrooms (National Center for Education Statistics, 2001).

Recent Challenges

A combination of substantial investments in early learning and K–12 education — coupled with raised standards for students, teachers, and school leaders and supports for professional learning — helped to improve student achievement in North Carolina and reduced the achievement gap over a period of nearly three decades.

However, there have been recent challenges and changes of course. As accountability sanctions grew increasingly severe after 2002, North Carolina studies found that the state accountability program's strategy of sanctioning low-performing schools — most of which serve economically disadvantaged and minority students in communities that have fewer resources — made it even more difficult for these schools to attract and retain qualified teachers (Clotfelter, Ladd, Vigdor, & Aliaga-Diaz, 2004) and that the associated recruitment of untrained teachers into these hard-to-staff schools through the state's lateral-entry route had strong negative effects on student achievement (Clotfelter, Ladd, & Vigdor, 2007; Henry et al., 2014).

These concerns caused renewed attention to school funding disparities. In 2004, the North Carolina Supreme Court found that the state's funding system does not comply with the constitutional mandate "of ensuring that all children of the state be provided with the opportunity for a sound basic education" (Hoke County Bd. of Educ. v. State, 2004). The Court affirmed the trial court's decision calling for a "competent, certified, well-trained teacher

who is teaching the standard course of study by implementing effective educational methods" in every classroom and "a well-trained competent principal with the leadership skills and the ability to hire and retain competent, certified and well-trained teachers who can implement an effective and cost-effective instructional program" in every school, supported by adequate resources to provide a sound, basic education (Hoke County Bd. of Educ. v. State, 2002).

In response to the Court's order that these needs be addressed by the legislature, the state's 2006–07 budget included a nearly 10% increase in K–12 education spending, with more money for low-wealth districts, a salary increase for teachers and administrators, and statewide expansion of a pilot program for disadvantaged students. An additional $17.9 million in lottery proceeds were also earmarked to expand the More at Four pre-kindergarten program (National Access Network).

That progress, however, was not sustained as the recession deepened and political changes occurred. As Exhibit 2 shows, many of the programs that were responsible for the state's strong gains in achievement prior to 2011 have been eliminated or sharply cut back.

Exhibit 2. Policy changes associated with educator supply and quality in North Carolina

Year	Policy Domain	Policy	Current Status
Mid-1980s	Teacher education	State-funded state universities to extend pre-service clinical teaching programs and strengthen the induction of new teachers in their first two years.	No formal support for university support of its graduates currently exists.
1997	Teacher education	State-funded USTEP (school-university partnership). Approximately $175,000 to $225,000 per year per institute of higher learning (IHE).	Funding folded into campus general allocations years ago. No formal investments in teacher education remain.
Late 1980s–2010	Teacher recruitment & education	State-funded Teaching Fellows, supporting service scholarships for up to 500 academically able high school students annually to prepare and teach for at least four years; forgivable scholarship program paid for full cost of college tuition for prospective teachers, plus more intensive preparation and summer enrichment experiences. More than 8,500 became teachers; and 80% remained employed in North Carolina schools after completing their initial four-year teaching requirement.	In 2011, the program was eliminated. In 2018, the state reinstated a scaled-back version of the program, with $6 million to serve 160 teacher candidates annually. Only $8,250 per year per candidate allocated for tuition, with no special training.
Mid-1980s	New teacher mentoring	Required two-year mentor program for all new recruits; expanded to three years.	Mentoring remains required by statute.

Year	Policy Domain	Policy	Current Status
Mid-1990s	New teacher mentoring	Funded mentoring at $1,000 per new recruit. North Carolina was one of 10 states to also offer stipends to mentors. In the mid-1990s, North Carolina piloted a three-year, performance-based licensure program involving a portfolio "product," mentoring, and classroom observations. By 2001, the state was investing $500,000 annually.	The portfolio was defunded in 2008. The mentoring payments were defunded in 2010. Now the state only spends a total of $2.2 million, serving about 1,000 new teachers annually — less than 10% of inexperienced teachers (fewer than three years of experience).
Mid-1990s through 2009	Teacher salaries	From 1996 to 2000, the state invested an additional $1.4 billion in teacher salaries. Between 2005 and 2009, the state invested an additional $1 billion in teacher salaries. By 2008–09 average teacher pay in North Carolina was ranked 25th in the nation.	Beginning in 2008, step increases were frozen (and master's pay eliminated). By 2013, the average pay had fallen to 47th in the nation. With raises beginning in 2014–15, teacher pay is back up to 34th in the nation.
1985	Professional development	The state created the NCCAT to provide innovative support to veteran teachers through weeklong residential programs to conduct research and develop leadership skills. Up to 5,000 teachers a year were served. By 2006, state funding had grown to $7 million annually.	In 2011, budget was cut by more than 50%, $3 million, and the program changed dramatically.
Mid-1990s	Professional development	Teacher Academy established to support professional development for teachers and administrators; by 2010, its annual budget had grown to $4.7 million, and it had begun to customize professional development for teachers and administrators in *Leandro* schools and districts per their school improvement plans.	Defunded in 2010. In 2008–09 the state spent $9.78 per student for professional development. Now eliminated.
2002	Professional development	Coach2Coach program supported university and K–12 teachers to learn together.	Eliminated.
1998	Recognized accomplished teaching: master's degree	10% base salary increase for a standards-based master's degree.	In 2010, state no longer pays for advanced degree. In February 2019, Senate Bill 28 was filed and would restore master's pay for teachers (if tied to subject being taught).
1994–1998	Recognized accomplished teaching: National Board certification	In 1994, state paid 4% salary increase for National Board–certified teachers (NBCTs); in 1998, base salary was increased to 12% (plus $2,500 assessment fee paid by the state, along with three additional professional development days); state has largest number of NBCTs teaching in the nation by early 2000s.	State pays 12% supplement; but no longer supports additional professional development or assessment fee. State recognizes NBCTs with eight CEU credits (2 for renewal).

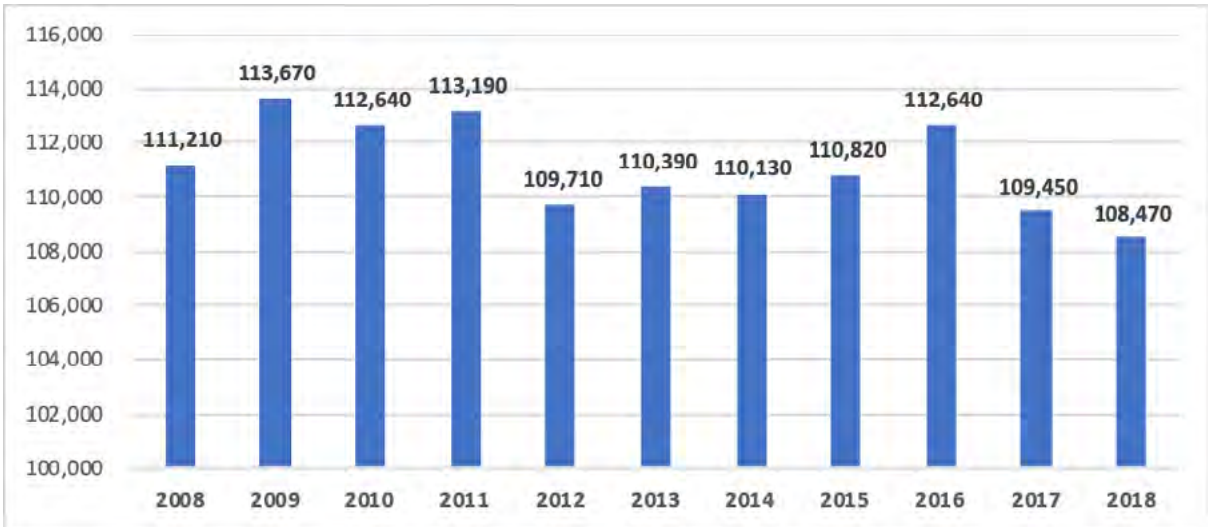
For example, in 2011, the legislature cancelled the state's very successful North Carolina Teaching Fellows program, which was a long-standing and highly successful service scholarship program. A longitudinal study of the prior version of the program, which was in place from 1986 to 2015 and recruited nearly 11,000 candidates into teaching, found that these Fellows not only had higher rates of retention compared with their peers, but they were also generally more effective educators as measured by test score gains of their students (Henry, Bastian, & Smith, 2012; Podolosky & Kini, 2016). A new version of the program, recently reinstated, is smaller and less comprehensive in both the range of recruits and the nature of the program they receive.

IV. Findings: The Current Status of Teaching in North Carolina

North Carolina has gone from having a very highly qualified teaching force, as recently as a decade ago, to having one that is extremely uneven in terms of the numbers of candidates, the quality of their preparation, particularly for teaching in high-poverty schools, and the extent to which they have met any standards at all before they enter teaching.

The total number of teachers employed in North Carolina has declined from an historic high of 113,670 in 2009 to 108,470 in 2018, a 5% drop over that time, largely due to budget cuts. (See Exhibit 3.) Over the same time period, enrollment in traditional public schools and charters schools increased by 2% (Public Schools of North Carolina, 2009; Public Schools of North Carolina, 2017).

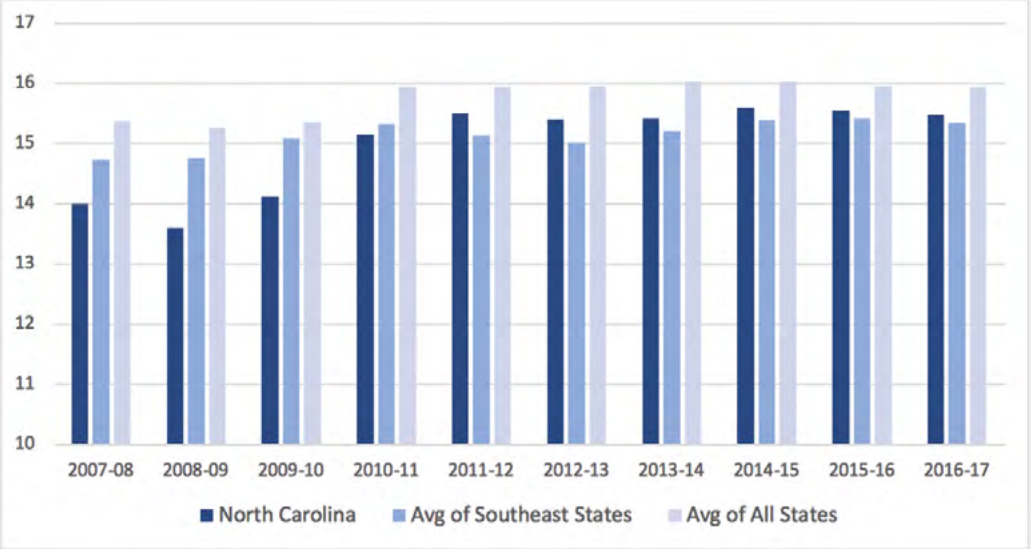
Exhibit 3. Teacher employment in North Carolina, 2008 through 2018



Source: Bureau of Labor Statistics, Occupational Employment Statistics. Retrieved from https://www.bls.gov/oes/tables.htm#2010. (All years include kindergarten, elementary, middle, and secondary regular teachers, special education teachers, and career/technical education teachers; years 2008–2011 also include pre-school special education teachers.)

As teacher employment has fluctuated over the years, so has the ratio of students to teachers. The largest increase in the number of pupils per teacher occurred between 2008–09 and 2010–11 as the Great Recession began. Although North Carolina had a smaller pupil-teacher ratio than other southeastern states until 2011, the reverse has been true in each of the years since. (See Exhibit 4.) The reduction in teacher employment and the increase in pupil-teacher ratios is directly related to the concurrent reduction in school funding in the state.

Exhibit 4: Pupil-teacher ratio, 2007–08 through 2016–17



Even though there has been a reduction in the size of the teacher workforce, the state has experienced increased difficulty recruiting and retaining qualified teachers, and many schools are unable to staff their positions appropriately.

Teacher Shortages

To estimate the extent of teacher shortages, the NCDPI tallies teacher vacancies each year, defining a vacancy as:

> *… an instructional position (or a portion thereof) for which there is not an appropriately licensed teacher who is eligible for permanent employment. Instructional positions that are filled with long-term substitutes, retired teachers, or provisionally licensed teachers would be counted as vacant by the LEA, because these employees are not lasting solutions to the vacancy issue and are only stop-gap measures (in most cases) employed by the LEA until a full-time, permanent, fully-licensed teacher can be found. Because of the Department's approach to defining teacher vacancy, one should not assume that positions listed as vacant lack a teacher, but that the position is being covered by the best possible interim teacher until the LEA can realize a more appropriate solution. (Public Schools of North Carolina, 2018, p. 22)*

The state reported 1,621 unfilled teacher vacancies for the school year 2017–18, with the greatest numbers in positions for teachers of exceptional children at all levels, elementary teachers, math teachers, and career /

technical educators. (See Exhibit 5.) In 2017–18, local education agencies (LEAs) reported 1,562 vacancies still unfilled on the first day of school (nearly 2% of all positions) and 1,555 unfilled on the 40th instructional day (Public Schools of North Carolina, North Carolina State Board of Education, & North Carolina Department of Public Instruction, 2018). According to the state report, many of the positions vacant on the 40th instructional day are different from vacancies reported on the first day of school, suggesting that teacher vacancies caused by teacher turnover are an ongoing challenge. Vacancy rates were as high as 12.6 % in Anson County Schools (Public Schools of North Carolina, North Carolina State Board of Education, & North Carolina Department of Public Instruction, 2018). (See Exhibit 6.) Of the six LEAs with the highest vacancy rates, four are in the northeastern part of the state, where shortages have been severe and five are among the highest-poverty counties, where 25% or more members of the community live below the poverty line.

Exhibit 5. Statewide total vacancies for subjects by school level, 2017–18

Subject Area	School Level	Number of Vacancies
Core (Math, English Language Arts, Science, Social Studies)	K–5	604
Exceptional Children	K–5	159
Math	6–8	106
English Language Arts (ELA)	6–8	87
Science	6–8	65
Social Studies	6–8	42
Exceptional Children	6–8	94
Math	9–12	95
ELA	9–12	69
Science	9–12	54
Social Studies	9–12	30
Exceptional Children	9–12	103
Career/Technical Education	9–12	113

Source: NCDPI, 2017–2018 State of the Teaching Profession in North Carolina (Report # 70).

Exhibit 6. LEAs with the highest teacher vacancy rates in North Carolina, 2017–2018

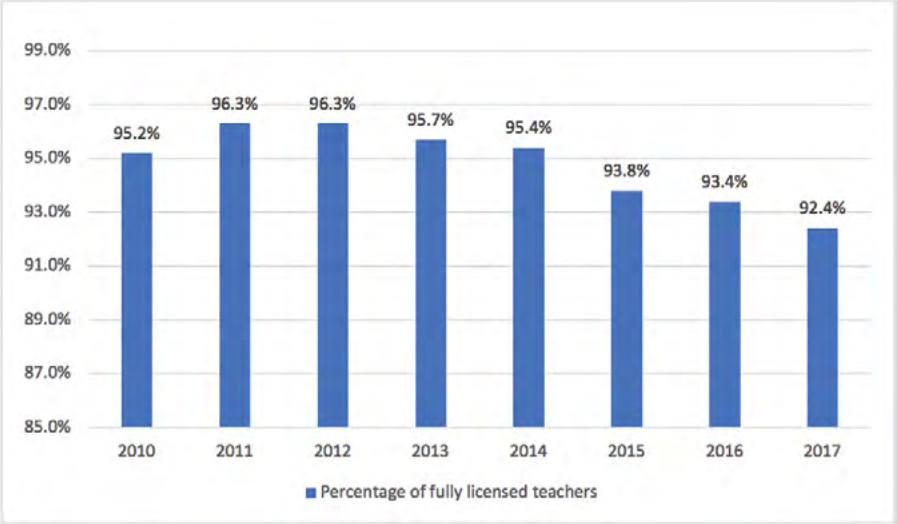
LEA Name	Teacher Vacancy Rate
Anson County Schools	12.6%
Northampton County Schools	12.0%
Warren County Schools	10.7%
Mitchell County Schools	10.1%
Elizabeth City–Pasquotank Schools	9.9%
Edenton-Chowan Schools	8.9%

Source: Public Schools of North Carolina, State Board of Education, Department of Public Instruction. Report to the North Carolina General Assembly, 2016–2017 State of the Teaching Profession in North Carolina, General Statute § 115C-12(22). Raleigh, NC. North Carolina Department of Public Instruction, p. 24, Table 12.

As noted above, although many vacancies are literally left unfilled, leaving courses untaught or class sizes increased, many others are filled by substitutes or by recruits who have not been prepared for teaching. The proportion of teachers in North Carolina who are not fully licensed has more than doubled since 2011, from 3.7% to 7.6%, and underprepared teachers are inequitably distributed throughout the state. (See Exhibit 7.) Whereas 92% of teachers are fully licensed overall, this statistic masks considerable variation among schools across the state, with differences among regions, types of communities (urban, rural, and suburban), and school poverty levels. For example, in low-poverty schools (with fewer than 25% of students receiving free and reduced-price lunch), 94% of teachers are fully licensed. However, in high-poverty schools (with greater than 75% of students receiving free and reduced-priced lunch), only 80% of teachers are fully licensed.[4]

4 LPI analysis of NCDPI datasets.

Exhibit 7: Percentage of fully licensed teachers in North Carolina



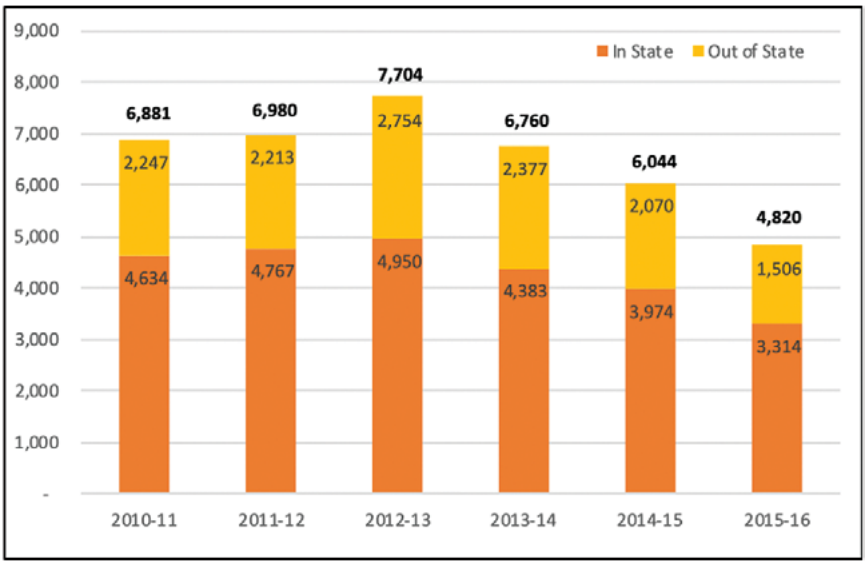
Source: North Carolina Department of Instruction, North Carolina School Report Cards. Retrieved from https://ncreportcards.ondemand.sas.com/SASVisualAnalyticsViewer/VisualAnalyticsViewer_guest.jsp?reportPath=/ReportCard/NC_SRC&reportName=NC+Report+Cards

When districts are unable to find qualified recruits in the spring or summer and hire near or after the school start date, studies show that the overall effectiveness of the recruits is generally lower, likely because of both the quality of the recruits hired and the disruption that occurs when teachers are not on board at the beginning of the school year (Papay & Kraft, 2016).

Teacher Supply

As the number of teachers in the workforce has declined, so has the supply of credentialed individuals. The number of teachers receiving an initial credential, from either in-state or out-of-state programs, has been decreasing since 2012–13. The total number of credentials issued decreased by 30% over the past five years (from 6,881 total credentials in 2010–11 to 4,820 in 2015–16), with the numbers awarded to both in-state and out-of-state teachers shrinking. (See Exhibit 8.)

Exhibit 8. Teachers credentialed from in-state and out-of-state, 2009–10 to 2015–16



Source: 2017 Title II Reports. (n.d.). North Carolina Section I.g Credentials Issued. Retrieved from https://title2.ed.gov/Public/Report/FullReport/FullReport.aspx?p=3_17

Enrollments in traditional teacher education programs declined by more than 50% between 2008–09 and 2015–16, whereas enrollments in alternative, non-IHE-based preparation programs more than tripled between 2010 and 2015–16. There were no enrollments in such programs prior to 2010. Of 15,649 enrollees in teacher preparation in 2015–16, nearly half (7,216) were enrolled in alternative programs, most of them in programs not associated with IHEs. (See Exhibit 9.) The largest numbers are in what the state calls its "lateral-entry program."

North Carolina defines the lateral-entry program as an alternate route to teaching for qualified individuals outside the public education system. Lateral entry allows individuals who have passed a content area test and been hired by a district to obtain a teaching position and begin teaching immediately upon hire while taking coursework toward a credential under the guidance of an IHE or a regional alternative licensing center. The NCDPI authorizes three-year lateral-entry professional educator's licenses on a provisional basis (Public Schools of North Carolina, 2017).

Exhibit 9. Teacher preparation enrollments by program type, 2008–09 to 2015–16

Year	Total Enrollment	Traditional Program Only	Alternative, IHE-Based Programs Only	Alternative, Non-IHE-Based Programs Only
2015–16	15,649	8,433	1,291	5,925
2014–15	14,932	8,870	1,467	4,595
2013–14	14,316	8,764	1,530	4,022
2012–13	13,716	8,741	1,526	3,449
2011–12	20,245	13,470	3,653	3,122
2010–11	18,551	15,800	0	2,751
2009–10	16,610	16,610	0	0
2008–09	16,902	16,902	0	0

Source: 2017 Title II Reports. (n.d.). North Carolina State Enrollment Information. Retrieved from https://title2.ed.gov/Public/Report/StateHighlights/StateHighlights.aspx?p=2_01

However, these alternative-route candidates do not appear to graduate and become credentialed at high rates. As Exhibit 10 shows, candidates from traditional programs are just over half of all "enrollees" (54%), but they are 76% of all completers. As lateral-entry candidates only need to take six credits per year, they can be in practice without having completed their training for up to six years, the length of time allowed for those holding a provisional professional educator's license, including renewals.[5] Furthermore, all categories of alternative-route candidates have significantly higher attrition rates than traditional candidates, as shown in the next section.

Exhibit 10. Teacher preparation completers by program type, 2013–14 to 2015–16

	2013-14	2014-15	2015-16
Traditional	4262	3666	3202
Alternative, IHE-based	794	544	548
Alternative, not IHE-based	460	465	474
Total	**5516**	**4675**	**4224**

Source: 2017 Title II Reports. (n.d.). North Carolina State Completer Information. Retrieved from https://title2.ed.gov/Public/Report/StateHighlights/StateHighlights.aspx?p=2_02

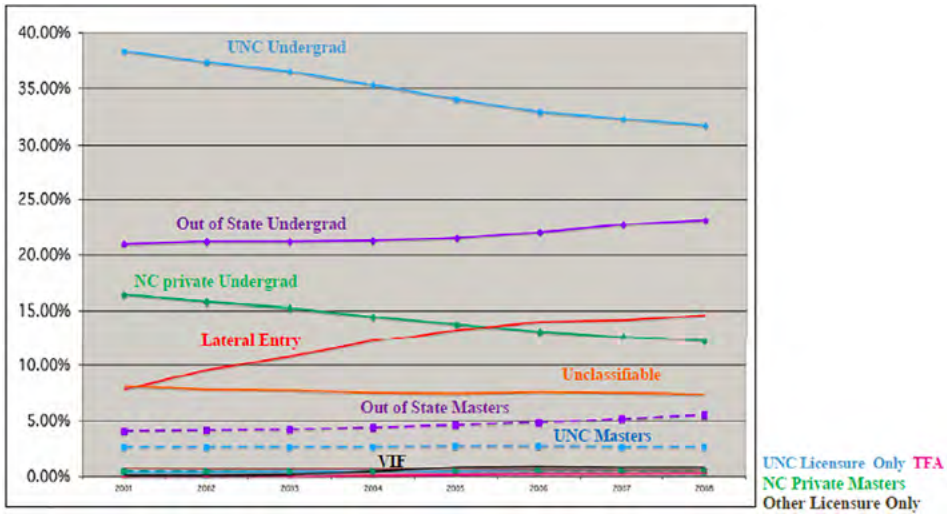
Sources of Teachers

Over time, the sources of teacher supply have shifted significantly for North Carolina, with fewer of the state's teachers coming from the in-state formal preparation system and proportionately more coming from out-of-state

5 Alternative-route candidates are issued a three-year lateral-entry provisional professional educator's license. They can renew this provisional license three times, for one year each time. https://title2.ed.gov/Public/Report/FullReport/FullReport.aspx?p=3_28

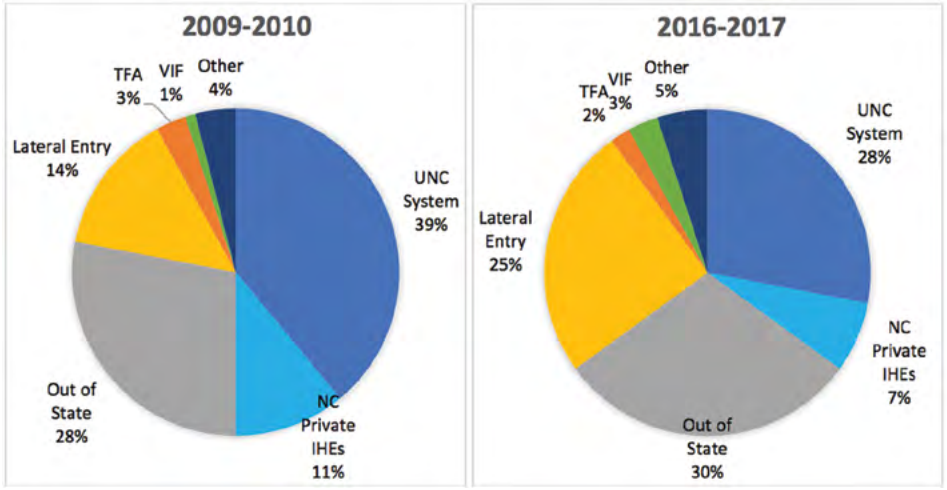
sources or alternative routes. In 2001, nearly 60% of all new entering teachers were prepared in North Carolina, and fewer than 10% were uncertified upon entry. (See Exhibit 11.) By 2010, 50% of all teachers were prepared in state, 29% were prepared out of state or were Visiting International Faculty (VIF) teachers, and 17% came through alternative routes. By 2016–17, only 35% of all teachers teaching in North Carolina received in-state teacher preparation, most by the UNC system (28%), with the remainder by private universities (7%). Thirty-two percent of teachers were prepared out-of-state or were VIF teachers, and 27% came through alternative routes (including 2% from Teach for America). (See Exhibit 12).

Exhibit 11: Trends in teacher entry pathways, 2001–08



Source: Henry, G. T., Purtell, K. M., Bastian, K. C., Fortner, C. K., Thompson, C. L., Campbell, S. L., & Patterson, K. M. (2014). The Effects of Teacher Entry Portals on Student Achievement. Journal of Teacher Education 2014, 65*(1) 7–23.*

Exhibit 12. Preparation pathways of new teachers, 2009–10 and 2016–17



Source: Education Policy Initiative at Carolina, University of North Carolina analysis of NCDPI data sets

These changes in the sources of teacher supply are important because there are major differences in the effectiveness and retention of teachers from these different pathways. A study by Henry and colleagues found that North Carolina prepared teachers were generally significantly more effective than those prepared out-of-state. This may be in part related to the reforms described earlier, which required North Carolina schools of education to become nationally accredited and leveraged much stronger licensing and teacher education practices in North Carolina. The goal was to produce more effective graduates, and that has generally been the outcome.

Meanwhile, lateral-entry teachers other than the small proportion who are Teach for America (TFA) recruits, were significantly less effective than teachers who had been prepared before entry. The study noted, as well, that first- and second-year teachers were less effective than those with greater experience: Elementary school math students taught by novices lost the equivalent of 21 days of schooling, and middle school math students taught by novices lost the equivalent of 47 days of school. Students taught by out-of-field teachers lost ground in reading/English, math, and science, and high school students taught by teachers with supplemental master's degrees gained achievement in English and math (Henry et al., 2014). Other research by Clotfelter, Ladd, and Vigdor (2007) at Duke University found similar trends, with stronger achievement gains for students whose teachers were fully certified, more experienced, and National Board certified.

As described in a later section, candidates prepared in UNC institutions also stay in teaching at much higher rates than those from any other pathway, and lateral-entry teachers leave at much higher rates than those in other pathways. A steep decline in the proportion of teachers who are more effective and most likely to stay in their teaching is clearly a problematic trend.

Teachers of Color

After a severe drop between 2012 and 2013, it is encouraging that more teachers of color have been enrolling in preparation lately, comprising about 30% of all enrollees in 2015–16. (See Exhibit 13.) Most of the increase has been for Hispanic/Latinx teachers and those identifying as two or more races. However, many candidates of color (Native American, Black, and Pacific Islander) are disproportionately enrolled in alternative pathways (see Exhibit 14), placing them at much greater risk for failing to receive a credential and for later turnover, as both national and North Carolina data show (see below) (Carver-Thomas & Darling-Hammond, 2017).

These teachers are an important resource, as recent research has found a positive impact of having a same-race teacher on the long-run achievement and attainment of students of color, particularly for Black students (e.g., Dee, 2004; Gershenson, Hart, Lindsay, & Papageorge, 2017). Several studies in North Carolina have found positive effects of having Black teachers on Black students' achievement (Clotfelter et al., 2007; Goldhaber & Hansen, 2010; Egalite, Kisida, & Winters, 2015).

In addition, a 2017 study of longitudinal student data in North Carolina and Tennessee found that Black students who were assigned to a class with a Black teacher at least once in third, fourth, or fifth grade were less likely to drop out of high school and more likely to aspire to go to college (Gershenson, Hart, Lindsay, & Papageorge, 2017). In North Carolina, having at least one Black teacher in grades three to five cut the high school dropout rate in half for Black boys. Black boys from low-income families were 39% less likely to drop out of high school

than those who had never had a Black teacher. For Black students identified as "persistently low-income" who received free or reduced-price lunch every year of grades three through eight, having a Black teacher increased their intentions of going to college by 19%, and by 29% for Black boys specifically. Notably, Black teachers tended to have similar, though somewhat smaller, effects on non-Black students.

Two other North Carolina studies found that, in addition to academic benefits, students of color can experience social-emotional benefits from having teachers of color, with fewer unexcused absences and fewer suspensions or expulsions, especially for such subject judgments as "willful defiance" (Holt & Gershenson, 2015; Lindsay & Hart, 2017). Non-Black students also had lower likelihoods of discipline when taught by a Black teacher, though the effect was less extreme than for Black students.

Scholars suggest that there might be a variety of reasons for these positive educational experiences, including role-model effects, higher expectations, the ability to offset stereotype threat for students of color, cultural awareness, instructional supports, and advocacy for students.

Exhibit 13. Teacher preparation enrollments by race, 2010–11 to 2015–16

Year	Native American/ Alaska Native	Asian	Black	Native Hawaiian/ Pacific Islander	2+ Races	Hispanic/ Latinx	Total Candi-dates of Color	White
2015–16	193	176	2,908	9	346	450	4082	9,660
2014–15	213	169	2,502	11	328	436	3659	9,309
2013–14	216	144	2,240	12	184	382	3178	8,884
2012–13	129	136	1,658	15	213	337	2488	7,823
2011–12	155	175	2,979	8	233	421	3971	12,735
2010–11	170	189	2,387	8	228	343	3325	12,158

Source: 2017 Title II Reports. (n.d.). North Carolina State Enrollment Information (Race/Ethnicity). Retrieved from https://title2.ed.gov/Public/Report/StateHighlights/StateHighlights.aspx?p=2_01&s=e

Exhibit 14. Teacher preparation enrollments by race and preparation pathway, 2015–16

Preparation pathway	Total	Native American/ Alaska Native	Asian	Black	Native Hawaiian/ Pacific Islander	White	2+ Races	Hispanic/ Latinx
Traditional	54%	24%	71%	43%	33%	66%	59%	59%
Alternative, IHE-based	8%	19%	7%	11%	0%	9%	10%	9%
Alternative, not IHE-based	38%	57%	22%	46%	67%	25%	30%	32%

Source: 2017 Title II Reports. (n.d.). North Carolina State Enrollment Information (Race/Ethnicity). Retrieved from https://title2.ed.gov/Public/Report/StateHighlights/StateHighlights.aspx?p=2_01&s=e

Distribution, Attrition, and Mobility by Pathway

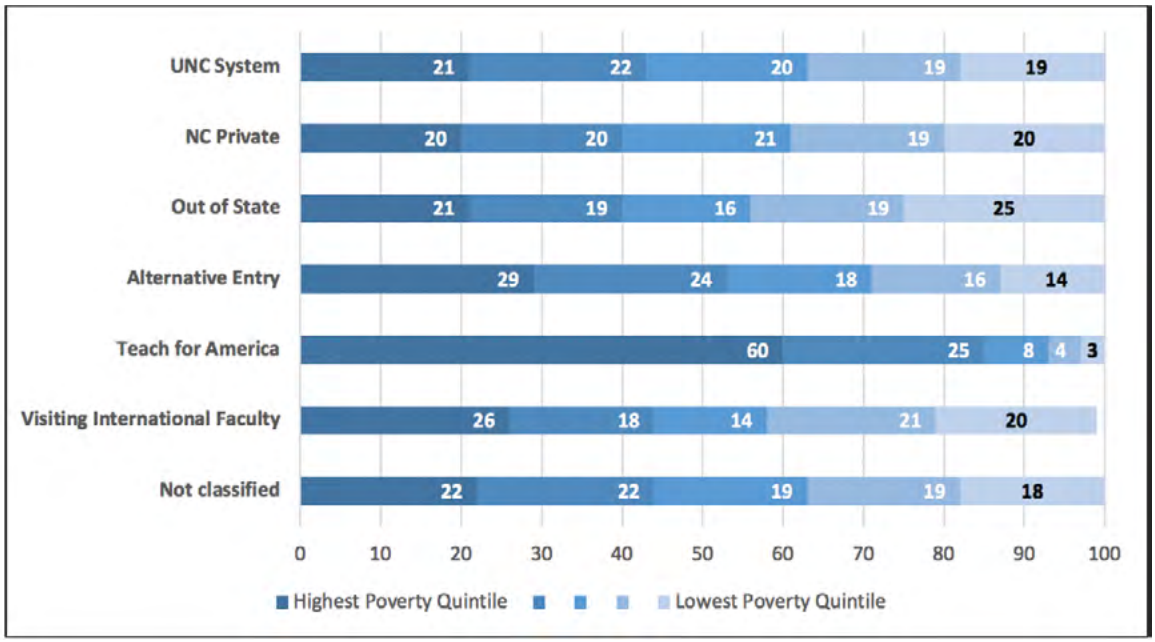
As noted above, lateral-entry teachers — who have been found, aside from TFA, to have a substantial negative effect on student achievement — are a large and growing share of all teachers in North Carolina, comprising 25% of all new entrants in 2016–17. (TFA recruits were another 2% of entrants.)

As shown in Exhibit 15, most of these teachers (identified in the exhibit as Alternative Entry) are concentrated in higher-poverty schools (the top two quintiles of student poverty), where 53% of them teach. Sixty percent of TFA recruits teach in higher-poverty schools.

Graduates from the UNC system are also more likely to teach in higher-poverty schools (43%) than lower-poverty schools (38%). Teachers from North Carolina private IHEs are equally distributed across schools by poverty level (40% in higher-poverty and 39% in lower-poverty schools).

Out-of-state teachers are slightly more concentrated in lower-poverty schools (44%) than in higher-poverty schools (40%). VIF teachers are slightly more concentrated in higher-poverty schools (44%) than in lower-poverty schools (41%).

Exhibit 15. Distribution of new teachers by pathway and school poverty quintile (2016–17)



A study that was able to track new entrants to teaching in North Carolina and their retention in the profession found that teachers who enter teaching through the UNC system's teacher preparation program have the highest retention rates in North Carolina schools after three and five years: 85% are still teaching in the state after three years and 72% after five years. (Some of those who have left the classroom are still in the school system within the state as administrators or in other education roles.) Graduates from North Carolina private IHEs are close behind with an 83% retention rate after three years and a 69% retention rate after five years. (See Exhibit 16.)

TFA teachers have the lowest three- and five-year retention rates.[6] Just 24% are still teaching in North Carolina after three years, and only 7% remain after five years. Teachers who enter from out of state through the lateral-entry route, or through the VIF program have similar retention rates.[7] About two thirds stay for three years, and just under half stay for five years.

These attrition rates have noticeable effects on student learning, both because they influence levels of experience which positively influence achievement and because they affect rates of school turnover, which negatively affect achievement (Ronfeldt, Loeb, & Wyckoff, 2013; Podolosky, Kini, & Darling-Hammond, in press). The pathways that are associated with considerable churn in their schools are, unfortunately, the ones that have been growing in recent years.

6 TFA teachers make a two-year commitment to remain in the classroom.

7 VIF teachers' visa is valid for three years. During the third year, teachers who remain in good standing may be eligible to apply for a two-year extension, for a total of five years.

Exhibit 16. Retention rates in the teacher field at three and five years' experience, by teacher preparation pathway, 2011

	3-Year Retention Rate	5-Year Retention Rate
UNC System	85%	72%
NC Private	83%	69%
Out of State	66%	48%
Lateral Entry	65%	48%
Visiting International Faculty	68%	49%
Teach for America	24%	7%
Unclassified	75%	65%

Source: Retention Rates in the Teaching Field at Three and Five Years of Experience, 2011, from the UNC Educator Quality Dashboard, University of North Carolina System.

These patterns are obvious, as well, in more current annual attrition rates. As Exhibit 17 shows, in 2017–18, experienced, licensed teachers had the lowest annual attrition rate, at 7.3%. TFA teachers had the highest attrition rate, at 28.3%, and the attrition rate for lateral-entry teachers was 15.5%, more than twice the rate for non-lateral-entry teachers (Public Schools of North Carolina, 2018, p. 7). These differences in attrition rates mirror national trends, which show that teachers without prior preparation leave the profession at two to three times the rate of those who are comprehensively prepared (Ingersoll, Merrill, & May, 2014).

VIF teachers and beginning teachers (those with fewer than three years' teaching experience) also have higher attrition rates than experienced teachers.

Exhibit 17. State annual attrition rates by teacher category, 2017–18

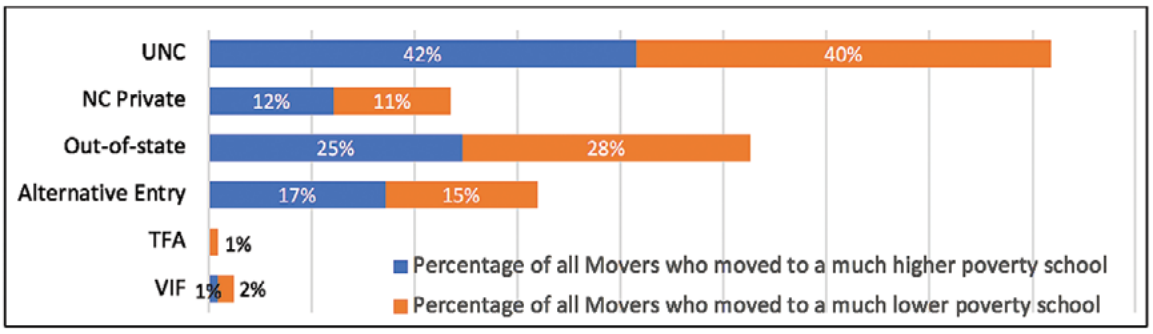
Category of Teachers		Total Number of Teachers in Category, 2017 – 18	Number of Teachers Leaving Employment in NC Public Schools	Percent Attrition in Category, 2017 – 18
Experienced, Licensed Teachers		79,314	5,749	7.3%
Beginning Teachers*		15,595	1,925	12.3%
TFA Teachers	All	449	127	28.3%
	Before Contract Term	399	80	20.1%
VIF Teachers	All	1,176	197	16.8%
	Before Contract Term	1,074	95	8.9%
Lateral-Entry Teachers		5,636	874	15.5%

**Beginning teachers include all teachers with fewer than three years of teaching experience. This includes some, but not all, lateral-entry teachers.*

Source: Public Schools of North Carolina, State Board of Education, Department of Public Instruction. Report to the North Carolina General Assembly, 2017–2018 State of the Teaching Profession in North Carolina, General Statute § 115C-12(22). Raleigh, NC. North Carolina Department of Public Instruction, p. 8, Table 1.

Among teachers who move from one school to another within the state, some do move from higher-poverty schools to much lower-poverty schools, as has been documented in other research about teacher mobility. However, just about as many move from lower-poverty schools to much higher-poverty schools, a trend seen across pathways. (See Exhibit 18.) Indeed, UNC-prepared teachers who changed schools in 2016–17 were slightly more likely to move to a much higher-poverty school, as were graduates of North Carolina private IHEs and alternative-entry teachers. Out-of-state graduates were more likely to move to much lower-poverty schools. TFA and VIF teachers who moved tended to stay within the same kind of school they entered.

Exhibit 18. North Carolina teachers who moved: Percentage by entry pathway moving to a much higher- or lower-poverty school, 2016–17

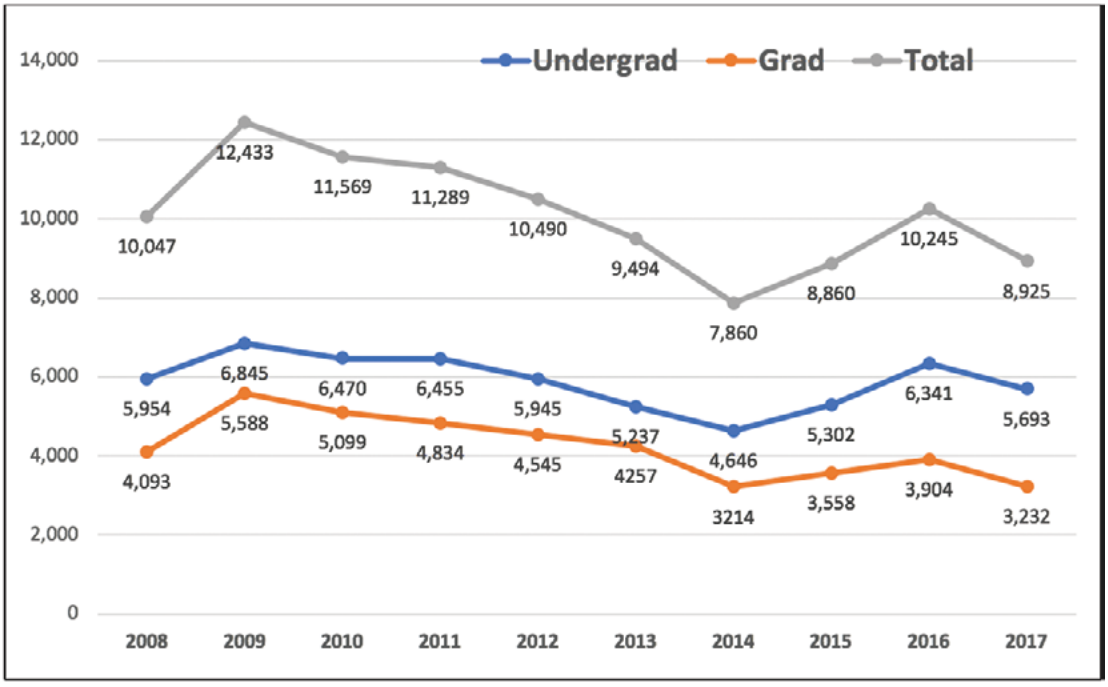


Source: North Carolina Department of Public Instruction; UNC System Office; Educational Policy Initiative at Carolina, UNC.

Trends Within North Carolina Institutions

Given the importance of North Carolina institutions to teacher effectiveness and retention in the state, this section focuses on trends in these institutions and their role in teacher supply within the state. As discussed, enrollment in UNC system institutions has declined by just over 10% overall since 2009 and by more than 30% since 2001. The lowest point was in 2014; there was an uptick in both undergraduate and graduate preparation programs in the subsequent two years. Unfortunately, there was another drop in enrollment between 2016 and 2017. (See Exhibit 19.)

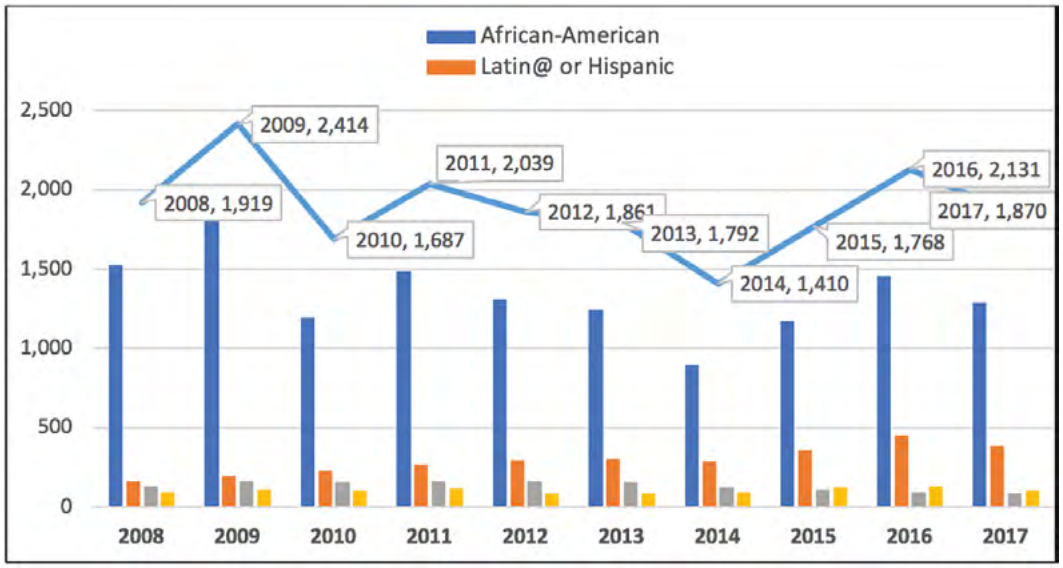
Exhibit 19. Enrollment in teacher preparation programs at UNC institutions (2008–2017)



Source: UNC System Office.

As with the total population of teacher candidates enrolled in the UNC system, the number of students of color in teacher preparation programs declined from 2008 to 2017. This enrollment loss is significantly greater than the systemwide decline during the same period. Enrollment of African American students in educator preparation programs declined precipitously, by about 33% from 2009 to 2017.

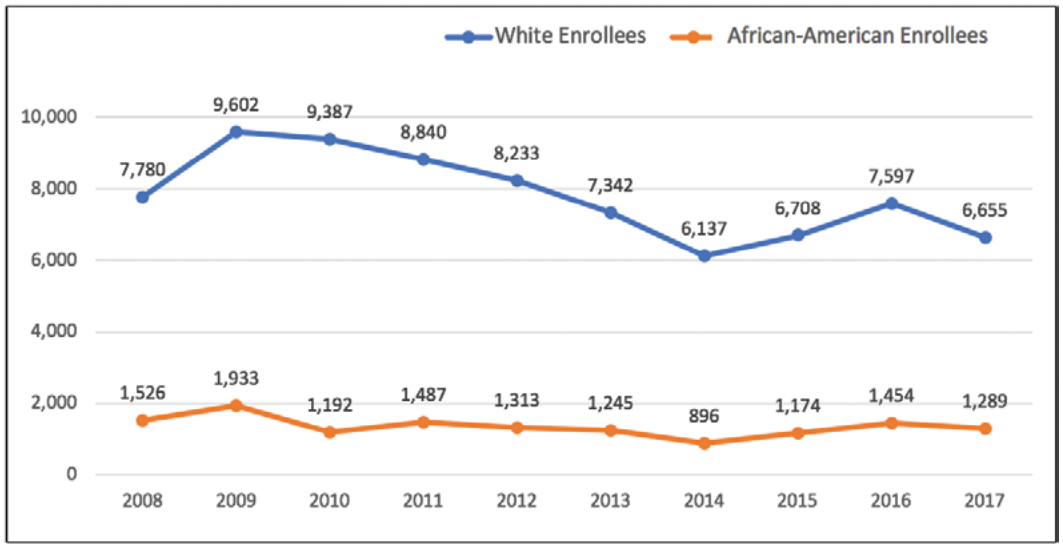
Exhibit 20. Under-represented student enrollment in UNC system educator preparation programs, 2008–2017



Source: UNC System Office.

This decrease in enrollment for African American students and White students from 2009 to 2017 was similar (31% versus 33%), but enrollments for White students experienced greater volatility. (See Exhibit 21.)

Exhibit 21. Comparison of White and African American enrollees in UNC system educator preparation programs, 2008–2016

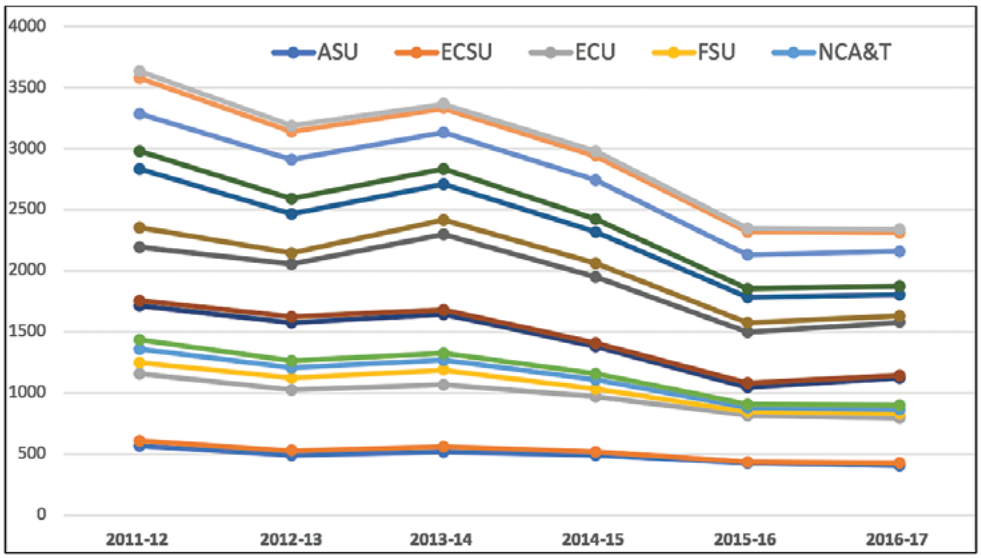


Source: UNC System Office.

Teacher production (i.e., the number of new graduates from preparation programs) lags enrollment figures by a few years as most programs are undergraduate. In addition to the fact that it takes students more than one year

to complete most programs, not every student who enrolls in teacher education graduates with a degree from that program and achieves a credential. As Exhibit 22 shows, production of new teachers has declined on most of the 15 UNC campuses in similar ways, with the biggest producers experiencing the largest drops.

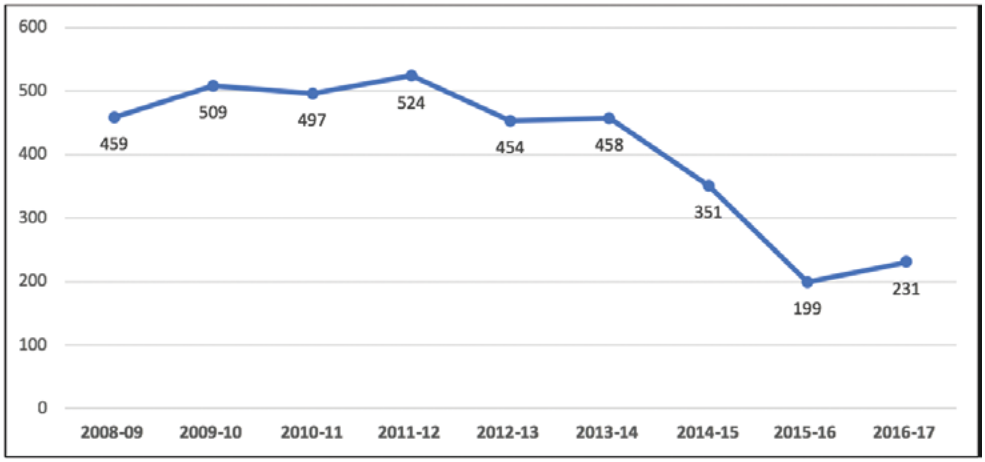
Exhibit 22. UNC-prepared teachers by institution, 2011–2016



Source: North Carolina Department of Public Instruction; UNC System Office; Educational Policy Initiative at Carolina, UNC.

Teacher production dropped more precipitously at UNC system minority-serving institutions than in the system overall. (See Exhibit 23.) The decline in teachers prepared between the high point in 2011–12 (524 new teachers) and the low point in 2015–16 (only 199 new teachers) was 61%. Production ticked up in 2016–17, but was still less than half of what it was in 2011.

Exhibit 23. Teachers prepared at UNC system minority-serving institutions, 2008–2016



Sources: North Carolina Department of Public Instruction; UNC System Office; Educational Policy Initiative at Carolina, UNC.

Teacher Demand

As a result of reductions in school budgets, the overall demand for teachers in North Carolina — that is, the total number of teaching positions in the system — has decreased. However, even with this reduced demand, it has been difficult to fill vacancies as the supply of teachers has declined even more.

Projected Demand

Without policy interventions, these trends are likely to get worse. In addition to addressing the current vacancy problems due to high attrition, it is necessary to plan for future needs. The North Carolina Department of Commerce produces long-term employment projections that provide an estimate of how the teaching workforce may evolve. Working with the U.S. Bureau of Labor Statistics, the Department of Commerce estimates three components of demand. The first is expected need based on projected student enrollment and pupil-teacher ratios. The second and third components are labor force exits and occupational transfers. Exits and transfers are determined through regression analyses of historical data that identify the characteristics of a worker, such as age and educational attainment, that make it likely he or she will separate from her occupation. These patterns from historical data are then applied to the current distribution of employment to project future separations.

As presented in Exhibit 24, the Department of Commerce estimates that the total number of teachers in K–12 schools will grow 4.6% between 2017 and 2026. The highest rate of growth is expected in kindergarten teacher positions, followed by middle school and secondary school positions, exclusive of career technical positions. Overall, the total number of position openings, accounting for teachers who will need to be replaced, is expected to be 72,452 by 2026. As is true nationally, nearly all of this demand is expected to be the result of attrition from the teaching profession. The combination of exits from the state workforce and transfers to nonteaching jobs is 93% of the expected additional demand.

Exhibit 24: Projected demand for North Carolina K–12 teachers, by position, 2017 to 2026

	Employment Estimate 2017	Employment Estimate 2026	Net Change	Percent Change	Total Openings Exits[1]	Total Openings Transfers[2]	Total Openings[3]
All Teachers, K–12	104,619	109,440	4,821	4.61	31,498	36,133	72,452
Kindergarten Teachers, Except Special Education	3,127	3,284	157	5.02	1,243	1,541	2,941
Elementary School Teachers, Except Special Education	38,762	40,553	1,791	4.62	11,778	13,213	26,782
Middle School Teachers, Except Special and Career/ Technical Education	18,770	19,657	887	4.73	5,706	6,402	12,995
Secondary School Teachers, Except Special and Career/ Technical Education	23,104	24,199	1,095	4.74	6,520	7,942	15,557
Career/Technical Education Teachers, Middle School	1,217	1,273	56	4.60	370	415	841
Career/Technical Education Teachers, Secondary School	4,844	5,032	188	3.88	1,361	1,658	3,207
Special Education Teachers, Kindergarten and Elementary School	7,671	8,008	337	4.39	2,344	2,573	5,254
Special Education Teachers, Middle School	2,947	3,076	129	4.38	900	988	2,017
Special Education Teachers, Secondary School	4,177	4,358	181	4.33	1,276	1,401	2,858

Source: 2026 North Carolina Employment Projections Summary, North Carolina Department of Commerce. https://www.nccommerce.com/data-tools-reports/labor-market-data-tools/employment-projections. Notes: (1) Exits are estimated positions based on workers leaving the labor force from this occupation. (2) Transfers are estimated positions based on workers leaving this occupation for a different occupation. (3) Net Change reflects the difference between the projected (2026) and base year (2017) employment.

Although there is an expected 4.61% increase in the total number of teachers by 2026, there is a great deal of variation across the state. For example, the teaching force in Wilmington, in the Southeast region, is expected to grow by almost 20%. Estimates predict greater-than-average increases in Charlotte at 7.7% (Southwest region) and Asheville at 6.3% (Western region). At the same time, Greensboro (Southeast region) and Hickory (Northwest region) are estimated to experience declines of 2.3% and 2.4% in the number of teachers employed. (See Exhibit 25.)

Exhibit 25: Projected demand for North Carolina K–12 teachers, by prosperity zone sub-region

	Employment Estimate 2017	Employment Estimate 2026	Net Change	Percent Change	Total Openings Exits[1]	Total Openings Transfers[2]	Total Openings[3]
North Carolina	104,619	109,440	4,821	4.61	31,498	36,133	72,452
Wilmington	3,478	4,159	681	19.58	1,115	1,273	3,202
Charlotte	22,142	23,839	1,697	7.66	6,721	7,719	16,137
Asheville	4,592	4,882	290	6.32	1,397	1,602	3,289
Raleigh-Durham	24,977	25,956	979	3.92	7,502	8,617	17,098
Winston-Salem	7,952	8,166	214	2.69	2,376	2,723	5,313
Goldsboro-Kinston	2,267	2,306	39	1.72	674	774	1,543
Boone-Wilkesboro	1,788	1,802	14	0.78	519	599	1,705
Greenville	4,099	4,131	32	0.78	1,201	1,373	3,234
Jacksonville-New Bern	1,705	1,716	11	0.65	508	569	1,840
Waynesville-Franklin	1,574	1,584	10	0.64	464	536	1,299
Pinehurst-Rockingham	611	612	1	0.16	182	204	987
Rocky Mount-Wilson	1,539	1,541	2	0.13	447	514	1,372
Elizabeth City	1,326	1,325	-1	-0.08	390	449	1,079
Fayetteville-Lumberton	6,938	6,876	-62	-0.89	2,037	2,333	4,308
Greensboro	10,089	9,853	-236	-2.34	2,941	3,369	6,074
Hickory	3,307	3,227	-80	-2.42	962	1,105	1,987

Source: 2017–2026 North Carolina Employment Projections Summary, North Carolina Department of Commerce.

Notes: (1) Exits are estimated positions based on workers leaving the labor force from this occupation. (2) Transfers are estimated positions based on workers leaving this occupation for a different occupation. (3) Net Change reflects the difference between the projected (2026) and base year (2017) employment.

Attrition and Demand

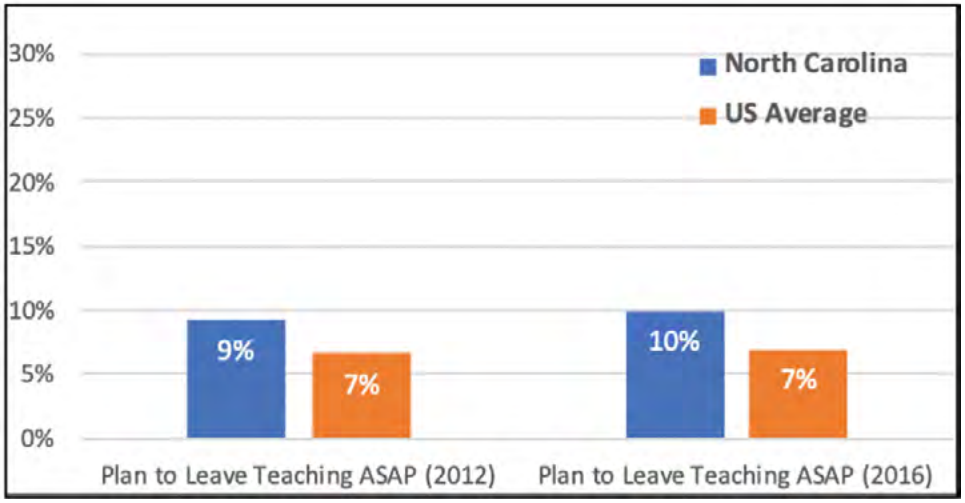
A major reason for the anticipated growth in demand for teachers is the rate of attrition of teachers from North Carolina schools, especially in high-poverty communities. Nationally, about 90% of new teacher demand is created by the need to fill vacancies created by attrition (Carver-Thomas & Darling-Hammond, 2017). As noted above, this proportion is projected to be about 93% in North Carolina.

In general, the national attrition rate over recent years has been about 7.8%, and state attrition rates have ranged from under 5% in the New England states to over 15% in Arizona (Sutcher, Darling-Hammond, & Carver-Thomas,

2016). North Carolina had an overall annual teacher attrition rate of 8.1% in 2017–18. This is the rate of teachers leaving employment in North Carolina public schools. This represents a slight decrease from 8.7% in 2016–17 (Public Schools of North Carolina, 2018, p. 7).

Although North Carolina's attrition rate is slightly above the national average, North Carolina teachers are noticeably more likely than other teachers nationally to plan to leave teaching as soon as possible — and rates have increased in recent years.

Exhibit 26: Plans to leave teaching ASAP, 2012 and 2016



Source: Public School Teacher Data File, 2016–17 and 2012–13 (U.S. Department of Education, & National Center for Education Statistics, National Teacher and Principal Survey).

While teacher attrition is a problem throughout the state, there is some variation by region and much greater variation across school districts, or LEAs. Across the state, attrition rates ranged from 6.4% in the Northwest region to about 9.8% in the Sandhills region. The Sandhills, Southeast, Northeast, and North Central regions, all in the eastern portion of the state, experienced higher-than-average rates of attrition in 2017–18. The Southwest region (includes Charlotte-Mecklenburg) and the Piedmont Triad, Western, and Northwest regions experienced lower-than-average rates of attrition in 2017–18. (See Exhibit 27.)

Exhibit 27. Contribution to the state attrition rate by region, 2017–18

Region	Total Number of Teachers	Number of Teachers Leaving Employment in NC Public Schools	Attrition Rate by Region, Highest to Lowest
Sandhills	9,009	880	9.8%
Southeast	9,058	806	8.9%
Northeast	5,004	445	8.9%
North Central	23,045	1,907	8.3%
Southwest	21,282	1,651	7.8%
Piedmont Triad	16,087	1,236	7.7%
Western	5,746	403	7.0%
Northwest	5,744	370	6.4%
State Totals	94,909	7,674	8.1%

Source: North Carolina Department of Public Instruction, 2017–18 State of the Teaching Profession in North Carolina.

Most variation in attrition rates is within regions and districts. Teacher attrition rates range from 4% in low-poverty districts such as Macon County Schools to 33% in Warren County Schools, a high-poverty district. Notably, the attrition rate for Warren County Schools is more than four times higher than the state attrition rate and more than seven times the attrition rate of Macon County Schools. (See Exhibit 28.)

Mobility rates track the number of teachers leaving one school or district for another in North Carolina. Mobility matters as much at the school level as attrition does (those who leave teaching in North Carolina altogether) because mobility creates teacher vacancies that have to be filled. Mobility rates ranged from 1% in Macon County Schools, a low-poverty district, to 12% in Warren County Schools, one of the state's highest-poverty districts. Combining both mobility and attrition from North Carolina teaching, districts lose between 4% (Macon County Schools) and 33% (Warren County Schools) of staff in a single year. LEAs with the highest attrition rates (Warren County Schools, Halifax County Schools, Thomasville City Schools, and Vance County Schools) have extremely high poverty levels of 99% and higher. (See Exhibit 28.)

Exhibit 28. Five highest and lowest total attrition rates for LEAs, with poverty levels, 2017–18

LEA	Total # of Teachers	# of Teachers Leaving State Employment	State Attrition Rate for LEA	# of Teachers Leaving LEA	LEA Mobility Rate	Total # of Teachers Leaving LEA	Total Attrition Rate From LEA	Poverty Level (% EDS)
Highest LEA Attrition								
Warren County Schools	154	32	20.8%	18	11.7%	50	32.5%	99.4%
Halifax County Schools	187	38	20.3%	16	8.6%	54	28.9%	98.8%
Northeast Regional School — Biotech/Agriculture	137	19	13.9%	16	11.7%	35	25.5%	Not available
Thomasville City Schools	166	27	16.3%	15	9.0%	42	25.3%	99.9%
Vance County Schools	445	52	11.7%	51	11.5%	103	23.1%	99.6%
Lowest LEA Attrition								
Caldwell County Schools	833	29	3.5%	28	3.4%	57	6.8%	60.8%
Dare County Schools	382	20	5.2%	4	1.0%	24	6.3%	39.9%
Yancey County Schools	174	7	4.0%	4	2.3%	11	6.3%	54.0%
Camden County Schools	129	4	3.1%	2	1.6%	6	4.7%	28.9%
Macon County Schools	325	11	3.4%	3	0.9%	14	4.2%	63.0%

Sources: Public Schools of North Carolina, State Board of Education, Department of Public Instruction. Report to the North Carolina General Assembly, 2017–2018 State of the Teaching Profession in North Carolina, General Statute § 115C-12(22). Raleigh, NC. North Carolina Department of Public Instruction, p. 19, Table 8; Public Schools of North Carolina, State Board of Education, Department of Public Instruction. Free & Reduced Meals Application Data, 2016–2017. http://www.dpi.state.nc.us/fbs/resources/data/; Public Schools of North Carolina, State Board of Education, Department of Public Instruction. Accountability and Testing Results, 2016–17 State, District, and School Level Summary Data. http://www.ncpublicschools.org/accountability/reporting/.

In addition to having high attrition and mobility rates, some low-performing schools have low recoupment rates. In other words, they struggle to recruit teachers to fill positions their teachers have left. Often, they are only able to fill few of their positions with North Carolina teachers moving from other districts and must hire beginning or out-of-state teachers — categories of teachers, along with those from the lateral-entry pathway they must often tap — who are less effective than in-state-prepared teachers. The eight districts identified as low performing in 2017–18 are also high poverty. (See Exhibit 30.)

Exhibit 29. Attrition, mobility, and recoupment* rates for LEAs identified as low performing, 2017–18

Row Labels	Total Number of Employees	State Attrition	State Attrition Rate	Mobility	Mobility Rate	Total Number Departed	LEA Attrition Rate	Recoup	Recoup Rate
Anson County Schools	214	25	11.7%	14	6.5%	39	18.2%	12	30.8%
Caswell County Schools	188	21	11.2%	12	6.4%	33	17.6%	13	39.4%
Edgecombe County Schools	398	43	10.8%	46	11.6%	89	22.4%	32	36.0%
Halifax County Schools	187	38	20.3%	16	8.6%	54	28.9%	12	22.2%
Nash-Rocky Mount Schools	956	81	8.5%	55	5.8%	136	14.2%	24	17.6%
Northampton County Schools	137	19	13.9%	16	11.7%	35	25.5%	5	14.3
Tyrrell County Schools	49	2	4.1%	3	6.1%	5	10.2%	6	120.0%
Washington County Schools	108	12	11.1%	8	7.4%	20	18.5%	6	30.0%

Source: North Carolina Department of Public Instruction, 2017–2018 State of the Teaching Profession in North Carolina (Report # 70).

** The recoupment rate is the number of mobile teachers who appear on an LEA's payroll on or after March 2017 divided by the total number of teachers who left that LEA during the measurement period.*

Exhibit 30. Recoupment and poverty rates for LEAs identified as low performing, 2017–18

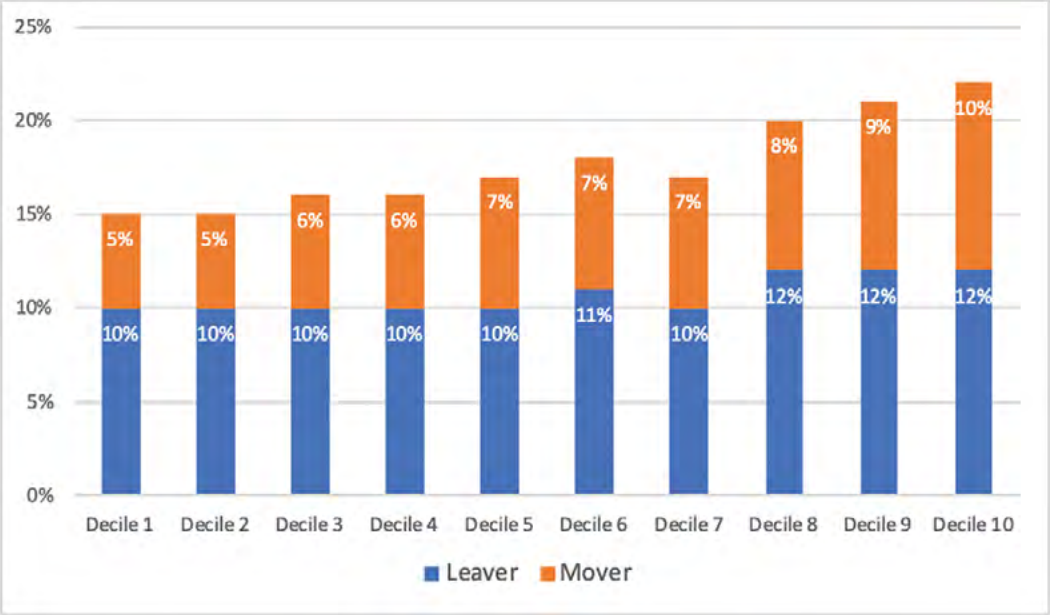
LEA NAME	Recoupment Rate	Poverty Level (2016-17), % EDS
Anson County Schools	30.8%	97%
Caswell County Schools	39.4%	79%
Edgecombe County Schools	36.0%	98%
Halifax County Schools	22.2%	99%
Nash-Rocky Mount Schools	17.6%	76%
Northampton County Schools	14.3%	99%
Tyrell County Schools	120.0%	77%
Washington County Schools	30.0%	99%

Source: Public Schools of North Carolina, State Board of Education, Department of Public Instruction. Report to the North Carolina General Assembly, 2017–2016 State of the Teaching Profession in North Carolina, General Statute § 115C-12(22). Raleigh, NC. North Carolina Department of Public Instruction, p. 19, Table 8; Public Schools of North Carolina, State Board of Education, Department of Public Instruction. Free & Reduced Meals Application Data, 2016–2017. http://www.dpi.state.nc.us/fbs/resources/data/

There are disparities in teacher turnover due to both mobility and attrition across schools with different concentrations of poverty, with even greater disproportionalities in those who move to other schools from high-poverty schools — a substantial exodus — than in the share who leave the profession or state from low- or high-poverty schools. From year to year, far more teachers in schools in the three highest deciles of poverty leave their schools

than those in schools in the three lowest deciles of poverty. In addition, the percentage of teachers moving to a different school is twice as high for teachers in the highest-poverty decile as in the lowest-poverty decile (10% versus 5%). (See Exhibit 31.)

Exhibit 31. Teacher leavers and movers: Percentages by school poverty decile (2016–17)

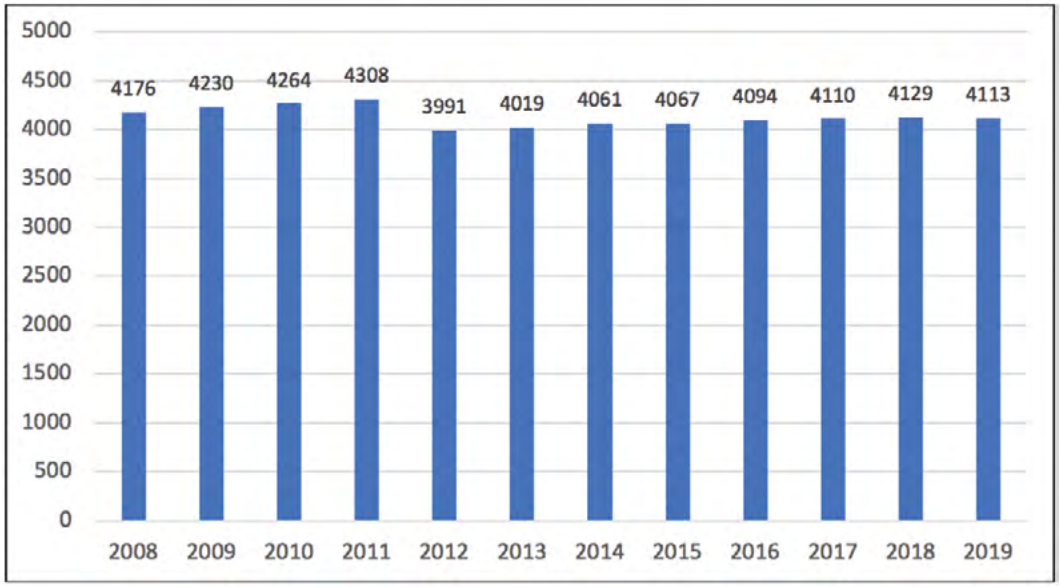


V. Findings: The Current Status of School Leadership in North Carolina

Demand for Administrators

As with teachers, there was a noticeable decrease — about 10% — in the number of school building administrators in North Carolina between 2011 and 2012. The number has slowly increased, but it remains below the number of school building administrators serving the system in 2008. (See Exhibit 32.)

Exhibit 32. Total number of school building administrators, 2008–2019



Source: North Carolina Department of Public Instruction: Highlights of the NC Public School Budget, 2008 through 2019.

Due to high turnover rates, particularly in some regions of the state, there is a recurring need to fill large numbers of vacancies. Using a definition of education administrator which includes district leaders, the U.S. Bureau of Labor statistics estimated an 8.7% increase in the overall need for elementary and secondary school administrators, and 13.9% increase in the overall workforce for preschool and child care administrators. Most of this demand (75% and 80% respectively) will be due to turnover. If these projections are correct, the number of total openings to be filled between 2014 and 2024 will comprise more than one third of the workforce. (See Table 20.)

Exhibit 33. Projections for North Carolina educational administrator workforce needs, 2014–2024

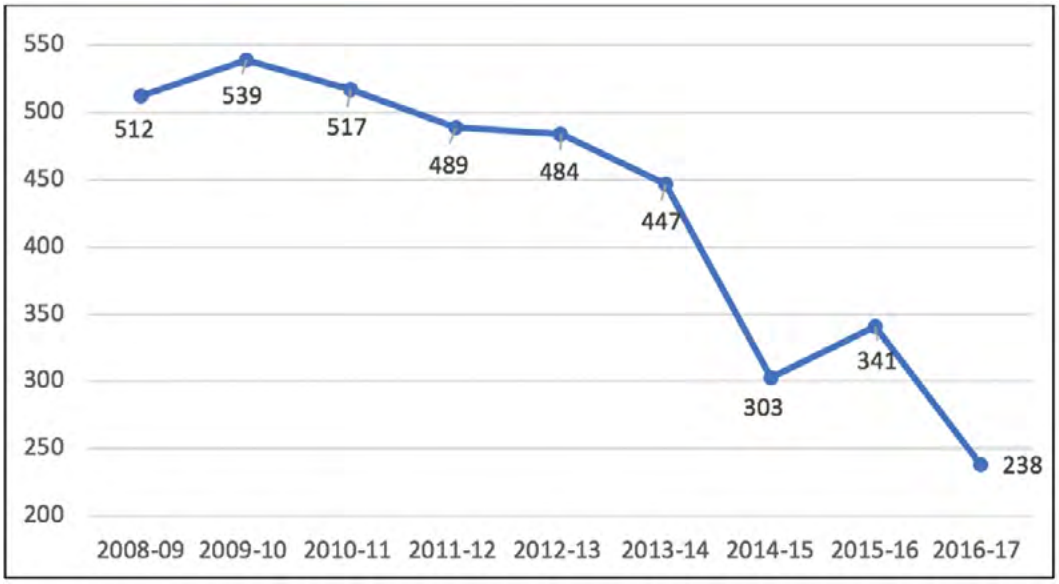
Occupational Title	Employment Estimate 2014	Employment Estimate 2024	Net Change	Percent Change	Annualized Growth Rate	Total Openings Growth	Total Openings Replacement	Total Openings
Preschool and Childcare Center/ Program	1,413	1,609	196	13.87	1.31	96	411	607
Elementary and Secondary School	7,404	8,045	641	8.66	0.83	641	2,153	2,794

Source: Bureau of Labor Statistics, Occupational Employment Statistics.

Supply of Administrators

Although the annual need for high-quality principals is substantial, the current supply in North Carolina appears limited. Traditionally, the UNC system has been the primary source of principals for North Carolina public schools. Between 2008 and 2016, the UNC system has provided a steadily declining number of new principals, producing 56% (301) fewer principals in 2016–17 than it produced in 2009–10 (539). (See Exhibit 34.)

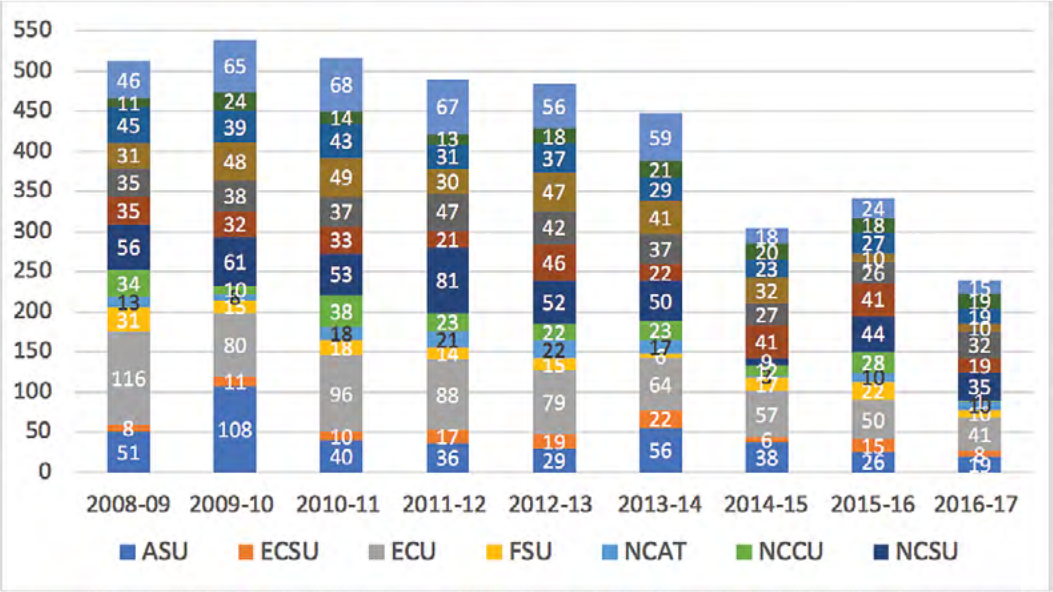
Exhibit 34. UNC-prepared principals, 2008–2016



Source: North Carolina Department of Public Instruction; UNC System Office; Educational Policy Initiative at Carolina, UNC.

The decline in the numbers of individuals credentialed to become school leaders has been distributed across all 13 education schools in the UNC system. Of all these schools, East Carolina University (ECU) produces the largest number of prospective principals, graduating 671 MSA students between 2008–09 and 2016–17, or 18% of the total graduates. Notably, the number of ECU graduates declined by 65% from 2009–10 to 2016–17. (See Exhibit 35.)

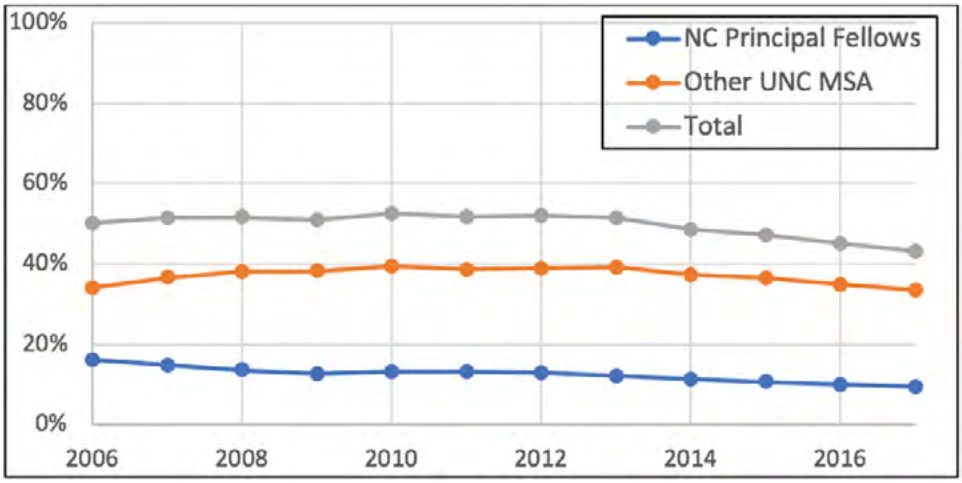
Exhibit 35. UNC-prepared principals by institution, 2008–2016



Source: North Carolina Department of Public Instruction; UNC System Office; Educational Policy Initiative at Carolina, UNC.

The UNC system prepares the greatest proportion of the principal workforce in North Carolina. However, its share of the workforce has declined — from a high of 53% in 2010–11 to a low of 43% in 2017–18. (See Exhibit 36.)

Exhibit 36. Proportion of principal workforce prepared by the UNC system, 2006–17



Source: North Carolina Department of Public Instruction; UNC System Office; Educational Policy Initiative at Carolina, UNC.

At the same time, the number and share of principals prepared by the North Carolina Principal Fellows program has also declined. This is important because more than two thirds of graduates prepared through the Principal Fellows program assume administrative (usually assistant principal) positions immediately after their training — about twice as many as graduates from other UNC MSA or add-on programs. (See Exhibit 37.) By three years

after their training, nearly 80% of Principal Fellows have become administrators — again about twice as many as in other pathways. And only 14% of Principal Fellows have left teaching or administration in the state by three years after graduation, as compared with 24% of all UNC system administrative graduates and 29% of add-on program graduates.

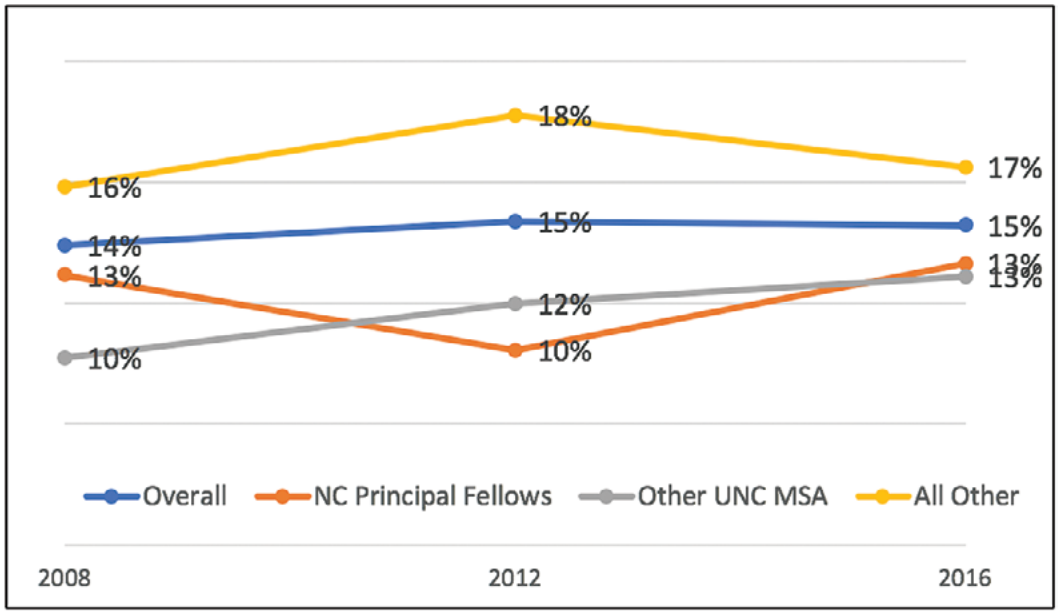
Exhibit 37. Graduates of principal preparation programs, first-year positions and third-year positions

	First-Year Positions (Assistant Principal/ Principal)	Third-Year Positions (Assistant Principal/ Principal)	Not Working in the State
UNC System (combined)	37% / 2%	36% / 10%	24%
NC Principal Fellows	66% / 2%	63% / 15%	14%
Other UNC MSA	34% / 2%	34% / 9%	24%
Add-On	27% / 2%	27% / 10%	29%
UNC System (no Add-On)	39% / 2%	39% / 10%	22%

Source: North Carolina Department of Public Instruction; UNC System Office; Educational Policy Initiative at Carolina, UNC.

From 2008 to 2016, UNC-prepared principals were consistently less likely to leave North Carolina public schools than principals prepared through other routes. (See Exhibit 38.)

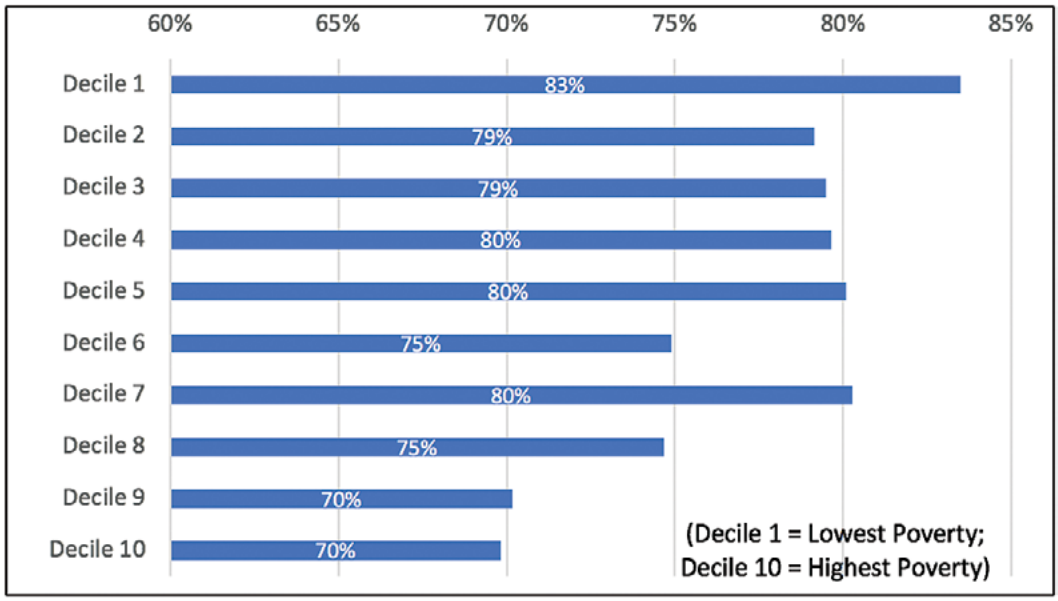
Exhibit 38. Principals who left North Carolina public schools, 2008–2016



Source: North Carolina Department of Public Instruction; UNC System Office; Educational Policy Initiative at Carolina, UNC.

School poverty level influences the likelihood that principals will remain in their schools. Not surprisingly, principals are more likely to stay in low-poverty schools than in higher-poverty schools. Whereas 83% of principals in the lowest-poverty schools stayed in the same school for 2017, only 70% of principals of high-poverty schools remained in the same school. (See Exhibit 39.)

Exhibit 39. Percentages of North Carolina public school principals who stayed in their school, by school poverty decile, 2017

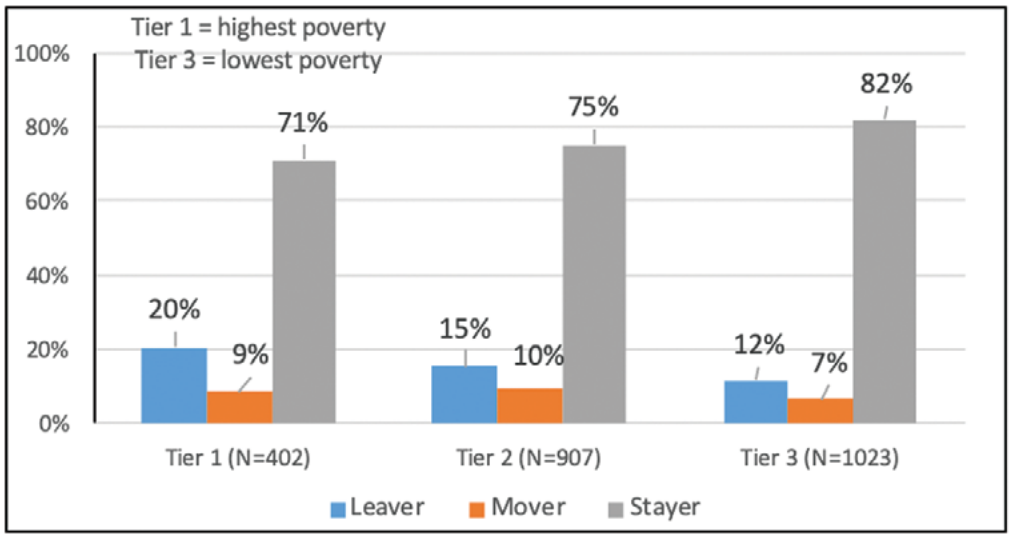


Source: North Carolina Department of Public Instruction; UNC System Office; Educational Policy Initiative at Carolina, UNC.

Similarly, principals in higher-poverty counties (Tier 1 in the state's economic tier designation) are more likely to leave or move than are principals in lower-poverty counties (Tier 2 and Tier 3).[8] One out of five principals (20%) in higher-poverty counties left their schools at the end of the 2015–16 school year. By contrast, only 12% of principals in low-poverty counties left their schools at the end of 2015–2016 school year. (See Exhibit 40.)

8 The North Carolina Department of Commerce annually ranks the state's 100 counties based on economic well-being and assigns each a tier designation. This tier system is incorporated into various state programs to encourage economic activity in the less prosperous areas of the state. The 40 most distressed counties are designated as Tier 1, the next 40 as Tier 2, and the 20 least distressed as Tier 3.

Exhibit 40. Principal mobility by county economic designation,* 2017



Source: North Carolina Department of Public Instruction; UNC System Office; Educational Policy Initiative at Carolina, UNC.

To better understand the choices made by principals leaving their schools, the research team investigated their mobility patterns. In the 2017–18 school year, principals who moved to new schools tended to move to schools that had lower percentages of economically disadvantaged students, stronger performance (as reflected in the NCDPI's performance composite), and slightly larger principal salary supplements. The move away from schools with economically disadvantaged students may be a result of confounding factors that are likely to be present in these schools, such as lower or less-predictable salaries and poorer working conditions. The working conditions in high-poverty schools are described in another paper in this series (Berry, Bastion, Darling-Hammond, & Kini, 2019).

Among principals who moved, there are not large differentials in several other school factors, including the percentage of minority students, student suspension rates, and student incident rates. (See Exhibit 41.)

Exhibit 41. Comparison of average characteristics of old and new schools of principals who moved, 2017

	Old School	New School
Poverty Decile	6	5.8
Percent Economically Disadvantaged Students	57.55	51.26
Percent Minority	51.56	51.56
Suspension Rate	18.53	19.17
Violent Acts Rate	6.94	6.86
Average Principal Salary Supplement	$10,555.26	$11,613.77
Performance Composite	53.1	54.51

VI. Factors Influencing Teacher and Principal Supply and Quality

National research shows that there are three major factors influencing teacher supply and turnover:

» **Level of preparation and mentoring.** In general, beginning teachers leave at higher rates than experienced teachers, and the extent of the difference has a great deal to do with the preparation and mentoring they receive. Teachers without pedagogical preparation — that is, coursework and clinical preparation for teaching — are two to three times more likely to leave teaching than those with comprehensive preparation (Ingersoll, Merrill, & May, 2014), a finding that is reinforced by North Carolina data on attrition presented earlier. In addition, new teachers who receive the most intensive mentoring — including in-classroom coaching, support with planning from other colleagues, a reduced teaching load, and principal support — are also twice as likely to stay in teaching as those who receive few supports when they enter teaching (Ingersoll, Merrill, & May, 2014).

» **Compensation.** Teachers are more likely to be recruited and retained when salaries and/or other compensation are competitive (Sutcher, Darling-Hammond, & Carver-Thomas, 2016). The amount of debt that teachers take on during their training is a factor that affects whether they will consider professions like teaching that have lower-than-average salaries in the labor market (Staklis & Henke, 2013; U.S. Department of Education, 2015).

» **Working Conditions.** Working conditions influence retention more than recruitment; they are also a big factor in determining whether teachers who have left teaching will return. They can include tangible physical conditions such as safety, physical plant conditions, pupil loads and the availability of supplies and equipment, as well as workplace efficacy conditions such as input into decision-making, opportunities for coaching and collaboration, administrative supports, and the collegiality of the environment (Horng, 2009; Podolsky, Kini, Bishop, & Darling-Hammond, 2016).

Where there are high attrition rates, the demand for teachers is inflated — and the quality of teachers undermined — by the need to continually replace teachers who are leaving at rapid rates. Cutting teacher attrition in half would largely eliminate the state's shortages and would allow most positions to be filled by in-state-prepared

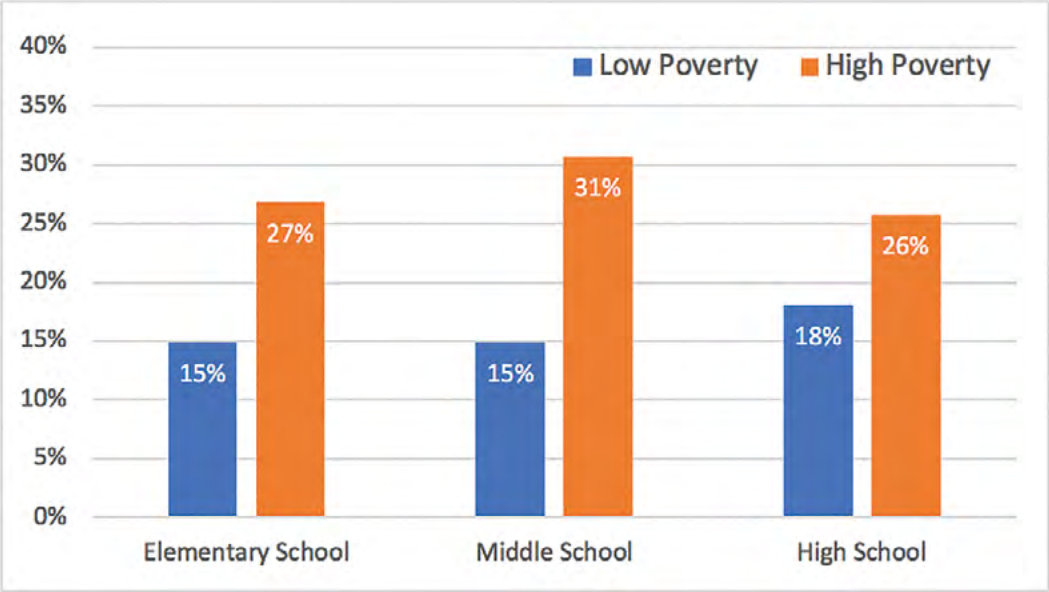
teachers, who are the most effective and longest-lasting of all the categories of recruits in North Carolina. This would mean working to retain half of the approximately 7,700 teachers who leave each year.

The vicious cycle in many districts — especially high-poverty districts — is that they experience high turnover and unfilled vacancies; they then often hire underprepared teachers who have high turnover rates (and who are also generally less effective) and therefore have difficulty getting ahead of the curve in terms of creating a stable and effective teaching force that can raise student achievement. This cycle needs to be broken if students are to experience the competent teaching force and stable school conditions required by *Leandro*.

Level of Preparation and Mentoring

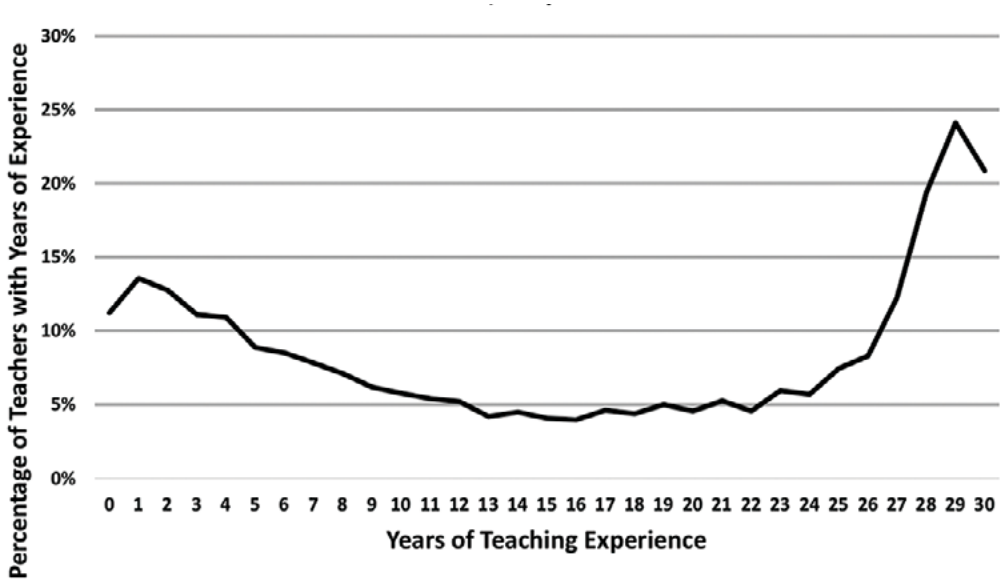
As noted, the share of teachers in the state who are novices is quite high, with more than one in five teachers having three or fewer years of experience. Inexperienced teachers are disproportionately serving in high-poverty schools. (See Exhibit 42.)

Exhibit 42: Percent new teachers (0–3 years of experience), 2016–17



Teachers with less experience have high rates of attrition in North Carolina, with 12.5% of those with three or fewer years of experience leaving each year. (See Exhibit 43.) Attrition then follows the usual U-shaped curve to decline in the mid-career years, increasing once again at retirement age. (See Exhibit 43.)

Exhibit 43. Percentage of teachers no longer employed in North Carolina public schools, by years of experience



Source: Public Schools of North Carolina, State Board of Education, Department of Public Instruction. Report to the North Carolina General Assembly, 2017–2018 State of the Teaching Profession in North Carolina, General Statute § 115C-12(22). Raleigh, NC. North Carolina Department of Public Instruction, p. 11, Chart 1.

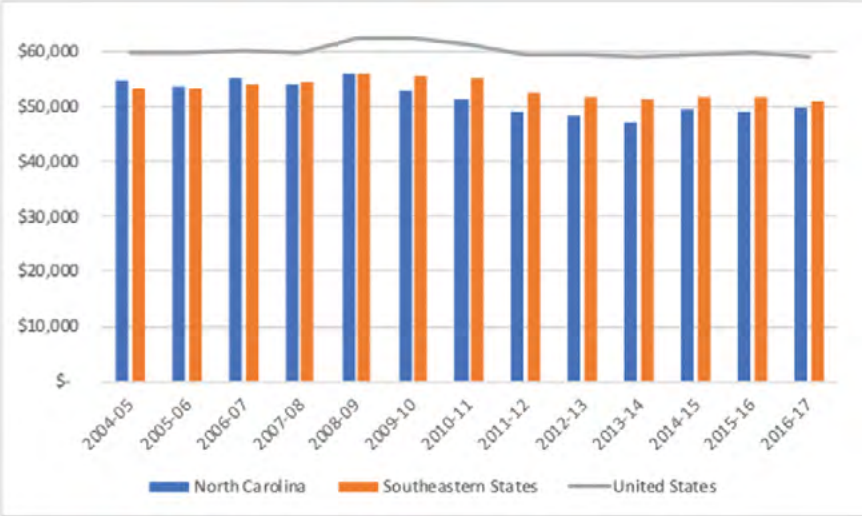
Furthermore, as described earlier in this report, preparation for beginning teachers is very uneven in North Carolina, with more than one in four teachers entering without full preparation, and more than half of these recruits having left the profession within five years. Because these teachers are concentrated in high-poverty schools, these schools have to meet a continuing demand for teachers associated with the large numbers who leave annually.

Another factor influencing high rates of attrition is the lack of mentoring for many recruits, as fewer than 10% of inexperienced teachers (1,000 out of 15,500 with less than three years of experience) are receiving services from the state's current mentoring program.

Compensation

After climbing for many years as part of a campaign to reach the national average, teacher compensation began falling in North Carolina after 2008, losing ground against both national benchmarks and the salaries in south-eastern states. (See Exhibit 44.)

Exhibit 44. Average annual K–12 teacher salaries, 2003–2017 (in constant[1] 2017 dollars)



Source: National Education Association, Estimates of School Statistics, selected years, 2004–05 through 2016–17.

(1) Constant dollars based on the Consumer Price Index, prepared by the Bureau of Labor Statistics, U.S. Department of Labor. Southeastern states include: Alabama, Florida, Georgia, Kentucky, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

In the 2017–18 school year, beginning teachers' average starting salaries in North Carolina were 29th in the nation at $37,631 versus the national average of $39,249 (National Education Association, 2018). Average teacher salaries in the state rank 37th in the nation and are 19% lower in North Carolina than in the nation ($50,861 versus $60,483) (National Education Association, 2018). (See Exhibit 45.) Further, although North Carolina's per-capita income was the third-highest among southeastern states, North Carolina ranked seventh in teacher compensation among 11 southeastern states in 2017–18 school year. Because of teacher supplements — which range from $0 to more than $8,000 — salaries vary across the state for teachers at all levels of experience (North Carolina Association of County Commissioners, 2017).

Exhibit 45: Starting teacher salaries and average teacher salaries, 2017–18

Southeastern States	Starting Teacher Salary	Southeastern States	Average Teacher Salary
Maryland	$ 45,147	Maryland	$ 69,761
Virginia	$ 40,453	Georgia	$ 56,329
Alabama	$ 38,491	Kentucky	$ 52,952
Florida	$ 37,636	Virginia	$ 51,265
North Carolina	$ 37,631	South Carolina	$ 51,027
Tennessee	$ 37,305	Tennessee	$ 50,900
Kentucky	$ 36,752	North Carolina	$ 50,861
Georgia	$ 35,474	Alabama	$ 50,239
Mississippi	$ 34,784	Florida	$ 47,721
West Virginia	$ 33,715	West Virginia	$ 45,642
South Carolina	$ 33,148	Mississippi	$ 43,107
National Average	$ 39,249	National Average	$ 60, 483

Source: The Starting Teacher Salary data are obtained from a variety of sources, including National Education Association state affiliates, state departments of education, and school district and local affiliate websites. Retrieved from: http://www.nea.org/home/2017-2018-average-starting-teacher-salary.html. Average Teacher Salary data are from: National Education Association. (2018). Rankings of the States 2017 and Estimates of School Statistics 2018, p. 49, Table E-7. http://www.nea.org/assets/docs/180413-Rankings_And_Estimates_Report_2018.pdf

In interviews throughout the state, teachers expressed their frustration with their compensation. One middle school teacher described his situation:

> *"I know people who have worked gas stations at night and teach all day. [I]f I didn't coach those three sports and get extra money from that, I'd have to go work another job."*

Another middle school teacher shared her future plans:

> *"I don't [see myself here in five years or in the profession] … because we're a household of two teachers. It's just not feasible moneywise for both of us to teach."*

The problems are more pronounced in rural areas that are struggling financially. A central office staff member explained:

> *"It's even more difficult for your rural districts. I know several that can't offer any supplement. Basically, they're just providing whatever the state provides. I think that's a big vehicle there to attract more teachers."*

In addition to drops in salaries, North Carolina shrank and then eliminated its North Carolina Teaching Fellows scholarship program for a period of time, which covered education costs for capable high school students

entering teaching. Without financial incentives to enter teaching tied to service commitments, recruitment and retention were both affected. The program is now back in effect, but focuses on hard-to-staff subject areas and is not large enough to meet demand.

Working Conditions

The strong relationship between teachers' working conditions and teacher retention and school effectiveness is described in another paper (Berry, Bastion, Darling-Hammond, & Kini, 2019). The data are quite clear that these conditions, which include teachers' heroic attempts to address the many stresses that children and families experience in low-income communities, are much worse in many high-poverty schools and contribute to teacher turnover. Teachers' comments in focus groups and interviews characterized the problems:

> *"They try to address it, but unfortunately, funding is not there — that's what we are told. For instance … we don't have textbooks, we need to make copies of reading selections to teach those kids. We only get like 1,500 copies per nine weeks … we [use] our own money, we have to buy cartridges for our printers to print this." (Middle school teacher)*

> *"I do enjoy being in the classroom, but this is a very high-stress environment in general.… While I love what I do, … I can't justify it and say it's worth it, it's not a long-term thing.… There's no way I can sustain this for a long time." (Middle school teacher)*

> *"I mean, I frequently spend three to four out of my five duty-free lunches with kids tutoring, doing extra credit, pulling for makeups because we have a lot of absences, calling home in the afternoons for those absences. I am constantly making phone calls and tutoring and after school clubs and whatever it is." (Middle school teacher)*

> *"I just feel like I can't teach at this rate for 25 years. … Yeah, I would say burnout is real." (Middle school teacher)*

Factors Influencing Principal Supply

The factors influencing principal supply are similar to those that influence teacher supply. Across national and local studies, researchers have identified three factors that influence principal turnover: access to professional development, fair compensation, and positive working conditions.

Level of Preparation, Mentoring, and In-Service Supports

Professional development, including preparation programs and in-service supports such as mentoring and coaching, can improve principals' sense of efficacy and satisfaction, and, in turn, improve retention (Darling-Hammond & Bransford, 2005). Studies have found that access to high-quality preparation programs, principal internships, and mentoring significantly reduces the likelihood that principals will leave their schools (Tekleselassie

& Villarreal, 2011). Programs that carefully select and prepare principals for challenging schools and that work with school districts to support and develop principals in those schools have been found to produce principals who are more likely to stay (Davis, Darling-Hammond, LaPointe, & Meyerson, 2005).

In a 2018 survey of principals in North Carolina, principals reported on their professional learning experiences. About one third of principals reported feeling their leadership program prepared them well to lead instruction that helps students develop the higher-order thinking skills that raise achievement on standardized tests. Similarly, only one third felt they had been well prepared to select effective curriculum strategies and materials, and about 29% felt well prepared to lead instruction that supports implementation of the new standards. More than one in five responding principals said that they were "poorly" or "very poorly" prepared to lead instruction in these areas. (See Exhibit 46.)

Exhibit 46. North Carolina principal survey responses regarding preparation to lead instruction

How well did your leadership program prepare you to lead instruction (as described below)?

	VERY POORLY	POORLY	ADEQUATELY	WELL	VERY WELL	TOTAL
Lead instruction that focuses on how to develop students' higher-order thinking skills	3.91% 24	18.40% 113	44.14% 271	22.31% 137	11.24% 69	614
Lead instruction that focuses on raising school-wide achievement on standardized tests	4.24% 26	16.80% 103	45.68% 280	23.16% 142	10.11% 62	613
Select effective curriculum strategies and materials	4.40% 27	17.62% 108	46.17% 283	21.70% 133	10.11% 62	613
Lead instruction that supports implementation of new state standards	4.89% 30	21.86% 134	44.37% 272	20.55% 126	8.32% 51	613

Principals also indicated the multiple areas in which they would like to receive professional development. (See Exhibit 47.) A majority indicated they would like professional learning opportunities to address how to lead instruction and schoolwide change processes focused on raising achievement, including students' higher-order thinking skills, social and emotional development, and physical and mental health. Most also indicated they would like learning opportunities that enable them to develop restorative practices in schools and meet the needs of English learners and students with disabilities while advancing equity. Finally, most voiced a need for support in leading the use of data to support student achievement.

Exhibit 47. North Carolina principals' desire for professional development

Related to instructional leadership:

ANSWER CHOICES	RESPONSES	
Lead instruction that focuses on how to develop students' higher-order thinking skills	57.41%	341
Lead instruction that focuses on raising school-wide achievement on standardized tests	62.79%	373
Select effective curriculum strategies and materials	48.99%	291
Lead instruction that supports the implementation of new state standards	40.24%	239
Total Respondents: 594		

Related to leading and managing school improvement:

ANSWER CHOICES	RESPONSES	
Use student and school data to inform continuous school improvement	59.23%	340
Lead a school-wide change process to improve student achievement	65.16%	374
Engage in self-improvement and your own continuous learning	40.59%	233
Total Respondents: 574		

Related to shaping teaching and learning conditions:

ANSWER CHOICES	RESPONSES	
Create collegial and collaborative work environments	28.77%	168
Work with the school community, parents, educators, and other stakeholders	39.21%	229
Lead schools that support students from diverse ethnic, racial, linguistic, and cultural backgrounds	38.53%	225
Lead schools that support students' social and emotional development	51.88%	303
Develop systems that meet children's needs and support their development in terms of physical and mental health	57.71%	337
Create a school environment that develops personally and socially responsible young people and uses discipline for restorative purposes	50.86%	297
Redesign the school's organization and structure to support deeper learning for teachers and students	44.86%	262
Total Respondents: 584		

Related to developing people:

ANSWER CHOICES	RESPONSES	
Design professional learning opportunities for teachers and other staff	47.00%	266
Help teachers improve through a cycle of observation and feedback	39.40%	223
Recruit and retain teachers and other staff	32.51%	184
Manage school operations efficiently	28.27%	160
Know how to invest resources to support improvements in school performance	51.06%	289
Total Respondents: 566		

Related to meeting the needs of all learners:

ANSWER CHOICES	RESPONSES	
Meet the needs of English learners	53.24%	296
Meet the needs of students with disabilities	62.05%	345
Equitably serve all children	57.19%	318
Total Respondents: 556		

Compensation

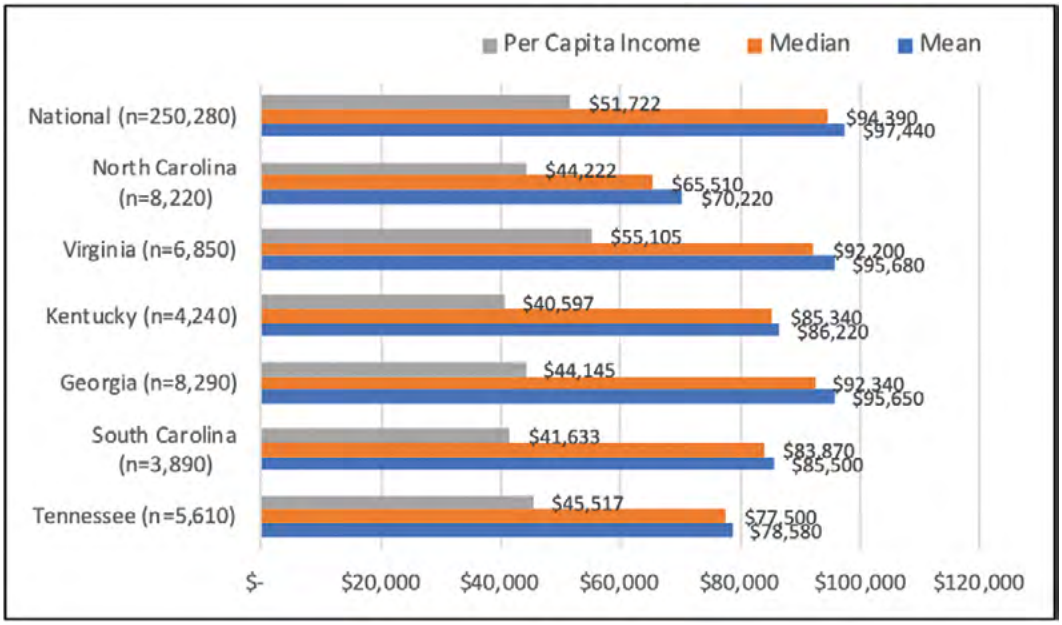
Salaries matter to principals in choosing new positions and in deciding whether to stay (Akiba & Reichardt, 2004; Ni, Sun, & Rorrer, 2015). Studies examining the relationship between principal turnover and compensation have observed principals moving to positions with higher salaries (Baker, Punswick, & Belt, 2010; Grissom & Bartanen, 2018; Tran & Buckman, 2017). Dissatisfaction with salary is further exacerbated by the fact that, in some contexts, principals' salaries can be lower than salaries of experienced teachers, despite principals' additional responsibilities and time commitment (Doyle & Locke, 2014; Goldhaber, 2007). This serves as a disincentive for qualified educators for moving to a leadership position (Lankford, Loeb, & Wyckoff, 2002).

Both of these are factors in North Carolina, where the compensation policy can result in principals' salaries being both lower than salaries of experienced teachers and unpredictable from year to year. Since school achievement factors into compensation and there is less use of experience as a stable base, the risks of losing ground on compensation are particularly great in lower-achieving schools. These also tend to be in low-wealth, high-poverty communities where salary supplements are smaller. As noted in Exhibit 45, principals tend to move to schools with greater salary supplements.

Although low compensation is a factor in principal turnover, higher salaries can sometimes offset the effect of poor working conditions (Gates, Ringel, Santibanez, Ross, & Chung, 2003) or poor school outcomes (Papa, 2007).

In 2017, the average principal salary in North Carolina was $27,220 less (28%) than the national average. Among the six southeastern states, the mean and median pay for North Carolina principals were the lowest, including two whose per-capita income is lower than North Carolina's. Mean North Carolina principal pay in 2017 was $25,460 less (27%) than principal pay in neighboring Virginia. (See Exhibit 48.)

Exhibit 48. Mean and median salaries for secondary and elementary educator administrators in southeastern states,* 2017



Source: U.S. Department of Labor, Bureau of Labor Statistics, Occupational Employment Statistics, https://www.bls.gov/oes/current/oes119032.htm#(3); Federal Reserve Bank of St Louis, Economic Research https://fred.stlouisfed.org/

**Note: Educator administrators include school and district administrators.*

Notably, in the WestEd/LPI principal survey, nearly one in four responding principals (24%) identified compensation as the major factor that would cause them to leave their position in the next three years. When asked about North Carolina's compensation policy, which eliminates consideration of experience in favor of pay based on schools' performance, 44% of responding principals reported that they "oppose" or "strongly oppose" the policy. About 24% reported that as a result of the policy, they would "seek to retire as soon as possible," "leave to obtain principalship in another school," or "leave the principalship." Approximately 28% of responding principals "strongly agreed" or "somewhat agreed" with the statement "If I could get a higher-paying job, I'd leave education as soon as possible."

Working Conditions

Research has identified a variety of working conditions that influence principals' decisions about whether to stay in their positions. These include workload (the number of school-related work hours inside and outside the school) (Tekleselassie & Villarreal, 2011; Fuller, Young, Richardson, Pendola, & Winn, 2018), job complexity (having multiple roles and responsibilities) (Tekleselassie & Villarreal, 2011), and disciplinary environment (student behavior and student and teacher absenteeism) (Tekleselassie & Villarreal, 2011; Loeb, Kalogrides, & Horng, 2010), as well as the availability of school resources, such as money and staff (Burkhauser, Gates, Hamilton, & Ikemoto, 2012; Beteille, Kalogrides, & Loeb, 2012), and relationships with students, families, teachers, and district administrators (Farley-Ripple, Raffel, & Welch, 2012; Burkhauser, Gates, Hamilton, & Ikemoto, 2012). Some research has also

found that principals' job decisions are related to the amount of support provided by the central office (Farley-Ripple, Raffel, & Welch, 2012). Because principal competence influences both their sense of efficacy and their ability to create some of these conditions within their schools, there is a strong interrelationship between the training and support principals receive and the teaching and learning conditions in their schools that enable them to feel fulfilled and likely to stay.

VI. Conclusions and Recommendations

This study found that, although it has severe teacher and leader shortages at the moment, North Carolina once had a very robust support system for developing and supporting the educator workforce. That system included:

- incentives for strong candidates to prepare for, enter, and stay in teaching and school leadership, through the North Carolina Teaching Fellows and Principal Fellows programs;
- rigorous standards for teacher preparation and supports for high-quality clinical training;
- mentoring for beginning teachers;
- rich professional development offerings for teachers and school leaders, in part through the NCCAT and the North Carolina Teacher Academy, as well as intensive supports for learning at the local level; and
- teacher and leader compensation approaching the national average, incorporating recognition of National Board certification.

These investments paid off. Teachers prepared in North Carolina universities are more effective and much more likely to stay in teaching than those entering through other pathways, with North Carolina Teaching Fellows at the top end of the effectiveness and retention scale. North Carolina Principal Fellows are more likely than others to enter and stay in the principalship as well. There was a period of time in the 1990s when North Carolina had virtually eliminated shortages and had the greatest gains in student achievement of any state, along with the greatest narrowing of the achievement gap. However, most of the elements of this system have been reduced or eliminated.

Today's shortages and high turnover — particularly in high-poverty schools — are a function of uneven preparation and mentoring, inadequate compensation, and poor working conditions. In particular, teachers want to work in collegial work settings with time for collaboration, supportive mentoring and professional learning, and input into decision making.

Part of the solution to the state's current problems is to restore key elements of the system that will provide a robust pipeline of well-prepared teachers and leaders trained in the UNC system, support their ongoing learning, and recognize their talents through adequate and equitable compensation, access to high-quality preparation and mentoring, and the ready availability of professional learning supports in the form of both professional development and coaching.

Until the state has rebuilt its pipeline, it will also need to seek to shore up the training and reduce the high turnover of the large number of alternatively certified teachers hired in the highest-poverty schools. This will require more induction and mentoring supports both on-site and through technological supports in remote areas.

Skilled teachers can be trained to serve as mentors and coaches to meet this need. The state has a large number of National Board–certified teachers — nearly 22,000 in 2018 (National Board for Professional Teaching Standards, 2018), more than any other state. Structures are needed to leverage these teachers' talents and allow them to share their expertise, especially for supporting learning in high-poverty schools. It is also important to train principals so that they can help shape supportive, collegial workplaces that enable teachers to become more effective and remain in the profession.

With respect to principals, as with teachers, it will be important to expand the most effective preparation programs and provide more access to those programs through financial supports, as well as creating the opportunity for mentoring and coaching on the job. The principal role is highly demanding, especially in high-poverty schools. To reduce attrition and enable them to be effective, principals need to be compensated adequately, but they need more — they need to have specialized training in ongoing school improvement and in meeting the needs of children who live in poverty and experience a range of adverse conditions, including housing and food insecurity, lack of health care, and, sometimes, abuse or neglect. They also need access to integrated student supports that will allow those needs to be met.

Below is a set of recommendations, first, for strengthening the teacher workforce and, second, for strengthening the administrator workforce to meet these needs.

Strengthening the Teacher Workforce

For teachers, recommendations fall into four areas:

1. Increase the **pipeline** of diverse, well-prepared teachers committed to teaching in North Carolina public schools who are incentivized/supported to teach in high-poverty communities.

2. Increase and equalize **compensation**, addressing teachers' needs (including, but not limited to, salary and, in high-need schools, housing, child care, loan repayment, and retention bonuses).

3. Ensure new teachers receive strong **preparation** for current needs and **mentoring** from capable, well-trained mentors in order to increase retention and effectiveness.

4. Address **teaching and learning conditions** that affect retention, including professional learning opportunities and whole-child supports.

Specifically, we recommend:

1. Increase the pipeline of diverse, well-prepared teachers committed to teaching in North Carolina public schools who enter through high-retention pathways and are incentivized/supported to teach in high-poverty communities.

North Carolina once had sufficient training capacity and incentives in place to staff all of its schools without shortages and had leveraged strong improvements in North Carolina preparation institutions. North Carolina–trained teachers have the highest levels of effectiveness and retention of any major pathway in the state. Cutbacks in incentives and capacity have produced shortages often filled by lateral-entry teachers, more than 1,000 of whom enter each year to teach in high-need schools. Lateral-entry teachers have the lowest levels of effectiveness and retention. The small pool of Teach for America teachers is an exception with respect to effectiveness, but TFA teachers have the highest attrition rates, with more than 30% leaving annually and more than 90% gone from the state after five years. Filling vacancies in high-need schools with teachers who leave at high rates creates a vicious cycle that exacerbates the problem and reduces achievement. Other solutions are needed. Strategies below have been found effective in North Carolina and other states for increasing the pipeline of prepared teachers who stay in teaching.

In focus groups conducted for this study, teachers identified the significant challenges recruiting and retaining teachers in high-poverty, rural schools. Other research conducted for this project and elsewhere has identified the strong relationship between teacher preparation and teacher retention and noted the large and growing percentage of North Carolina teachers entering the classroom without having completed teacher preparation. To return to a set of conditions that will enable a stable, effective teaching force, the state should:

A. ***Rebuild capacity within the North Carolina system*** (public and private) ***and increase the number of UNC teacher graduates***, with a goal of returning to former levels of production within five years. A goal of increasing production from 3,300 to 5,000 in-state-trained and credentialed teachers annually would be appropriate. In addition to incentives for candidates (see below), this may require funds to redesign/rebuild programs that have been reduced.

Minority-serving institutions (MSIs) should be a special focus for expansion, given the strong positive effect teachers of color have on the achievement of students of color — particularly with respect to African American teachers and their students. Expanding this pool of teachers may also require a review of the state teacher testing program to ensure that any barriers to entry that are unrelated to capacity to teach effectively are removed and that there are multiple pathways to demonstrate competency.

B. ***Expand and redesign the current North Carolina Teaching Fellows program***, providing targeted incentives for high-need fields and communities. The long-standing, highly successful North Carolina Teaching Fellows program was ended briefly, then restarted at a much lower level of funding and with new features. It currently provides up to $33,000 per candidate over four years to cover the cost of teacher preparation in exchange for an eight-year commitment to teach (four years if teaching at a low-performing school). Demand for the program far exceeds the number of funded slots. This year there were 2,000 applicants for 200 slots.

The state should significantly expand its investment in this program and consider refinements to better target recruitment to and deepen preparation for rural, high-poverty schools. The state could:

- Set a goal of increasing the number of candidates from 200 to 1,000 within three years and to 2,000 within five years;
- Reinstate the additional leadership training the Fellows once received and include training in culturally responsive and trauma-informed teaching;
- Expand the number of campuses that can host Fellows and include one or more historically Black colleges and universities (HBCUs) in that group of campuses;
- Target candidates to high-poverty schools rather low-performing schools (so as not to create incentives for low performance) and to rural schools; and
- Emphasize expanding the pool of candidates of color and candidates in shortage fields.

C. Carefully design and seed ***teacher residency programs*** in high-need rural and urban districts in North Carolina, through a state matching grant program (leveraging ESSA Title II/state dollars). Teacher residencies have been successful in many states at solving teacher shortages by providing candidates with high-quality preparation that includes a full year of post-graduate clinical training in a university–school district partnership program, tied to financial support (e.g., a salary or stipend), a credential at the end of the year, and a commitment to remain teaching in the district for three to five years. Residencies have high rates of retention and add diversity (Guha, Hyler, & Darling-Hammond, 2016).

North Carolina already has some successful residency models in the state, such as the North Carolina A&T Teacher Residency (MSI / HBCU), which partners with Randolph County Schools and Stokes County Schools (Carver-Thomas, 2018).

To accomplish the expansion of this kind of high-quality program, the state would need to better design the teacher residency route, recently legislated as a means to replace the lateral-entry license through Senate Bill 599 in 2017. Currently, the definition in the bill does not adequately incorporate the features of successful residencies and could lead to suboptimal training that misses the benefits of well-developed residency programs.

D. ***Expand Grow Your Own programs***, especially as a strategy to build the supply of teachers who are committed to staying in rural and high-poverty schools. Grow Your Own teacher preparation programs recruit and train local community members, career changers, paraprofessionals, after-school program staff, and others currently working in schools. Drawing on what some researchers have called the "pull of home," local graduates and community members offer a sustainable solution to teacher shortages while also often increasing the diversity of the teacher workforce. Grow Your Own (GYO) programs are underway in many states, including Alaska, Arkansas, California, Colorado, Delaware, Minnesota, Mississippi, Pennsylvania, and South Carolina (Espinoza, Saunders, Kini, & Darling-Hammond, 2018).

Successful GYO models include North Carolina's ***TA to Teachers program*** to support teaching assistants in earning their teacher certification, often through community college pathways. The research team heard in interviews how successful this has been in some rural counties. Expanding this program would be a useful way to support a stronger, more stable teaching force in these communities.

California recently invested $45 million in a similar program, the ***Classified Staff Teacher Preparation program***, which offers up to $20,000 in tuition support to classified staff members over five years to earn their teacher credential. It would be ideal for this program to be offered for tuition in both undergraduate and postbaccalaureate programs, as many classified staff members who already hold a bachelor's degree could complete their teaching credential in one year and be available to teach.

Other GYO models include ***2 + 2 programs*** that allow candidates to begin teacher preparation at a community college and then finish at a four-year institution, making teacher preparation more accessible in rural areas, more affordable, and more likely to recruit diverse candidates. An example of such a program exists at Elizabeth State College serving Halifax County (Carver-Thomas, 2018).

A companion strategy is to expand ***high school career academy programs*** such as the North Carolina Teacher Cadet Program. A similar teacher cadet program in South Carolina has had strong outcomes (Espinoza, Saunders, Kini, & Darling-Hammond, 2018). Future Teachers of North Carolina is a recently created program (S. 598, 2017–18), run by the UNC system that may provide another means for strengthening the pipeline for teachers who will work in high-need districts if the focus is on recruiting from those communities.

2. Increase and equalize compensation, including, but not limited to wages (e.g., housing, child care, loan repayment, retention bonuses in high-need schools).

North Carolina salaries have dropped to about 37th in the nation, and the state is losing teachers it trains to nearby states that pay more. Salary supplements make salaries unequal and exacerbate inequalities in teacher recruitment and retention. Compensation issues are not limited to wages. Many factors make teaching attractive and affordable in different contexts, so it is useful to consider compensation broadly. Research has shown that major, strategic changes in compensation in states and districts have often resolved shortages within a few years. Strategic policies could include the following:

A. ***Raise and equalize salaries*** so that they are more competitive with surrounding states and other professions. As was done in the 1990s, North Carolina could set a goal and a framework to increase beginning teacher salaries to the national average over the next decade, with concomitant increases in the rest of the salary schedule. Even if it takes a number of years to make the improvements incrementally, making a start and setting a plan will encourage many teachers who might otherwise leave teaching in North Carolina to stay if other conditions are also moving in a positive direction.

Raising the statewide minimum salary would also decrease the need for salary supplements, which create inequalities across districts. This is especially problematic when these are a function of wealth. If there is a need to take

into account cost-of-living differentials, this could be better accommodated by applying a cost of living factor to the salary schedule itself.

B. Add ***financial incentives*** for recruitment and retention that can bring qualified teachers to high-need communities. These can include supplements to income such as ***subsidized teacher housing*** where needed, especially in rural communities. This can be accomplished by working with the State Employees Credit Union Foundation, the North Carolina Housing Finance Agency, or other similar agency. Five school districts in North Carolina already have apartment complexes specifically for their teachers: Asheville, Buncombe County, Dare County, Hoke County, and Hertford County. Financed with the help of zero-interest loans from the State Employees Credit Union Foundation, the teacher apartment complexes contain two-bedroom, two-bathroom apartments that rent below market for teachers.

The state could create a ***professional support block grant*** for the purpose of recruiting, retaining, and developing teachers, which can be used for mentoring, incentives for recruitment and retention (loan repayments, housing supports, child care supports, retention bonuses), engagement in National Board certification, collaboration time, professional development days, and other strategies to support teachers. This could either be targeted to high-need districts and schools or it could be available to all districts, with the amounts weighted by the numbers of students in poverty, those who are new English learners, and other pupil needs.

Finally, the state could better ***leverage the expertise of National Board–certified teachers*** to go to and stay in high-poverty schools and to serve as mentors and instructional leaders. In addition to the salary increment NBCTs receive, the state could consider an additional multiyear stipend for NBCTs who teach in high-poverty schools, as many other states and districts have done, including Alabama, Arkansas, California, Colorado, Hawaii, Maryland, Mississippi, Montana, Utah, Washington, West Virginia, and Wisconsin (Espinoza, Saunders, Kini, & Darling-Hammond, 2018). Studies in California found that statewide stipend payments of $5,000 per year for four years to teachers who had earned National Board certification and worked in low-performing schools contributed to a much more equitable distribution of such teachers than was true in other states.

State policy can also better leverage financial incentives for NBCTs by linking these incentives to increased opportunities to serve as mentors and instructional leaders. Florida, for example, for a time offered both a certification bonus and a mentoring bonus for NBCTs, both equivalent to 10% of salary; the latter bonus required the NBCT to provide 12 days of mentoring or other support to colleagues.[9]

3. Ensure all new teachers receive preparation to meet current needs and mentoring from capable, well-trained mentors in order to increase retention and effectiveness.

A substantial body of research indicates that teachers who are better prepared and better mentored stay in teaching at much higher rates and are more successful, especially in high-need environments (Podolsky, Kini, Bishop, & Darling-Hammond, 2016). Many teachers interviewed reinforced the need both for more comprehensive training to meet the acute needs of the students they serve and for more readily available mentoring.

9 http://www.fldoe.org/teaching/recognition/dale-hickam-excellent-teaching-program/salary-mentoring-bonuses.stml

North Carolina has leveraged strong improvements in the past through licensing, accreditation, and mentoring programs that have atrophied and need renewal. To improve the capacity of new teachers to succeed — which enhances their willingness to stay in the profession — the state can:

A. Use ***licensing and accreditation*** rules, which guide what programs provide and candidates must learn, plus ***improvement grants to programs***, to leverage strong clinical training and learning for standards-based, culturally responsive, trauma-informed teaching that can attend to students' social, emotional, and academic development.

B. Expand and improve the ***New Teacher Support Program*** so that it is able to support all new teachers. Currently, just 1,000 of approximately 15,500 North Carolina teachers with less than three years of experience are served. As this program is expanded, it should ensure that mentors are well trained, are in the same field as mentees, and have released time that allows them to coach novices in their classrooms as well as support their planning. The most well-developed programs also provide novices with a reduced teaching load and collaboration time with other teachers in their department or grade level.

C. Require ***greater levels of mentor support and training*** for teachers of record who are not yet fully licensed, ensuring that they get access to the professional development and induction support they need and, ideally, begin to transition into residency programs that offer high-quality clinical training with wraparound coursework for a more coherent, better-supported form of preparation.

4. Address **teaching and learning conditions** that affect retention, including professional learning opportunities and whole-child supports.

As described in a companion paper (Berry, Bastian, Darling-Hammond, & Kini, 2019), conditions that allow teachers to do their work more effectively influence retention — these include instructional knowledge and skills, collaboration opportunities, opportunities to use and be recognized for expertise, and wraparound supports for children that allow them to learn and that reduce trauma in their lives and in the lives of educators trying to help them. That paper describes more fully several policies that can address these conditions. These would:

A. Invest in principal preparation professional learning that prepares principals to cultivate collaborative working environments and in teacher-led learning and professional development, which have a strong impact on teacher effectiveness and retention.

B. Develop a cadre of teacher leaders across the state who are able to facilitate teacher-led professional learning and coaching with their colleagues in person and virtually.

C. Create university and Pre-K–12 partnerships to support content-focused, standards-based professional learning that is aligned with preservice efforts and available virtually as well as on-site.

Strengthen the Principal Workforce

Research conducted as part of this project demonstrates that North Carolina faces a declining supply of qualified school principals. In higher-poverty districts, this has resulted in a relatively inexperienced principal workforce, high levels of principal turnover, and many principals who do not feel well prepared to lead school change efforts. North Carolina currently allocates no state funds to professional development for principals.

The research team offers three recommendations to increase the supply and retention of well-prepared, diverse, and committed principals and other school leaders committed to serving in North Carolina public schools: expansions to high-quality recruitment and preparation programs, access to mentoring and professional development, and changes in compensation and evaluation strategies.

1. Expand high-quality pipelines and training that supports entry and retention.

Principals who are well prepared are more likely to enter and stay in the principalship. Strong models exist in the state for preparing principals, and can be utilized if resources are invested to support candidates' capacity to participate in these programs. To address these needs, the state can expand the ***North Carolina Principal Fellows program***, which has a 25-year track record of success preparing principals who have been found to be effective and who are more likely both to take principalships when they receive their credentials and to remain in their positions. In addition, ***North Carolina State University's Educational Leadership Academy*** has been recognized nationally as a high-quality program that works to prepare and retain principals in high-poverty, hard-to-staff, and historically low-performing schools. Finally, the ***Transforming Principal Preparation grant program***, which has launched programs in six regional sites to prepare principals for high-need schools. The state can financially support candidates' ability to participate in these programs and expand their capacity, ensuring that they provide a residency or internship working alongside an expert principal and that both the residency and the aligned coursework provide support to principal candidates in learning how to design schools for student and teacher learning.

2. Update preparation and professional development to meet current needs.

As noted in this report, the better prepared and supported principals are with the knowledge and skills they need to succeed, the more likely they are to stay in the profession and in challenging schools. To support principals' likelihood of success, the state can:

A. Use licensing and accreditation levers, plus improvement grants to programs and professional development funding, to ***leverage strong principal learning*** for standards-based, culturally responsive, trauma-informed leadership that can attend to social, emotional, and academic development, including leadership of community-school approaches that can support success in high-poverty schools.

B. Ensure, through preparation and professional development, that principals are prepared to ***create collaborative learning environments for teachers***, which can enhance effectiveness and stem turnover in the teaching force.

C. Create ***mentoring, induction, and coaching opportunities*** for the existing principal workforce, as some states have done. In Delaware, for example, the state leadership academy, which operates out of the University of Delaware, provides mentoring for beginning principals and coaching for veterans. In Georgia, the Georgia Leadership Institute provides these supports.

3. Rationalize and improve principal compensation and evaluation.

The research team learned from principals that the current compensation system, which replaces credit for experience with data from school test scores, is a strong disincentive to stay in the profession in North Carolina, as it can cause large fluctuations in salary, especially in high-need communities where school leadership is already more demanding and stressful. To address this problem, we recommend ***revising the principal salary structure*** so that it ensures an adequate level of compensation competitive with other jobs requiring similar skills and training, provides a more dependable set of expectations for compensation, and creates incentives, rather than disincentives, for working in high-need schools. We also suggest that the state consider whether other compensation incentives are needed to offset disincentives that may have been created by elimination of retiree health benefits and pension benefits for leaders hired after 2021.

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