

Teacher Apprenticeship in North Carolina

Exploring In-Classroom Preparation
for the Next Generation of Teachers





Teacher Apprenticeship in North Carolina

Exploring In-Classroom Preparation for the Next Generation of Teachers

Table of Contents

Introduction.....	ii-iii
I. Potential Impact: How Teacher Apprenticeships Can Strengthen the Educator Workforce in North Carolina.....	1-4
II. Nuts & Bolts: Components of Teacher Apprenticeship.....	5-7
III. The Teacher Apprenticeship Landscape in the United States.....	8-9
IV. The Teacher Apprenticeship Landscape in North Carolina.....	10-12
V. Recommendations	
Phase I: Pilot Recommendations.....	13-19
Phase II: Statewide Implementation.....	19-21
VI. Conclusion.....	22
VII. References.....	23

Acknowledgements

This report is the result of three years of research and conversations around the need for a statewide teacher apprenticeship strategy that aligns and complements North Carolina's work to transform the teacher pipeline through initiatives like Advanced Teaching Roles. Much thanks to the teams at the [NC Department of Public Instruction](#), [ApprenticeshipNC](#), [myFutureNC](#), [RTI International](#), [Reach University](#), and numerous local school districts and educator preparation programs for their contributions to this work.



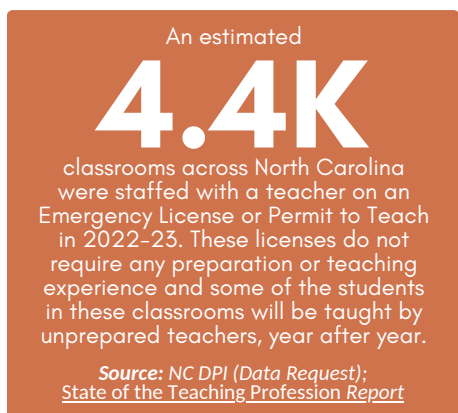
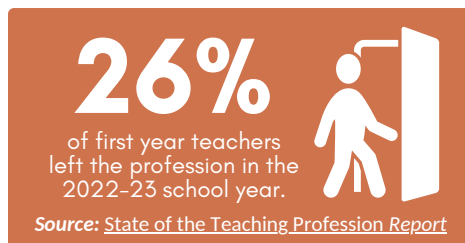
BEST NC is a non-profit, non-partisan coalition of business leaders committed to improving North Carolina's education system by convening, informing, and engaging state leaders to identify and advance improved education policies, programs, and initiatives. BEST NC envisions a North Carolina in which every student graduates with the knowledge, skills and behaviors to succeed in a competitive global economy. Our mission is to unite an engaged and informed business perspective to build consensus toward dramatically transforming and improving education in North Carolina.

INTRODUCTION



Research has consistently found that teachers are the single-most important in-school factor for student success.ⁱ For those seeking policy solutions that will improve student achievement, there is nothing more vital than a teacher pipeline that recruits high-quality candidates, provides them with opportunities to learn and grow in the profession, and retains them over time as their expertise and effectiveness increases.

Unfortunately, recent state-level data highlights serious challenges in North Carolina's teacher pipeline, with both higher-than-normal levels of teacher attrition and persistent teacher vacancies. Teacher attrition reached a seven-year high in 2023-24 at 14.4% and in 2022-23, there were an estimated 6,000 teacher vacancies, with higher vacancy rates in hard-to-staff subject areas like math and special education and in higher-poverty districts.^{ii, iii}



Perhaps even more important, new teachers in North Carolina are nearly twice as likely to be underprepared for the job than they were just 10 years ago. In the 2022-23 school year, 41% of new teachers had no formal teacher preparation or in-class experience before entering the classroom. On average, these teachers have higher turnover rates and are less effective than traditionally prepared teachers.

One of the top-five recommendations from the [NC STRIDE teacher recruitment working group](#), teacher apprenticeship is widely recognized as a tool that has the potential to recruit and retain more teachers by reducing barriers to entering, finding success, and remaining in the profession. By pairing high-quality

educator preparation with a meaningful, paid, on-the-job learning experience, teacher apprenticeship can help schools fill critical vacancies and better prepare new teachers to improve student outcomes.

BEST NC believes a robust, statewide registered teacher apprenticeship program will strengthen the teacher pipeline in North Carolina by:

- 1. Reducing attrition and helping schools retain more of their teachers, disrupting the costly cycle of teacher turnover and giving students access to more experienced, more effective teachers.**
- 2. Addressing challenges created by the growing pipeline of college-educated professionals who are interested in becoming a teacher but have no traditional teacher preparation or classroom experience.**
- 3. Increasing the diversity of teachers by eliminating barriers to the teaching profession and recruiting candidates from the teacher assistant workforce and others who have not yet earned a college degree.**

A strong teacher pipeline is one of the key ways to improve student achievement. A robust teacher apprenticeship achieves this goal in several ways. First, it will ensure that no student has an unprepared teacher in their classroom as the only teacher responsible for their learning. Second, by ensuring high-quality preservice teaching experience and preparation, new teachers who go through an apprenticeship will, on average, be both better prepared and stay longer in the profession. These benefits translate directly to students. Student growth scores are higher, on average, when they are taught by teachers who complete traditional preparation and when taught by experienced teachers.

Teacher apprenticeship is a topic of great interest across the country, but effective statewide implementation eludes most states. By leveraging existing initiatives and learning from other states, North Carolina has an opportunity to develop a strong statewide teacher apprenticeship program that creates a new and innovative pathway into the profession, helps schools fill critical vacancies and retain more of their effective teachers, and better prepares teachers to drive student achievement gains from the moment they enter the classroom.

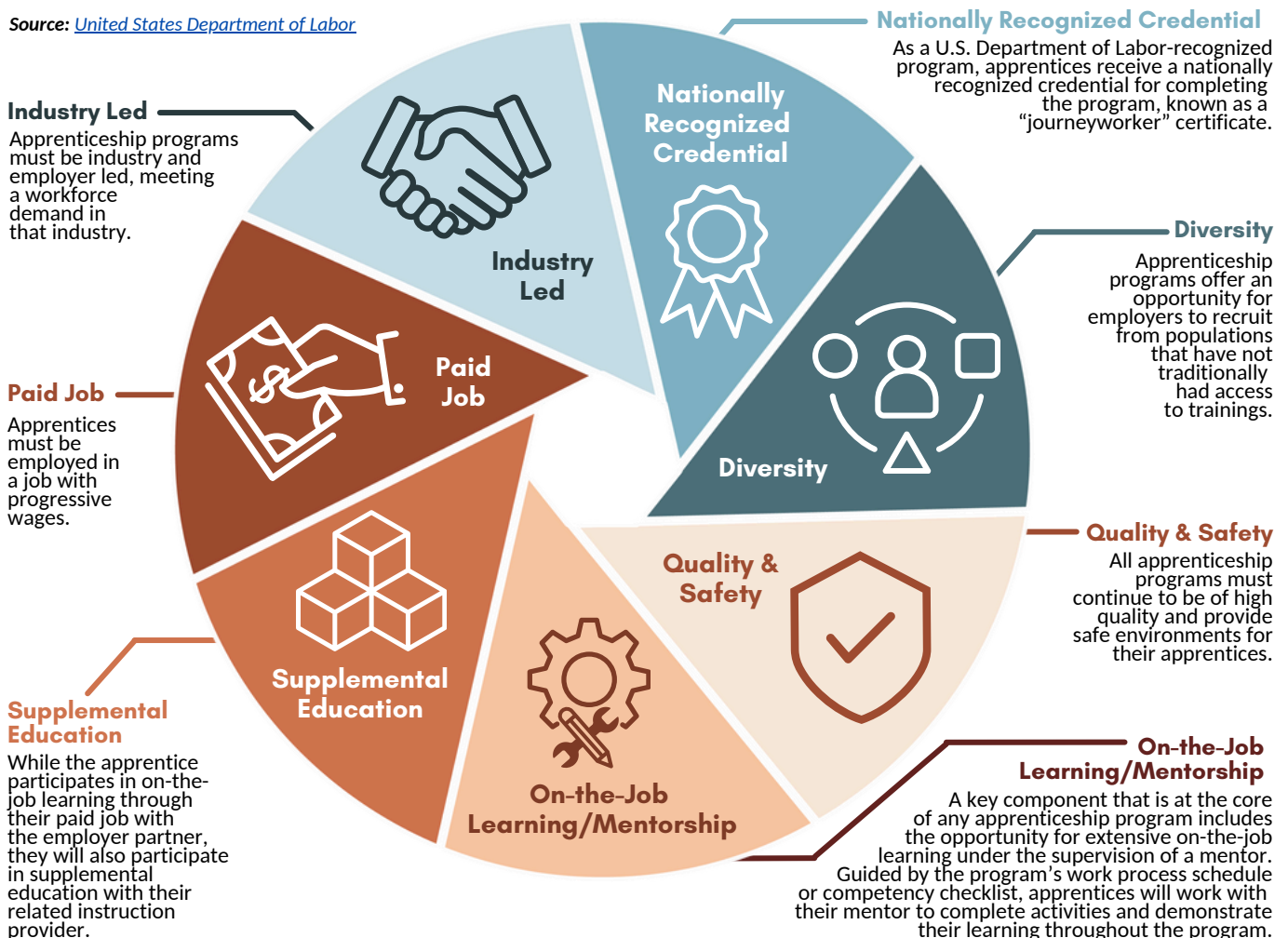
There are three primary teacher candidate populations that would benefit from entering the teaching profession through an apprenticeship. These are:

- College-educated professionals who want to become a teacher but who do not want to immediately become a teacher of record.
- High-potential candidates, such as teacher assistants, who have some college experience and are seeking a lower-cost, more supportive pathway into the profession.
- Teacher candidates coming through traditional educator preparation programs seeking extended, paid student teaching opportunities.

At scale, each public school in North Carolina would support one-to-two teacher apprenticeship positions. A smaller-scale pilot program is a vehicle to flesh out important policy and implementation questions, resulting in learning that supports the long-term success and sustainability of a fully scaled statewide teacher apprenticeship program.

EX i.i - Components of a Federally-Registered Apprenticeship Program

Source: [United States Department of Labor](https://www.dhs.gov/e-verify/)



I. POTENTIAL IMPACT: HOW TEACHER APPRENTICESHIPS CAN STRENGTHEN THE EDUCATOR WORKFORCE IN NORTH CAROLINA

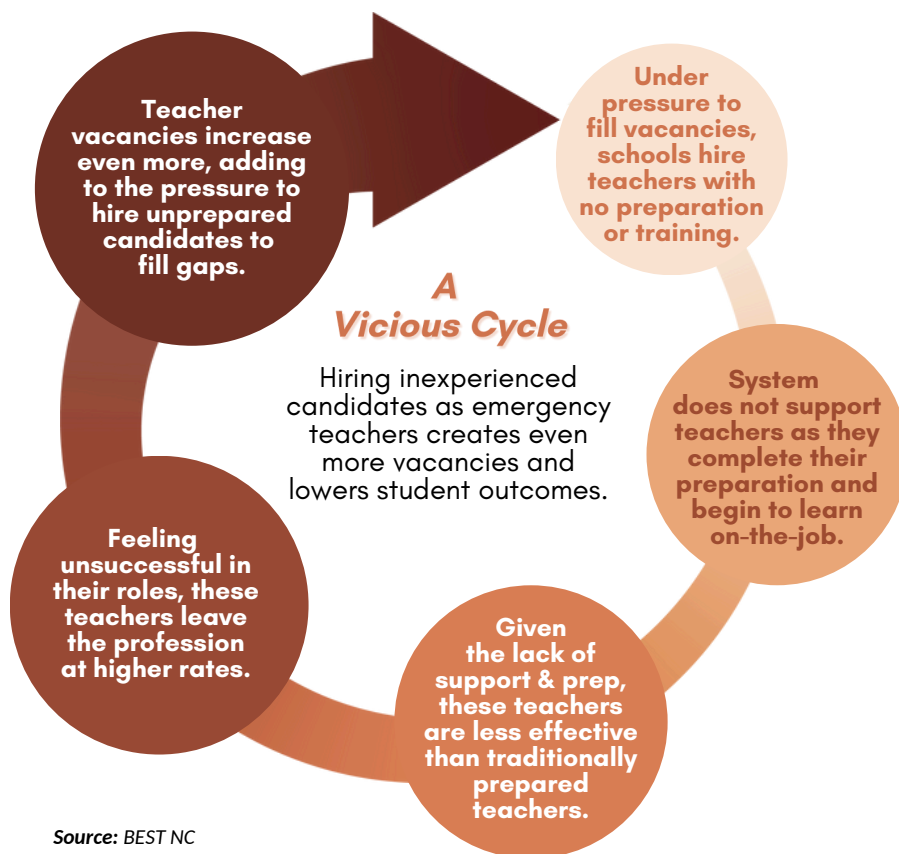


➤ **There are three primary ways that a robust teacher apprenticeship program can strengthen and expand the teacher pipeline in North Carolina and improve student access to effective educators.**

1. Reducing attrition and helping schools retain more of their teachers, disrupting the costly cycle of teacher turnover and giving students access to more experienced, more effective teachers.

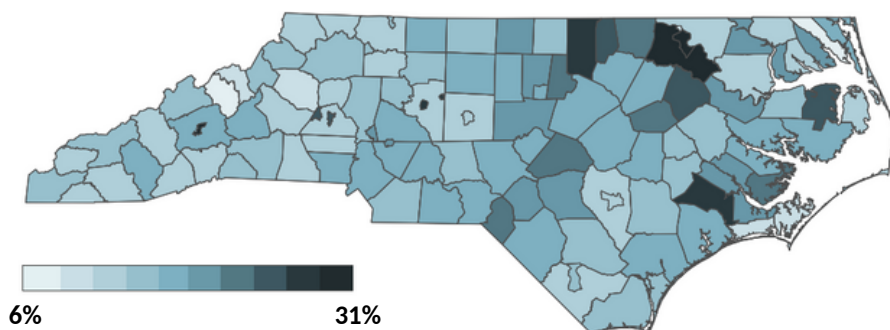
Registered apprenticeship programs have been shown to reduce attrition, which can help schools retain teachers longer and give more teachers an opportunity to find success in the profession.

Teacher attrition and vacancies are a major teaching workforce challenge. In 2023-24, teacher attrition in North Carolina was 14.4%.^{iv} Meanwhile, there were an estimated 6,000 teacher vacancies in 2022-23, with higher vacancy rates in hard-to-staff subject areas like math and special education and in higher-poverty districts.^v Importantly, beginning teachers also leave the profession at markedly higher rates. An astounding 26% of first-year teachers in 2022-23 did not return to teach in North Carolina the following school year.^{vi} This figure suggests that, early in their careers, many teachers lack the preparation and support necessary to persist in the profession.



Source: BEST NC

EX I.1 - K-12 Traditional Public School Teacher Departure Rates, by District (2022-23)



Source: NC DPI, [State of the Teaching Profession Report](#)

Elevated teacher attrition for beginning teachers has detrimental effects on students, because teachers markedly increase their effectiveness over the first six to eight years of their careers. When schools replace teachers lost to attrition with brand new teachers, they are, in effect, “starting over” with a new teacher who must enter the profession and improve their effectiveness over time.



“*Every time a school starts over with a new teacher, the instruction students receive becomes less effective.*”

Not only are beginning teachers likely to be replaced by similarly inexperienced teachers who are at the same elevated risk of leaving, but teacher attrition costs districts between \$10,000 and \$20,000 per leaving teacher. Costs are associated with separation, recruitment, hiring, and training.^{vii}

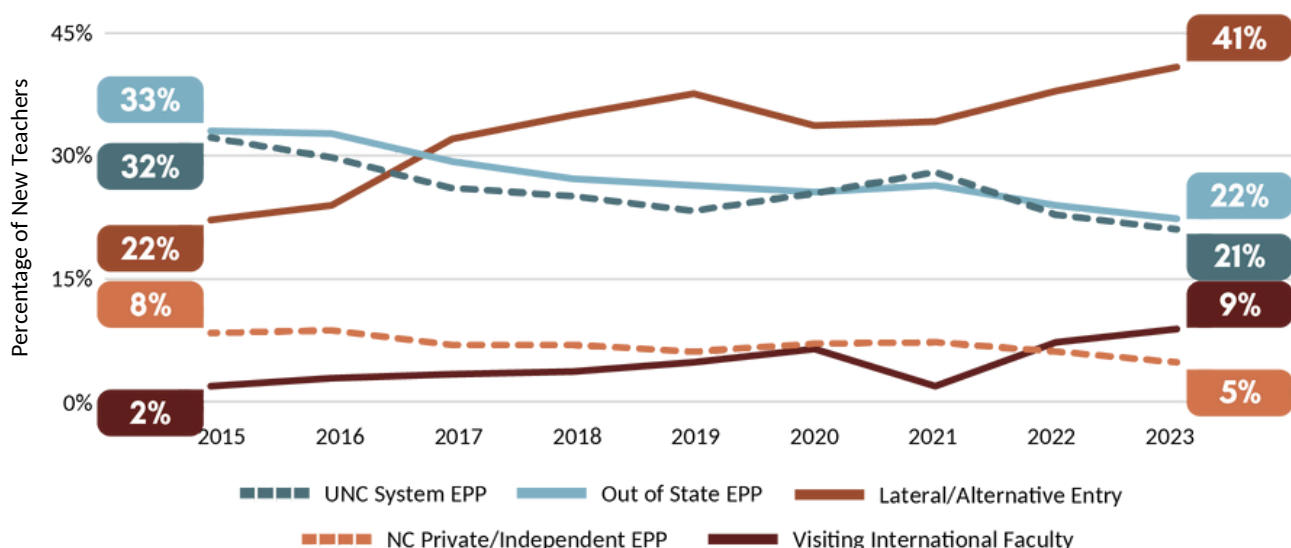
Apprenticeships are designed to provide teacher candidates with significant, job-specific training and mentorship that ensures they are prepared to succeed in the role and have deep knowledge of their local context before completing their program. As a result, teacher apprenticeships have the potential to help schools and districts reduce attrition and retain effective teachers.

2. Addressing challenges created by the growing pipeline of college-educated professionals who are interested in becoming a teacher but have no traditional teacher preparation or classroom experience.

By offering registered apprenticeships, teacher candidates who have not received formal training or classroom experience can take the time they need to become better prepared prior to taking on the incredibly important job of being a classroom teacher.

In North Carolina, a significant and growing portion of new teachers enter the profession via alternative preparation routes, which require candidates to hold a bachelor’s degree but allow them to work full-time as a teacher without formal teacher training or classroom experience. In 2023, 41% of all first-year teachers were alternatively prepared, almost double the percentage of teachers just eight years prior (see Exhibit I.2 below).

EX I.2 – Distribution of Preparation Routes for Newly Hired K-12 Public School Teachers (2015 to 2023)



Source: NC DPI (Data Request)

32%

of first year teachers during the 2022-23 academic year had **NO** preparation prior to becoming a classroom teacher and were not required to enroll in a preparation program upon becoming employed.

Source: NC DPI (Data Request)

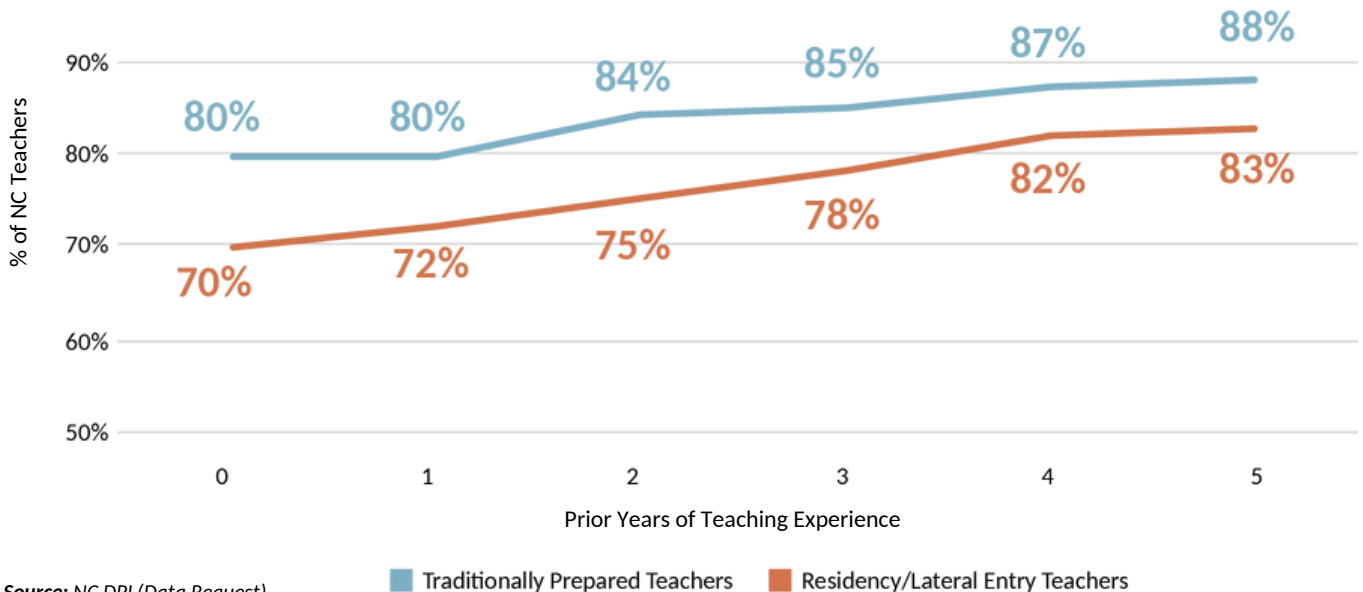
Teachers can enter on a Residency License and teach for up to three years while they are simultaneously completing their educator training or they can enter on a Permit to Teach or Emergency License, which are non-renewable one-year licenses that do not require enrollment in an educator preparation program (EPP). The latter two licenses are intended to be used infrequently as stopgap measures for teachers intending to obtain a Residency License but who cannot yet enroll in an EPP.

Unfortunately, recent data suggest that, among alternatively prepared teachers, the percentage who enter on a Permit to Teach or Emergency License has increased dramatically from 46% in 2019-20 to 75% in 2022-23. This accounts for 32% of all first-year teachers in 2022-23.^{viii} For many teachers entering the profession laterally, the cost of enrolling in an EPP is unmanageable, and Permit to Teach and Emergency licenses allow these teachers to buy time and for school districts to fill vacancies.

There are significant challenges associated with these licenses, however – 49% of these teachers leave after one or two years in the classroom without ever receiving teaching training. This means that tens of thousands of students are in a classroom, perhaps year after year, with teachers who may not be adequately prepared to teach them. Research shows that the long-term effects of this can be very damaging to students' academic success. A recent study comparing two cohorts of third grade students showed that successive years exposed to a highly effective teacher resulted in student achievement increasing by 15 percentage points, while successive years exposed to an ineffective teacher lowered student achievement by 10 percentage points.^{ix} Research has also shown that exposure to ineffective teachers negatively impacts students in multiple ways, including reduced chances of graduating high school, lower college attendance rates, diminished lifetime earnings, and poorer long-term health outcomes.

While residency licensure and other alternative licensure pathways offer important access to teaching for college-educated professionals who want to switch careers and help schools – especially low-performing and high-poverty schools – fill vacancies, student growth data reveal alternatively prepared teachers are less effective than traditionally prepared teachers at entry. Importantly, the differences in effectiveness persist for at least the first six years of their careers. These data suggest alternatively prepared teachers would benefit from more intensive embedded on-the-job training to help bridge the gaps that stem from entering the profession without formal teacher training.

EX I.3 – Percent of NC Public School Teachers Meeting or Exceeding Expected Student Growth Over First Six Years of Teaching, by Preparation Route (First Year Teachers in 2013-14, 2015-16, and 2016-17)



Source: NC DPI (Data Request)

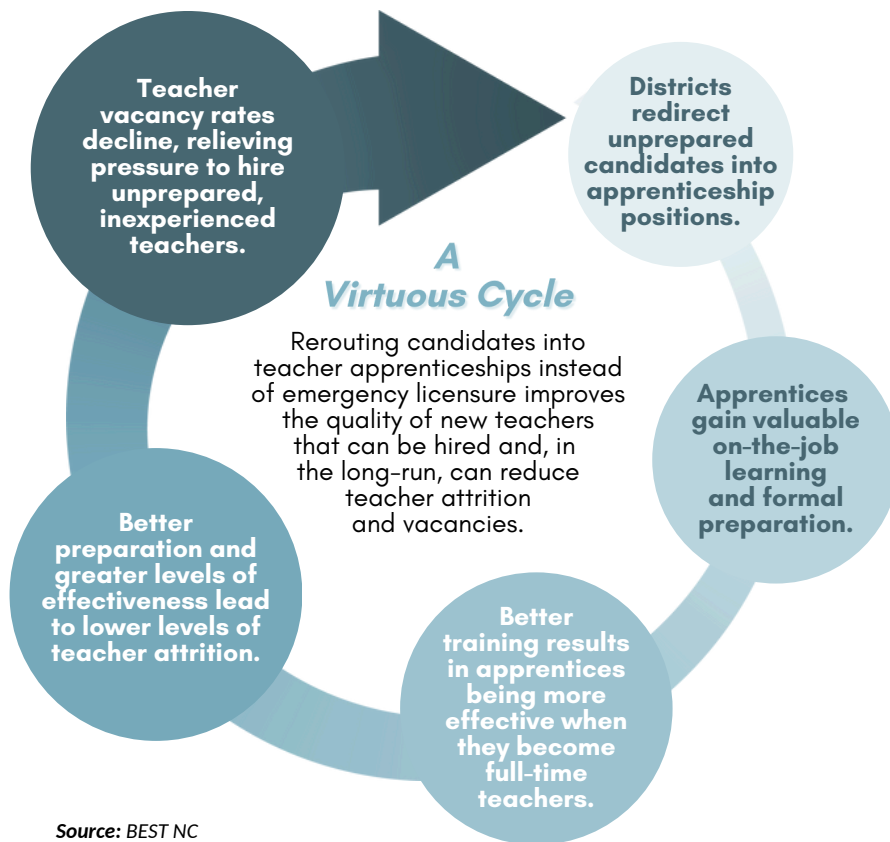


Registered apprenticeships can provide an opportunity for college-educated professionals to “try on” the teaching profession without immediately becoming the teacher of record. Although many qualified bachelor’s degree candidates will continue to enter on a residency license, at scale, teacher apprenticeship could replace the Permit to Teach and Emergency License entry points which currently allow college graduates to teach without enrolling in a preparation program. As apprentices, these individuals would benefit from the direct, embedded support of a highly effective teacher colleague – particularly in schools implementing Advanced Teaching Roles (see Exhibit V.2 on page 16) – increasing their readiness to support students’ academic gains upon becoming a teacher of record or transitioning them out of the profession if they cannot demonstrate readiness to become a teacher of record.

3. Increasing the diversity of teachers by eliminating barriers to the teaching profession and recruiting candidates from the teacher assistant workforce and others who have not yet earned a college degree.

In addition to an uneven distribution of highly qualified teachers, the teacher workforce in North Carolina does not reflect the racial and ethnic diversity of public school students.

One way to improve the diversity of the teacher workforce is to pave the way for teacher assistants to train to become teachers. Data from the North Carolina Department of Public Instruction show that teacher assistants are much more diverse than the teacher workforce as a whole – people of color represent fewer than one out of five teachers but make up more than one-third of teaching assistants.^{xi} Research also shows that teacher assistants more closely match the linguistic diversity of students than teachers.^{xii}



Teacher assistants are high-potential teacher candidates – they already have experience working in schools with children and often want to become teachers. Survey data from TeachNC reveals that 63% of teacher assistants in North Carolina state that they “definitely” want to become a teacher or “are seriously considering becoming a teacher.”^{xiii} However, they experience barriers to entry that make the transition difficult, including difficulty paying for coursework and testing needed for certification, as well as navigating the licensure process.

Registered apprenticeships have the potential to strengthen and diversify the teacher workforce by offering a lower-cost, more supportive pathway into the profession for high-potential teacher assistants and other candidates.

Source: BEST NC

II. NUTS & BOLTS: COMPONENTS OF TEACHER APPRENTICESHIP



➤ Components of an Apprenticeship

The United States Department of Labor (U.S. D.O.L.) is responsible for registering apprenticeship programs. In 46 states, the U.S. D.O.L. authorizes a state agency – called a State Apprenticeship Agency (SAA) – to register apprenticeships with the federal government. In North Carolina, the SAA is ApprenticeshipNC, a part of the North Carolina Community College System.^{xiv}

There are seven components of all federally registered apprenticeships:



Industry Led

Apprenticeship programs must be industry and employer led, meeting a workforce demand in that industry.



Nationally Recognized Credential

As a U.S. Department of Labor-recognized program, apprentices receive a nationally recognized credential for completing the program, known as a “journeyworker” certificate.^{xv}



Diversity

Apprenticeship programs offer an opportunity for employers to recruit from populations that have not traditionally had access to trainings.



Quality & Safety

All apprenticeship programs must continue to be of high quality and provide safe environments for their apprentices.



On-the-Job Learning/Mentorship

The core of any apprenticeship program includes the opportunity for extensive on-the-job learning under the supervision of a mentor. Apprentices will work with their mentor to complete activities and demonstrate their learning throughout the program.



Supplemental Education

While the apprentice participates in on-the-job learning through their paid job with an employer partner, they will also participate in supplemental education with a related instruction provider.



Paid Job

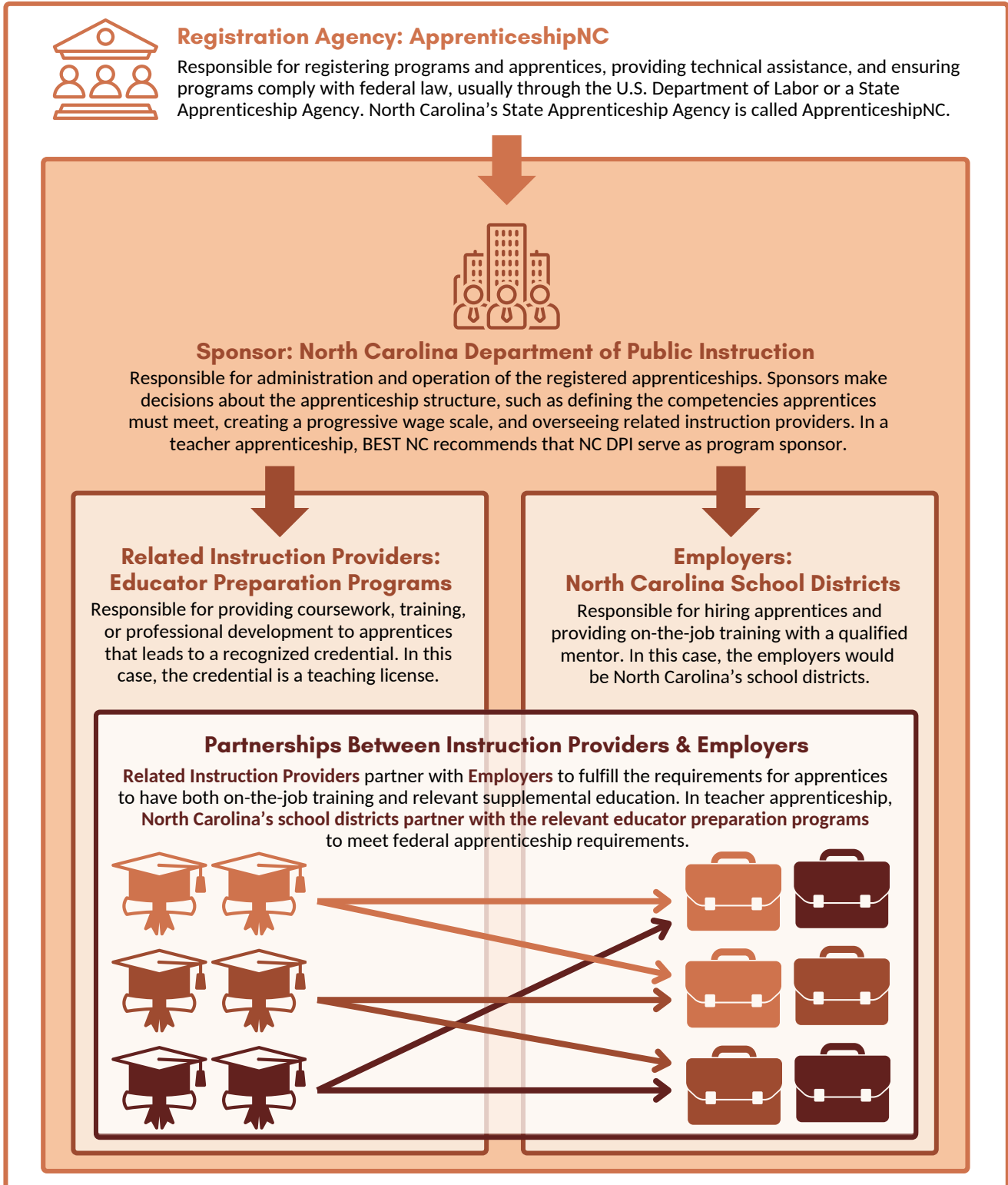
Apprentices must be employed in a job with progressive wages.

Source: [United States Department of Labor](#)

➤ Key Apprenticeship Partners

All registered apprenticeships must designate agencies that will play key roles in their operation. Exhibit II.1 below shows the spheres of influence each partner has within the apprenticeship model, the relationships between those agencies, and how this model can be deployed in North Carolina.

EX II.1 - Key Partners in Federally-Registered Apprenticeship Programs



Source: [United States Department of Labor](#)

➤ Apprenticeship Funding

Registered apprenticeships may be funded exclusively by employers, but employers often take advantage of federal and state funding streams to offset qualified expenses related to the apprenticeship program. Registering an apprenticeship program with the U.S. D.O.L. gives employers and their apprentices access to federal funds via the Workforce Innovation and Opportunity Act (WIOA). WIOA funds can be used to support on-the-job training, related instruction, and a host of other associated expenses, such as books, supplies, childcare assistance, and transportation.^{xvi} In 2023-24, North Carolina received \$69 million in WIOA funding to be used for various workforce development efforts.^{xvii}

While the main source of federal funding is WIOA, federal grants can also be awarded to states. Some of these grants have been based on a formula (every state gets some money), while others are competitive grants that require states to apply for funding.

States pass federal funds for registered apprenticeships through to regional workforce development boards, which are groups of community leaders appointed by local elected officials and charged with planning and oversight responsibilities for workforce programs in their area. In North Carolina, there are 20 regional workforce development boards.^{xviii}

Workforce development boards are empowered to develop their own policies to stipulate which industries, organizations, and apprentice candidates are eligible to access funding, and which portions of an apprenticeship – e.g. on-the-job training, related instruction, or other expenses such as supplies and transportation – are eligible for reimbursement. The result is that, within a given state, workforce development boards can have a wide variety of policies and eligibility criteria.

In addition to federal funding streams, states can allocate funds to support apprenticeships – either broadly or within specific industries. Like federal funding, state funds can either be administered based on formulas to all apprenticeship programs that meet specific eligibility criteria or via a competitive grants process.

➤ Evidence of Effectiveness

Research consistently demonstrates that apprenticeships benefit both the employer and the apprentice. A study of apprenticeship participants from a U.S. D.O.L. grant program found that the return on investment for employers operating a federally registered apprenticeship program was 144%, meaning that, for every \$100 invested by employers, the registered apprenticeship program generated \$144 in total benefits.^{xix}

A separate assessment of federally registered apprenticeships in 10 states revealed that the benefits of the program (including increased productivity and decreased dependence on government programs) outweighed the costs for state and federal government agencies by an average of almost \$60,000 over the first nine years of the program. The same study found that, nine years after completion of an apprenticeship program, apprentices earned about \$6,000 more per year than demographically similar candidates who did not participate in an apprenticeship program.^{xx}

Part of the reason that apprenticeships are so cost-effective is that they tend to generate indirect benefits for employers, including decreased employee turnover (see Exhibit II.2 below). Indirect benefits can last for years beyond the period of the apprenticeship.

EX II.2 – Indirect Benefits of Apprenticeship Programs Reported by Employers



Source: [United States Department of Labor](#)

III. THE TEACHER APPRENTICESHIP LANDSCAPE IN THE UNITED STATES



Teacher Apprenticeship in the United States

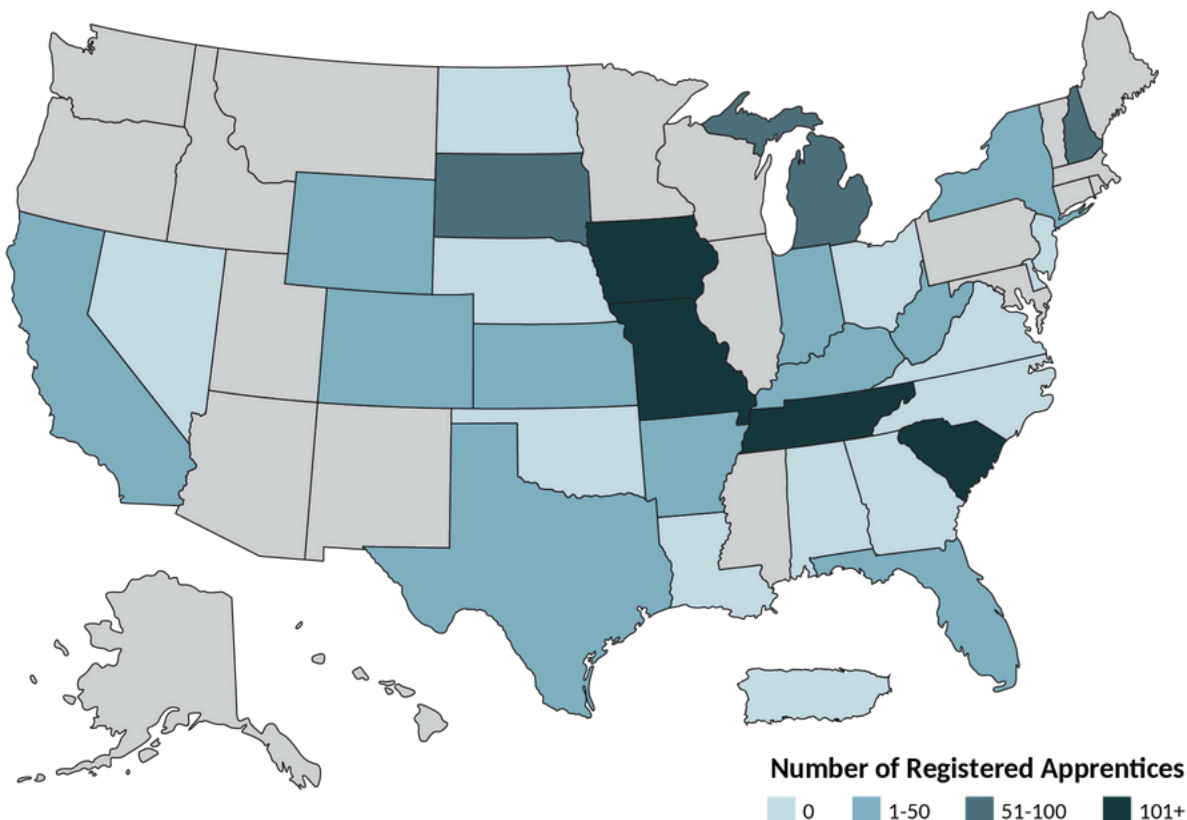
Tennessee was the first state in the nation to establish a federally registered teacher apprenticeship program in 2018 (see next page). Since then, there has been remarkable growth in the teacher apprenticeship movement – as of January 2025, school districts in 46 states and Puerto Rico, the Virgin Islands, and Washington D.C. have established registered teacher apprenticeships.^{xxi}

The target populations and entry points for prospective apprentices in registered teacher apprenticeships vary across states. While some states and districts are recruiting from the teacher assistant pool, other states are focused on supporting high school students.^{xxii}

State support of school districts’ efforts to establish teacher apprenticeships also varies widely. Of the 46 states with a registered program, 11 list the state department of education or another state agency as an apprenticeship sponsor.^{xxiii} Additionally, some states, like Tennessee (\$20 million) and Florida (\$9 million), have targeted state funds specifically to grow teacher apprenticeships, while in other states, school districts have established registered apprenticeships without any state funds explicitly directed to support teacher apprenticeships.^{xxiv}

Nationally, just over 3,600 teacher apprentices were enrolled in 2024 across 46 states, with nine states enrolling more than 100 teacher apprentices.^{xxv} Given the nascent stage of development of most states’ efforts to advance registered teacher apprenticeships and the variety of strategies being deployed so far, the next decade will be an important period of experimentation, learning, and growth.

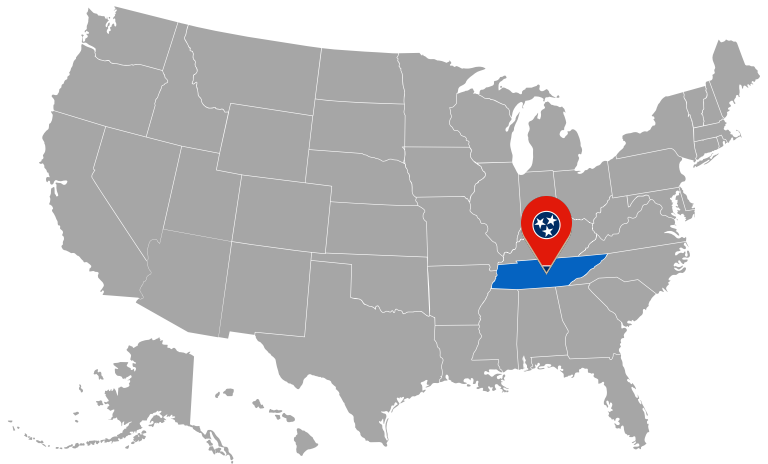
EX III.1 – States with Registered Teacher Apprenticeship Programs (January 2025)



Source: [Educator Registered Apprenticeship Intermediary](#).

➤ Tennessee: The First Federally Registered Teacher Apprenticeship Program in the United States

Teacher apprenticeship programs in the United States began in 2018-19 with Tennessee's Grow Your Own model, which used ESSER funding to support partnerships between school districts and educator preparation programs to prepare teacher apprentices. Teacher apprenticeship programs grew rapidly in the state and, in January 2022, the U.S. D.O.L. officially approved Tennessee's Grow Your Own model, making it the first federally registered teacher apprenticeship program in the nation. In May of 2022, the state allocated \$20 million in federal ESSER funding to launch its Grow Your Own Center, a partnership between the Tennessee Department of Education and the University of Tennessee System to support teacher pipeline initiatives, chief among them teacher apprenticeships.^{xxvi} In 2023, 57 apprentices completed the program and an additional 678 were enrolled.



Apprenticeship Experience

Tennessee has 11 educator preparation programs (EPPs) partnering with 73 school districts – approximately half of all school districts in the state – to offer teacher apprenticeships.^{xxvii} School districts in Tennessee, in cooperation with their EPP partners, establish their own prior education requirements, ranging from a high school diploma to a bachelor's degree. The result is a wide variety of pathways and entry points across the state.^{xxviii}

Apprentices work under the tutelage of a mentor teacher for at least a year of on-the-job learning. Apprentices with a bachelor's degree typically complete their related instruction at an EPP in about a year, those with an associate's degree complete their studies in approximately two years, and those with less than two years of college credit take up to three years. The apprenticeship is competency-based, meaning that successful demonstration of skills and knowledge in an authentic setting is necessary to complete the program. Apprentices earn a progressively increasing wage as they demonstrate a sequence of competencies.^{xxix}

Mentor teachers for teacher apprentices in Tennessee must have at least three years of experience and have demonstrated effectiveness on a recent teaching evaluation. Mentors are responsible for evaluating whether apprentices have met the competencies required to complete the program and may receive training in coaching and adult development. Mentor teachers receive a stipend for their work, the amount of which varies from district to district.^{xxx}

Funding

The Tennessee Grow Your Own Center awards funds to EPPs via a competitive grants process. Grants were funded from 2020-2022 using federal ESSER dollars. However, with the sunsetting of ESSER relief dollars, the most recent round of funding in 2023 came from the state via the Governor's discretionary fund. Total state funding per teacher apprentice amounts to between \$5,000 and \$10,000 per candidate and pays for a portion of apprentices' instructional costs (e.g. tuition, fees, books, and testing).^{xxxi, xxxii} Because state funds do not cover the full cost of tuition, they are braided with other funding sources, such as federal WIOA dollars, as well as state and federal sources of grant-based tuition assistance.^{xxxiii}

While paying for apprentices' related instruction requires braiding together funding from a wide variety of federal, state, and local sources, funding for apprentices' on-the-job training is more straightforward. School districts are responsible for all apprentices' salaries and benefits, including progressive wage increases as apprentices demonstrate increased competency. Districts often utilize funding for teacher assistant positions or funds set aside for unfilled positions.^{xxxiv}

IV. TEACHER APPRENTICESHIP IN NORTH CAROLINA



▶ North Carolina's First Steps Toward Teacher Apprenticeship

Early District Efforts Provide Evidence that More Funding and Policies Are Needed

Initial efforts to implement registered teacher apprenticeships at the district level have highlighted the need for state investment and policy changes to ensure their feasibility and success.

For example, in 2022, Edgecombe County Schools and Hertford County Schools registered teacher apprenticeship programs with ApprenticeshipNC. However, neither district's registered apprenticeship program was able to enroll any apprentices. In Hertford and Edgecombe, the two most significant roadblocks to enrolling apprentices were a lack of funding to support teacher apprentices' related instruction costs and a lack of technical assistance to braid together public funding streams to support districts' programs.

“ After 12 months without enrolling any apprentices, programs were cancelled by ApprenticeshipNC. ”

Each district planned to enroll candidates currently employed as teacher assistants in their teacher apprenticeship program. Teacher assistant salaries would be paid using state allotments, local funding would be used for the gradually increasing salary scale required for all registered apprenticeships, and one-time federal COVID relief dollars from the State Fiscal Recovery Fund would be used to cover the cost of related instruction. However, rules required apprentices accessing these funds be between the ages of 16 and 25, and most apprentice candidates in Hertford and Edgecombe were older.^{xxxv} This left the districts unable to cover the cost of related instruction (between one and two years of tuition, fees, and books for most teacher assistants) for apprentice candidates, with apprentice candidates also unable to afford these costs. As a result, after 12 months without enrolling any apprentices, their programs were cancelled by ApprenticeshipNC.

In summer 2023, Wayne County Public Schools (WCPS), in partnership with Wayne Community College, registered a teacher apprenticeship program with Apprenticeship NC. The program is open to teacher assistants and other classified employees with at least 48 credit hours of undergraduate coursework, with the first nine teacher apprentices beginning their training in fall 2024. Wayne County is leveraging existing teacher assistant positions to support teacher apprentice wages and plans to use \$25,000 in one-time incentive funding from the [Educator Registered Apprenticeship \(ERA\) Intermediary](#), which is funded by the U.S. Department of Labor, to help teacher apprentices offset the cost of related instruction at an educator preparation program of their choosing. The district will provide \$2,000 per year for each apprentice by braiding incentive dollars, federal Title II funding, and local funding.

Also in 2023, Lenoir, Greene, and Jones County Schools partnered with Lenoir Community College (LCC) to register a teacher apprenticeship program targeting high school students who want to become teachers. Tuition, fees, and books for apprentices' first two years are paid for using a combination of funds from North Carolina's Career and College Promise dual enrollment program and the Lenoir Community College Foundation's LCC Guarantee Scholarship. After two years, apprentices will transfer their LCC credits to a four-year college or university of their choice to complete their undergraduate education, with the local school districts covering the cost of tuition for the final two years.

Apprentices work as paid employees in their local school district in a variety of capacities throughout the course of their apprenticeship and the funding for apprentices' wages comes from districts' local budgets. Due to the extensive financial commitments of the local school districts, both Greene and Jones counties plan to enroll one apprentice at a time, and Lenoir County will enroll two.

Note: There are a number of other North Carolina public school districts that have designed or are designing their own teacher apprenticeship programs.

Initial State Investment Has Minimal Impact Thus Far

In response to growing interest and need from local school districts, the North Carolina General Assembly allocated \$1 million in recurring funding to create the Teacher Apprentice Grant Program. The policy provides grants to school districts to cover the cost of tuition (up to \$4,600 per semester for up to four academic years) at an EPP for eligible teacher apprentices. However, to be eligible, apprentices must be employed in an elementary school in the same school district where they graduated high school. These narrow eligibility criteria have limited the number of candidates that can qualify. This program is an important first step on which a broader teacher apprenticeship strategy can be built.

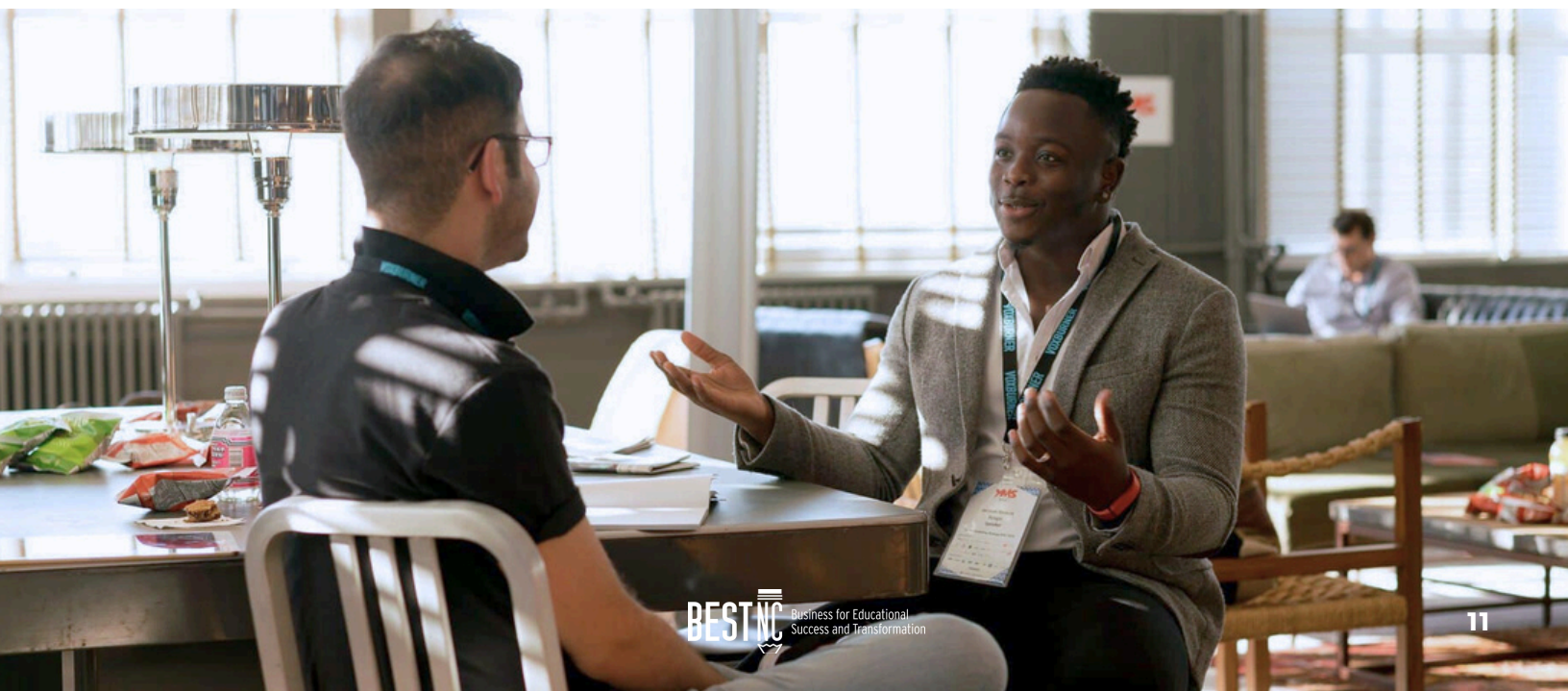
► **Support for a Broad Teacher Apprenticeship Strategy in North Carolina**

Given staffing challenges and increasing national momentum around apprenticeship, teacher apprenticeship was a major recommendation of both the [NC STRIDE Action Plan for Teacher Recruitment](#) and [Pathways to Excellence for Teaching Professionals](#). Populations of pre-service teacher candidates that could be tapped to fill teacher apprenticeship positions include:

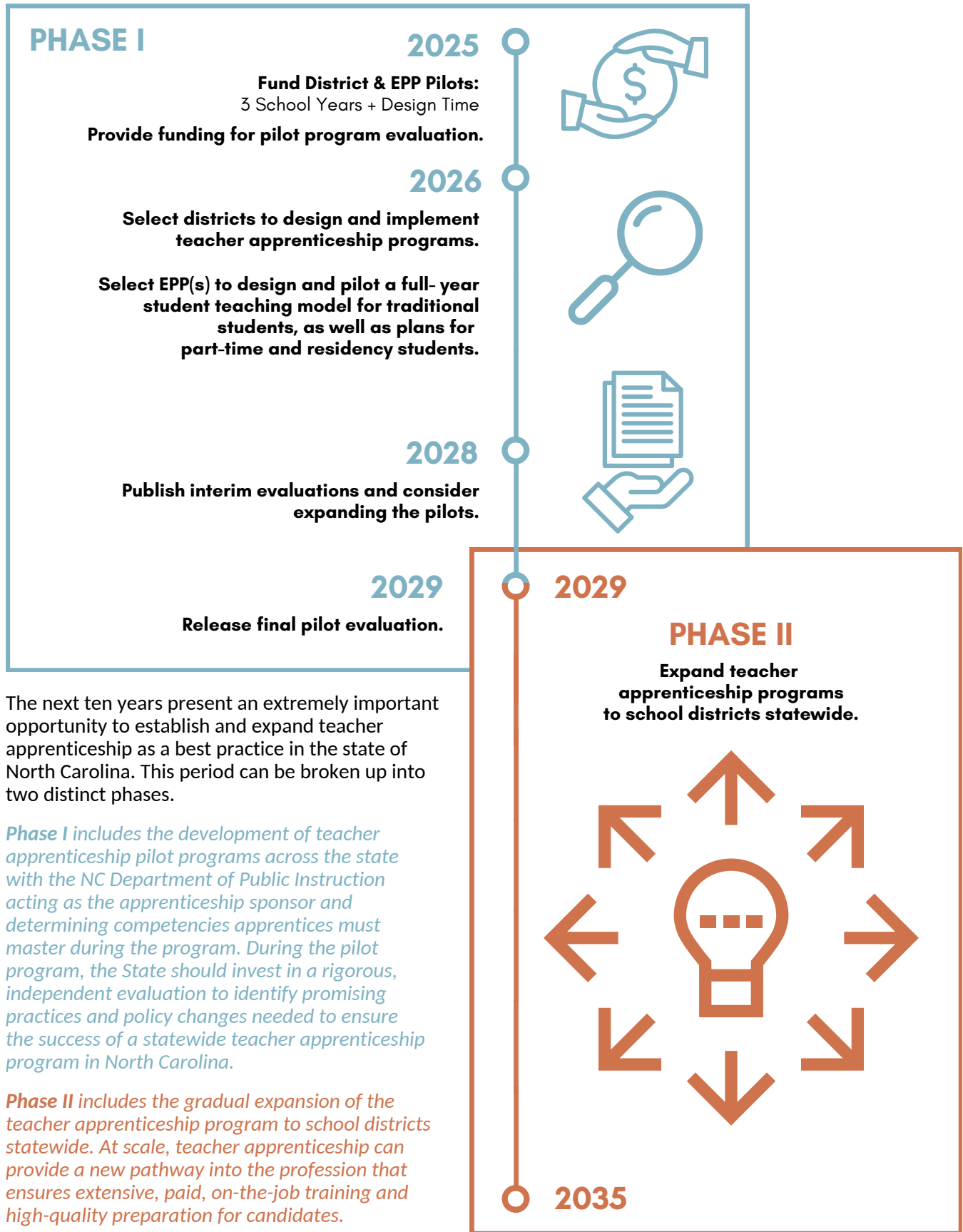
1. College-educated professionals who want a pathway into the teaching profession without immediately becoming the teacher of record. Apprentices from this group currently enter the profession on a Residency License, an Emergency License, or a Permit to Teach.
2. High-potential teacher assistants seeking a lower-cost, more supportive pathway into the profession. This candidate pool could also include other classified school employees, such as office support staff, or other qualified candidates with some college but no degree.
3. Teacher candidates coming through traditional educator preparation programs seeking extended, paid student teaching opportunities during the final year of their preparation. A yearlong apprenticeship could replace the traditional semester of student teaching.

Drawing from these three pools of pre-service teacher candidates, North Carolina could recruit and support around 5,700 teacher apprentices with roughly two apprentices in each of the state's approximately 2,700 public schools.

However, there are many unanswered questions about the most effective practices for recruiting, placing, and supporting these future teachers. We, therefore, recommend a short-term pilot program that is designed to lay the foundation for full, statewide implementation of a robust teacher apprenticeship initiative to support a large portion of future teachers to benefit students.



EX IV.1 - Recommended Phases of Teacher Apprenticeship Implementation in North Carolina



The next ten years present an extremely important opportunity to establish and expand teacher apprenticeship as a best practice in the state of North Carolina. This period can be broken up into two distinct phases.

Phase I includes the development of teacher apprenticeship pilot programs across the state with the NC Department of Public Instruction acting as the apprenticeship sponsor and determining competencies apprentices must master during the program. During the pilot program, the State should invest in a rigorous, independent evaluation to identify promising practices and policy changes needed to ensure the success of a statewide teacher apprenticeship program in North Carolina.

Phase II includes the gradual expansion of the teacher apprenticeship program to school districts statewide. At scale, teacher apprenticeship can provide a new pathway into the profession that ensures extensive, paid, on-the-job training and high-quality preparation for candidates.

V. RECOMMENDATIONS



PHASE I: Pilot Recommendations

The following recommendations detail how to establish a teacher apprenticeship pilot program that will encourage innovation and experimentation within districts and EPPs and provide policymakers with crucial learning to inform eventual expansion to a statewide program.

1. **Establish a Competitive Grants Pilot Program that Awards Grants to School Districts to Launch Registered Teacher Apprenticeship Programs.**
2. **NC DPI Should Act as the Sponsor and Technical Assistance Provider for a North Carolina Registered Teacher Apprenticeship Program.**
3. **School Districts, Selected through a Competitive Grants Process, Should Act as Registered Apprenticeship Program Employers.**
4. **Require a Rigorous Independent Evaluation of the Apprenticeship Pilots.**
5. **Prioritize Teacher Assistant and Alternative Entry Teacher Candidates for Teacher Apprentice Positions.**
6. **Give Priority to Districts Implementing Advanced Teaching Roles.**
7. **Teacher Apprenticeship Pilots Should Identify Strategies to Ensure District Human Resource Directors Place Alternative Entry Candidates into Teacher Apprentice Positions Instead of Emergency License and Permit to Teach Roles.**
8. **Provide School Districts with Technical Assistance to Braid State and Federal Funding Streams to Serve and Graduate the Maximum Number of Teacher Apprentices.**
9. **Incentivize EPPs to Design Programs That Support Teacher Apprenticeship and Remove Policy Barriers that Inhibit Innovation.**

Pilot Recommendation #1: Establish a Competitive Grants Pilot Program that Awards Grants to School Districts to Launch Registered Teacher Apprenticeship Programs.

The State of North Carolina should launch a teacher apprenticeship pilot program, offering grant funding to support up to 15 districts and a total of 100 apprentices. In this teacher apprenticeship pilot program, school districts would utilize teacher assistant positions to provide the base salary for teacher apprentices (100 teacher assistant positions represents about 0.5% of the approximately 24,000 teacher assistants statewide). Districts would then use grant funding to pay for:

- A salary supplement for teacher apprentices to increase their pay relative to teacher assistants, reflecting more rigorous expectations and increased responsibilities of teacher apprentices compared to teacher assistants (average teacher assistant salary was \$25,100 in 2022-23).^{xxxvi}
- Progressive pay increases as teacher apprentices demonstrate skill gains and progress through the program.
- Related instruction costs for teacher apprentices (tuition, fees, books, etc.). In order to access state funding to support tuition, apprentices would ideally have to demonstrate that they have first exhausted grant-based federal financial aid options, such as Pell Grants and Teacher Education Assistance for College and Higher Education grants.

BEST NC estimates a per-apprentice cost of approximately \$15,000 per candidate per year, and with an additional \$500,000 budgeted for technical assistance and pilot program evaluation, anticipated costs for the pilot program would be approximately \$2 million in the first year, with an additional \$1.75 million in the second year.

➤ **Pilot Recommendation #2: The North Carolina Department of Public Instruction (NC DPI) Should Act as the Sponsor and Technical Assistance Provider for a North Carolina Registered Teacher Apprenticeship Program.**

In order to ensure consistency and quality of teacher apprenticeship programming in each pilot district, NC DPI should act as the sponsor of a single statewide teacher apprenticeship program, with each school district receiving grant funds acting as a participating employer (see pilot recommendation #3 below). As the sponsor of the apprenticeship program, NC DPI should be charged with:

- Outlining the duties and responsibilities of teacher apprentices as they move through the program, with particular emphasis on on-the-job training requirements.
- Creating competencies for teacher apprentices that reflect progressive acquisition of skill and knowledge by the apprentice. Ideally, competencies will align with the North Carolina Educator Evaluation System's Teacher Candidate Evaluation Rubric, which articulates the standards for pre-service teachers approved by the North Carolina State Board of Education:^{xxxvii} *Districts should retain the flexibility to add additional competencies that reflect skills and dispositions needed to meet district goals.*
- Creating resources that can be used by districts to select and train mentor teachers, providing prospective mentors with background information related to teacher apprenticeship programs and direction on their responsibilities as a mentor.
- Providing technical assistance to district personnel or contracting with an external provider to deliver that support (see Pilot Recommendation #7 on page 17).
- Evaluating or contracting with an external entity to evaluate the pilot program to determine best practices and barriers to expansion (see Pilot Recommendation #9 on page 18).

➤ **Pilot Recommendation #3: School Districts, Selected through a Competitive Grants Process, Should Act as Registered Apprenticeship Program Employers.**

School districts have always been the recipients, or end users, of the teacher talent pipeline. This means they have also been subject to the ebbs and flows of the pipeline – if there are fewer highly qualified new teacher candidates, schools and students suffer. A registered apprenticeship program flips this dynamic – districts have agency to influence the quality and quantity of incoming teachers.

With NC DPI setting overarching apprenticeship standards and competencies, districts, acting as the employer in the registered apprenticeship program, can then be incentivized to tap into the talent in their schools and communities to leverage a teacher apprenticeship pathway to increase the number of well-prepared teachers that serve their students.

In their applications to receive state funding under a teacher apprenticeship pilot program, school districts should, at a minimum:

- Convey how a registered teacher apprenticeship program would help to address their district's unique human capital challenges (for instance, focusing on local shortages in specific subject areas).
- Articulate a detailed system of supports for teacher apprentices in their applications, including the qualifications for the lead or mentor teachers and a basic schedule of support and supervision.
- Identify other sources of funding that will be braided with teacher apprenticeship grant funding to support their program.
- Prioritize teacher assistants and alternative entry teacher candidates for teacher apprenticeship slots (see Pilot Recommendation #4 on the next page).
- Identify how the district's existing Advanced Teaching Roles programming can help to create an ideal learning environment for teacher apprentices (see Pilot Recommendation #5 on the next page).
- Identify strategies to route alternative entry candidates into teacher apprenticeship positions rather than entering the profession on an Emergency license or Permit to Teach, ensuring students have access to better prepared educators (see Pilot Recommendation #6 on page 16).

➤ **Pilot Recommendation #4: Require a Rigorous Independent Evaluation of the Apprenticeship Pilots.**

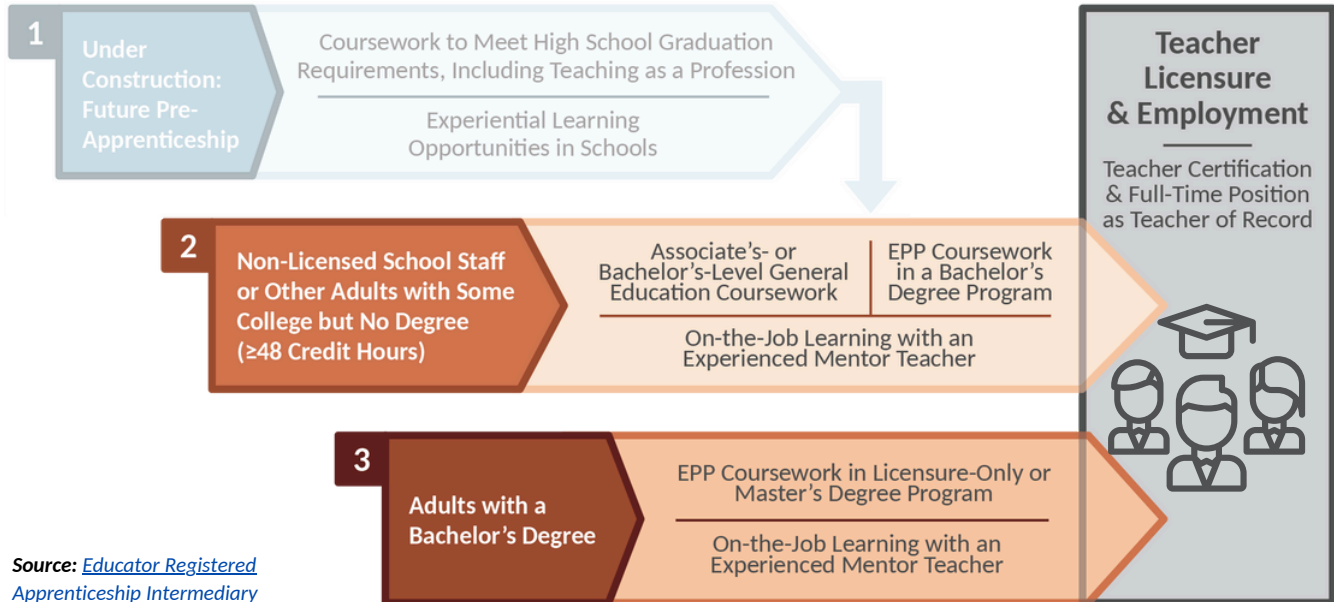
During the pilot program, the NC Department of Public Instruction should contract with an independent research organization to carry out a comprehensive evaluation. This evaluation should analyze both qualitative and quantitative data to assess key factors, including the apprentices' interest in and preparedness for the teaching profession, the program's impact on teacher attrition and vacancies, and any potential effects on student outcomes. To help target resources where they are needed most, the selection process could give priority to districts with greater recruitment and retention needs.

➤ **Pilot Recommendation #5: Prioritize Teacher Assistant and Alternative Entry Teacher Candidates for Teacher Apprenticeship Positions.**

A teacher apprenticeship pilot program should create opportunities for school districts to recruit teacher candidates from within their schools and communities, provide them with training in the schools where they will eventually teach, prepare them to make an immediate positive impact on student achievement, and increase the likelihood that they retain them after they begin teaching.

While there are a number of populations that could benefit from teacher apprenticeship, teacher assistants and alternative entry teacher candidates can demonstrate the most impact in the near term. Teacher assistants have institutional knowledge, are familiar with the students, and are eager to become teachers. They also more closely represent the racial and linguistic diversity of the student body than teachers. Meanwhile, alternative entry candidates are a growing share of North Carolina's new teachers, but student growth data demonstrate that they could benefit from a year of training under the supervision of a highly effective teacher before becoming the teacher of record.

EX V.1 - Teacher Apprenticeship Entry Points and Pathways



Source: [Educator Registered Apprenticeship Intermediary](#)

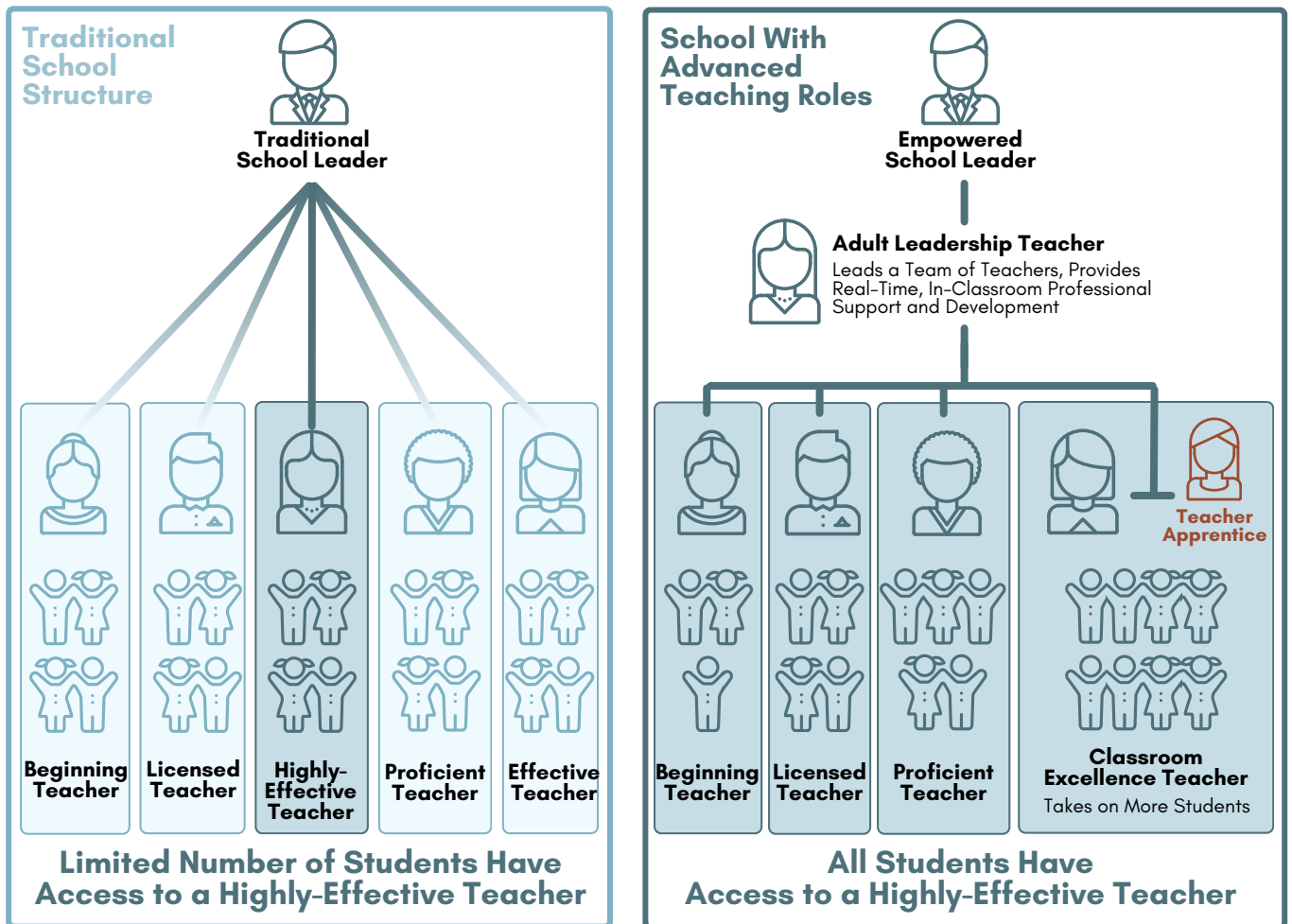
➤ **Pilot Recommendation #6: Give Priority to Districts Implementing Advanced Teaching Roles.**

Advanced Teaching Roles (ATR) is a state initiative that allows districts to design and implement new organizational models that elevate effective teachers leadership positions in which they receive substantial, ongoing pay increases for taking on additional responsibilities. Teachers extend their reach by either leading a team of teachers and providing instructional support for all the teachers on the team (an Adult Leadership teacher) or by directly teaching more students (a Classroom Excellence teacher). As a result, ATR teachers increase the instructional capacity of the entire staff; provide embedded, intentional support for novice teachers; and ensure more students get access to effective instruction. As of the 2024-25 school year, 429 schools in 2 school districts are implementing ATR, accounting for approximately 1-in-6 public schools statewide.

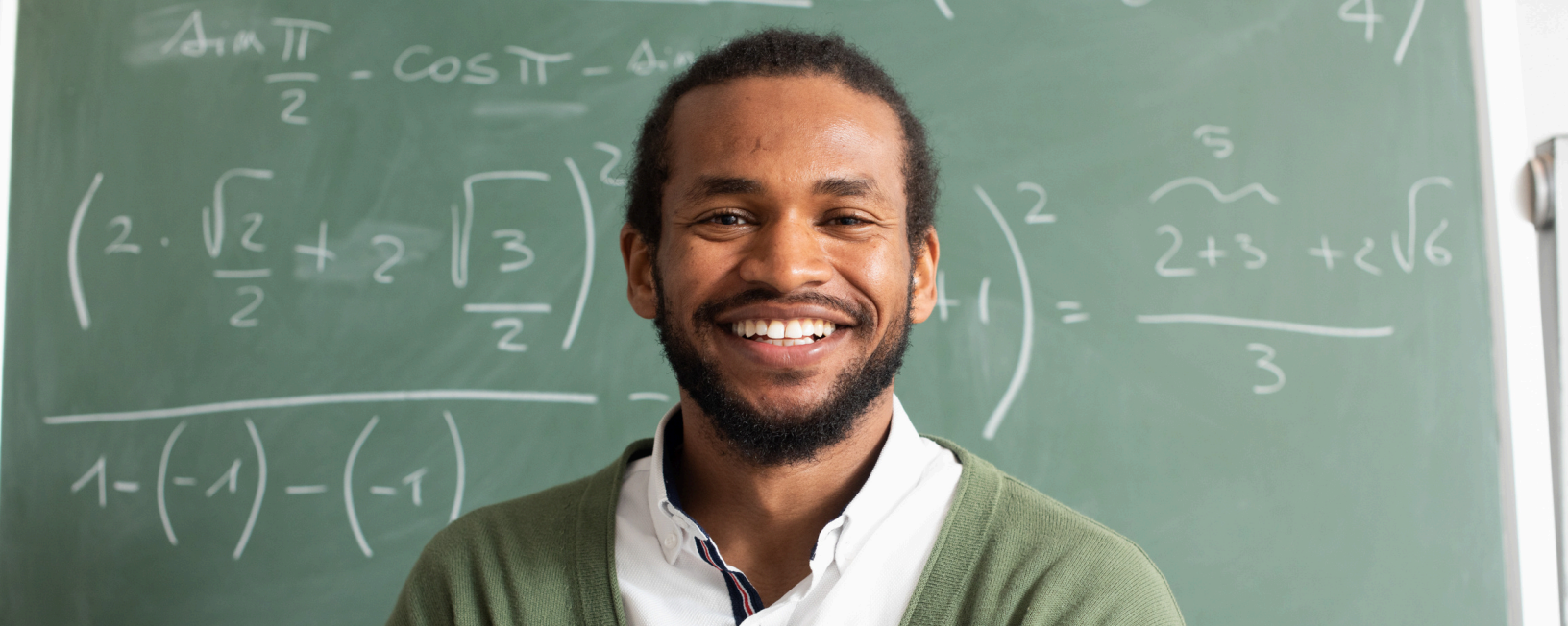
ATR schools are ideal learning environments for teacher apprentices, because they already have the infrastructure in place to support the development of teachers. Teacher apprentices placed on ATR teams would be mentored by and have extensive opportunities to co-teach with a Classroom Excellence teacher (or another teacher with demonstrated effectiveness). They would also receive instructional coaching from an Adult Leadership teacher and learn essential data-driven planning and assessment practices by participating in their teacher team’s weekly data meetings.

Placing teacher apprentices on an ATR team ensures daily professional support and consistent modeling of effective teaching practices, making districts implementing ATR the ideal testing ground for a teacher apprenticeship pilot program.

EX V.2 - Teacher Apprenticeship in Advanced Teaching Roles Staffing Structures



Source: BEST NC



➤ **Pilot Recommendation #7: Teacher Apprenticeship Pilots Should Identify Strategies to Ensure District Human Resource Directors Place Alternative Entry Candidates into Teacher Apprentice Positions Instead of Emergency License and Permit to Teach Roles.**

Given the significant increase in the use of Emergency Licenses and Permits to Teach and that these teachers are less effective and leave the profession at higher rates, North Carolina should consider whether teacher apprenticeship programs provide an opportunity to move away from or potentially eliminate these licenses.

The pilot program creates an opportunity for districts to design and test strategies to successfully re-route potential Emergency License or Permit to Teach candidates into more supportive teacher apprenticeship roles, without leaving classroom teaching positions unfilled. For example, in Advanced Teaching Roles districts, principals could temporarily reassign students to Classroom Excellence teachers, who are effective teachers who receive extra pay for taking on additional students, for a finite time of one to two years, until an apprenticeship teacher is ready to fill the vacant role.

➤ **Pilot Recommendation #8: Provide School Districts with Technical Assistance to Braid State and Federal Funding Streams to Serve and Graduate the Maximum Number of Teacher Apprentices.**

One of the lessons learned from North Carolina's school districts' early attempts to establish teacher apprenticeship programs is that it is challenging to access federal funding for teacher apprentices. While the U.S. D.O.L. has several funding streams to support state-level apprenticeship programs, the processes for accessing those funds are often difficult to navigate for central office administrators who are not accustomed to the federal apprenticeship rules and regulations.

Additionally, as mentioned on page 8, now is a time of significant learning and growth for states attempting to develop a teacher apprenticeship pipeline. As best practices in program design (e.g. recruitment of teacher apprentices and teacher mentors, on-the-job training and support of teacher apprentices, effective school district-educator preparation program partnerships, etc.) emerge in other states, it is imperative that these practices be incorporated into North Carolina's teacher apprenticeship program.

It is therefore reasonable for NC DPI, whether in-house and/or by contracting with an external provider with demonstrated experience and expertise aiding states and districts to establish teacher apprenticeship programs to provide technical assistance to school districts. If contracting with an external provider, the provider should be helping states and districts establish best practices in program design, as well as leverage all available funding streams to support teacher apprentices.



➤ **Pilot Recommendation #9: Incentivize EPPs to Design Programs That Support Teacher Apprenticeship and Remove Policy Barriers that Inhibit Innovation.**

In order for teacher apprentices to successfully complete their on-the-job training and become licensed teachers, their education and coursework requirements must simultaneously allow for them to hold a full-time position in a North Carolina public school. This may require educator preparation programs to make significant changes for teacher apprenticeship, including adapting course sequences to align with the significantly expanded on-the-job training of apprentices, considering how to grant credit for teacher apprentices' work in schools, and offering programming that would allow candidates to realistically complete their preparation in one to two years (for candidates with a bachelor's degree) or two to three years (candidates with some college experience).

North Carolina should consider how to incentivize EPPs to partner with pilot school districts and align preparation coursework with the structure of a teacher apprenticeship. This may include providing funding and/or technical assistance for program redesign in partnership and consultation with school districts, which will be employing teacher apprentices and designing and overseeing the on-the-job training portion of the apprenticeship.

Teacher Apprenticeship and the Potential Role of Philanthropy



While the ultimate goal is to establish a statewide system of teacher apprenticeship that is embedded in all schools and aligned with the overall teacher talent pipeline, the initiation of a pilot program and the development of an apprenticeship model could be accelerated through private sector philanthropic funding. It is important that philanthropic investments are consistent with the recommendations above, so that pilots can translate seamlessly into a statewide teacher apprenticeship program. Philanthropic contributions could include funding for technical assistance for districts, compensation for apprentices, and/or funding for apprentices' related education costs. Ideally, a funder could invest in a district or region that is willing to implement a teacher apprenticeship pilot and that understands the potential for this initiative to transform the teacher pipeline, i.e., the importance of diverting Emergency and Permit to Teach candidates into these roles as a long-term retention strategy.

PHASE II: STATEWIDE IMPLEMENTATION

North Carolina should utilize learnings from the teacher apprenticeship pilot program to inform how to scale the program statewide. As with any innovation, expansion will require patience, persistence, and a thoughtful initiative to ensure all students and teachers can benefit. The following factors should be considered when developing the final program:

? **How can the program be scaled statewide to provide the most benefit to students and educators?**

As explained on page 11, a statewide teacher apprenticeship program can support several types of teacher candidates, including:

- Candidates with a bachelor's degree in an area other than teaching who would prefer to enter the profession through a cost-effective, supportive teacher apprenticeship rather than becoming a teacher of record right way.
- Candidates with some college credit (including those working as teacher assistants); and
- Candidates in traditional EPPs who are away completing the student teaching portion of their training.

Based on current EPP enrollment trends and interest in the state's Teacher Assistant to Teachers scholarship program, BEST NC estimates that a fully scaled teacher apprenticeship program would enroll around 5,700 teacher apprentices per year, or approximately two per public school across the state.

While the pilot program is designed to leverage existing teacher assistant positions to cover the bulk of the cost for teacher apprentice salaries, a fully scaled statewide apprenticeship program would likely require the creation of new positions explicitly for this purpose. Based on the evaluation of the pilot program, the state should consider the most important populations to include in a scaled-up program, the pace of expansion, and the rate of investment.

BEST NC recommends that each full-time apprentice be eligible for a \$35,000 salary, plus health insurance and retirement benefits totaling roughly \$15,000. With an estimated education cost of \$5,000 annually, the annual cost for each apprentice to \$55,000.

? **To what extent, if any, can teacher assistant positions be utilized for teacher apprentices?**

Converting teacher assistant positions to fund a portion of the salary for teacher apprentices is a cost-effective way to support and scale a statewide teacher apprenticeship program. If existing teacher assistant positions are converted to cover the salary and benefits salaries for teacher apprentices, the estimated cost per apprentice would drop from \$55,000 to \$15,000.

There are currently around 22,000 teacher assistants in the state, so 5,700 teacher apprentice positions would represent just 25% of all teacher apprentice positions statewide. Additionally, because teacher apprentices and teacher assistants share overlapping responsibilities, teacher apprentices could still perform many of the duties assigned to teacher assistants but would be better supported due to the coaching and guidance that they would receive from their mentor teacher.

However, given the importance of the teacher assistant role to student learning and school operations and the need to differentiate the teacher apprentice role to prepare the apprentice to become a teacher of record, the state should consider the extent to which teacher assistant positions can be converted to teacher apprentice positions. Regardless of the approach, the state should ensure that teacher apprentice base salaries are supplemented, above teacher assistant pay, to reflect the higher expectations and increased responsibilities of the teacher apprentice role.

? How can North Carolina incentivize EPPs to design programs that align with and support teacher apprenticeship?

As described on page 18, EPPs will likely need to redesign their existing post-baccalaureate programs to align with the structure of a teacher apprenticeship, with special attention on how they can modify coursework to accommodate students who will be employed full-time and if credit can be granted for on-the-job learning. EPPs will also need to consider whether or not their traditional programs can accommodate students working as teacher apprentices for a yearlong, paid student teaching experience.

Based on evaluations of the teacher apprenticeship pilot program, the state should consider how to incentivize all EPPs across the state to align their programs with the structure of the teacher apprenticeship, ensuring that all teacher candidates can receive effective, high-quality preparation. It may also be beneficial to create communities of practice among EPPs to support this work and facilitate the sharing of best practices and lessons learned.

? What ongoing supports will school districts need to operate a registered teacher apprenticeship program?

It is important to consider how school districts, EPPs, state agencies, and local workforce development boards will work together to develop a successful teacher apprenticeship program, and what technical assistance each of these stakeholders will require.

The administrative burden and background knowledge around compliance and funding of registered apprenticeship programs are significant barriers that can hinder school district efforts to operate programs and enroll teacher apprentices. School districts will likely require ongoing technical support on program implementation and continuous improvement, either from NC DPI or from an external provider.

? How can the state's Advanced Teaching Roles initiative be leveraged to support teacher apprentices?

As stated earlier, Advanced Teaching Roles (ATR) is a state initiative enabling districts to design and implement new organizational models that elevate teachers to leadership positions that enables them to earn higher compensation for taking on additional responsibilities. ATR is being implemented in 26 school districts across North Carolina and nine more have been approved to begin implementation in 2025-26. Given the continued interest in and expansion of ATR, the state should consider the degree to which ATR can help create the infrastructure needed to support and monitor apprentices' on-the-job training, including the potential to require ATR teacher leaders to serve as teacher apprentice mentors.

? Over time, can teacher apprenticeship replace Emergency and Permit to Teach Licenses?

In districts participating in a teacher apprenticeship program, it is prudent to consider whether teacher apprenticeship can replace Permit to Teach and Emergency License options, with the goal of providing a more robust and supportive pathway into the profession for teachers entering the profession laterally.

Individuals on Permit to Teach and Emergency licenses are not required to simultaneously enroll in an EPP and may continue teaching for up to two years before they receive any formal training. The use of these licenses has grown substantially since their inception in 2019 and in 2022-23 represented approximately 31% of all new teachers.^{xxxviii}

These candidates stand to benefit greatly from the coursework and on-the-job training provided through a teacher apprenticeship. Districts should consider how to leverage the teacher apprenticeship program in place of Permit to Teach and Emergency licenses, so no student has a teacher without at least a minimal amount of experience and preparation for the important job of being a teacher.

? How can a teacher apprenticeship program inform the development of new measures of teacher effectiveness?

North Carolina requires all teachers to pass content and pedagogy exams in order to become fully licensed teachers and persist in the teaching profession. Many states use this approach, but research and evidence from North Carolina demonstrates that, while licensure exam scores are moderately associated with teacher effectiveness, they also prevent educators who would be effective teachers from becoming licensed.^{xxxix} This unnecessarily constricts the teacher pipeline in North Carolina.

In order to maximize the number of highly qualified teachers entering the profession, the state should examine lessons from the teacher apprenticeship pilot program to determine if it is possible to develop new measures of teacher effectiveness that are more closely related to job performance (which may be used alongside licensure exams). Teacher apprenticeship offers a practical model for measuring preservice teacher candidates' mastery of core teaching competencies in an authentic classroom setting and therefore provides an opportunity for the state to expand how it assesses the skills of teachers entering and persisting in the profession.





VI. CONCLUSION



Schools and districts in North Carolina face urgent challenges in recruiting and retaining effective teachers and filling critical vacancies. These challenges are exacerbated in high-poverty schools where great teachers are needed most. In many districts, schools are trapped in a vicious cycle. New teachers often enter the profession with insufficient training and minimal support, leaving them ill-equipped to foster significant academic growth in their students. As a result, these teachers frequently leave the profession at high rates, only to be replaced by others facing the same obstacles.

North Carolina is one of at least 30 states seeking to capitalize on the strengths of federally registered apprenticeships to address these teacher pipeline challenges. While many efforts have been attempted, none are yet on a clear path to ensure that every teacher candidate can receive rigorous training and classroom experience prior to becoming a classroom teacher.

By leveraging existing initiatives and learning from other states, North Carolina has an opportunity to develop a strong statewide teacher apprenticeship program that creates a new and innovative pathway into the profession, helps schools fill teacher vacancies and retain more of their effective teachers, and better prepares teachers to drive student achievement gains from the moment they enter the classroom. The clear roadmap articulated in this report can make North Carolina a national model for a strong, embedded, and successful teacher apprenticeship program.

VII. CITATIONS



- i. Heck, R. (2009). Teacher effectiveness and student achievement: investigating a multilevel cross-classified model. <https://www.emerald.com/insight/content/doi/10.1108/09578230910941066/full/html>
- ii. North Carolina Department of Public Instruction. (2024). 2022-23 State of the Teaching Profession Report. https://www.dpi.nc.gov/documents/files/state-teaching-profession-2022-2023/download?attachment#:text=The%20calculations%20show%20that%20out_state%20attrition%20rate%20of%2011.45%25.
- iii. North Carolina Department of Information Technology. (2023). State of the Teaching Profession Dashboard. https://bi.nc.gov/t/DPI-EducatorRecruitmentandSupport/Views/StateoftheTeachingProfession/SoTPDashboard?%3Aembed=y&%3AisGuestRedirectFromVizportal=y&%3Aorigin=card_share_link.
- iv. North Carolina Department of Public Instruction. (2024). 2022-23 State of the Teaching Profession Report. https://www.dpi.nc.gov/documents/files/state-teaching-profession-2022-2023/download?attachment#:text=The%20calculations%20show%20that%20out_state%20attrition%20rate%20of%2011.45%25.
- v. North Carolina Department of Public Instruction. (2024). 2022-23 State of the Teaching Profession Report. https://www.dpi.nc.gov/documents/files/state-teaching-profession-2022-2023/download?attachment#:text=The%20calculations%20show%20that%20out_state%20attrition%20rate%20of%2011.45%25.
- vi. North Carolina Department of Public Instruction. (2024). 2022-23 State of the Teaching Profession Report. https://www.dpi.nc.gov/documents/files/state-teaching-profession-2022-2023/download?attachment#:text=The%20calculations%20show%20that%20out_state%20attrition%20rate%20of%2011.45%25.
- vii. Learning Policy Institute. (2024). What Does Teacher Turnover Cost Your School or District? <https://learningpolicyinstitute.org/product/2024-whats-cost-teacher-turnover>.
- viii. North Carolina Department of Public Instruction. (2024). Data request: Distribution of Preparation routes for Newly Hired K-12 Public School Teachers, 2015 to 2023.
- ix. Hattie, J. (2023). Factors that Influence Learning in Schools. Sage. <https://www.socialsciencespace.com/2023/03/john-hattie-on-the-factors-that-influence-learning-in-schools/>
- x. Goe, L. (2007). The Link Between Teacher Quality and Student Outcomes: A Research Synthesis. National Comprehensive Center for Teacher Quality. <https://files.eric.ed.gov/fulltext/ED521219.pdf>.
- xi. North Carolina Department of Public Instruction. (2024). Data request: Student – Teacher Ratios in K-12 Public Schools by Race/Ethnicity, 2021-22.
- xii. Dee, T. (2004). Teachers, Race, and Student Achievement. MIT Press Direct. <https://direct.mit.edu/rest/article-abstract/86/1/195/57486/Teachers-Race-and-Student-Achievement-in-a?redirectedFrom=fulltext>
- xiii. North Carolina Department of Public Instruction. (2023). TeachNC Recruitment Initiative Report. Report to the North Carolina General Assembly. <https://www.ncleg.gov/Files/Library/agency/dpi17136.pdf>
- xiv. ApprenticeshipNC. <https://www.nccommunitycolleges.edu/news/apprenticeshipnc/>
- xv. United States Department of Labor Office of Apprenticeship. Industry-Recognized Apprenticeship General Fact Sheet. https://www.commerce.gov/sites/default/files/2020-06/IRAP_General_Fact_Sheet.pdf.
- xvi. Workforce Innovation and Opportunity Act. <https://www.apprenticeship.gov/investments-tax-credits-and-tuition-support/workforce-innovation-and-opportunity-act#:text=WIOA%20is%20designed%20to%20help%20job%20seekers%20to%20compete%20in%20the%20global%20economy.&text=WIOA%20funding%20can%20also%20help%20provide%20support%20programs%20such%20as%20tools%20books%20and%20uniforms>.
- xvii. North Carolina Department of Commerce. (2024). Workforce Innovation and Opportunity Act (WIOA) Annual Statewide Performance Report Narrative, State of North Carolina, Program Year 2023. https://www.dol.gov/sites/dolgov/files/ETA/Performance/PY23%20Databooks/NC_Annual%20Performance%20Narrative%20PY23.pdf.
- xviii. Workforce Development Boards. <https://www.commerce.nc.gov/jobs-training/workforce-professionals-tools-resources/workforce-development-boards>.
- xix. United States Department of Labor. (2022). Do Employers Earn Positive Returns to Investments in Apprenticeship? Evidence from Registered Programs under the American Apprenticeship Initiative. <https://www.dol.gov/agencies/eta/research/publications/do-employers-earn-positive-returns-investments-apprenticeship>.
- xx. Reed, D., Liu, A., and Kleinman, R. (2012). An Effectiveness Assessment and Cost-Benefit Analysis of Registered Apprenticeships in 10 States. Mathematica Policy Research. <https://www.mathematica.org/publications/an-effectiveness-assessment-and-costbenefit-analysis-of-registered-apprenticeship-in-10-states>.
- xxi. Kriha, N., Westphal, S., Feinstein, J., and Mote, E. (2025). Registered Teacher Apprenticeship Programs: A 50-State Scan. EdTrust. <https://edtrust.org/rti/registered-teacher-apprenticeship-programs/#:text=Teacher%20apprenticeships%20have%20now%20expanded%20wide%20variety%20of%20implementation%20approaches>.
- xxii. Reddig, N., Milling, J., Foster, L., Standafer, E., Rice, O., and Stadd, J. (2024). Profiles of Educator Registered Apprenticeship Programs. Educator Registered Apprenticeship Intermediary. <https://www.apprenticeship.gov/sites/default/files/Profiles%20of%20Educator%20Registered%20Apprenticeship%20Programs.pdf>.
- xxiii. Melnick, H. (2024). How States Can Support Teacher Apprenticeship. https://learningpolicyinstitute.org/media/4203/download?inline&file=TN_Teacher_Apprenticeship_BRIEF.pdf.
- xxiv. Melnick, H. (2024). How States Can Support Teacher Apprenticeship. https://learningpolicyinstitute.org/media/4203/download?inline&file=TN_Teacher_Apprenticeship_BRIEF.pdf.
- xxv. Reddig, N., Milling, J., Foster, L., Standafer, E., Rice, O., and Stadd, J. (2024). Profiles of Educator Registered Apprenticeship Programs. Educator Registered Apprenticeship Intermediary. <https://www.apprenticeship.gov/sites/default/files/Profiles%20of%20Educator%20Registered%20Apprenticeship%20Programs.pdf>.
- xxvi. Tennessee Department of Education. Grow Your Own. <http://tn.gov/education/grow-your-own.html#:text=Tennessee%20has%20set%20a%20new%20pipeline%20and%20address%20teacher%20shortages>.
- xxvii. Tennessee Department of Education. Grow Your Own. <http://tn.gov/education/grow-your-own.html#:text=Tennessee%20has%20set%20a%20new%20pipeline%20and%20address%20teacher%20shortages>.
- xxviii. Tennessee Department of Education. Grow Your Own. <http://tn.gov/education/grow-your-own.html#:text=Tennessee%20has%20set%20a%20new%20pipeline%20and%20address%20teacher%20shortages>.
- xxix. Tennessee Department of Education. Grow Your Own. <http://tn.gov/education/grow-your-own.html#:text=Tennessee%20has%20set%20a%20new%20pipeline%20and%20address%20teacher%20shortages>.
- xxx. Tennessee Department of Education. Grow Your Own. <http://tn.gov/education/grow-your-own.html#:text=Tennessee%20has%20set%20a%20new%20pipeline%20and%20address%20teacher%20shortages>.
- xxxi. Melnick, H. (2024). How States Can Support Teacher Apprenticeship. https://learningpolicyinstitute.org/media/4203/download?inline&file=TN_Teacher_Apprenticeship_BRIEF.pdf.
- xxxii. Tennessee Department of Education. Grow Your Own. <http://tn.gov/education/grow-your-own.html#:text=Tennessee%20has%20set%20a%20new%20pipeline%20and%20address%20teacher%20shortages>.
- xxxiii. University of Tennessee Grow Your Own Center. LEA Funding Sources for Registered Teacher Apprenticeship Programs in Tennessee. <https://growyourown.tennessee.edu/lea-funding-sources-for-registered-teacher-apprenticeship-programs-in-tennessee/>.
- xxxiv. University of Tennessee Grow Your Own Center. LEA Funding Sources for Registered Teacher Apprenticeship Programs in Tennessee. <https://growyourown.tennessee.edu/lea-funding-sources-for-registered-teacher-apprenticeship-programs-in-tennessee/>.
- xxxv. North Carolina Community College System Apprenticeship NC. Develop a Registered Apprenticeship Program through ApprenticeshipNC. <https://www.nccommunitycolleges.edu/businesses/apprenticeships/>.
- xxxvi. North Carolina Department of Public Instruction. (2022). Fiscal Year 2022 – 2023 North Carolina Public School Salary Schedules. <https://www.dpi.nc.gov/documents/fbs/finance/salary/schedules/salary-schedule-fn-fy23pdf/download?attachment>.
- xxxvii. North Carolina Department of Public Instruction. North Carolina Educator Preparation Standards. <https://www.dpi.nc.gov/educators/educator-preparation/north-carolina-educator-preparation-standards>.
- xxxviii. North Carolina Department of Public Instruction. (2024). 2022-23 State of the Teaching Profession Report. https://www.dpi.nc.gov/documents/files/state-teaching-profession-2022-2023/download?attachment#:text=The%20calculations%20show%20that%20out_state%20attrition%20rate%20of%2011.45%25.
- xxxix. National Council on Teacher Quality. (2010). When It Comes to Licensing Tests, We Need the Wisdom of Solomon. <https://www.nctq.org/blog/When-it-comes-to-licensing-tests-we-need-the-wisdom-of-solomon>.



For additional information and resources on Teacher Apprenticeship in North Carolina, visit our Teacher Apprenticeship landing page for policy updates and analysis.

 <https://BESTNC.org>

 [NCEdFacts.org](https://www.ncedfacts.org)

 info@BESTNC.org

 [/BESTNorthCarolina](https://www.facebook.com/BESTNorthCarolina)

 [@bestnc_org](https://twitter.com/bestnc_org)

 [company/BESTNC](https://www.linkedin.com/company/BESTNC)