



Taking the Long View: State Efforts to Solve Teacher Shortages by Strengthening the Profession

Daniel Espinoza, Ryan Saunders, Tara Kini, and Linda Darling-Hammond

Taking the Long View: State Efforts to Solve Teacher Shortages by Strengthening the Profession

Daniel Espinoza, Ryan Saunders, Tara Kini, and Linda Darling-Hammond

Acknowledgments

The authors would like to thank the members of the Learning Policy Institute Educator Quality team and Emily Efland for providing thoughtful feedback during the drafting of this report. Special thanks to current and former LPI colleagues Joseph Bishop, Desiree Carver-Thomas, Roneeta Guha, Maria Hyler, Anne Podolsky, and Leib Sutcher, whose prior research has greatly informed the content of this report. We also thank Alexandra Manuel, Beth Geiger, and Maren Johnson of Washington State’s Professional Educator Standards Board for valuable feedback on sections of this report. In addition, thanks to Gretchen Wright, Amber Hu, and Aaron Reeves for their editing and design contributions to this project, and to Lisa Gonzales for overseeing the editorial and production processes. Without their generosity of time and spirit, this work would not have been possible.

Research in this area of work is funded in part by the S. D. Bechtel, Jr. Foundation and the Carnegie Corporation of New York. Core operating support for the Learning Policy Institute is provided by the Sandler Foundation, the William and Flora Hewlett Foundation, and the Ford Foundation.

External Reviewers

This report benefited from the insights and expertise of two external reviewers: Ellen Sherratt, Vice President for Policy and Research at the National Board for Professional Teaching Standards, and Gary Sykes, Professor Emeritus, Michigan State University. We thank them for the care and attention they gave the report; any shortcomings remain our own.

The suggested citation for this report is: Espinoza, D., Saunders, R., Kini, T., & Darling-Hammond, L. (2018). *Taking the long view: State efforts to solve teacher shortages by strengthening the profession*. Palo Alto, CA: Learning Policy Institute.

This report can be found online at <https://learningpolicyinstitute.org/product/long-view>.

This work is licensed under the Creative Commons Attribution-NonCommercial 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc/4.0/>.



Table of Contents

Executive Summary	v
Introduction	1
The Focus of This Report	2
Service Scholarships and Loan Forgiveness	4
State Examples	5
High-Retention Pathways Into Teaching	8
Teacher Residencies.....	10
Grow Your Own Programs.....	12
Mentoring and Induction for New Teachers	16
State Examples	16
Developing High-Quality School Principals	20
State Examples	20
Competitive Compensation	23
State Examples	23
Recruitment Policies	28
Incentivizing Retired Teachers to Return to the Profession	28
Teacher License Reciprocity	29
How Washington State Is Taking a Comprehensive Approach to Addressing Teacher Shortages	31
Service Scholarships and Loan Forgiveness for Teacher Candidates	31
High School Teacher Pathways and Other Grow Your Own Programs.....	32
Mentoring and Induction.....	33
Strengthening School Leadership.....	34
Salaries and Competitive Compensation	34
Recruitment Policies	35
Conclusion	36
Appendix A: State Policies Included in This Report	37
Endnotes	40
About the Authors	54

List of Boxes and Figures

Box 1. Five Legislative Principles for State Loan Forgiveness and Service Scholarship Programs	5
Box 2. Key Characteristics of Strong Residencies	10
Figure 1. Service Scholarships and Loan Forgiveness	6
Figure 2. High-Retention Pathways Into Teaching	9
Figure 3. Mentoring and Induction for Novice Teachers	17
Figure 4. School Leadership	21
Figure 5. Competitive Compensation	24

Executive Summary

Across the country, districts and schools are struggling to meet the growing demand for qualified teachers. Indeed, there are some subjects—such as mathematics, science, and special education—in which nearly every state is experiencing a teacher shortage. As a result, states often turn to underqualified teachers to fill the vacuum, a problematic and often temporary solution because these teachers are less effective on average and more likely to leave the field, especially in high-need schools in which they are disproportionately placed. Such attrition is costly to states and further undermines student achievement and school improvement efforts.

Fortunately, research offers insights on how to attract, develop, and retain a strong and stable teacher workforce. This report builds on that research by focusing on six evidence-based policies that states are pursuing to address their teacher shortages while also strengthening their educator workforce. The policy strategies include:

- Service scholarships and loan forgiveness
- High-retention pathways into teaching
- Mentoring and induction for new teachers
- Developing high-quality school principals
- Competitive compensation
- Recruitment strategies to expand the pool of qualified educators

This report examines all submitted and approved Every Student Succeeds Act (ESSA) state plans, as well as targeted reviews of recent, relevant state legislation; publicly available program documents; and administrative data. Examples of states implementing promising policies to bolster their teacher workforce are drawn from this analysis. In addition, this report includes a detailed exploration of the comprehensive approach taken by Washington state that leverages a number of evidence-based policies in tandem to address teacher shortages while also improving its educator workforce.

Service Scholarships and Loan Forgiveness

The cost of high-quality preparation is a significant obstacle to entering the teaching profession. Although research finds an association between teachers' level of preparation and both their effectiveness and their likelihood of remaining in the profession, the cost of preparation is increasingly difficult for candidates to afford. To overcome such barriers, at least 40 states have established service scholarship and loan forgiveness programs as a well-grounded policy to recruit and retain high-quality teachers. Such programs underwrite the cost of teacher preparation in exchange for a number of years of service in the profession. Research has found that effective service scholarship and loan forgiveness programs leverage greater recruitment into professional fields and locations where individuals are needed and support retention. Effective programs:

- recruit and select candidates who are academically strong, committed to teaching, and well prepared;
- cover all or a large percentage of tuition;
- target high-need fields and/or schools;
- commit recipients to teach with reasonable financial consequences if they do not fulfill the commitment (but not so punitive that they avoid the scholarship entirely); and
- are administratively manageable for participating teachers, districts, and higher education institutions.

While such programs have long existed in some states, a number are starting new programs or reviving previously unfunded programs to attract teachers to rural locations, historically underserved communities, and high-need subject areas. Indiana, Iowa, Nebraska, Nevada, and North Carolina, for example, are taking this approach to address their teacher shortages.

High-Retention Pathways Into Teaching

Research demonstrates that teacher turnover is higher for those who enter the profession without adequate preparation. Teachers who are unprepared leave teaching at rates 2 to 3 times as high as those who have been comprehensively prepared. However, teachers often choose alternative certification pathways that omit student teaching and some coursework because, without financial aid, they cannot afford to be without an income for the time it takes to undergo teacher training. The fact that these teachers leave at higher rates exacerbates the revolving door of teachers in the high-need schools where they are concentrated. Program options that both subsidize the cost of teacher preparation and provide high-quality training with retention supports can serve to recruit and keep teachers.

Teacher residencies

Teacher residencies, in which candidates work as paid apprentices to skilled expert teachers while completing highly integrated coursework, have been successful in recruiting and retaining talented candidates in high-need fields and school districts. Numerous states, including California, Louisiana, Michigan, Pennsylvania, and Texas, have enacted teacher residency programs. Some have allocated state funding for these programs and many are leveraging federal funding under ESSA to do so. Indeed, 15 states and Washington, DC, identified using the residency model to improve teacher preparation and effectiveness in their ESSA plans.

Research points to eight key characteristics of strong teacher residency programs:

1. Strong district and university partnerships
2. Coursework about teaching and learning tightly integrated with clinical practice
3. A full year of residency teaching alongside an expert mentor teacher
4. High-ability, diverse candidates recruited to meet specific district hiring needs, typically in fields with shortages
5. Financial support for residents in exchange for a 3- to 5-year post-residency teaching commitment
6. Cohorts of residents placed in partnership “teaching schools” that model good practices with diverse learners and are designed to help novices learn to teach
7. Expert mentor teachers who co-teach with residents
8. Ongoing mentoring and support for graduates after they enter the teaching force

Research on the impact of the residency model suggests that, on average, residents are more racially diverse than other new teachers, are viewed as effective, and are much more likely to stay in teaching, especially in the high-need districts that sponsor them.

Grow Your Own programs

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 the “pull of home,” local graduates and community members offer a sustainable solution to teacher shortages while also increasing the diversity of the teacher workforce. Grow Your Own programs are underway in many states, including Alaska, Arkansas, California, Colorado, Delaware, Minnesota, Mississippi, Pennsylvania, and South Carolina.

Grow Your Own programs take different forms. Some common types include paraprofessional teacher training programs and “2 + 2” programs that allow candidates to begin teacher preparation at a community college and then finish at a 4-year institution. High school pathways—which embed career-focused courses on education topics alongside work-based experiences to interest young people in pursuing a teaching career—can also be considered a Grow Your Own model.

Mentoring and Induction for New Teachers

Evidence suggests that strong mentoring and induction for novice teachers can be a valuable strategy to retain new teachers and improve their effectiveness. Beginning teachers who receive a comprehensive set of induction supports are twice as likely to stay in teaching as those who do not receive this support. However, the number of states supporting mentoring and induction programs decreased during the recent recession, and a 2016 review of state policies found that just 16 states provide dedicated funding to support teacher induction. Under ESSA, states can leverage federal Title II, Part A funds to support new teacher induction and mentoring. Indeed, a number of states, including Delaware and Ohio, are taking such an approach. Other states have invested state funds to support new teacher induction, including Connecticut and Iowa.

Research points to several key elements of high-quality induction that are most strongly associated with reduced levels of turnover. These include having a mentor from the same field, common planning time with other teachers in the same subject, regularly scheduled collaboration with other teachers, and being part of an external network of teachers.

Developing High-Quality School Principals

Comprehensive strategies to address teacher shortages capitalize on the central role principals play in attracting and retaining talented teachers. Teachers cite principal support as one of the most important factors in their decision to stay in a school or in the profession. Therefore, states can benefit from building effective systems of preparation and professional development for school leaders.

Title II, Part A of ESSA provides states with new opportunities to invest in and improve school leadership in ways that could increase teacher retention, including by reserving up to 3% of their state Title II, Part A funds for school leader development. Many states—including North Dakota and Tennessee—are seizing this opportunity, with nearly half of states using the optional 3% set-aside and 21 states using ESSA funds to invest in principal preparation. The North Carolina Principal Fellows program offers an example of a long-standing, successful state effort to support principal development.

A recent review of studies on effective principal preparation and development programs identified four key elements that support principal learning:

- Effective organizational partnerships between programs and districts for candidate recruitment and preparation
- Learning opportunities carried out in collaborative structures, such as cohorts or networks of practicing principals
- Meaningful and authentic learning opportunities that are problem based, context specific, and supported with on-the-job coaching
- Curriculum focused on learning how to improve schoolwide instruction, support collegial working environments, and analyze and act on data

Evaluation of new programs created with federal funding under ESSA will be essential to understanding what works in recruiting, supporting, and retaining high-quality principals, particularly in high-need schools.

Competitive Compensation

The extent to which individuals choose to enter and stay in teaching is highly influenced by the availability of competitive wages. Not surprisingly, the lack of competitive compensation is one factor that frequently contributes to teacher shortages, by impacting the quality and quantity of people training to become teachers as well as attrition within the existing teacher workforce. Even after adjusting for the shorter work year in teaching, beginning teachers nationally earn about 20% less than individuals with college degrees in other fields—a wage gap that widens to 30% by mid-career. Large inequities in teacher salaries among districts within the same labor market leave some high-need, under-resourced districts at a strong disadvantage in both hiring and retaining teachers.

More competitive compensation can be a critical strategy to recruit and retain effective educators, although different approaches may be necessary depending on the state, regional, and district context. Many states are working to provide more competitive compensation through a variety of strategies, including overall salary increases (e.g., Idaho, Oklahoma, South Dakota, and West Virginia), stipends and other forms of compensation targeted to teachers in high-need subjects and high-need schools (e.g., Colorado, South Carolina, and Utah), and financial rewards for teacher leadership and expertise (e.g., Idaho and Iowa). Over half of states offer stipends to teachers who have earned National Board Certification as a strategy to retain effective teachers and reward them for their expertise.

Recruitment Policies

In light of fiscal constraints, many states are also opting for low-cost policy solutions that expand the pool of qualified teachers. Such strategies include recruiting recently retired teachers back into the classroom to fill open positions and strengthening licensure reciprocity to ease undue burdens to cross-state mobility and allow experienced and accomplished educators the opportunity to seamlessly transition into service in a different state. Colorado, for example, is actively pursuing both strategies, and Idaho, Oklahoma, and West Virginia are also recruiting retired teachers to help address teacher shortages.

Together, these six policy strategies can help address teacher shortages by recruiting, training, and retaining committed, skilled, and diverse educators into the classrooms and subject areas that need them.

Introduction

Across the country, districts and schools are struggling to meet the growing demand for qualified teachers.¹ In 2017–18, more than 100,000 classrooms in the United States were staffed by instructors who were unqualified for their jobs.² These classrooms are disproportionately located in low-income, high-minority schools, although in some key subjects, every kind of district has been hit by a lack of qualified applicants. This is a serious problem for the children these schools serve and for the country as a whole. Not only are underprepared teachers less effective on average,³ they are also 2 to 3 times more likely to leave teaching than fully prepared teachers,⁴ creating a revolving door that makes solving shortages an uphill climb.

In some subjects, nearly every state is experiencing a teacher shortage. The U.S. Department of Education reports that, in 2017–18, a large majority of states identified shortages of teachers in mathematics (47 states and the District of Columbia), special education (46 states and DC), science (43 states), world languages (40 states and DC), career and technical education (32 states), and teachers of English learners (32 states).⁵

States do not experience the impact of shortages equally: Those with lower salaries and poorer working conditions have larger shortages. And shortages do not impact all children equally: Office for Civil Rights data show that districts serving more children of color employ about 4 times more uncertified teachers than districts serving few students of color.⁶ Students from low-income families, students with disabilities, and English learners (ELs) are also more likely to be taught by underqualified teachers than other students, with negative effects on their achievement.⁷

What is driving these shortages? First, states across the country are facing steeply declining enrollments in teacher education, which decreased 35% between 2009 and 2014. At the same time, demand for teachers began to grow sharply when the economic recovery took hold in 2015 as districts replaced positions and courses that had been cut during the Great Recession. Finally, high teacher attrition rates—far higher in the U.S. than in other high-performing countries—cause continual demand for new teachers.⁸

Office for Civil Rights data show that districts serving more children of color employ about 4 times more uncertified teachers than districts serving few students of color.

About 90% of the annual nationwide demand for teachers has been created by teachers leaving the profession. In recent years, annual attrition in the U.S. has averaged about 8% of all teachers. Two thirds of those teachers left for reasons other than retirement, including lack of adequate preparation and mentoring, pressures of test-based accountability, lack of administrative supports, low salaries, and poor teaching conditions. These conditions vary significantly across the states and influence both turnover and shortages.⁹

In addition to negative impacts on student achievement, high rates of teacher turnover carry financial costs as well. When schools are continually losing teachers, relationships are disrupted, professional development investments are thrown away, and curriculum and school improvement efforts are derailed. Estimates of replacement costs range from about \$9,000 per teacher in rural

and small suburban districts to more than \$20,000 in urban districts, totaling more than \$8 billion annually.¹⁰ Funds spent on recruiting, hiring, onboarding, and supporting new teachers could be more productively spent on policies to stabilize and strengthen the teacher workforce.

Of course, some attrition is necessary and even desirable, particularly when it means that teachers who are ill-suited to the profession find a better fit elsewhere. But, at 8% annually, U.S. turnover rates far exceed productive sorting; they reflect systemic challenges and require systemic solutions. If the U.S. could cut its rate of attrition in half—to the level experienced in high-achieving jurisdictions—supply would outpace the demand for teachers and, with some field-specific adjustments, the nation could virtually end its recurring teacher shortage crisis.¹¹

The Focus of This Report

Fortunately, much is known about how to attract, develop, and retain a strong and stable teacher workforce, and states across the country are taking action to address their teacher shortages in ways that strengthen their overall teacher workforce. In this report, we highlight research on evidence-based policies that have been used to address teacher shortages and boost teacher recruitment and retention. We focus on the following six policies:

1. Service scholarships and loan forgiveness
2. High-retention pathways into teaching
3. Mentoring and induction for new teachers
4. Developing high-quality school principals
5. Competitive compensation
6. Recruitment policies to expand the pool of qualified educators

For each of these policies, we describe promising actions taken by states to respond to teacher shortages—the resources they are dedicating; the policies they are enacting; and, where available, the results achieved. State examples are drawn from an analysis of all submitted and approved ESSA state plans as well as targeted reviews of recent, relevant state legislation; publicly available program documents; and administrative data. Examples were selected based on their alignment with evidence-based practices and, where available, evidence of effectiveness. Examples were also selected to reflect a diversity of state policies and contexts. A list of all states included in the report by policy area is available in Appendix A.

Of course, there is no single policy that will solve teacher shortages if enacted in isolation. For example, research on salaries and working conditions in hard-to-staff schools indicates that it is important both to raise salaries and to provide for more collegial, supportive, well-resourced environments in order to recruit and retain teachers. Similarly, research suggests that policymakers interested in induction programs to support new teachers should also consider policies that encourage collaboration and mentorship within a school, as opposed to a stand-alone induction policy. The interdependency of the six evidence-based policies described here underscores that policymakers should consider how to ensure a set of mutually reinforcing strategies to effectively recruit and retain high-quality educators.

For this reason, we conclude with a profile of how one state—Washington—has taken a comprehensive approach to addressing teacher shortages and improving its educator workforce by implementing many of the evidence-based policies described in this report.

As with all policy decisions, the effectiveness and impact of strategies will hinge on a number of factors, including the size, scope, and comprehensiveness of the policy; the quality of implementation; and the program's responsiveness to the state and local context as well as broader labor market conditions. The examples included in this report should be regarded as approaches worth further consideration and examination, either because there is some evidence of effectiveness or because, based on prior research, their design suggests a likelihood of success. As states implement policies they should continually evaluate implementation and outcomes to strengthen the effectiveness of their actions.

Service Scholarships and Loan Forgiveness

One significant obstacle to entering the teaching profession is the cost of teacher preparation.¹² More than two thirds of individuals entering the field of education borrow money to pay for their higher education, resulting in an average debt of about \$20,000 for those with a bachelor’s degree and \$50,000 for those with a master’s degree.¹³ Unlike other professions—such as law or medicine in which expected professional salaries may justify large up-front training costs—teachers in most states earn significantly less than other college graduates. In this context, individuals may rationally forego teaching in favor of a career that does not require incurring a significant debt that must then be repaid on a low salary. Although research demonstrates that a teacher’s level of preparation is associated with his or her effectiveness¹⁴ and likelihood of remaining in the profession,¹⁵ the cost of preparation is increasingly difficult for candidates to afford.

Given these financial barriers for aspiring teachers, service scholarship and loan forgiveness programs can be an effective strategy to attract and retain new, quality candidates to the profession. These programs underwrite the cost of teacher preparation in exchange for a number of years of service in the profession—typically 3 to 5. Individuals who do not complete the service requirement must repay the loan amount with modest interest. Such financial supports are frequently targeted to high-need fields (such as mathematics, science, or special education), and/or high-need locations (such as schools in rural or low-income communities).

A recent review of research on service scholarship and loan forgiveness programs in both medicine and teaching found that, when such strategies cover a significant portion of tuition and/or living costs, they are effective in recruiting and retaining high-quality professionals into the fields and communities in which they are most needed.¹⁶ Box 1 presents principles for designing state loan forgiveness and service scholarship programs based on this review. Research also suggests that loan forgiveness programs may be an important lever for bringing individuals who have left the teaching profession back to the classroom. In a recent national survey by the U.S. Department of Education, 1 in 4 public school teachers who had left teaching and also said they would consider returning to the profession identified loan forgiveness as extremely or very important to their decision to return.¹⁷

Although research demonstrates that a teacher’s level of preparation is associated with his or her effectiveness and likelihood of remaining in the profession, the cost of preparation is increasingly difficult for candidates to afford.

In the face of growing teacher shortages, many states are turning to service scholarship and loan forgiveness programs as a proven policy to recruit and retain high-quality teachers. While service scholarships and loan forgiveness programs have long existed in some states, a number of states are starting new programs or expanding previous programs to attract teachers to rural locations, historically underserved communities, and high-need subject areas. By committing resources to bringing new teachers into the profession and retaining them long term, states can expand students’ access to high-quality teachers and support educational equity.

Box 1

Five Legislative Principles for State Loan Forgiveness and Service Scholarship Programs

1. Recruit and select candidates who are academically strong, committed to teaching, and well prepared.
2. Cover all or a large percentage of tuition.
3. Target high-need fields and/or schools.
4. Commit recipients to teach with reasonable financial consequences if they do not fulfill the commitment (but not so punitive that they avoid the scholarship entirely).
5. Are administratively manageable for participating teachers, districts, and higher education institutions.

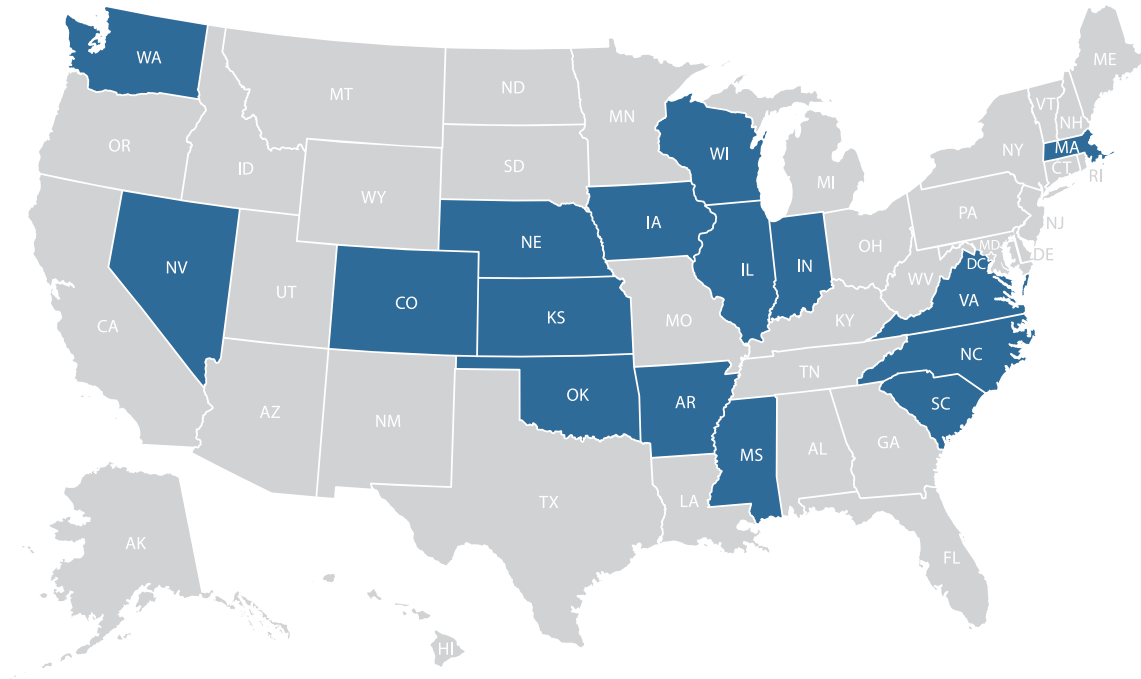
Source: Learning Policy Institute. (2018). Legislative principles: Designing state loan forgiveness and service scholarship programs. https://teachershortage.solutiontoolkit.org/resources?policy_solution=&resource_type=62 (accessed 7/22/18).

State Examples

North Carolina recently reinstated its long-standing and highly successful service scholarship program, with a new focus on the high-need fields of special education and science, technology, engineering, and mathematics (STEM). The re-established program, the North Carolina Teaching Fellows, covers a significant portion of preparation costs, targets high-need subjects, and incentivizes teaching in schools most prone to experience shortages, thereby reflecting several evidence-based best practices. With a state investment of over \$6 million, the revived program will provide scholarships to approximately 160 teacher candidates each year, starting in the 2018–19 academic year.¹⁸ In exchange for a scholarship of \$8,250 per year for 4 years (\$33,000 total), candidates commit to teaching special education or STEM for 8 years in a North Carolina public school, or 4 years if teaching at a low-performing North Carolina public school. 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 to their peers, but they were also generally more effective educators as measured by test score gains of their students.¹⁹

Nebraska's teacher loan forgiveness program includes several of the research-supported design principles: It incentivizes teaching in high-need fields and schools, and covers a meaningful portion of preparation costs. The state recently expanded its loan forgiveness program for teachers—investing over \$1.4 million in 2016–17—and, in its ESSA state plan, proposes to leverage federal funds under Title II of ESSA to further support the program.²⁰ The Attracting Excellence to Teaching loan forgiveness program provides Nebraska teacher candidates seeking certification in shortage areas with access to a \$3,000 forgivable loan annually for up to 5 years (\$15,000 total).²¹ After earning certification and teaching full time for 2 years at a Nebraska school, candidates' loans are forgiven at a rate of \$3,000 per year. The loans do accrue interest, but program participants are only required to pay the interest in the event that they do not complete their service commitment.

Figure 1
Service Scholarships and Loan Forgiveness



Service Scholarships and Loan Forgiveness Programs Featured in This Report:

- Arkansas
- Colorado
- Illinois
- Indiana
- Iowa
- Kansas
- Massachusetts
- Mississippi
- Nebraska
- Nevada
- North Carolina
- Oklahoma
- South Carolina
- Virginia
- Washington
- Wisconsin

Highlights:

Indiana: Next Generation Hoosier Educators Scholarship: \$30,000 service scholarship, 5-year service commitment.

Iowa: Teach Iowa Scholar Program: \$20,000 for 5-year service commitment in high-need subjects.

Nebraska: up to \$15,000 in loan forgiveness targeting shortage areas, at rate of \$3,000/year beginning after candidate completes 2 years of full-time teaching; repayment accelerated for teachers in rural or high-poverty schools.

Nevada: Teach Nevada Scholarship: \$24,000 scholarship targeting high-need subjects and schools, 5-year service commitment, \$1,000 bonus to EPPs for on-time candidate completion.

North Carolina: \$33,000 scholarship for STEM/special education teachers, 8-year service commitment (or 4 years if at low-performing school).

The program further encourages students to teach in high-need areas by offering accelerated loan forgiveness—twice the normal rate, or \$6,000 per year—for teachers in high-poverty or very sparse (i.e., rural) school districts.²² The program has a long-standing track record of effectively recruiting and retaining educators in shortage areas. Since it began in 2006, it has recruited more than 1,100 new Nebraska teachers, more than 85% of whom have already completed or are on track to complete their service commitment.²³

In **Indiana**, then-Governor Mike Pence signed a law in April 2016 appropriating \$10 million to create the Next Generation Hoosier Educators Scholarship for students interested in becoming teachers. The scholarship is designed to significantly reduce the cost of entry into teaching. In exchange for promising to teach for 5 years in the state after graduation, scholarship recipients receive \$7,500 per year for up to 4 years (\$30,000 total) to attend a teacher preparation program in Indiana.²⁴ The program is limited to 200 students yearly. To be eligible for the scholarship, applicants must graduate in the top 20% of their high school class or score in the 20th percentile on their ACT or SAT exams, as well as maintain a 3.0 GPA while in college.²⁵

In 2015, **Nevada** passed a law establishing the Teach Nevada Scholarship as a long-term strategy to combat the state’s teacher shortage. Students enrolling in teacher preparation programs at Nevada colleges and universities are eligible for up to \$3,000 per semester with a maximum total limit of \$24,000.²⁶ Grants are awarded to teacher preparation programs, which then provide the awards to teacher candidates. To incentivize retention, candidates receive 75% of the scholarship upfront, with the remaining 25% awarded after they have completed 5 years of teaching in Nevada public schools. The law additionally awards a \$1,000 “bonus” per candidate to educator preparation programs once candidates have demonstrated on-time successful program completion. The legislation prioritizes veterans and candidates from disadvantaged backgrounds, and also reflects best practices by targeting candidates earning certification in high-need areas (such as STEM, special education, and English learner programs) and those who agree to teach in high-need schools. The 2015 law appropriated \$5 million divided evenly between fiscal years 2015–16 and 2016–17.²⁷

Iowa also targets its loan forgiveness and service scholarship program to high-need subjects. The state offers the Teach Iowa Scholar Program for new teachers with teaching licenses and endorsements in designated shortage areas who graduate in the top 25% of their class.²⁸ Eligible teachers receive awards up to \$20,000 over 5 years of employment, at a rate of \$4,000 per year. The program is currently funded at \$400,000 for fiscal year 2018.²⁹

Other states that have recently enacted loan forgiveness and service scholarship incentives either through legislation and/or administrative actions taken by their respective boards of education include: **Colorado, Illinois, Kansas, Massachusetts, Mississippi, South Carolina, Virginia, and Wisconsin.**³⁰

Across the country, service scholarships and loan forgiveness programs can be tailored to address a particular state’s unique teacher workforce challenges. At the same time, the effectiveness of such programs in addressing teacher shortages may be limited by the number of scholarships awarded. For example, several states’ limits on the number of service scholarships may limit their ability to address the scope of their teacher shortages. The amount of the scholarship or loan forgiveness provided to each candidate may also potentially limit impact, which is suggested by research on programs in other states offering smaller awards, including **Arkansas** and **Oklahoma.**³¹

High-Retention Pathways Into Teaching

Creating stronger teacher retention also requires stronger training and mentoring for new teachers.³² Research demonstrates that teacher turnover is higher for those who enter the profession without adequate preparation. Studies of the relationship between teacher preparation and teacher turnover suggest educators with little to no pedagogical preparation are 2 to 3 times more likely to leave the profession than those with the most comprehensive preparation, which includes student teaching, formal feedback on their teaching, and multiple courses in student learning and teaching.³³ Adequate mentoring for beginning teachers also matters. These studies highlight that there is a continuum of preparation along which individuals enter the profession which is associated with levels of teacher attrition. The best-prepared teachers are also, typically, the longer lasting.

Some of the attrition of underprepared teachers could be due to the fact that those with the least training are often hired in the schools with the most difficult-to-fill vacancies and the most challenging teaching conditions. However, a recent large-scale analysis that controlled for school and teacher characteristics, subject area, workplace conditions, and district salaries found that teachers who enter the profession through alternative certification pathways are 25% more likely to leave teaching than other teachers, even after all the other factors are taken into account.³⁴

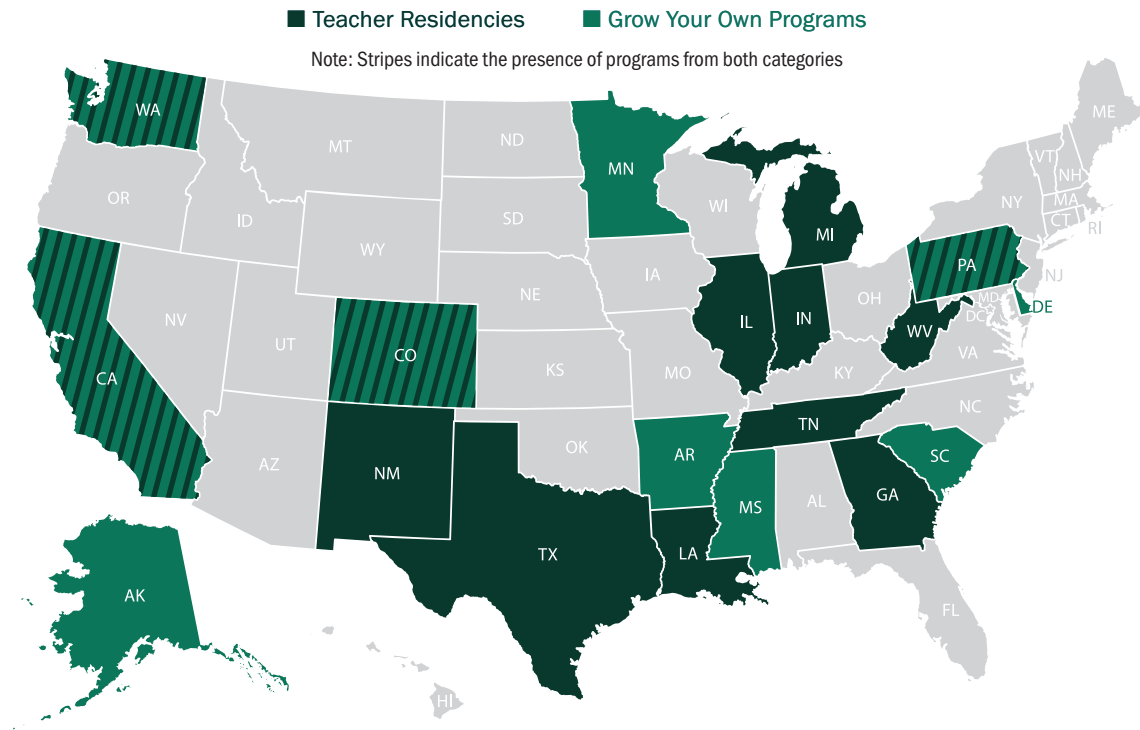
While alternative certification programs come in a range of models—some of them more rigorous than others—research shows that alternatively certified teachers typically receive less pre-service coursework preparation than those who enter through traditional programs and are less likely to have student taught before being placed as teacher of record in the classroom.³⁵ Those who do receive some student teaching have typically taught under the wing of an expert for only a few weeks.

As a result, most studies find that teachers who enter through alternative routes are less effective with students when they begin teaching than teachers who have been fully prepared before entry. Those who stay long enough to complete a preparation program typically grow in effectiveness (as do most teachers over the first few years of teaching); however, large proportions leave in the first 3 years and before they have had a chance to become effective.³⁶ Studies comparing outcomes across alternative routes have found that those with more coursework and student teaching have stronger outcomes than those in programs that offer less training and support.³⁷

Quite often, teachers choose alternative certification pathways because, without financial aid, they cannot afford to be without an income for the time it takes to undergo teacher training. Thus, programs that both subsidize the cost of teacher preparation and provide high-quality training can serve to recruit and better retain teachers. Research shows the following high-retention pathways—including teacher residencies and Grow Your Own programs—have been successful in addressing teacher shortages while strengthening the teacher workforce with effective teachers who stay in the profession.

Studies of the relationship between teacher preparation and teacher turnover suggest teachers with little to no pedagogical preparation are 2 to 3 times more likely to leave the profession than those with the most comprehensive preparation.

Figure 2
High-Retention Pathways Into Teaching



Programs Featured in This Report:

Teacher Residencies:

- California
- Colorado
- Georgia
- Illinois
- Indiana
- Louisiana
- Michigan
- New Mexico
- Pennsylvania
- Tennessee
- Texas
- Washington
- West Virginia

Grow Your Own Programs:

- Alaska
- Arkansas
- California
- Colorado
- Delaware
- Minnesota
- Mississippi
- Pennsylvania
- South Carolina
- Washington

Highlights:

California: Invested \$45 million in 2016-17 to revive Classified Staff Teacher Training Program, up to \$20,000 per candidate. California also invested \$75 million in 2018 for Teacher Residency Grant Program for special education, STEM, and bilingual shortage areas.

Pennsylvania: \$2 million to fund the Innovative Teacher and Principal Residency Program.

Minnesota: \$3 million to fund Paraprofessional Pathway to Teacher Licensure Program.

Mississippi: “2 Plus 2” programs to expand teacher preparation to rural areas through partnerships between community colleges and 4 year IHEs.

Washington: Offers competitive grants for Recruiting Washington Teachers programs and piloting Bilingual Educators Initiative to diversify teaching workforce.

Teacher Residencies

Newly emerging teacher residencies, which recruit candidates to work as paid apprentices to skilled expert teachers while completing highly integrated coursework, have been successful in many contexts in recruiting talented candidates into high-need fields and school districts and helping them become effective and stay.³⁸ By combining comprehensive, financially supported preparation with a post-program service requirement, teacher residency programs can keep candidates in teaching longer, thereby reducing high rates of new teacher attrition and the subsequent need to hire more new teachers.

Teacher residencies offer an accelerated path to teacher certification through district and university partnerships that ensure high-quality pedagogical training and clinical practice in yearlong programs typically targeted to postbaccalaureate candidates. Residents receive funding for tuition and living expenses, plus a stipend or a salary, while they apprentice with a master teacher in a high-need classroom for an entire school year and take related courses that earn them a credential and often a master's degree. They repay this investment by committing to teach in a hard-to-staff position in the sponsoring district for at least 3 to 4 years after their residency year while they receive additional mentoring. Urban districts or consortia of rural districts with nearby universities often sponsor these programs. Box 2 summarizes the key characteristics of strong teacher residency programs identified in a recent report reviewing the research on this model.

Research on the impact of the residency model suggests that, on average, residents are more racially diverse than other new teachers and are much more likely to stay in teaching, especially in the high-need districts that sponsor them.³⁹ Research also suggests that graduates of teacher residency programs are generally effective in the classroom, as judged by principals who hire them and through evidence about their students' performance.⁴⁰

Box 2

Key Characteristics of Strong Residencies

1. Strong district and university partnerships
2. Coursework about teaching and learning tightly integrated with clinical practice
3. A full year of residency teaching alongside an expert mentor teacher
4. High-ability, diverse candidates recruited to meet specific district hiring needs, typically in fields with shortages
5. Financial support for residents in exchange for a 3- to 5-year post-residency teaching commitment
6. Cohorts of residents placed in partnership “teaching schools” that model good practices with diverse learners and are designed to help novices learn to teach
7. Expert mentor teachers who co-teach with residents
8. Ongoing mentoring and support for graduates after they enter the teaching force

Source: Guha, R., Hyler, M. E., & Darling-Hammond, L. (2016). *The teacher residency: An innovative model for preparing teachers*. Palo Alto, CA: Learning Policy Institute.

State Examples

In response to severe teacher shortages, the **California** legislature recently invested \$75 million to fund teacher residency programs in special education, bilingual education, and STEM—the subjects in which the state’s shortages are greatest.⁴¹ The program, which will launch in 2018–19, provides grant funding of up to \$20,000 per teacher that is matched by districts. It will fund more than 3,500 new teachers in the state who commit to serving in the sponsoring district for at least 4 years following the residency.

Texas has implemented a similar program at smaller scale. In 2013, the state enacted legislation to create a state teacher residency program and provide candidates with a yearlong subsidized apprenticeship during which they take courses while working in the classroom alongside an expert teacher.⁴² In exchange for the comprehensive, district-based preparation, participants commit to teach in a hard-to-staff school for 4 years. In its fourth year of operation, the state-funded residency program was preparing 36 candidates annually through an intensive and highly focused preparation program. The program was funded with an investment of nearly \$1.3 million in the 2016–17 biennium and grew to include two Texas universities partnering with four school districts across the state, including the Dallas Independent School District.⁴³ Unfortunately, the Texas legislature did not fund the residency program in the current 2018–19 biennium. Early evidence from the program points to residents’ success in raising achievement in 5th and 8th grade science.⁴⁴

With the specific inclusion of teacher residencies as an allowable use of funds under Title II, Part A of ESSA, more states are leveraging federal funds and allocating state funds to create or expand teacher residency programs. Indeed, a recent review of ESSA state plans from the National Center for Teacher Residencies finds 15 states and Washington, DC, proposing to use residency models to improve teacher preparation and effectiveness, though they are at different stages of implementation.⁴⁵

Consistent with its ESSA state plan, **Pennsylvania** recently launched a \$2 million competitive grant program, the Innovative Teacher and Principal Residency Program, to support the growth of teacher (and leader) residencies in the state in order to improve educator recruitment, preparation, and retention and increase the diversity of the educator workforce.⁴⁶ The program is designed to support both undergraduate and postgraduate residency programs, and it provides implementation or expansion grants of up to \$750,000 and planning grants of up to \$75,000. Reflecting some of the key characteristics described in Box 2, educator preparation programs must apply in partnership with high-need local education agencies (LEAs), creating opportunities for new and strengthened partnerships across the state. Programs must also provide a full-year clinical residency and financial support that “eliminates or significantly reduces” financial burden for candidates. **Michigan** has launched a similar \$2.2 million initiative with its Title II, Part A funds, with a focus on preparing substitute teachers and paraprofessionals to become certified teachers through the residency-based programs. The state has set aside \$400,000 for high-poverty small or rural LEAs.⁴⁷

Louisiana has worked to make residencies available to all teacher candidates and thereby strengthen teacher preparation across the state, leveraging federal funds to do so. In 2016, the Board of Elementary and Secondary Education formally adopted regulations requiring a yearlong residency as a pathway to licensure.⁴⁸ The state intends to use Title II, Part A funds to support its ongoing effort to develop and implement these yearlong teacher residencies. Additionally, Louisiana committed to funding university administration costs related to the implementation of yearlong residencies, as well as a \$2,000 stipend for candidates and a \$1,000 stipend for mentor

teachers. Given the scale and challenge of building residencies across an entire teacher preparation system, the state has committed funding to ensure support is available to ease this transition. In total, \$7.3 million will be used as transitional funding through 2019 for university administration costs, teacher resident stipends, and mentor teacher stipends and training. The sources of funding will include Individuals with Disabilities Education Act (IDEA) and Title II dollars in addition to state funds. Funding for rural school systems and their preparation partners will come through a portion of the Department of Education's 5-year, \$66.8 million Teacher Incentive Fund (TIF) grant. Louisiana also plans to use the state's Title II, Part A set-aside to support stipends and training for mentor teachers.⁴⁹

Other states are working to support stronger partnerships between educator preparation programs and local educational agencies, with the goal of ensuring that teacher preparation is closely guided by the needs of local school districts and reducing high rates of attrition for novice teachers. Specifically, a number of states are funding competitive grant programs and supporting partnership pilots with the goal of incentivizing more collaborative clinical preparation between k–12 districts and preparation programs and identifying best practices for seeding new partnerships. States focusing their efforts in these ways include **Colorado, Georgia, Illinois, Indiana, New Mexico, Tennessee, and West Virginia.**⁵⁰ **Georgia**, in particular, has sought to support partnerships through the development of regional networks that bring together leadership from across districts and preparation programs on a regular basis to share knowledge and develop more enduring and reciprocal relationships.⁵¹

Grow Your Own Programs

Grow Your Own (GYO) programs offer another strategy worth considering as part of a long-term solution to addressing teacher shortages in both rural and urban districts.⁵² The term applies to a broad array of programs that recruit teacher candidates from nontraditional populations who are more likely to reflect local diversity and are more likely to continue to teach in their communities. Drawing on the pull of home,⁵³ initiatives that recruit local graduates and community members can present a sustainable solution to teacher shortages while also increasing the diversity of the teacher workforce.⁵⁴

Grow Your Own teacher preparation programs recruit local community members, career changers, paraprofessionals, after-school program staff, and others currently working in schools. Participants receive support such as financial aid, coaching, assistance navigating credential requirements, counseling, and programmatic support as they complete their bachelor's degree and earn their teaching credential.

GYO programs have shown positive results in recruiting and retaining diverse teachers in the hardest to staff schools, in part by leveraging participants' existing connections to the community and prior experience working closely with the student population.⁵⁵ A report from The Urban Institute found that graduates from a national GYO program, The Pathways to Teaching Careers Program, remained in teaching longer than the typical beginning teacher and taught in high-need urban and rural schools at a very high rate.⁵⁶ For rural districts in particular, which often struggle to recruit teachers from outside the community, GYO programs appear to have the potential to provide a local and potentially sustainable source of educators in the near and long term. Given initial positive findings on recruitment and retention, additional research investigating the effectiveness of GYO graduates would be useful.

GYO programs come in all shapes and sizes, as described in the state examples that follow. Some common variants include paraprofessional teacher training programs, as well as “2 + 2” programs that allow candidates to begin teacher preparation at a community college with clear course articulation agreements to then complete teacher preparation and credentialing requirements at a 4-year institution. Teacher residency programs, which are often 1-year accelerated postbaccalaureate programs, offer another GYO

Through high school pathways that embed career-focused courses on education topics alongside work-based experiences, states work to elevate teaching and lay the groundwork for future recruitment.

model. High school cadet programs, teaching academies, and other strategies to interest secondary school students in teaching can also be considered a GYO model, though these programs operate on a longer timeline and, of course, not all participating high school students will become teachers. Through high school pathways that embed career-focused courses on education topics alongside work-based experiences, states work to elevate teaching and lay the groundwork for future recruitment by helping high school students understand and connect with the profession before they have entered college and started on their career path.

State examples

California’s School Paraprofessional Teacher Training Program (funded from 1995 through 2011) provides an example of the effectiveness of GYO programs in growing and retaining a more diverse teaching force: 65% of the program’s participants were people of color and bilingual. By its 13th year of operation, sponsors reported that of the 1,708 program graduates, 92% had remained California public school employees.⁵⁷ In 2016 and 2017, California invested \$45 million in a revived version of the program, the California Classified School Employee Teacher Credentialing Program,⁵⁸ which is training 2,250 classified staff members, typically paraprofessionals, to become teachers. More than half of new program participants are Latinx or Black.

For rural communities that are not located near a 4-year university, local community colleges can support the teacher pipeline through innovative programs such as 2 + 2 programs. In **Mississippi**, the partnership between Hinds Community College and Delta State University offers junior- and senior-level courses for a bachelor’s degree in elementary education and the Childhood Development Program. Students in central Mississippi who wish to complete their elementary education degree can take classes at a designated Hinds campus by way of traditional classroom, video conferencing, and online options. In its ESSA state plan, the Mississippi Department of Education articulates its goal to have similar partnerships with educator preparation programs at all community colleges in the state by 2025.⁵⁹ Because of the large number of students of color enrolled in community colleges—over 40%, by some estimates—such partnerships have the potential to attract more candidates of color to the teaching profession.⁶⁰

In **Colorado**, HB 18-1002, the Rural Colorado Grow Your Own Educator Act, creates a rural teacher fellowship program and allows rural districts and preparation programs to partner in an effort to recruit students entering their fourth year of an approved educator preparation program to participate in a personalized yearlong teaching fellowship. Fellows receive \$10,000 and commit to

teaching for 2 years in a rural school upon completion of the fellowship year. Additionally, fellows must meet all requirements for licensure and demonstrate growth in specific competencies tailored to teaching in a rural school context and identified at the start of the fellowship year. In selecting fellows, districts and preparation programs are encouraged to give preference to applicants who are from the surrounding rural area. The state has appropriated \$530,448 for fiscal year 2019 and plans to provide 50% of up to 100 fellowship stipends each year.⁶¹

Several states are starting programs that seek to recruit community members, after-school program staff, and current school employees into teaching. **Arkansas, Pennsylvania, and Washington** all plan to either begin or continue efforts to develop these Grow Your Own programs across their respective states.⁶²

Many states are seeking to steer more high school students toward the profession of teaching, given the overall declining interest in the field. In 2015, just 4.6% of U.S. high school graduates who took the ACT test said they intended to pursue a career as an educator, compared to 7% in 2010.⁶³ And, as noted earlier, the number of college students enrolled in teacher education programs has declined steeply since 2009.⁶⁴

Programs such as Educators Rising, which supports more than 2,400 schools with programs dedicated to helping students learn about teaching,⁶⁵ and the South Carolina Teacher Cadet Program, make the case for teaching as a rewarding future career choice and provide opportunities for high school students to practice and develop the skills and dispositions that will help them become quality educators in the future. The **South Carolina** Teacher Cadet Program, in which students take a dual-credit, college-level course that introduces them to teaching, has had over 65,000 participants in its 31-year history.⁶⁶ The annual cost of the program is approximately \$150 per student, with 1 out of 5 high school cadets eventually earning a teacher certification.⁶⁷

In 2016, **Delaware** announced a total of \$450,000 in competitive grants for private and public high schools to establish career and technical education programs—including, among others, K–12 Teacher Academies for aspiring teachers.⁶⁸ Thirteen of the 23 programs receiving grants for the 2017–18 school year are new K–12 Teacher Academies.⁶⁹ Each proposed K–12 Teacher Academy offers three preparation courses: Human Growth and Development, Teaching as a Profession, and Foundations of Curriculum and Instruction. Once students successfully complete the three courses, they are eligible for certain dual-enrollment courses at either Delaware Technical Community College or Wilmington University. Through these academies, Delaware hopes to create a pipeline into the teaching profession and reduce the turnover of teachers across the state.

Other states are investing in similar efforts. **Arkansas** has expanded its Teacher Cadet high school recruitment program to 38 districts. The program plans for further expansion to an additional 21 schools in 2018–19.⁷⁰ **Alaska** recently rebranded its Future Educators of Alaska (FEA) program as Educators Rising Alaska and committed to piloting a model curriculum statewide. FEA started in 2003 and has since grown from programs in three rural districts to programs in districts across the state. In 2012, the Alaska Department of Education and Early Development supported FEA's expansion by awarding it a Carl Perkins Career and Technical Education grant to build education career pathways for students. Moving forward, Educators Rising Alaska will also pilot the “Aspiring to Teach” microcredentials program. These microcredentials are a series of performance-based assessments in such topics as classroom culture, collaboration, and anti-bias instruction that allow rising educators to showcase their growing skills.⁷¹

Minnesota has allocated \$3 million that can be used to fund Grow Your Own programs that recruit high school students to pursue teaching as well as teacher residency pilot programs that recruit school district employees or community members, especially candidates of color and Native American candidates.⁷²

Mississippi also intends to expand high school academies and Educators Rising chapters.⁷³

Further efforts to recruit future teachers through targeted high school coursework and programs are in development in **Pennsylvania**, where the Department of Education plans to implement a statewide teacher recruitment initiative to encourage high school students to consider teaching as a profession. The department is also considering supporting the development of teaching academy magnet high schools across the commonwealth to proactively promote the long-term development of a diverse and talented educator workforce for Pennsylvania.⁷⁴

Beyond ESSA, states can leverage other federal funding to support the development of Grow Your Own programs. For example, Perkins Career Technical Education Act dollars can fund development of high school teacher career pathways.

Beyond ESSA, states can leverage other federal funding to support the development of GYO programs. For example, Perkins Career Technical Education Act dollars can fund development of high school teacher career pathways, a strategy that Alaska is taking. Although high school pathways may take time to bear fruit in terms of producing well-prepared and committed new teachers as high school students will need to complete college and earn their teaching credential, long-term teacher workforce development is an investment that can pay off for states.

Mentoring and Induction for New Teachers

Strategies that specifically target improvements in teacher retention for novice teachers can help mitigate teacher shortages.⁷⁵ Evidence suggests that strong induction and support for early-career or newly arriving teachers can be an effective policy to ensure well-prepared individuals remain in the classroom. The reason is simple. The first few years of every teacher's career require a leap from preparation to practice; these early years are formative, but also extremely difficult. Even teachers who have undergone excellent preparation can struggle as they adjust to a new school, learn the complex nuances of classroom management, grow from their mistakes, and implement new curriculum and instruction—all while ensuring their students are learning.

Research points to several key elements of high-quality induction that are most strongly associated with reduced levels of turnover. These include having a mentor from the same field, having common planning time with other teachers in the same subject, having regularly scheduled collaboration with other teachers, and being part of an external network of teachers.⁷⁶

A study of induction based on national data found that beginning teachers who receive a comprehensive set of induction supports—including the elements above—stay in teaching at rates more than twice that of those of teachers who lack these supports.⁷⁷ However, only a small proportion of teachers receive this comprehensive set of supports.⁷⁸

Although mentoring and induction programs became more widely available in the United States during the 1990s and early 2000s, many programs lost funding during the recession and far fewer new teachers were receiving mentoring in 2012 than in 2008.⁷⁹ A 2016 review of state policies related to teacher induction found that just 16 states provide dedicated funding to support teacher induction.⁸⁰

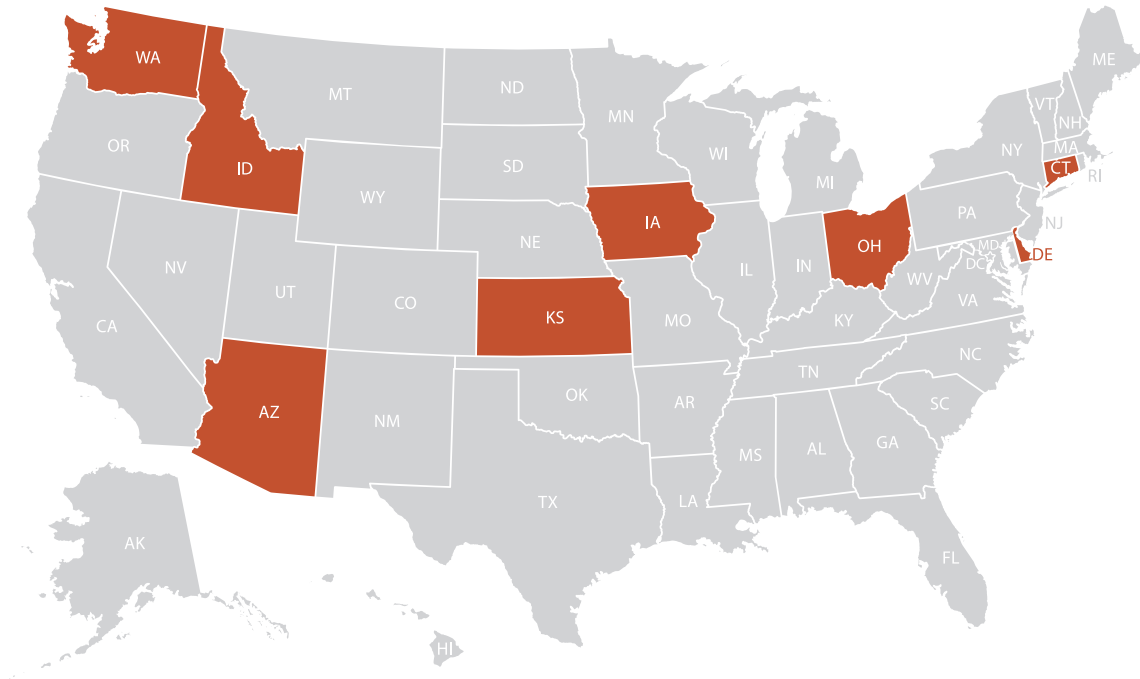
There is also great variability in the quality of these programs. High-poverty schools, which tend to have weaker induction programs that must serve a greater number of novice teachers, are also schools in which resources are less available and early-career teachers generally face more complex and diverse student needs and challenges.⁸¹ Several states, however, including **Delaware**, **Iowa**, and **Connecticut**, serve as worthwhile models well on their way to offering comprehensive and effective beginning teacher induction.

State Examples

Delaware has implemented a multiyear induction program to support and retain excellent educators. The state requires that all new teachers participate in a 4-year induction and mentoring program to advance their license.⁸² This Comprehensive Induction Program (CIP) began during the 1994–95 school year as a pilot mentoring program in three districts and was redesigned and expanded statewide 10 years later.⁸³ The annual appropriation for CIP is \$300,000.⁸⁴ The redesigned program requires a number of activities characteristic of high-quality induction:

- weekly meetings between mentor and novice teachers, including face-to-face conversations to provide real-time support;
- eight lesson observations (four observing and four being observed) in both of the first 2 years; and
- participation in evidence-based professional learning each year of the program, including professional learning communities specifically for new teachers.⁸⁵

Figure 3
Mentoring and Induction for Novice Teachers



**Induction Programs
 Featured in This Report:**

- Arizona
- Connecticut
- Delaware
- Idaho
- Iowa
- Kansas
- Ohio
- Washington

Highlights:

Connecticut: Teacher Education and Mentoring (TEAM) Program provides 2-year induction required to advance teaching credential.

Delaware: 4-year, state-funded induction for all beginning teachers; competitive grants to incentivize innovation in mentoring support.

Iowa: locally designed, state-funded induction for all 1st- and 2nd-year teachers, funded at \$1,300 per novice teacher.

More recently, the Delaware Department of Education (DDOE) created a competitive grant program to incentivize innovation in the state mentoring program. Beginning in the 2013–14 school year, DDOE began offering competitive grants to fund development and/or delivery of innovative induction models for new educators.⁸⁶ In the first five rounds of the grant, DDOE awarded around \$1 million to districts and charter schools.⁸⁷

Delaware’s commitment to and continuous improvement of its induction and mentoring for new teachers appears to be associated with improved teacher practice as well as teacher retention. According to a 2017 statewide survey of teachers, 78% agreed or strongly agreed that the additional support they received as a new teacher improved their instructional practice, 79% agreed or strongly agreed that the additional support helped them to impact their students’ learning, and 71% agreed or strongly agreed that the induction supports were important in their decision to continue teaching at their current school.⁸⁸

Iowa has a long history of prioritizing teacher induction. In 2001, the Iowa legislature enacted the Teacher Quality Act, expanding teacher induction statewide and making it a requirement for second-tier teacher licensure.⁸⁹ Since then, the Iowa Mentoring and Induction (M&I) program has grown and now annually involves approximately 3,000 1st- and 2nd-year educators across the state. M&I seeks to increase student achievement by promoting excellence in teaching and increasing the retention of promising beginning teachers.⁹⁰

Iowa's Mentoring and Induction program seeks to increase student achievement by promoting excellence in teaching and increasing the retention of promising beginning teachers.

Successful completion of an induction program is also a requirement for Iowa teachers to advance to the career-level teaching certificate.⁹¹ Iowa supports the program by distributing \$1,300 to districts and Area Education Agencies (AEAs) for each 1st- and 2nd-year educator, with \$1,000 of each payment going toward mentor stipends and the remainder toward program costs. For fiscal year 2016–17, over \$4 million was allocated to the statewide mentoring program.⁹²

Iowa's M&I framework is intended to give local districts the flexibility to design programs responsive to their contexts. By stipulating minimum levels of beginning teacher support, including release time to design lessons and plan with a mentor, opportunities to observe experienced teachers, and constructive feedback on instruction,⁹³ state law provides general outlines that districts can use to structure their induction programs. However, it is the responsibility of districts to design programs that engage teachers in meaningful activities that support the Iowa teaching standards and meet beginning educators' personal and professional needs. Iowa's M&I structure—providing evidence-based minimum induction requirements but broad flexibility in program design—offers benefits in terms of district tailoring and appears to have long-standing support in the state. However, M&I's flexibility, and hence variability, complicates rigorous evaluation of its overall effectiveness.

Connecticut has required teacher mentoring since the early 1990s, but funding and support structures had waned with budget cuts over time. The state established a new statewide, district-driven teacher induction program for all new teachers—the Teacher Education and Mentoring (TEAM) program—beginning in 2009.⁹⁴ TEAM aims to provide a nonevaluative system of support focused on professional growth and reflective practice. As part of the program, new teachers are paired with a mentor who coaches and guides them through the first 2 years of the profession—typically providing 1–2 hours of individualized support per week.⁹⁵ Beginning teachers complete five modules: (1) classroom environment, (2) planning, (3) instruction, (4) assessment, and (5) professional responsibility. Each module includes a deliberate process of goal setting, implementing new learning in the classroom, and receiving feedback on changes in teaching practice and student outcomes.

A 2013 evaluation of TEAM using survey evidence of participants found that participation in the program contributed to beginning teachers' sense of development and their decision to stay in the profession and their district.⁹⁶ Surveyed beginning teachers overwhelmingly identified numerous aspects of the program as positively impacting their practice, including reflections with their mentors on teaching effectiveness, discussions regarding how to establish safe and productive classrooms, and strategizing how to use assessment data to make instructional decisions.

Additionally, approximately 78% of surveyed beginning teachers either agreed or strongly agreed that their TEAM mentor had a positive influence on their decision to continue teaching. This latter result suggests that induction programs that offer mentoring can benefit teacher retention. Unfortunately, as of this writing, funding for the TEAM program had recently been cut at the state level.⁹⁷ While it remains to be seen how districts will continue their support for this program at the local level (given state mandates), the model provides a promising blueprint for states seeking to build a comprehensive mentoring and new teacher support program.

Despite the evidence pointing to mentoring and induction programs as a cost-effective investment to retain new teachers and improve their effectiveness, many states do not require this type of support for new teachers. Federal funding can help fill this gap. For example, in addition to state funding, **Delaware** will use Title II, Part A funds to provide resources for its comprehensive induction program.⁹⁸ **Ohio** is also leveraging Title II, Part A funds to help schools improve the implementation of teacher induction programs. The state hopes that with this investment students will have more equitable access to effective teachers.⁹⁹ Other states taking advantage of ESSA to design, implement, expand, or further support induction programs include **Arizona**, **Idaho**, and **Kansas**.¹⁰⁰ Whether supported with state or federal funds, providing mentoring and induction for beginning teachers is a promising strategy for states seeking to reduce novice teacher turnover and thereby reduce their teacher shortages.

Developing High-Quality School Principals

Comprehensive strategies to address teacher shortages consider the central role principals play in attracting and retaining talented teachers.¹⁰¹ Teachers cite principal support as one of the most important factors in their decision to stay in a school or in the profession.¹⁰² Research demonstrates that a principal's ability to create positive working conditions and collaborative, supportive learning environments plays a critical role in attracting and retaining qualified teachers.¹⁰³ At a time when many schools throughout the nation, particularly those serving a high number of students from low-income families and students of color, are struggling to find and keep teachers, the leadership of a strong, supportive principal takes on added import for student success.

High-need schools can benefit most from effective principals who know how to keep talented teachers. For example, a large national study found that a principal's effectiveness, as perceived by teachers, was strongly related to the level of teacher attrition and that this impact was much larger in high-need schools.¹⁰⁴ Multiple studies of teacher attrition in high-poverty schools have found that teachers' perceptions of their school's leader is a dominant factor in their decision to remain at the school.¹⁰⁵

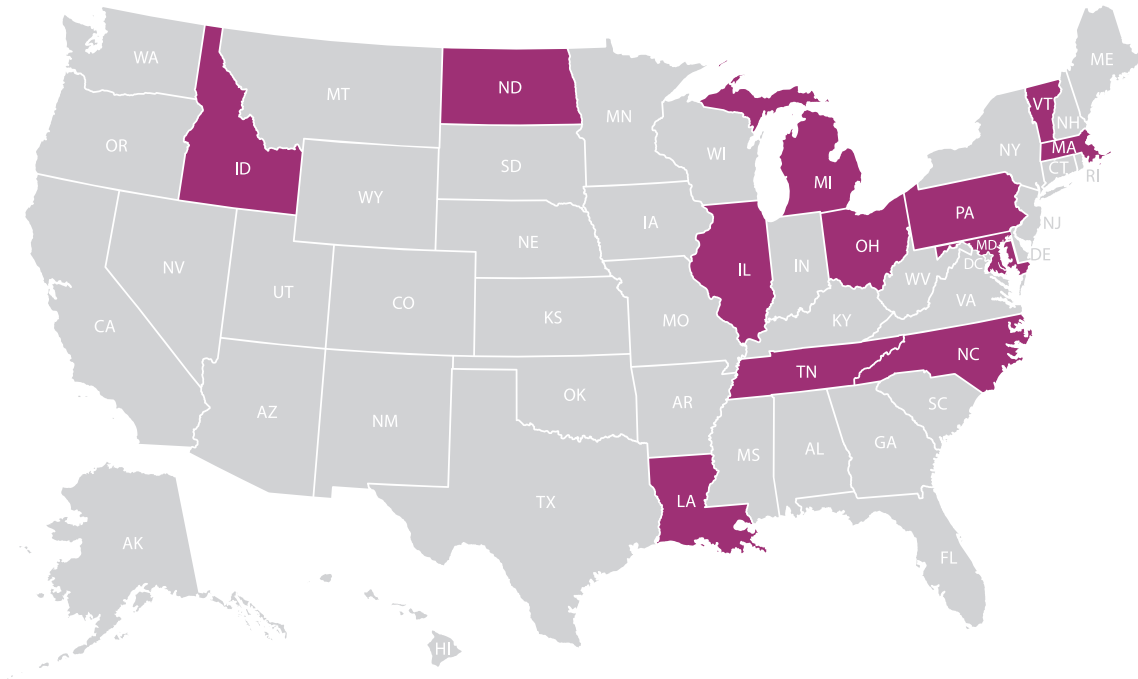
Given the significant role principals can play in teacher retention—which directly affects the number of vacancies that need to be filled each year—it is important that states build effective systems of preparation and professional development for school leaders. A recent review of studies on effective principal preparation and development programs identified four key elements that help support principal learning: (1) effective organizational partnerships between programs and districts for candidate recruitment and preparation; (2) learning opportunities carried out in collaborative structures such as cohorts or networks of practicing principals; (3) meaningful and authentic learning opportunities that are problem based, context specific, and supported with on-the-job coaching; and (4) curriculum focused on learning how to improve schoolwide instruction, support collegial working environments, and analyze and act on data.¹⁰⁶

With the transition to ESSA—including new opportunities in the law to set aside up to 3% of Title II, Part A funds to support leadership development—a growing number of states are committing resources to strengthen school leadership in ways that can support efforts to recruit and retain high-quality educators.¹⁰⁷ In recognition of this new opportunity, we highlight both a long-standing state effort to support principal development as well as more recent promising examples from ESSA plans. Evaluation of these new programs will be essential in order to better understand what works in recruiting, supporting, and retaining high-quality principals, particularly in high-need schools.

State Examples

In 1993, the **North Carolina** General Assembly created the North Carolina Principal Fellows Program. The program provides competitive, merit-based scholarship loans to individuals seeking a master's degree in School Administration 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.¹⁰⁸ Fellows' yearlong internships can provide meaningful and authentic learning

Figure 4
School Leadership



School Leader Development Programs Featured in This Report:

- Idaho
- Illinois
- Louisiana
- Maryland
- Massachusetts
- Michigan
- North Carolina
- North Dakota
- Ohio
- Pennsylvania
- Tennessee
- Vermont

Highlights:

North Carolina: North Carolina Principal Fellows: \$30,000 service scholarship for 2-year principal preparation, including yearlong paid residency; 4-year service commitment.

North Dakota: Using Title II, Part A 3% set-aside to fund ND Leadership Academy and provide mentors for all 1st-year principals.

Tennessee: Using Title II, Part A 3% set-aside to fund competitive grants for leadership residencies in high-need districts.

opportunities that research indicates are critical in principal development.¹⁰⁹ They must also maintain employment as a principal or assistant principal in North Carolina for 4 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 University of North Carolina Master’s of School Administration graduates and all other North Carolina principals.¹¹⁰ Nearly 90% of principal fellows graduated and completed their 4-year service commitment.¹¹¹ Currently, the state plans to invest \$3.2 million a year over the next 2 years in the North Carolina Principal Fellows Program.¹¹²

Title II, Part A of ESSA provides states with new opportunities to invest in and improve school leadership in ways that might increase both teacher and principal retention, including by reserving up to 3% of these funds for school leader development. Many states are seizing this opportunity, with nearly half of states using the optional 3% set-aside and 21 states using ESSA funds to invest in principal preparation.¹¹³ **Tennessee's** ESSA state plan lays out a comprehensive vision for leadership preparation and support across the state and contains many promising leadership investments.¹¹⁴ Among other things, the state will utilize the Title II, Part A leadership set-aside to support leader residency programs in high-need districts through competitive grant opportunities. The state will also pursue and support districts with an interest in applying for additional grant dollars through ESSA's Title II, Part B Teacher and School Leader Incentive Fund Grant to establish residency programs for both teachers and leaders in high-need schools. Additionally, Tennessee will use set-aside funds for leader development to create 4-year statewide and regional leadership pipeline programs aligned with effective research-based program components that produce transformational school leaders. These pipeline programs will be partnership-led, innovative, and high impact, and will serve to increase the supply of high-quality school leaders across the state.¹¹⁵

North Dakota is using ESSA as an opportunity to create multi-tiered leadership support to develop principals as effective leaders. One tier involves implementation of a leadership academy to ensure that North Dakota principals have the resources and support they need to be effective leaders. The leadership academy will provide professional support, professional development, career ladder opportunities, assistance with administrator shortages, and support to address administrator retention in an effort to raise student achievement. The academy will also serve as a resource for schools designated as in need of improvement pursuant to ESSA, in an effort to promote and build capacity in specific aspects of leadership.¹¹⁶

Title II, Part A of ESSA provides states with new opportunities to invest in and improve school leadership in ways that might increase both teacher and principal retention.

North Dakota's planned leadership support also includes implementing and expanding a first-year principal mentorship program with the goal of providing a mentor to all new administrators. This program has two main objectives: (1) to increase the effectiveness of new administrators and (2) to decrease principal turnover in rural and struggling schools.¹¹⁷ Mentors are trained and assigned to new principals and conduct, at a minimum, two site visits during the school year, along with weekly meetings. Mentorship will not be a stand-alone effort; instead, it is tied to ongoing professional development directly related to the knowledge necessary to be an effective leader. This layering of support aligns with research highlighting the importance of field-based coaching and learning that connects directly with a new leader's practice.¹¹⁸ Delivered to provide ongoing skill development for principals, the professional development will include a series of modules delivered at the regional level. Given the impact that effective principal mentoring can have on professional development and growth,¹¹⁹ North Dakota is building a statewide system of support that can supply schools in every part of the state with quality education leaders capable of positively influencing teacher retention.¹²⁰

Many other states have identified leadership preparation and development as a priority in their ESSA plans, including **Idaho, Illinois, Louisiana, Maryland, Massachusetts, Michigan, Ohio, Pennsylvania,** and **Vermont.**¹²¹

Competitive Compensation

The extent to which teachers choose to enter and stay in teaching is highly influenced by the availability of well-paid job opportunities.¹²² It is not surprising then that competitive compensation, or lack thereof, is one factor that contributes to teacher shortages. Research shows that teachers' salaries affect the supply of teachers, including the distribution of teachers across districts, and the quality of people training to be teachers.¹²³

Salaries also influence teacher attrition. All else equal, teachers are more likely to quit when they work in districts with lower wages.¹²⁴ While there is variation within and across states, teacher salaries in the U.S. are generally lower than those offered to college graduates in other professions. Even after adjusting for the shorter work year in teaching, beginning teachers nationally earn about 20% less than individuals with college degrees in other fields—a wage gap that widens to 30% by mid-career. Moreover, the difference in pay between teachers' compensation as compared to other workers with a college degree has grown larger over time. While total compensation (salary, health benefits, and pension) was similar in 1994 between teachers and other workers with a college degree, by 2015 teachers earned 11% less per week in total compensation (including benefits).¹²⁵ In 30 states, mid-career teachers who head families of four qualify for public benefit programs, including free and reduced-price school meals.¹²⁶

In addition, large inequities in teacher salaries among districts within the same labor market leave some high-need, under-resourced districts at a strong disadvantage in hiring. Inequality in salaries is problematic for low-paying districts within any labor market. According to a recent analysis of New York and California, these districts serve significantly more students from low-income families, students of color, and English learners than higher-paying districts.¹²⁷

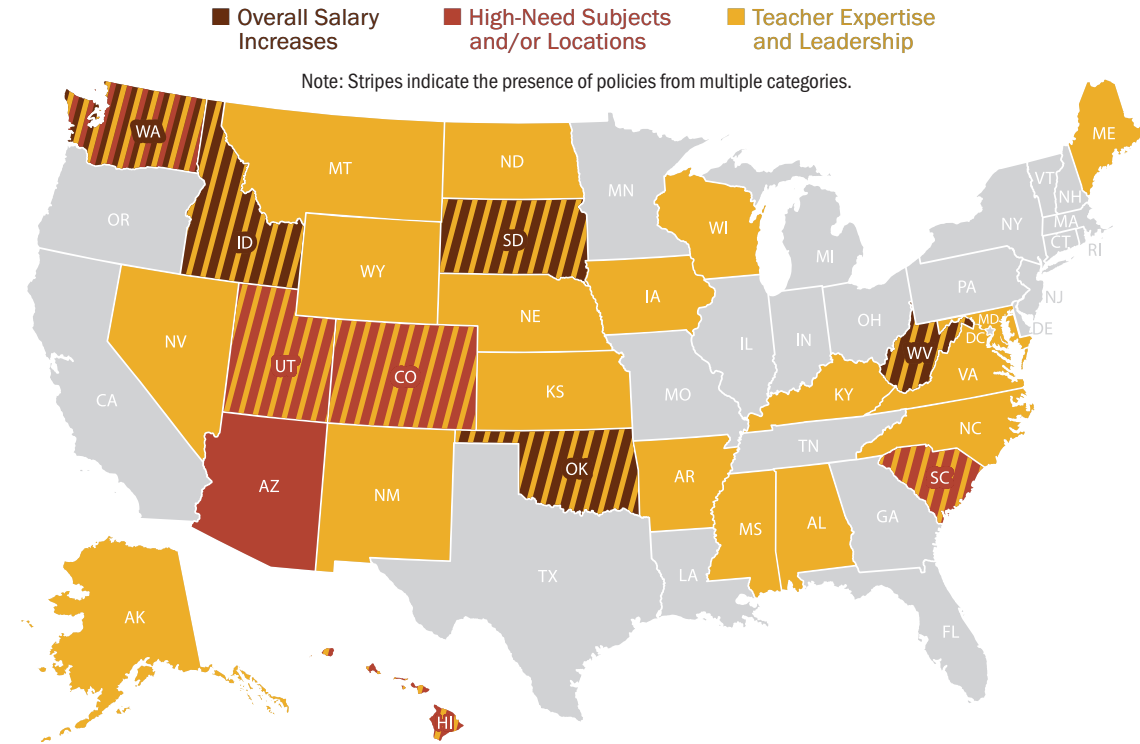
More competitive compensation can be a critical strategy to recruit and retain effective educators, although different approaches may be necessary depending on the particular state, regional, and district context. States are working to provide more competitive compensation through a variety of strategies, including overall salary increases, stipends and other forms of compensation targeted to teachers in high-need subjects and high-need schools, and financial rewards for teacher leadership and expertise. We highlight many of these states in the following sections.

State Examples

Overall salary increases

In 2018, the nation witnessed a wave of teacher activism focused on both low teacher salaries and the inadequacy of education funding in general in some states. From North Carolina to Kentucky to Arizona, teachers have raised concerns about years of frozen and falling real wages. Two states, West Virginia and Oklahoma, took action in 2018 to address concerns raised by teachers. After a 9-day statewide teacher walkout, the **West Virginia** legislature unanimously approved and the governor signed a 5% salary increase for teachers and all school employees.¹²⁸ In **Oklahoma**—a state in which teacher shortages have been particularly severe¹²⁹—Governor Mary Fallin signed HB1010 and HB1023. This legislative package raises taxes on cigarettes, fuel, and lodging in order to fund a \$6,100 average increase in teacher salaries—an increase of 13.5% from the 2016 average salary.¹³⁰ These two states are not alone in substantially raising teacher salaries in recent years.

**Figure 5
Competitive Compensation**



Policies Featured in This Report:

Overall Salary Increases:

- Idaho
- Oklahoma
- South Dakota
- Washington
- West Virginia

High-Need Subjects/Locations:

- Arizona
- Colorado
- Hawaii
- South Carolina
- Utah
- Washington

Teacher Expertise and Leadership:

- Alabama
- Alaska
- Arkansas
- Colorado
- Hawaii
- Idaho
- Iowa
- Kansas
- Kentucky
- Maine
- Maryland
- Mississippi
- Montana
- Nebraska
- Nevada
- New Mexico
- North Carolina
- North Dakota
- Oklahoma
- South Carolina
- South Dakota
- Utah
- Virginia
- Washington
- West Virginia
- Wisconsin
- Wyoming

Highlights:

Idaho: Raising teacher salaries 17% over 5 years, beginning in 2015, including teacher career ladder with associated salary increases.

South Dakota: Half-cent sales tax in 2016 raised teacher salaries by an estimated \$8,500 on average.

Oklahoma: 13.5% salary increase in 2018 (average of \$6,100) funded through increased taxes on cigarettes, fuel, and lodging.

West Virginia: Passed a 5% salary increase in 2018.

Colorado: \$2,800 bonuses for individuals who student teach and remain in rural schools.

Utah: \$5,000 bonuses for teachers who move to high-poverty schools.

Arkansas: \$10,000 for 5 years for National Board Certified teachers (NBCTs) in high-poverty schools, \$10,000 for 10 years for NBCTs at high-poverty schools in high-poverty districts.

Iowa: Teacher Leadership and Compensation Program offers stipends of \$2,000, \$5,000, and \$10,000 for teachers who have advanced on career continuum.

Washington: ~\$6,000 bonus for NBCTs, plus additional \$5,000 if teaching at an under-resourced school.

Over half of states offer stipends to teachers with National Board certification.

South Dakota raised salaries recently without the spur of labor action. Following the recommendations of a blue-ribbon task force studying teacher retention,¹³¹ the South Dakota legislature approved a half-cent sales tax increase to raise teacher salaries in 2016—the first sales tax increase since 1969.¹³² The change was projected to raise \$67 million and increase average teacher salaries by \$8,500 to about \$48,500.¹³³ Given South Dakota’s historically low teacher salaries in both national and regional comparisons, the pay raise is intended to help the state compete in the regional teacher labor market.¹³⁴

Other states have also raised teacher salaries in recent years to address teacher shortages. In 2015, **Idaho** made a 5-year commitment to improve compensation for public school teachers. Under HB 296, the Idaho legislature laid out its plan to raise the minimum teacher salary by nearly 17%, from \$31,750 to \$37,000.¹³⁵ Implementing the bill would cost about \$214 million over 5 years.¹³⁶ Now 3 years in, the state is on track to meet these increases.

In addition, the law establishes a teacher career ladder by defining minimum requirements for master teachers and expanding access to leadership premiums for educators who take on additional responsibilities beyond classroom teaching. For example, master teachers, in order to earn the designation and be eligible for a \$4,000 stipend, must have a minimum of 8 years of teaching experience and the majority of their students must meet measurable student achievement benchmarks. Under the law, teachers also receive financial compensation for undertaking leadership responsibilities by teaching in hard-to-fill positions, providing mentoring, or teaching dual-enrollment courses. Premium amounts are at the discretion of local districts but may range from \$850 to 25% of a teacher’s salary each year. Districts fund these leadership premiums through an additional state apportionment of \$850 per full-time-equivalent teacher and pupil service staff member employed by the district.¹³⁷

Financial incentives for teachers in high-need subjects and locations

In places where teacher shortages primarily affect certain subjects and schools, more targeted financial incentives may be appropriate. Many states have taken steps to establish targeted incentives—or differential pay—for teachers in high-need subjects and schools.

South Carolina offers annual salary stipends for teachers in high-turnover districts who teach in critical subject areas. This program, part of the Rural Recruitment Initiative, provides eligible teachers an additional \$1,500 a year.¹³⁸ Funded at over \$10 million for fiscal year 2016–17, the initiative also includes, among other strategies, loan forgiveness in the amount of \$5,000 a year for 7 years for teachers in 28 districts currently served by the program.¹³⁹

Colorado recently enacted legislation to attract student teachers to high-need rural districts.¹⁴⁰ Teacher candidates who agree to student teach in a rural district and remain in any rural district for 3 years upon graduation with a teaching degree are eligible for \$2,800. Awards are further targeted to high-need subjects (science, mathematics, special education), cultural and linguistic diversity, and rural districts located 50 miles or more from major metropolitan areas.¹⁴¹ In 2016, the state approved an initial \$112,000 for this program—enough to fund 40 stipends.¹⁴²

More recently, **Utah** passed HB 212 in 2017, which sets aside \$250,000 annually for bonuses for effective teachers who currently teach or move to teach in one of the state’s highest poverty schools. Teachers eligible for the Effective Teachers in High Poverty Schools incentive program can receive a \$5,000 salary bonus, half of which is paid by the eligible teacher’s school.¹⁴³

Beyond state investments, several states are taking advantage of opportunities in ESSA to make teaching in high-need schools more attractive. **Hawaii** is considering leveraging Title I, Part A funds to provide financial incentives, such as housing allowances, for teachers in schools identified for comprehensive or targeted support.¹⁴⁴ **Arizona** is considering a similar strategy but with Title II, Part A funds in which salary increases, social support programs, and housing allowances for teachers in high-need schools are all being explored.¹⁴⁵

Research suggests that these types of differential compensation programs are most effective in improving teacher retention long term when they are sustained over time and accompanied by investments in leadership and working conditions in the targeted schools as well.¹⁴⁶

Financial rewards for teacher expertise and leadership

Some states have boosted teacher compensation while raising teacher quality by providing state stipends for teachers earning National Board Certification. The well-respected National Board Certification process allows applicants to demonstrate teaching expertise through a rigorous, standards-based performance assessment requiring submission of a teaching portfolio, videos of teaching, reflections on teaching, lesson plans, and evidence of student learning. Numerous research studies have found that teachers who earn National Board Certification (NBCTs) are, on average, more effective teachers (as measured by their students' test score gains) than non-NBCTs with similar experience.¹⁴⁷ As a strategy to retain effective teachers and reward them for their expertise, over half of states offer stipends to teachers who have earned National Board Certification, including **Kentucky, Maine, and Wyoming**.¹⁴⁸

In an effort to increase the number of NBCTs working in the highest need schools, a number of states provide additional incentives to NBCTs working in these schools, which are typically schools experiencing teacher shortages.

- In 2017, **Arkansas** passed Act 937, which significantly increases the stipend amount for teachers holding National Board Certification in a high-poverty school in a high-poverty district (defined as 70% or more of students eligible for free and reduced-price lunch).¹⁴⁹ For teachers currently holding National Board Certification, stipend amounts remain the same—\$5,000 a year for 10 years. For teachers receiving their National Board Certification after January 1, 2018, the amount varies depending on the type of school in which they teach: \$2,500 will be awarded to teachers in a non-high-poverty school (for 5 years), \$5,000 for teachers in a high-poverty school that is not in a high-poverty district (for 5 years), and \$10,000 for teachers in a high-poverty school in a high-poverty district (for 10 years). Given that the average salary for an Arkansas teacher with 15 years of experience is \$38,150,¹⁵⁰ this stipend is a sizable, carefully crafted incentive to boost the number of expert teachers in the highest need schools.
- In 2018, **Alabama** doubled its stipend—from \$5,000 to \$10,000—for NBCTs teaching in high-need, low-performing, or low-graduation-rate schools.¹⁵¹
- **Washington** offers a similar incentive. For the 2017–18 school year, NBCTs were eligible for a \$5,892 bonus. In addition, NBCTs in under-resourced schools—such as elementary schools with 70% of students from low-income backgrounds—are eligible for an additional bonus of \$5,000 a year.¹⁵² Washington funded these bonuses at \$62.6 million for fiscal year 2018.¹⁵³

Alongside Alabama, Arkansas, and Washington, **Colorado, Hawaii, Maryland, Mississippi, Montana, Utah, West Virginia,** and **Wisconsin** also provide additional targeted financial incentives to NBCTs teaching in high-need schools.¹⁵⁴

Several states are coupling increased compensation with teacher leadership responsibilities. These responsibilities could include leading teacher professional development, facilitating instructional leadership teams, mentoring novice teachers, and serving as a model or coach for other teachers. By using salary supplements to professionally elevate effective educators, teacher leadership frameworks can address teacher career advancement while also creating broader systems of support for novice teachers and spreading best teaching practices. The **Idaho** law described on page 25 is one such example.

Several states are coupling increased compensation with teacher leadership responsibilities, such as leading teacher professional development, facilitating instructional leadership teams, mentoring novice teachers, and serving as a model or coach for other teachers.

Likewise, a teacher career ladder is one strategy **Iowa** implemented through legislation passed in 2013.¹⁵⁵ Iowa's system, the Teacher Leadership and Compensation (TLC) program, establishes criteria for five tiers of the teacher career continuum: initial, career, model, mentor, and lead teacher. The latter three categories carry increased responsibilities, days worked, and salary stipends—\$2,000, \$5,000, and \$10,000, respectively. In a recent evaluation of this system, self-reported survey evidence indicates that the TLC program is not only associated with improved teacher retention, but is also contributing to improvements in instruction and the professional climate in TLC districts.¹⁵⁶ In fiscal year 2017, Iowa funded TLC at \$150 million per year (about \$300 per student), enabling all districts to voluntarily participate.¹⁵⁷

Recruitment Policies

Against the backdrop of persistent teacher shortages, states face continued challenges in providing the level of school funding and resources necessary to offer all students an education that meets state standards. As indicated in a 2017 report from the Center on Budget and Policy Priorities, 29 states provided less overall per-student funding in 2015 (the most recent year available) than in 2008 before the Great Recession. In 19 states, local government funding per student fell over the same period, further exacerbating the impact of state funding cuts.¹⁵⁸

In light of these fiscal constraints, one common response to growing shortages and shrinking state budgets is to lower the bar into the profession through relaxing licensure requirements or increasing the use of emergency permits. Although these strategies may appear low cost, what is often overlooked is that underprepared teachers have high rates of costly teacher turnover¹⁵⁹ and typically are less effective.¹⁶⁰ High turnover negatively impacts both student achievement and districts' bottom lines, as the cost of replacing every teacher who leaves can be more than \$20,000 in urban school districts.¹⁶¹

More productively, in place of lowering the bar for entry into the profession, many states have opted for a set of low-cost policy solutions that expand the pool of qualified educators within a state. Such strategies include recruiting recently retired educators back into the classroom to fill open positions and strengthening licensure reciprocity to provide a more streamlined route into the classroom for experienced educators coming from outside the state.

Incentivizing Retired Teachers to Return to the Profession

To stem the use of emergency permits as a tool for filling teacher vacancies, some states have sought to immediately expand the pool of qualified educators by recruiting recently retired educators back into the classroom to serve in shortage areas. Retired teachers are an untapped resource that can help meet immediate hiring needs without the cost and delay of pre-service preparation. More experienced teachers could be a boon to many schools, since evidence shows that teachers, on average, continue to improve student outcomes with each year of experience, including into the second and third decades of their careers.¹⁶²

States using this approach have typically eliminated barriers to re-entry, such as mandatory separation from service periods and caps on earnings that may apply while a teacher is receiving a pension. Some states have sought to utilize this approach as a way to address acute shortages in some rural areas, which often struggle to recruit new or younger teachers to communities farther from the urban centers where they may have completed their teacher preparation. The laws we highlight in this section often include language regarding the number of years a retired educator may be employed in a shortage position, the specific window of years or months into retirement (i.e., mandatory separation) one must be in order to qualify, and requirements for ongoing contributions to pension funds.

State examples

Colorado's HB 17-1176, passed in 2017, incentivizes retired teachers and other school employees to return to rural schools experiencing critical shortages by permitting retirees to receive a salary without any reduction in state pension benefits. Retirees may only return to service for a maximum

of 6 years.¹⁶³ Importantly, Colorado’s legislative analyst determined that the policy would result in additional state revenue, as both the rehired teacher and his or her employer would contribute to the state pension system, thereby increasing pension contributions without any corresponding increase in pension liability.¹⁶⁴

Similar legislation in **Oklahoma**, SB 428, allows a retired classroom teacher who has been retired for at least 1 year to return to the classroom and continue to receive full retirement benefits with no earnings limitations. This policy is a 3-year pilot meant to address severe current shortages.¹⁶⁵ According to the Oklahoma Department of Education, close to 4,000 recently retired teachers would be eligible for the program, which could help fill vacant positions with experienced and fully qualified teachers as the state faces growing numbers of emergency certificate requests.¹⁶⁶ Other states, including both **Idaho** and **West Virginia**, enacted legislation in 2017 meant to support the return of retired teachers into the classroom to fill high-need positions.¹⁶⁷

Teacher License Reciprocity

A growing number of states are looking beyond their borders to help expand the pool of qualified educators available to fill vacant positions. According to national survey data from the U.S. Department of Education, more than 1 in 10 teachers who left their position at the end of the 2011–12 school year for non-retirement reasons cited a move or geographic issue as extremely or very important in their decision to leave.¹⁶⁸ Although limited, the research on the cross-state mobility of the teacher workforce suggests that some state-specific barriers, such as state licensure requirements and lack of pension portability, can discourage teachers from staying in the teaching profession when they move to a different state.

Some licensing requirements may create unproductive barriers through duplicative testing, coursework requirements, fees, slow administrative processes and requirements, and unclear licensure standards.¹⁶⁹ These barriers vary from state to state and over time. Although some states have worked to remove obstacles in recent years, analysis of the most recent U.S. Department of Education Schools and Staffing Survey found that issues of certification reciprocity were cited by 42% of potential teacher re-entrants as extremely or very important in their decision about whether to return to teaching.¹⁷⁰

That said, states also have important incentives to maintain their state’s teacher licensing standards. State certification requirements reflect a state’s values and context, as well as priorities for its teacher workforce. For example, a state with a large population of English learners may have more stringent licensure requirements for all teachers with respect to teaching ELs than a state with few EL students. State-specific licensing requirements are intended to help ensure that both in-state and out-of-state prepared teachers meet the common standards that a given state has set for all of its teachers.

A recent review of state policies related to teacher licensure reciprocity examined the prevalence of a number of factors that can affect how easily a teacher is able to transfer their license across state lines. Factors included coursework requirements, assessment requirements and exemptions, different requirements based on experience, evidence of effectiveness, and special reciprocity based on advanced credentials, among others.¹⁷¹ The report finds that since 2016, at least 11 states have enacted laws and approved regulations to facilitate reciprocity.

States should consider establishing thoughtful, efficient reciprocity requirements that ease undue burdens to cross-state mobility and allow teachers to serve in the classrooms in which they are most needed. Ultimately, states should seek a balance that allows experienced and accomplished educators the opportunity to seamlessly transition into service in a different state while ensuring that all teachers crossing state lines are equipped with the requisite skills and knowledge required to support specific student populations. Many states, for example, offer full reciprocity for National Board Certified teachers, who have demonstrated their effectiveness through the rigorous, widely recognized board certification process.

States should seek a balance that allows experienced and accomplished educators the opportunity to seamlessly transition into service in a different state while ensuring that all teachers crossing state lines are equipped with the requisite skills and knowledge required to support specific student populations.

In highlighting reciprocity policies that both support greater movement and maintain state standards for teachers, we focus on a state that offers flexibility to out-of-state teachers who have more than 3 years of experience and can demonstrate 3 years of accomplished teaching through their former state's teacher evaluation or performance management system. Further, we consider the impact of limited and reasonable coursework requirements that target specific subjects or student populations along with limited, if any, testing requirements usually based on experience and endorsement subject.

Colorado offers out-of-state teachers a streamlined process to transfer their credentials. The primary factors considered in the process are years of licensed teaching experience and content area.¹⁷² Applicants with at least 3 years of “successful, evaluated experience” within the previous 7 years as a full-time, licensed teacher in an elementary or secondary school in a content area that correlates with a Colorado endorsement area are exempt from taking licensing exams. Such an applicant is eligible to receive a professional license, the license granted to recent graduates of educator preparation programs that is valid for 5 years. Candidates with fewer than 3 years of full-time, licensed experience in the relevant content area may still teach in the state, but they instead receive an initial license and must complete an approved induction program. For applicants who do not meet either experience or content area expertise requirements, Colorado offers a 1-year interim authorization as the pathway into teaching. These candidates become eligible to apply for an initial license when they successfully complete other relevant content exams. Additionally, the state has a special provision allowing military spouses to teach under an interim authorization. This authorization is valid for 1 year and may be extended for 1 additional year by the state Department of Education.

How Washington State Is Taking a Comprehensive Approach to Addressing Teacher Shortages

If they are of sufficient size and scale, and are well implemented, the policies and examples detailed in this report can contribute to solving state teacher shortages. However, no one policy is likely to be sufficient. Once recruited, teachers must have productive teaching conditions that allow them to be effective and stay. And positive working conditions alone are not enough to make a teacher feel efficacious enough to continue without adequate preparation and mentoring. There is no single silver bullet that can ensure that all students, especially traditionally disadvantaged students, have a stable, well-prepared teaching force supporting their learning over time.

To make more substantial progress toward establishing an education system that is adequately and equitably staffed, policymakers can consider a comprehensive approach to addressing teacher shortages. Such an approach includes carefully designed policies attending to every stage of the educator continuum, from recruitment and preparation to development, retention, and career advancement. Comprehensive approaches also recognize the critical impact school leaders have on this continuum.

Washington is making a concerted, multiyear effort to solve teacher shortages, improve teacher retention, and strengthen the overall educator workforce. Teacher shortages have been a critical issue for the Evergreen State for several years, driven by growing student enrollment, declining enrollment in teacher preparation programs, and an aging teacher workforce retiring in high numbers.¹⁷³ Recent evidence from a 2017 survey of Washington principals found that 9 out of 10 principals were affected by the state's teacher shortage, and over half of surveyed principals were not able to fill all vacant classroom teacher positions with fully certified teachers. Twelve percent of surveyed principals stated that shortages were so severe they were in "crisis mode." More than two thirds (72%) admitted they are struggling in their search for well-qualified candidates.¹⁷⁴

State Representative Sharon Tomiko Santos, Chair of Washington's House Education Committee, described how Washington has approached the challenges presented by its dire teacher shortages:

We're trying to take the long view. For too long, at the state level and at the local level, we have been really focused on the short-term immediate crisis at hand. It's not that we should ignore the immediate crisis at hand, but if we're constantly on that merry-go-round of engaging in crisis solutions, then we will never get our arms around the holistic issue of what is changing in our society in terms of attitudes. What is changing in our economy, and how are we going to be able to provide and deliver a comprehensive solution that will last beyond the next 3 to 5 years?¹⁷⁵

This section describes the legislation and other policies enacted in Washington to address teacher shortages and strengthen its teacher workforce.

Service Scholarships and Loan Forgiveness for Teacher Candidates

In a wide-ranging, bipartisan piece of legislation passed in 2016, Washington created two new grant programs to help reduce the financial burden of teacher preparation and thereby boost teacher recruitment and retention.¹⁷⁶ The first program, the Teacher Shortage Conditional Grant, encourages individuals to earn teaching certification in subjects or geographic areas experiencing

shortages.¹⁷⁷ Awards vary by financial need, with a maximum of \$10,000 for each year an applicant is enrolled in an eligible teacher preparation program. Recipients repay the grant through teaching service—2 years for each year of funding received, or 1 year for each year of funding received for service in a shortage area. For fiscal year 2017, the program is funded at \$468,000, and 53 grants were awarded in the first round.¹⁷⁸

The second newly created grant program also helps steer teacher candidates to teaching careers in high-need areas. The Student Teaching Grant program was established to incentivize students to complete student teaching at Title I schools.¹⁷⁹ To do so, it offers applicants who are student teaching in such schools a maximum annual award of \$10,000, again contingent on financial need. This student teaching grant also has an initial appropriation of \$468,000.¹⁸⁰

This legislation builds on existing conditional loan scholarships that Washington has used since 2007 to incentivize particular populations' entry into the educator workforce. These scholarships require the recipient to work in the classroom for 2 years for each year of loan obligation in order to move funds from a loan to a scholarship.¹⁸¹ These types of conditional loan scholarships are available to existing educators who are “retooling” their qualifications, to paraprofessionals training to become teachers, and to participants in alternative-route Grow Your Own programs. Funding for these three conditional loan programs administered by the Washington Professional Educator Standards Board was provided at \$2.3 million for fiscal year 2019:

- The Educator Retooling Conditional Scholarship Program provides financial support (up to \$3,000) to certified teachers in Washington who seek to expand their knowledge and skills to add an endorsement in subject or geographic shortage areas in exchange for a 2-year commitment to teach in the newly added endorsement subject.¹⁸²
- The Pipeline for Paraeducators Conditional Loan Scholarship Program (Parapipeline Program) provides financial support (up to \$4,000 in exchange for a 2-year teaching service commitment) to classified instructional staff with at least 3 years of classroom experience to pursue their Associate of Arts (AA) degree in order to qualify for, enroll in, and complete an alternative route program.¹⁸³
- The Alternative Route to Teaching Block Grant provides funding for alternative route preparation programs, districts, and conditional loan scholarships for candidates in order to foster Grow Your Own teacher strategies to address district need. Candidates receive an \$8,000 conditional loan scholarship.¹⁸⁴

High School Teacher Pathways and Other Grow Your Own Programs

A second prong of Washington's approach to solving teacher shortages and sustainably staffing public schools focuses on assisting districts to help foster high school teacher pathways and other Grow Your Own programs. The Recruiting Washington Teachers (RWT) program is one such example. Established in 2007, the goal of this program is to prepare a diverse group of future educators who more closely reflect the state's student population.¹⁸⁵ RWT is a high school teacher academy program that helps students to explore cultural identity and educational opportunities through the lens of the teaching profession.

By supporting participants as they complete high school and apply to and attend college, the RWT program strengthens the pathway from high school to teaching, with the goal that students will become not only certified teachers, but also education leaders who make a difference in their communities. RWT has provided ongoing funding for “learning laboratories”—partner school sites

that have developed model curriculum, implementation resources, and professional development tools that are made available for any school interested in establishing a teacher academy. Each learning laboratory site includes partnerships between local teachers, districts, and higher education institutions to provide guidance and support to students.

Initial research on the RWT program suggests that the program is succeeding in recruiting students of color, multilingual students, and students who will be the first generation in their family to attend college. Surveys of program participants also suggest that the RWT program is increasing participants' interest in teaching as a career, with about half of the RWT respondents (54%) reporting that their participation in the program had increased their interest in a teaching career.¹⁸⁶ Currently only anecdotal evidence exists showing the impact of RWT on teacher recruitment in the sponsoring districts,¹⁸⁷ but future evaluation plans—made possible by improvements to student data tracking—will allow the state to track program participants' postsecondary trajectory and, hopefully, career choices.¹⁸⁸

To further diversify the teaching workforce, a Bilingual Educators pilot initiative is currently underway, with grant awards totaling \$450,000 for the 2018–19 school year.¹⁸⁹ The project aims to recruit, prepare, and mentor bilingual high school students in order to ready them to become future bilingual teachers and counselors in the state. Similar to RWT, pilot sites selected through the competitive grant application process will serve as learning laboratories to develop best practices and resources to share across the state.

In addition, \$1.8 million in Alternative Route to Teaching Block Grant funds was awarded to nine Grow Your Own programs in FY 2017.¹⁹⁰ One grant recipient, Highline School District, has created a pipeline program to support paraprofessionals with bilingual skills in the district to become certificated teachers with an elementary education endorsement. Participants receive \$8,000/year for 2 years in a conditional loan scholarship while they earn their B.A. and teaching credential—covering about three quarters of the cost of preparation—which is then repaid with 2 years of certificated teaching service in Washington.¹⁹¹

Mentoring and Induction

Recognizing that more than a quarter of all Washington teachers have 0 to 5 years of experience, Washington has taken action to establish a system of supports that increases teacher retention, particularly for beginning teachers. Washington offers induction and mentoring for new teachers through the Beginning Educator Support Team (BEST) program.¹⁹² Since 2012, the Office of the Superintendent of Public Instruction (OSPI) has offered a competitive grant to fund creation of BEST programs in districts around the state. For 2017–18, required induction components include ongoing professional learning for beginning teachers, monthly formative observations and feedback on beginning teachers' practice, release time for observation of accomplished teachers, and professional learning for mentors. There is \$10.5 million currently appropriated for these grants.¹⁹³ Seeking to go beyond state funds, Washington also plans to leverage ESSA Title II, Part A funds to further support these programs.¹⁹⁴

Recognizing that more than a quarter of all Washington teachers have 0 to 5 years of experience, Washington has taken action to establish a system of supports that increases teacher retention, particularly for beginning teachers.

To further improve induction support, Washington is taking steps to ensure that mentor teachers are adequately trained to effectively coach, observe, and advise beginning teachers under their wing. In SB 6455, the legislature charged the OSPI with developing goals for mentorship training programs and encouraged the OSPI to design professional development curricula to standardize mentorship training statewide.¹⁹⁵

There is some initial evidence that these investments in mentoring and induction for Washington's beginning teachers are paying off. A recent examination of the BEST program found that BEST-funded districts with full-fledged induction programs—that is, those who indicated on a survey that they had implemented all the program's requirements, such as professional learning, observations, and training of mentors—saw 6% year-to-year turnover among beginning educators, compared to an average of approximately 10% statewide.¹⁹⁶ A next step for the state is to ensure that all novice teachers in the state receive comprehensive mentoring support in their early years, as only 61% of year 1 teachers and 58% of year 2 teachers received any kind of support in 2016–17.¹⁹⁷ Just half of Washington state's over 300 districts received BEST funding for 2017–18.¹⁹⁸

Strengthening School Leadership

As highlighted earlier in this report, principals and school leaders are integral to efforts to address teacher shortages. Teachers cite principal support as a key factor in their decision about whether to stay in a school or in the profession.¹⁹⁹ Washington's ESSA plan indicates that it intends to take advantage of ESSA's optional 3% set-aside to invest in professional learning for its school leaders because this is an area in which there has been little state investment in the past.²⁰⁰

Salaries and Competitive Compensation

Washington has taken major strides to boost teacher salaries, prompted by a long-running school finance lawsuit in the state, *McCleary v. State*. In a landmark 2012 ruling, the Washington Supreme Court found that the state was violating the constitutional rights of its students by failing to amply fund a basic education for them—including the cost of teacher salaries—and in 2015, the court began fining Washington \$100,000 per day for failure to comply with the court's order to remedy the constitutional violation.

In response to the case, in 2017 the Washington legislature passed landmark legislation that made several significant changes to state funding for public education, including raising teacher salaries.²⁰¹ This includes raising salaries statewide for beginning teachers, as well as policies to allow for differential pay for teachers in subject matter shortage areas and to adjust for regional cost differences. Additionally, Washington has a long-standing policy to provide stipends for expert teachers who have earned National Board Certification, with an additional \$5,000 for those NBCTs who teach in high-need schools.

Washington's funding overhaul is complex. Key elements include raising the minimum starting teacher salary to \$40,000 by the 2019–20 school year, up from \$36,521 in 2017–18.²⁰² The law also specifies a maximum teacher salary of \$90,000, but makes STEM, bilingual education, and special education teachers eligible for salaries 10% above the maximum salary. The law requires regional salary adjustments for areas with high housing costs; these adjustments are not subject to the \$90,000 salary maximum.

To determine the size of the adjustment, the state calculates and ranks all districts based on the average single-family residential home value in and around the district. Districts whose housing value is above the statewide median are divided into three equal groups, or terciles. The first group receives an additional 6% in their base state teacher salary funding, the second group receives an additional 12%, and the third group (i.e., districts with the highest average single-family home value) receives an additional 18%. The minimum salary allocation and regionalization factors enacted in 2017 will be revisited regularly (every 6 years) to ensure they provide market-rate salaries and align with actual staffing costs.²⁰³

Other aspects of the state funding overhaul include phased-in funding for three paid professional learning days and mandated annual inflation adjustments to salaries.²⁰⁴ In 2018, the state legislature passed legislation to accelerate the timeline for funding these salary increases in order to comply with a Supreme Court mandate, and the court terminated jurisdiction over the case in June 2018.²⁰⁵

Recruitment Policies

Washington has also enacted several policies to address teacher shortages that remove constraints on teacher hiring. Recent legislation creating the Teacher Shortage Conditional Grant program and Student Teaching Residency Grant program also streamlined out-of-state teacher license reciprocity for experienced out-of-state teachers seeking a professional certificate.²⁰⁶ Furthermore, the law allows certain retired teachers to return to the classroom as substitute teachers without forfeiting retirement benefits.²⁰⁷ This is particularly critical in Washington, where, in 2016, 61% of surveyed principals reported that, in the past 5 days, they needed to cover a classroom because no substitutes were available.²⁰⁸

Washington's multipronged approach to combating teacher shortages offers one example of a comprehensive approach. But as with any policy, the efficacy of the state's investments will hinge on the scale, scope, and implementation of the initiatives. To address the need for continual fine-tuning and improvement, several of Washington's teacher-shortage-related policies contain provisions mandating policy impact reports. For example, to assess the impact of streamlining out-of-state teacher certification, the Washington State Institute for Public Policy must evaluate, among other elements, whether the enacted provisions increase the number of professional certifications issued to individuals from out of state. Similar reports, which will be critical in guiding future legislative efforts, will also be prepared to assess the impact of the Teacher Shortage Conditional Grant. A comprehensive evaluation of the state's efforts to solve the teacher shortage by strengthening the teaching profession should help guide this ambitious effort over the years to come.

Conclusion

Many states are taking meaningful steps to address teacher shortages. Both short- and long-term policy solutions can help recruit, prepare, and retain committed, skilled, and diverse educators in the classrooms and subject areas that need them most. Furthermore, research points the way forward toward solutions that are likely to be effective, and many that already are achieving positive results.

From California to South Dakota to Mississippi, policymakers across the country are taking action to address their teacher shortages while strengthening their educator workforces. Their efforts include providing service scholarships or loan forgiveness for teacher education, expanding high-retention pathways into the profession—such as teacher residencies and Grow Your Own programs—supporting new teachers once they are hired, strengthening school leadership, boosting teacher compensation, and otherwise expanding the pool of qualified teachers by recruiting retired and out-of-state teachers. These policymakers are seeking to take a long view by creating strategies that can not only address immediate shortages, but also create a strong, effective, and stable teaching profession for the future.

From California to South Dakota to Mississippi, policymakers across the country are taking action to address their teacher shortages while strengthening their educator workforces.

Appendix A

State Policies Included in This Report

State	Service Scholarships and Loan Forgiveness		High-Retention Pathways		Mentoring and Induction	School Leadership	Competitive Compensation			Recruitment Policies	
			Teacher Residencies	Grow Your Own			Salary Increases	Targeted Financial Incentives	Teacher Leadership	Retired Teachers	Teacher License Reciprocity
Alabama											
Alaska				X				X			
Arizona					X				X		
Arkansas	X			X				X			
California			X	X							
Colorado	X		X	X				X		X	
Connecticut					X						
Delaware				X	X						
Florida											
Georgia			X								
Hawaii									X		
Idaho					X			X		X	
Illinois	X		X								
Indiana	X		X								
Iowa	X				X					X	
Kansas	X				X					X	

State	Service Scholarships and Loan Forgiveness		High-Retention Pathways		Mentoring and Induction	School Leadership	Competitive Compensation			Recruitment Policies	
			Teacher Residencies	Grow Your Own			Salary Increases	Targeted Financial Incentives	Teacher Leadership	Retired Teachers	Teacher License Reciprocity
Kentucky											
Louisiana			X			X					X
Maine											X
Maryland						X					X
Massachusetts	X					X					
Michigan			X			X					
Minnesota				X							
Mississippi	X			X							X
Missouri											
Montana											X
Nebraska	X										X
Nevada	X										X
New Hampshire											
New Jersey											
New Mexico			X								X
New York											
North Carolina	X					X					X
North Dakota						X					X

State	Service Scholarships and Loan Forgiveness		High-Retention Pathways		Mentoring and Induction	School Leadership	Competitive Compensation			Recruitment Policies	
			Teacher Residencies	Grow Your Own			Salary Increases	Targeted Financial Incentives	Teacher Leadership	Retired Teachers	Teacher License Reciprocity
Ohio					X	X					
Oklahoma	X						X		X		X
Oregon											
Pennsylvania			X	X		X					
Puerto Rico											
Rhode Island											
South Carolina	X			X					X		
South Dakota							X		X		
Tennessee			X			X					
Texas			X								
Utah									X		
Vermont						X					
Virginia	X								X		
Washington	X		X	X	X			X	X	X	X
Washington DC											
West Virginia			X				X		X		X
Wisconsin	X								X		
Wyoming									X		

Endnotes

1. This section draws on Darling-Hammond, L. (2017, September 20). Where have all the teachers gone? [Blog post]. <https://learningpolicyinstitute.org/blog/where-have-all-teachers-gone>; Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). *A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S.* Palo Alto, CA: Learning Policy Institute.
2. Darling-Hammond, L. (2017, September 20). Where have all the teachers gone? [Blog post]. <https://learningpolicyinstitute.org/blog/where-have-all-teachers-gone>.
3. Darling-Hammond, L. (2016). Research on teaching and teacher education and its influences on policy and practice. *Educational Researcher*, 45(2), 83–91.
4. Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators.* Palo Alto, CA: Learning Policy Institute.
5. U.S. Department of Education. Teacher shortage areas. <https://www2.ed.gov/about/offices/list/ope/pol/tsa.html#list> (accessed 4/16/18).
6. U.S. Department of Education. Civil Rights Data Collection (CRDC) for the 2013–14 school year. <https://ed.gov/about/offices/list/ocr/docs/crdc-2013-14.html> (accessed 4/16/18).
7. Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). *A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S.* Palo Alto, CA: Learning Policy Institute.
8. Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). *A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S.* Palo Alto, CA: Learning Policy Institute.
9. Carver-Thomas, D., & Darling-Hammond, L. (2017). *Teacher turnover: Why it matters and what we can do about it.* Palo Alto, CA: Learning Policy Institute.
10. Barnes, G., Crowe, E., & Schaefer, B. (2007). *The cost of teacher turnover in five school districts: A pilot study.* Arlington, VA: National Commission on Teaching and America’s Future; Milanowski, A., & Odden, A. (2007). *A new approach to the cost of teacher turnover.* Seattle, WA: School Finance Redesign Project, Center on Reinventing Public Education; Shockley, R., Guglielmino, P., & Watlington, E. J. (2006). *A national crisis in teacher education: What are the costs?* Old Tappan, NJ: Pearson Education; Carroll, T. G. (2007). *Policy brief: The high cost of teacher turnover.* Arlington, VA: National Commission on Teaching and America’s Future; Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators.* Palo Alto, CA: Learning Policy Institute, endnote 37. To derive estimates, we averaged individual estimates from these studies by district type and adjusted each estimate for inflation using the Bureau for Labor Statistics Consumer Price Index Inflation Calculator. These averages by district type provide an approximate plausible cost of teacher turnover.
11. Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). *A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S.* Palo Alto, CA: Learning Policy Institute.
12. This section draws on Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators.* Palo Alto, CA: Learning Policy Institute.
13. U.S. Department of Education. (2015). *Web tables: Trends in graduate student financing: Selected years, 1995–96 to 2011–12.* Washington, DC: National Center for Education Statistics, U.S. Department of Education. <http://nces.ed.gov/pubs2015/2015026.pdf> (accessed 8/23/18).
14. Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2010). Teacher credentials and student achievement in high school: A cross-subject analysis with student fixed effects. *Journal of Human Resources*, 45(3), 655–681; Darling-Hammond, L., Holtzman, D. J., Gatlin, S. J., & Heilig, J. V. (2005). Does teacher preparation matter? Evidence about teacher certification, Teach for America, and teacher effectiveness. *Education Policy Analysis Archives*, 13(42), 51; Glazerman, S., Isenberg, E., Dolfin, S., Bleeker, M., Johnson, A., Grider, M., & Jacobus, M. (2010). *Impacts of comprehensive teacher induction.* Washington, DC: U.S. Department of Education; Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2006). How changes in entry requirements alter the teacher workforce and affect student achievement. *Education Finance and Policy*, 1(2), 176–216; Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2007). Teacher credentials and student achievement: Longitudinal analysis with student fixed effects. *Economics of Education Review*, 26(6), 673–682.

15. Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute.
16. Podolsky, A., & Kini, T. (2016). *How effective are loan forgiveness and service scholarships for recruiting teachers?* Palo Alto, CA: Learning Policy Institute.
17. LPI analysis of the Schools and Staffing Survey (SASS), 2012, and the Teacher Follow-up Survey (TFS), 2013, from the Schools and Staffing Surveys, National Center for Education Statistics.
18. The University of North Carolina. North Carolina Teaching Fellows. <https://ncteachingfellows.com/> (accessed 4/27/18); Nc. Gen Statute. § 116-209.62 (2017); Stancill, J. (2017, November 16). Want to be a teacher? These 5 NC colleges were chosen for new teaching fellows program. *The News&Observer*. <http://www.newsobserver.com/news/local/education/article185030128.html>.
19. Henry, G. T., Bastian, K. C., & Smith, A. A. (2012). Scholarships to recruit the ‘best and brightest’ into teaching: Who is recruited, where do they teach, how effective are they, and how long do they stay? *Educational Researcher*, 41(3), 83–92; Podolsky, A., & Kini, T. (2016). *How effective are loan forgiveness and service scholarships for recruiting teachers?* Palo Alto, CA: Learning Policy Institute.
20. Nebraska Department of Education. (2016). *Status of the programs report: Programs of the Excellence in Teaching Act*. Lincoln, NE: Nebraska Department of Education. https://www.education.ne.gov/wp-content/uploads/2017/07/ETASStatusRpt_Dec2016.pdf; Nebraska Department of Education. (2018). Nebraska consolidated state plan under the Every Students Succeeds Act. Lincoln, NE: Nebraska Department of Education, 160. https://cdn.education.ne.gov/wp-content/uploads/2018/06/Nebraska_ESSA_Final.pdf (accessed 5/10/18).
21. Nebraska Department of Education. (2016). *Status of the programs report: Programs of the Excellence in Teaching Act*. Lincoln, NE: Nebraska Department of Education. https://www.education.ne.gov/wp-content/uploads/2017/07/ETASStatusRpt_Dec2016.pdf.
22. Nebraska Department of Education. (n.d.). Attracting Excellence to Teaching Program. <https://www.education.ne.gov/educatorprep/aetp/> (accessed 4/30/18).
23. Nebraska Department of Education. (2017). Attracting Excellence to Teaching Program (AETP): Status of the program as of December 2017. <https://cdn.education.ne.gov/wp-content/uploads/2017/12/2017-AETP-Overview.pdf>.
24. H.B. 1002. 119th Leg., Reg. Sess. (In. 2016).
25. Indiana Commission for Higher Education. (n.d.). Next Generation Hoosier Educators Scholarship. <https://www.in.gov/che/4680.htm> (accessed 2/2/18).
26. S.B. 511. 78th Leg., Reg. Sess. (Nv. 2015); Nevada Department of Education. (n.d.). Teach Nevada Scholarships and incentives (SB 511). http://www.doe.nv.gov/Educator_Effectiveness/Educator_Develop_Support/Teach_Nevada_Scholarships_and_Incentives/ (accessed 4/27/18).
27. S.B. 511. 78th Leg., Reg. Sess. (Nv. 2015).
28. Iowa College Student Aid Commission. (n.d.). Teach Iowa Scholar Program. <https://www.iowacollegeaid.gov/teachiowascholar> (accessed 4/27/18).
29. HF 642. 2017 Leg., Reg. Sess. (Ia. 2017), 2. <https://www.legis.iowa.gov/docs/publications/LGI/87/HF642.pdf> (accessed 6/5/2018).
30. S.B. 16-104. 2016 Leg., Reg. Sess. (Co. 2016); S.B. 1791. 98th Leg., Reg. Sess. (Il. 2013); Ks. Stat. § 74-32,107 (2018); Ma. Gen. Laws § 15a-19 (2018); Ms. Code § 37-106-57 (2014); Sc. Code § 59-26-20 (2018); Va. Code Ann. § 22.1-290.01 (2018); Wi. Code § 39.399 (2018).
31. Maranto, R. & Shuls, J. V. (2012). How do we get them on the farm? Efforts to improve rural teacher recruitment and retention in Arkansas. *Rural Educator*, 34(1), n27; Bull, K. S., Marks, S., & Salyer, B. K. (1994). Future teacher scholarship programs for science education: Rationale for teaching in perceived high-need areas. *Journal of Science Education and Technology*, 3(1), 71–76.

32. This section draws on Carver-Thomas, D., & Darling-Hammond, L. (2017). *Teacher turnover: Why it matters and what we can do about it*. Palo Alto, CA: Learning Policy Institute; Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute.
33. Ingersoll, R., Merrill, L., & May, H. (2014). *What are the effects of teacher education and preparation on beginning teacher attrition? Research report (#RR-82)*. Philadelphia, PA: Consortium for Policy Research in Education, University of Pennsylvania; Henke, R., Chen, X., & Geis, S. (2000). *Progress through the teacher pipeline: 1992–93 college graduates and elementary/secondary school teaching as of 1997. Postsecondary education descriptive analysis report*. Washington, DC: National Center for Education Statistics, U.S. Department of Education.; Carver-Thomas, D., & Darling-Hammond, L. (2017). *Teacher turnover: Why it matters and what we can do about it*. Palo Alto, CA: Learning Policy Institute.
34. Carver-Thomas, D., & Darling-Hammond, L. (2017). *Teacher turnover: Why it matters and what we can do about it*. Palo Alto, CA: Learning Policy Institute.
35. Carver-Thomas, D., & Darling-Hammond, L. (2017). *Teacher turnover: Why it matters and what we can do about it*. Palo Alto, CA: Learning Policy Institute.
36. Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2010). Teacher credentials and student achievement in high school: A cross-subject analysis with student fixed effects. *Journal of Human Resources*, 45(3), 655–681; Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2007). Teacher credentials and student achievement: Longitudinal analysis with student fixed effects. *Economics of Education Review*, 26(6), 673–682; Darling-Hammond, L., Holtzman, D. J., Gatlin, S. J., & Heilig, J. V. (2005). Does teacher preparation matter? Evidence about teacher certification, Teach for America, and teacher effectiveness. *Education Policy Analysis Archives*, 13(42), 51; Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2006). How changes in entry requirements alter the teacher workforce and affect student achievement. *Education Finance and Policy*, 1(2), 176–216.
37. Constantine, J., Player D., Silva, T., Hallgren, K., Grider, M., and Deke, J. (2009). *An evaluation of teachers trained through different routes to certification, final report* (NCEE 2009-4043). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education; Darling-Hammond, L. (2009). *Educational opportunity and alternative certification: New evidence and new questions*. Stanford, CA: Stanford Center for Opportunity Policy in Education; Humphrey, D. C., Wechsler, M. E., Hough, H. J. (2008). Characteristics of effective alternative teacher certification programs. *Teachers College Record*, 110(1), 1–63.
38. This section of the report draws on Guha, R., Hyler, M. E., & Darling-Hammond, L. (2016). *The teacher residency: An innovative model for preparing teachers*. Palo Alto, CA: Learning Policy Institute.
39. Guha, R., Hyler, M. E., & Darling-Hammond, L. (2016). *The teacher residency: An innovative model for preparing teachers*. Palo Alto, CA: Learning Policy Institute.
40. Papay, J. P., West, M. R., Fullerton, J. B., and Kane, T. J. (2012). Does an urban teacher residency increase student achievement? Early evidence from Boston. *Educational Evaluation and Policy Analysis*, 34(4), 413–434; Guha, R., Hyler, M. E., & Darling-Hammond, L. (2016). *The teacher residency: An innovative model for preparing teachers*. Palo Alto, CA: Learning Policy Institute.
41. A.B. 1808, Section 39, 2018 Leg., Reg. Sess. (Ca. 2018). http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB1808
42. H.B. 1752, 83rd Leg., Reg. Sess. (Tx. 2013).
43. Texas Higher Education Coordinating Board. (n.d.). Texas Teacher Residency Program. <http://www.thecb.state.tx.us/index.cfm?objectid=79787D83-0CD5-7CBF-AD65BCB8DCEFDDB> (accessed 4/27/18).
44. Texas Higher Education Coordinating Board. (n.d.). Teacher Residency Program Phase 2. (2016). <http://www.thecb.state.tx.us/reports/PDF/9129.PDF?CFID=68962054&CFTOKEN=15807142> (accessed 4/28/18).
45. National Center for Teacher Residencies. (2018). Part 2: States' ESSA plans and teacher residencies. [https://nctrresidencies.org/part-2-states-essa-plans-teacher-residencies/?ct=t\(EBLAST_1_10_2018\)](https://nctrresidencies.org/part-2-states-essa-plans-teacher-residencies/?ct=t(EBLAST_1_10_2018)) (accessed 7/23/18).

46. Pennsylvania Department of Education. (2018). *Application guidelines for innovative teacher and principal residency programs*. Harrisburg, PA: Pennsylvania Department of Education. <http://www.education.pa.gov/Teachers%20-%20Administrators/Teacher%20Quality/Pages/Innovative-Teacher-and-Principal-Residency-Programs-Grant.aspx> (accessed 07/01/18).
47. Michigan Department of Education. (2016). 2016–2017 Title II, Part A (3) Competitive Grant Program for Improving Teacher Quality. https://www.michigan.gov/documents/mde/MEGSPresentation_377546_7.ppt. Lansing, MI: Michigan Department of Education.
48. La. Code § 28-XLV-303, 2 (2017); Louisiana Department of Education. (2017). *Updated teacher preparation transition guide*. Baton Rouge, LA: Louisiana Department of Education. <https://www.louisianabelieves.com/docs/default-source/teaching/teacher-preparation-transition-guide.pdf?sfvrsn=12> (accessed 5/21/18).
49. Louisiana Department of Education. (August 8, 2017). *Louisiana consolidated state plan under the Every Student Succeeds Act (ESSA)*. Baton Rouge, LA: Louisiana Department of Education, 26, 72–73. <https://www.louisianabelieves.com/docs/default-source/louisiana-believes/louisianas-essa-state-plan.pdf?sfvrsn=23> (accessed 5/21/18).
50. H.B. 18-1332, 71st Gen. Assem., Reg. Sess. (Co. 2018); Indiana Department of Education. (January 8, 2018). State template for the consolidated state plan under the Every Student Succeeds Act. Indianapolis, IN: Indiana Department of Education, 69, 78. <https://www.doe.in.gov/sites/default/files/essa/essa-plan-revisions.pdf> (accessed 5/21/18); Georgia Department of Education. (January 11, 2018). Georgia consolidated state plan under the Every Student Succeeds Act (ESSA). Atlanta, GA: Georgia Department of Education, 82–83. [http://www.gadoe.org/External-Affairs-and-Policy/communications/Documents/Georgia%20State%20ESSA%20Plan%20Final%20Submission%20--%201-11-18%20Clean%20\(1\).pdf](http://www.gadoe.org/External-Affairs-and-Policy/communications/Documents/Georgia%20State%20ESSA%20Plan%20Final%20Submission%20--%201-11-18%20Clean%20(1).pdf) (accessed 5/22/18); Pennsylvania Department of Education. (January 12, 2018). Pennsylvania consolidated state plan under the Every Student Succeeds Act (ESSA). Harrisburg, PA: Pennsylvania Department of Education, 72–74. <http://www.education.pa.gov/Documents/K-12/ESSA/Resources/PA%20ESSA%20Consolidated%20State%20Plan%20Final.pdf> (accessed 5/22/18); Tennessee Department of Education. (March 21, 2018). Tennessee consolidated state plan under the Every Student Succeeds Act (ESSA). Nashville, TN: Tennessee Department of Education, 271–272. https://www.tn.gov/content/dam/tn/education/documents/TN_ESSA_State_Plan_Approved.pdf (accessed 5/22/18); Illinois State Board of Education. (August 29, 2017). Illinois consolidated state plan under the Every Student Succeeds Act (ESSA). Springfield, IL: Illinois State Board of Education, 97. <https://www.isbe.net/Documents/ESSAStatePlanforIllinois.pdf> (accessed 5/22/18); West Virginia Department of Education. (January 9, 2018) West Virginia’s consolidated state plan under the Every Student Succeeds Act (ESSA). Charleston, WV: West Virginia Department of Education, 62. <https://www2.ed.gov/admins/lead/account/stateplan17/wvconsolidatedstateplanfinal.pdf> (accessed 5/22/18); New Mexico Public Education Department. (August 9, 2017). New Mexico consolidated state plan under the Every Student Succeeds Act (ESSA). Santa Fe, NM: New Mexico Public Education Department, 115. <https://webnew.ped.state.nm.us/wp-content/uploads/2018/02/FINAL-APPROVED-NM-State-ESSA-Plan.pdf> (accessed 5/22/18).
51. Georgia Department of Education. (2017). Georgia’s P-20 Collaboratives. Atlanta, GA: Georgia Department of Education. [http://www.gadoe.org/School-Improvement/Teacher-and-Leader-Effectiveness/Documents/P%2020%20Documents/Final%20P-20%20Infographic%208.03.17%20w%20Borders%20\(RV4\)%20PDF3.pdf](http://www.gadoe.org/School-Improvement/Teacher-and-Leader-Effectiveness/Documents/P%2020%20Documents/Final%20P-20%20Infographic%208.03.17%20w%20Borders%20(RV4)%20PDF3.pdf).
52. This section draws on Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute.
53. Boyd, D., Lankford, H., Loeb, S., & Wyckoff, J. (2005). The draw of home: How teachers’ preferences for proximity disadvantage urban schools. *Journal of Policy Analysis and Management*, 24(1), 113–132.
54. Carver-Thomas, D. (2018). *Diversifying the teaching profession: How to recruit and retain teachers of color*. Palo Alto, CA: Learning Policy Institute.
55. Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute.
56. Clewell, B. C., & Villegas, A. M. (2001). *Absence unexcused: Ending teacher shortages in high-need areas. Evaluating the pathways to teaching careers program*. Washington, DC: Urban Institute, 2001.

57. Commission on Teacher Credentialing. (2008). *California School Paraprofessional Teacher Training Program: An annual report to the legislature as required by SB 1636*. Sacramento, CA: Commission on Teacher Credentialing. http://www.ctc.ca.gov/reports/PTTP_2008_LegRpt.pdf. (accessed 12/20/17).
58. California Commission on Teacher Credentialing, Educator Preparation Committee. (2017). *Update on state-funded grant programs*. Sacramento, CA: California Commission on Teacher Credentialing. https://www.ctc.ca.gov/docs/default-source/commission/agendas/2017-12/2017-12-3b.pdf?sfvrsn=894e57b1_2 (accessed 4/27/18).
59. Mississippi Department of Education. (March 26, 2018). Mississippi consolidated state plan under the Every Student Succeeds Act (ESSA). Jackson, MS: Mississippi Department of Education, 72–74. http://www.mde.k12.ms.us/docs/state-superintendent/mississippi-essa-consolidated-state-plan-usde-v5-2018-03-26-final-with-sigs_20180329.pdf?sfvrsn=2 (accessed 5/22/18).
60. Ma, J., Baum, S. (2016). *Trends in community colleges: Enrollment, prices, student debt and completion*. New York, NY: College Board; Carver-Thomas, D. (2018). *Diversifying the teaching profession: How to recruit and retain teachers of color*. Palo Alto, CA: Learning Policy Institute.
61. H.B. 18-1002, 71st Gen. Assem., Reg. Sess. (Co. 2018).
62. Arkansas Department of Education. (January 16, 2018). Arkansas consolidated state plan under the Every Student Succeeds Act (ESSA). Little Rock, AR: Arkansas Department of Education, 121. http://www.arkansased.gov/public/userfiles/ESEA/Arkansas_ESSA_Plan_Final_rv_January_30_2018.pdf (accessed 5/22/18); Pennsylvania Department of Education. (January 12, 2018). Pennsylvania consolidated state plan under the Every Student Succeeds Act (ESSA). Harrisburg, PA: Pennsylvania Department of Education, 82–83. <http://www.education.pa.gov/Documents/K-12/ESSA/Resources/PA%20ESSA%20Consolidated%20State%20Plan%20Final.pdf> (accessed 5/22/18); State of Washington Professional Educator Standards Board. (n.d.). “Grow Your Own” initiative. <https://www.pesb.wa.gov/innovation-policy/grow-your-own> (accessed 5/22/18).
63. ACT, Inc. (2016). *The condition of future educators 2015*. Iowa City, IA: Author; ACT, Inc. (2015). *The condition of future educators 2014*. Iowa City, IA: Author.
64. Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). *A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S.* Palo Alto, CA: Learning Policy Institute.
65. Educators Rising. (2018). <https://educatorsrising.org/> (accessed 5/22/18); Simmons, A. (2018, February 12). Teacher recruitment starting in high school. <https://www.edutopia.org/article/teacher-recruitment-starting-high-school> (accessed 5/22/18).
66. Teacher Cadets. (n.d.). Research. <https://www.teachercadets.com/research.html> (accessed 5/22/18).
67. The Riley Institute at Furman University. (n.d.). *Teacher Cadet Program: WhatWorksSC Clearinghouse*. Greenville, SC: The Riley Institute at Furman University Center for Education Policy and Leadership. <https://riley.furman.edu/sites/default/files/docs/Teacher%20Cadet.pdf> (accessed 4/27/18).
68. Delaware Government. (2016, December 5). Pathways to prosperity grants will support 23 new high school programs beginning in 2017. <https://news.delaware.gov/2016/12/05/pathways-to-prosperity-grants-will-support-23-new-high-school-programs-beginning-in-2017/> (accessed 5/22/18); Delaware Department of Education. (n.d.). CTE state–model programs of study. <https://www.doe.k12.de.us/Page/2016> (accessed 2/2/18).
69. Delaware Government. (2016, December 5). Pathways to prosperity grants will support 23 new high school programs beginning in 2017. <https://news.delaware.gov/2016/12/05/pathways-to-prosperity-grants-will-support-23-new-high-school-programs-beginning-in-2017/> (accessed 5/22/18).
70. Arkansas Department of Education. (2017). Arkansas consolidated state plan under the Every Student Succeeds Act (ESSA). Little Rock, AR: Arkansas Department of Education, 120. http://www.arkansased.gov/public/userfiles/ESEA/Arkansas_ESSA_Plan_Final_rv_January_30_2018.pdf (accessed 5/22/18).
71. Educators Rising Alaska. (n.d.). Micro-credentials. http://educatorsrisingalaska.org/student_pathways.php (accessed 8/16/18).
72. H.F. 2, 90th Leg., 1st Spec. Sess. (Mn. 2017).

73. Mississippi Department of Education. (March 26, 2018). Mississippi consolidated state plan under the Every Student Succeeds Act (ESSA). Jackson, MS: Mississippi Department of Education, 61. http://www.mde.k12.ms.us/docs/state-superintendent/mississippi-essa-consolidated-state-plan-usde-v5-2018-03-26-final-with-sigs_20180329.pdf?sfvrsn=2 (accessed 5/22/18).
74. Pennsylvania Department of Education. (January 12, 2018). Pennsylvania consolidated state plan under the Every Student Succeeds Act (ESSA). Harrisburg, PA: Pennsylvania Department of Education, 78. <http://www.education.pa.gov/Documents/K-12/ESSA/Resources/PA%20ESSA%20Consolidated%20State%20Plan%20Final.pdf> (accessed 5/22/18).
75. This section draws on Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute.
76. Ingersoll, R. M., & Smith, T. M. (2004). Do teacher induction and mentoring matter? *NAASP Bulletin*, 88(638), 28–40.
77. Ingersoll, R. M., & Smith, T. M. (2004). Do teacher induction and mentoring matter? *NAASP Bulletin*, 88(638), 28–40.
78. Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute.
79. Koppich, J. E., Humphrey, D. C., Bland, J., Heenan, B., McCaffery, T., Ramage, K., & Stokes, L. (2013). *California's beginning teachers: The bumpy path to a profession*. Menlo Park, CA: SRI International; Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute.
80. Goldrick, L. (2016). *Support from the start: A 50-state review of policies on new educator induction and mentoring*. Santa Cruz, CA: New Teacher Center. Note: In at least Connecticut's case, the state has eliminated state funding for teacher induction since the publication of this report.
81. Kardos, S. M., & Johnson, S. M. (2010). New teachers' experiences of mentoring: The good, the bad, and the inequity. *Journal of Educational Change*, 11(1), 23–44.
82. Delaware Professional Standards Board. (n.d.). Delaware administrative code: Title 14 education, 1503 educator mentoring. <http://regulations.delaware.gov/AdminCode/title14/1500/1503.pdf> (accessed 12/12/17).
83. Raffel, J. A., Holbert, R. R., Curtis, K. A., Middlebrooks, A., Noble, A., & O'Malley, F. (2007). *Delaware's new teacher mentoring/induction program: Initiation, implementation, and integration*. Newark, DE: University of Delaware.
84. S. B. 285, 148th Gen. Assem., Reg. Sess. (De. 2017), 211.
85. Delaware Professional Standards Board. (n.d.). Delaware administrative code: Title 14 education, 1503 educator mentoring. <http://regulations.delaware.gov/AdminCode/title14/1500/1503.pdf> (accessed 12/12/17); Delaware Department of Education. (n.d.). Comprehensive induction program: Program requirements. <https://www.doe.k12.de.us/Page/3569> (accessed 12/8/17).
86. Delaware Department of Education. (September 1, 2017). Delaware consolidated state plan under the Every Student Succeeds Act (ESSA). Dover, DE: Delaware Department of Education, 75. https://www.doe.k12.de.us/cms/lib/DE01922744/Centricity/Domain/425/DE_consolidatedstateplan.FINAL%20clean%20090117.pdf (accessed 5/23/18).
87. Personal phone call with Jon Neubauer, Education Associate, Delaware Department of Education (2018, February 1). For an earlier total, see New Teacher Center. (2016). *State policy review: New teacher induction Delaware*. Santa Cruz, CA: New Teacher Center.
88. TELL Delaware. (2017). Result details. <https://telldelaware.org/results/report/590/172027> (accessed 12/8/17).
89. S. F. 476, 79th Leg., Gen. Sess. (Ia. 2001).
90. Iowa Department of Education. (n.d.). Mentoring and induction for beginning educators. <https://www.educateiowa.gov/pk-12/educator-quality/mentoring-induction-beginning-educators> (accessed 11/20/17).
91. S. F. 476, 79th Leg., Gen. Sess. (Ia. 2001).

92. Ia. Code. § 284.13 (2017).
93. S. F. 476, 79th Leg., Gen. Sess. (Ia. 2001).
94. P. A. 09-6, 2009 Leg., Spec. Sess. (Ct. 2009); Connecticut Department of Education. (n.d.). Teacher Education and Mentoring (TEAM) program. <http://portal.ct.gov/SDE/TEAM/Teacher-Education-And-Mentoring-TEAM-Program> (accessed 5/22/18).
95. Bozack, A., Freilicher, T., & Salvaggio, A. N. (2013). *Teacher education and mentoring program evaluation report*. <http://www.cea.org/issues/news/2013/mar/04/pdf/TEAM-Report-2-15-13.pdf> (accessed 12/12/17).
96. Bozack, A., Freilicher, T., & Salvaggio, A. N. (2013). *Teacher education and mentoring program evaluation report*. <http://www.cea.org/issues/news/2013/mar/04/pdf/TEAM-Report-2-15-13.pdf> (accessed 12/12/17).
97. Moran, J. D. (2017). Summary of the Teacher Education and Mentoring (TEAM) Program. Hartford, CT: Connecticut General Assembly, Office of Legislative Research. <https://www.cga.ct.gov/2017/rpt/pdf/2017-R-0306.pdf> (accessed 5/22/18); H. B. 1502, 2017 June Spec. Sess., (Ct. 2017).
98. Delaware Department of Education. (September 1, 2017). Delaware consolidated state plan under the Every Student Succeeds Act (ESSA). Dover, DE: Delaware Department of Education, 78. https://www.doe.k12.de.us/cms/lib/DE01922744/Centricity/Domain/425/DE_consolidatedstateplan.FINAL%20clean%20090117.pdf (accessed 5/23/18).
99. Ohio Department of Education. (January 16, 2018). Ohio consolidated state plan under the Every Student Succeeds Act (ESSA). Columbus, OH: Ohio Department of Education, 83. http://education.ohio.gov/getattachment/Topics/Every-Student-Succeeds-Act-ESSA/OH_ESSA_SUBMISSION.pdf.aspx (accessed 5/23/18).
100. Arizona Department of Education. (August 21, 2017). Arizona consolidated state plan under the Every Student Succeeds Act (ESSA). Phoenix, AZ: Arizona Department of Education, 53. <https://cms.azed.gov/home/GetDocumentFile?id=59b185613217e1015407f276> (accessed 5/23/18); Idaho State Board of Education. (March 28, 2018). Idaho consolidated state plan under the Every Student Succeeds Act (ESSA). Boise, ID: Idaho State Board of Education, 71. <http://www.sde.idaho.gov/topics/consolidated-plan/files/Idaho-Consolidated-State-Plan-Final-March-28-2018.pdf> (accessed 5/23/18); Kansas State Department of Education. (January 8, 2018). Kansas consolidated state plan under the Every Student Succeeds Act. Topeka, KS: Kansas State Department of Education, 74. http://www.ksde.org/Portals/0/ECSETS/ESEA/KSconsolidatedstateplan01182018_Approved.pdf (accessed 5/23/18).
101. This section draws on Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute.
102. Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute.
103. Hughes, A. L., Matt, J. J., & O'Reilly, F. L. (2015). Principal support is imperative to the retention of teachers in hard-to-staff schools. *Journal of Education and Training Studies*, 3(1), 129–134; Brown, K. M., & Wynn, S. R. (2009). Finding, supporting, and keeping: The role of the principal in teacher retention issues. *Leadership and Policy in Schools*, 8(1), 37–63; Grissom, J. A. (2011). Can good principals keep teachers in disadvantaged schools? Linking principal effectiveness to teacher satisfaction and turnover in hard-to-staff environments. *Teachers College Record*, 113(11), 2552–2585.
104. Grissom, J. A. (2011). Can good principals keep teachers in disadvantaged schools? Linking principal effectiveness to teacher satisfaction and turnover in hard-to-staff environments. *Teachers College Record*, 113(11), 2552–2585.
105. Goodpaster, K. P. S., Adedokun, O. A., & Weaver, G. C. (2012). Teachers' perceptions of rural STEM teaching: Implications for rural teacher retention. *Rural Educator*, 33, 9–22; Boyd, D., Grossman, P., Ing, M., Lankford, H., Loeb, S., & Wyckoff, J. (2011). The influence of school administrators on teacher retention decisions. *American Educational Research Journal*, 48(2), 303–333; Marinell, W. H., & Coca, V. M. (2013). *Who stays and who leaves? Findings from a three-part study of teacher turnover in NYC middle schools*. New York, NY: Research Alliance for New York Schools.
106. Sutcher, L., Podolsky, A., & Espinoza, D. (2017). *Supporting principals' learning: Key features of effective programs*. Palo Alto, CA: Learning Policy Institute.

107. Espinoza, D., & Cardichon, J. (2017). *Investing in effective school leadership: How states are taking advantage of opportunities under ESSA*. Palo Alto, CA: Learning Policy Institute.
108. N.C. Gen. Stat. § 116-74.41-43 (2017); University of North Carolina Academic and University Programs Division. (2015). *Great teachers and school leaders matter*. Chapel Hill, NC: University of North Carolina. <http://ncpfp.northcarolina.edu/wp-content/uploads/2016/09/UNC-Academic-and-University-Programs-Annual-Report-2015.pdf> (accessed 4/28/18).
109. Sutchter, L., Podolsky, A., & Espinoza, D. (2017). *Supporting principals' learning: Key features of effective programs*. Palo Alto, CA: Learning Policy Institute.
110. Bastian, K. C., & Fuller, S. C. (2015). *The North Carolina Principal Fellows program: A comprehensive evaluation*. Chapel Hill, NC: University of North Carolina at Chapel Hill Education Policy Initiative at Carolina; University of North Carolina Academic and University Programs Division. (2015). *Great teachers and school leaders matter*. Chapel Hill, NC: University of North Carolina. <http://ncpfp.northcarolina.edu/wp-content/uploads/2016/09/UNC-Academic-and-University-Programs-Annual-Report-2015.pdf> (accessed 4/28/18).
111. Bastian, K. C., & Fuller, S. C. (2015). *The North Carolina Principal Fellows program: A comprehensive evaluation*. Chapel Hill, NC: University of North Carolina at Chapel Hill Education Policy Initiative at Carolina.
112. Data from current operations appropriations: Fiscal Years 2017–2019, North Carolina Office of State Budget and Management. https://files.nc.gov/ncosbm/documents/files/2017-19_Certified_U10_UNCGA.pdf (accessed 4/27/18).
113. New Leaders. (2018). *Prioritizing leadership: An analysis of state ESSA plans*. New York, NY: New Leaders, Inc. http://newleaders.org/wp-content/uploads/2018/02/2018.NL_.ESSA-State-Plan-Policy-Brief-FINAL.pdf (accessed 07/05/18).
114. Tennessee Department of Education. (March 21, 2018). Tennessee consolidated state plan under the Every Student Succeeds Act (ESSA). Nashville, TN: Tennessee Department of Education, 268–272. https://www.tn.gov/content/dam/tn/education/documents/TN_ESSA_State_Plan_Approved.pdf (accessed 05/18/18).
115. Tennessee Department of Education. (March 21, 2018). Tennessee consolidated state plan under the Every Student Succeeds Act (ESSA). Nashville, TN: Tennessee Department of Education, 268–272. https://www.tn.gov/content/dam/tn/education/documents/TN_ESSA_State_Plan_Approved.pdf (accessed 05/18/18).
116. North Dakota Department of Public Instruction. (April 30, 2018). North Dakota consolidated state plan under the Every Student Succeeds Act (ESSA). Bismarck, ND: North Dakota Department of Public Instruction, 96. https://www.nd.gov/dpi/uploads/1494/ND_ConsolidatedStatePlan_4302018.pdf (accessed 05/18/18).
117. North Dakota Department of Public Instruction. (April 30, 2018). North Dakota consolidated state plan under the Every Student Succeeds Act (ESSA). Bismarck, ND: North Dakota Department of Public Instruction, 97. https://www.nd.gov/dpi/uploads/1494/ND_ConsolidatedStatePlan_4302018.pdf (accessed 05/18/18).
118. Sutchter, L., Podolsky, A., & Espinoza, D. (2017). *Supporting principals' learning: Key features of effective programs*. Palo Alto, CA: Learning Policy Institute.
119. Olivero, G., Bane, K. D., & Kopelman, R. E. (1997). Executive coaching as a transfer of training tool: Effects on productivity in a public agency. *Public Personnel Management*, 26(4), 461–469; Gates, S. M., Hamilton, L. S., Martorell, P., Burkhauser, S., Heaton, P., Pierson, A., Baird, M. D., Vuollo, M., Li, J. J., Lavery, D. C., Harvey, M., & Gu, K. (2014). *Preparing Principals to Raise Student Achievement: Implementation and Effects of the New Leaders Program in Ten Districts*. Santa Monica, CA: RAND Corporation; Braun, D., Gable, R. K., & Kite, S. L. (2008). Relationship among essential leadership preparation practices and leader, school, and student outcomes in k–8 schools. Unpublished paper presented at the annual meeting of the Northeastern Educational Research Association, Rocky Hill, CT. https://scholarsarchive.jwu.edu/teacher_ed/1/ (accessed 07/16/18).
120. North Dakota Department of Public Instruction. (April 30, 2018). North Dakota consolidated state plan under the Every Student Succeeds Act (ESSA). Bismarck, ND: North Dakota Department of Public Instruction, 94–99. https://www.nd.gov/dpi/uploads/1494/ND_ConsolidatedStatePlan_4302018.pdf (accessed 05/21/18).

121. Ohio Department of Education. (January 16, 2018). Ohio consolidated state plan under the Every Student Succeeds Act (ESSA). Columbus, OH: Ohio Department of Education, 82. http://education.ohio.gov/getattachment/Topics/Every-Student-Succeeds-Act-ESSA/OH_ESSA_SUBMISSION.pdf.aspx (accessed 05/21/18); Pennsylvania Department of Education. (January 12, 2018). Pennsylvania's consolidated state plan under the Every Student Succeeds Act (ESSA). Harrisburg, PA: Pennsylvania Department of Education, 67–76. <http://www.education.pa.gov/Documents/K-12/ESSA/Resources/PA%20ESSA%20Consolidated%20State%20Plan%20Final.pdf> (accessed 05/21/18); Massachusetts Department of Elementary and Secondary Education. (August 24, 2017). Massachusetts consolidated state plan under the Every Student Succeeds Act (ESSA). Malden, MA: Massachusetts Department of Elementary and Secondary Education, 16. <http://www.doe.mass.edu/titlei/essa/state-plan.docx> (accessed 05/21/18); Maryland State Department of Education. (January 10, 2018). Maryland consolidated state plan under the Every Student Succeeds Act (ESSA). Baltimore, MD: Maryland State Department of Education, 64–65. <http://marylandpublicschools.org/about/Documents/ESSA/ESSAMDSUBMISSIONConsolidatedStatePlan011018.pdf> (accessed 05/21/18); Michigan Department of Education. (November 15, 2017). Michigan consolidated state plan under the Every Student Succeeds Act (ESSA). Lansing, MI: Michigan Department of Education, 69–75. https://www.michigan.gov/documents/mde/Michigan-ESSA-Plan_11-15-17_606136_7.pdf (accessed 05/21/18); Idaho State Department of Education. (March 28, 2018). Idaho consolidated state plan under the Every Student Succeeds Act (ESSA). Boise, ID: Idaho State Department of Education, 41–42. <http://www.sde.idaho.gov/topics/consolidated-plan/files/Idaho-Consolidated-State-Plan-Final-March-28-2018.pdf> (accessed 05/21/18); Illinois State Board of Education. (August 29, 2017). Illinois consolidated state plan under the Every Student Succeeds Act (ESSA). Springfield, IL: Illinois State Board of Education, 98. <https://www.isbe.net/Documents/ESSAStatePlanforIllinois.pdf> (accessed 05/21/18); Louisiana Department of Education. (August 8, 2017). Louisiana consolidated state plan under the Every Student Succeeds Act (ESSA). Baton Rouge, LA: Louisiana Department of Education, 79–81. <https://www.louisianabelieves.com/docs/default-source/louisiana-believes/louisianas-essa-state-plan.pdf?sfvrsn=23> (accessed 05/21/18); Vermont Agency of Education. (September 1, 2017). Vermont consolidated state plan under the Every Student Succeeds Act (ESSA). Barre, VT: Vermont Agency of Education, 99. <http://education.vermont.gov/sites/aoe/files/documents/edu-essa-vermont-state-plan-final.pdf> (accessed 05/21/18).
122. This section draws on Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute.
123. Adamson, F., & Darling-Hammond, L. (2012). Funding disparities and the inequitable distribution of teachers: Evaluating sources and solutions. *Education Policy Analysis*, 20(7), 1–46; Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute.
124. Grissom, J. A., Viano, S. L., & Selin, J. L. (2015). Understanding employee turnover in the public sector: Insights from research on teacher mobility. *Public Administration Review*, 76(2), 241–251; Loeb, S., Darling-Hammond, L., & Luczak, J. (2005). How teaching conditions predict teacher turnover. *Peabody Journal of Education* 80(3), 44–70; Carver-Thomas, D., & Darling-Hammond, L. (2017). *Teacher turnover: Why it matters and what we can do about it*. Palo Alto, CA: Learning Policy Institute; Stockard, J., & Lehman, M. B. (2004). Influences on the satisfaction and retention of 1st-year teachers: The importance of effective school management. *Educational Administration Quarterly* 40(5), 742–771. For a list of studies from the 1980s and 1990s finding that teachers are more likely to quit when they work in districts with low wages, see also, Adamson, F., & Linda Darling-Hammond, L. (2011). *Speaking of salaries: What it will take to get qualified, educated teachers in all communities*. Washington, DC: Center for American Progress.
125. Allegretto, S. A., & Mishel, L. (2016). *The teacher pay gap is wider than ever*. Washington, DC: Economic Policy Institute.
126. Boser, U., & Straus, C. (2014). *Mid- and late-career teachers struggle with paltry incomes*. Washington, DC: Center for American Progress. <https://www.americanprogress.org/issues/education-k-12/reports/2014/07/23/94168/mid-and-late-career-teachers-struggle-with-paltry-incomes/> (accessed 8/16/18).
127. Adamson, F., & Darling-Hammond, L. (2011). *Speaking of salaries: What it will take to get qualified, effective teachers in all communities*. Washington, DC: Center for American Progress.
128. H. B. 4145, 2018 Leg., Reg. Sess. (Wv. 2018).

129. Berg-Jacobson, A., & Levin, J. (2015). *Oklahoma study of educator supply and demand: Trends and projections*. Washington, DC: American Institutes for Research; Oklahoma State Department of Education. (2016). *Teacher Shortage Task Force: Final report*. Oklahoma City, OK: Oklahoma State Department of Education; Oklahoma State Department of Education. (2017). *Teacher Shortage Task Force: June 2017 update*. Oklahoma City, OK: Oklahoma State Department of Education.
130. H. B. 1010XX, 2018 Leg., 2nd Extraordinary Sess. (Ok. 2018); H. B. 1023XX, 2018 Leg., 2nd Extraordinary Sess. (Ok. 2018); National Education Association. (2017). *Rankings and estimates: Rankings of the states 2016 and estimates of school statistics 2017*. Washington, DC: National Education Association.
131. Soholt, D., & Sly, J. (2015). *Final report: Blue Ribbon Task Force on teachers and students*. <http://blueribbon.sd.gov/Blue%20Ribbon%20Report%20-%20Final.pdf> (accessed 10/18/17).
132. H. B. 1182, 91st Leg., Reg. Sess. (Sd. 2016).
133. Blue Ribbon Task Force. (n.d.). *Summary of new school funding laws*. <http://blueribbon.sd.gov/docs/Memo%20on%20Final%20Formula.pdf> (accessed 12/12/17).
134. Soholt, D., & Sly, J. (2015). *Final report: Blue Ribbon Task Force on Teachers and Students*. <http://blueribbon.sd.gov/Blue%20Ribbon%20Report%20-%20Final.pdf> (accessed 10/18/17); National Education Association. (2015). *Rankings & estimates: Rankings of the states 2014 and estimates of school statistics 2015, 92*. Washington, DC: National Education Association. http://www.nea.org/assets/docs/NEA_Rankings_And_Estimates-2015-03-11a.pdf (accessed 06/04/18).
135. H. B. 296, 63rd Leg., Reg. Sess. (Id. 2015).
136. H. B. 296 statement of purpose/fiscal note. (2015). <https://legislature.idaho.gov/wp-content/uploads/sessioninfo/2015/legislation/H0296SOP.pdf> (accessed 2/1/18).
137. H. B. 296, 63rd Leg., Reg. Sess. (Id. 2015).
138. Unpublished data from the South Carolina Center for Educator Recruitment, Retention & Advancement. (Personal communication, June 7, 2018).
139. Seckinger, T. (2016). *Consideration of FY 2017–18 appropriation request and FY 2015–16 annual report for the ELA funded Teacher Recruitment Project, Center for Educator Recruitment, Retention, and Advancement (CERRA)*. http://www.che.sc.gov/CHE_Docs/commission%20calendar&materials/2016/October/7.02.A.pdf (accessed 2/1/18); The Center for Educator Recruitment, Retention, & Advancement (CERRA). (2017). *Annual Report 2016–17*. Rock Hill, SC: Author. https://www.cerra.org/uploads/1/7/6/8/17684955/2016-17_cerra_annual_report.pdf (accessed 05/24/18).
140. S.B. 16-104, 2016 Leg., Reg. Sess. (Co. 2016).
141. Colorado Center for Rural Education. (n.d.). Colorado rural teaching stipend. <http://www.unco.edu/colorado-center-for-rural-education/student-teaching-stipend.aspx> (accessed 2/20/18).
142. S.B. 16-104, 2016 Leg., Reg. Sess. (Co. 2016), 6.
143. H.B. 212, 2017 Leg., Gen. Sess. (Ut. 2017).
144. Hawaii Department of Education. (January 16, 2018). Hawaii consolidated state plan under the Every Student Succeeds Act (ESSA). Honolulu, HI: Hawaii Department of Education, 96. <https://www2.ed.gov/admins/lead/account/stateplan17/hiconsolidatedstateplanfinal.pdf> (accessed 05/25/18). As of March 2018, the Hawaii legislature was considering a Teacher Home Assistance Bill, SB 2278, that would provide eligible teachers \$500 a month toward housing costs if they agree to teach in hard-to-fill schools for 5 years.
145. Arizona Department of Education. (August 21, 2017). Arizona consolidated state plan under the Every Student Succeeds Act (ESSA). Phoenix, AZ: Arizona Department of Education, 53. <https://cms.azed.gov/home/GetDocumentFile?id=59b185613217e1015407f276> (accessed 05/25/18).
146. Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute, 46.

147. Cowan, J., & Goldhaber, D. (2016). National Board Certification and teacher effectiveness: Evidence from Washington state. *Journal of Research on Educational Effectiveness* 9(3): 233–258; Goldhaber, D., & Anthony, E. (2007). Can teacher quality be effectively assessed? National Board Certification as a signal of effective teaching. *The Review of Economics and Statistics* 89(1), 134–150; Chingos, M. M., & Peterson, P. E. (2011). It's easier to pick a good teacher than to train one: Familiar and new results on the correlates of teacher effectiveness. *Economics of Education Review* 30(3), 449–465; Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2010). Teacher credentials and student achievement in high school: A cross-subject analysis with student fixed effects. *Journal of Human Resources* 45(3), 655–681.
148. National Board for Professional Teaching Standards. (2017). State incentive chart. http://www.nbpts.org/wp-content/uploads/state_incentive_chart.pdf (accessed 1/24/18).
149. S. B. 555, 91st Leg., Reg. Sess.(Ar. 2017).
150. Arkansas Department of Education. (2017). Teacher salary schedule analysis 2017–2018. Little Rock, AR: Arkansas Department of Education. http://www.arkansased.gov/divisions/fiscal-and-administrative-services/publication-and-reports/report_categories/salary-reports (accessed 4/27/18).
151. H.B. 175, 2018 Leg., Reg. Sess. (Al. 2018).
152. Washington Office of Superintendent of Public Instruction. (2016). National Board Certified Teachers. <http://www.k12.wa.us/certification/nbpts/TeacherBonus.aspx>. For the relevant statute, see Wa. Code § 392-140-973 at <http://apps.leg.wa.gov/wac/default.aspx?cite=392-140-973> (accessed 4/27/18).
153. Sub. S. B. 5883, 65th Leg., 3rd Spec. Sess. (Wa. 2017), 218.
154. National Board for Professional Teaching Standards (2017). State incentive chart. Arlington, VA: National Board for Professional Teaching Standards. http://www.nbpts.org/wp-content/uploads/state_incentive_chart.pdf (accessed 4/27/18).
155. Ia. Code § 284.15 (2016). <https://www.legis.iowa.gov/docs/code/2016/284.15.pdf> (accessed 1/24/18).
156. American Institutes for Research. (2017). *Iowa's Teacher Leadership and Compensation Program: Findings from 2016–17*. Washington, DC: American Institutes for Research.
157. Iowa Department of Education. (2017). *Teacher leadership and compensation status report*. Des Moines, IA: Iowa Department of Education.
158. Leachman, M., Masterson, K., & Figueroa, E. (2017). *A punishing decade for school funding*. Washington, DC: Center on Budget and Policy Priorities.
159. Ingersoll, R., Merrill, L., & May, H. (2014). *What are the effects of teacher education and preparation on beginning teacher attrition?* (Research report #RR-82). Philadelphia, PA: Consortium for Policy Research in Education, University of Pennsylvania; Henke, R., Chen, X., & Geis, S. (2000). *Progress through the teacher pipeline: 1992–93 college graduates and elementary/secondary school teaching as of 1997. Postsecondary education descriptive analysis report*. Washington, DC: National Center for Education Statistics, U.S. Department of Education; Carver-Thomas, D., & Darling-Hammond, L. (2017). *Teacher turnover: Why it matters and what we can do about it*. Palo Alto, CA: Learning Policy Institute; Gray, L., & Taie, S. (2015). *Public school teacher attrition and mobility in the first five years: Results from the first through fifth waves of the 2007–08 Beginning Teacher Longitudinal Study*. Washington, DC: National Center for Education Statistics, U.S. Department of Education; Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute.
160. Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2010). Teacher credentials and student achievement in high school: A cross-subject analysis with student fixed effects. *Journal of Human Resources*, 45(3), 655–681; Darling-Hammond, L., Holtzman, D. J., Gatlin, S. J., & Heilig, J. V. (2005). Does teacher preparation matter? Evidence about teacher certification, Teach for America, and teacher effectiveness. *Education Policy Analysis Archives*, 13(42), 512–3; Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2006). How changes in entry requirements alter the teacher workforce and affect student achievement. *Education Finance and Policy*, 1(2), 176–216; Laczko-Kerr, I., & Berliner, D. C. (2002). The effectiveness of “Teach for America” and other under-certified teachers on student academic achievement: A case of harmful public policy. *Education Policy Analysis Archives*, 10, 37; Kane, T. J., Rockoff, J. E., & Staiger, D. O. (2008). What does certification tell us about teacher effectiveness? Evidence from New York City. *Economics of Education Review*, 27(6), 615–631.

161. Barnes, G., Crowe, E., & Schaefer, B. (2007). *The cost of teacher turnover in five school districts: A pilot study*. Washington, DC: National Commission on Teaching and America's Future. (Cost adjusted for inflation using the Bureau for Labor Statistics Consumer Price Index inflation calculator.)
162. Kini, T., & Podolsky, A. (2016). *Does teaching experience increase teacher effectiveness? A review of the research (brief)*. Palo Alto, CA: Learning Policy Institute.
163. H. B. 17-1176, 2017 Leg., Reg. Sess. (Co. 2017).
164. Abram, J. (2017). HB 1178: Final Fiscal Note. Denver, CO: Colorado Legislative Council Staff. https://leg.colorado.gov/sites/default/files/documents/2017A/bills/fn/2017a_hb1176_f1.pdf (accessed 05/20/18).
165. S. B. 428, 2017 Leg., Reg. Sess. (Ok. 2017).
166. Oklahoma State Department of Education. (n.d.). Emergency certifications. <http://sde.ok.gov/sde/documents/2017-09-13/emergency-certifications> (accessed 8/9/18). Felder, B. (2017, May 29). Oklahoma education bills include targeting school waste, teacher recruitment. *NewsOK*. <http://newsok.com/article/5550844>.
167. H.B. 2637, 83rd Leg., 2nd Sess. (Wv. 2017); H. B. 113, 64th Leg., Reg. Sess. (Id. 2017).
168. Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute.
169. Coggshall, J. G., & Sexton, S. K. (2017). *Teachers on the move: A look at teacher interstate mobility policy and practice*. Washington, DC: National Association of State Directors of Teacher Education and Certification; Aragon, S. (2017). *Teacher license reciprocity: 50-state review*. Denver, CO: Education Commission of the States.
170. Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute.
171. Aragon, S. (2017). *Teacher license reciprocity: 50-state review*. Denver, CO: Education Commission of the States.
172. Colorado Department of Education. (n.d.). Credentialing guide for out-of-state applicants. <http://www.cde.state.co.us/cdeprof/coloradoreciprocity> (accessed 12/12/17); Colorado Department of Education. (n.d.). Out-of-state endorsement FAQ. <http://www.cde.state.co.us/cdeprof/outofstatefaq> (accessed 12/12/17); H. B. 18-1130, 71st Gen. Assem., Reg. Sess. (Co. 2018); Co. Code regulations § 301-37: 2.03(3), 11-12. <https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=7160&fileName=1%20CCR%20301-37> (accessed 12/12/17).
173. Office of Superintendent of Public Instruction. (2017). The teacher shortage in Washington: Current status and actions to address It [PowerPoint slides]. Retrieved from <https://app.leg.wa.gov/CMD/Handler.ashx?MethodName=getdocumentcontent&documentId=NRoW0T3q948&att=false>.
174. Association of Washington School Principals. (2017). The teacher and substitute shortage: Washington state, fall 2017. <http://wcm.awsp.org/awspdocuments/2018-Teacher-Shortage-Survey-InfoGraphic.pdf> (accessed 05/05/18).
175. Public comments by Sharon Tomiko Santos, Washington State Representative (D-37th) (2017, September 19). Understanding teacher turnover: Why it matters and what we can do about it. Learning Policy Institute; Washington, DC. <https://www.youtube.com/watch?v=aWHb7MzotzI> (accessed 7/15/18).
176. 2nd Sub. S. B. 6455, 64th Leg., Reg. Sess. (Wa. 2016).
177. Washington Student Achievement Council. (n.d.). Teacher Shortage Conditional Grant. Ready Set Grad. <http://readyssetgrad.org/teachers> (accessed 12/12/17).
178. Sub. S. B. 5883, 65th Leg., 3rd Spec. Sess. (Wa. 2017); Washington Student Achievement Council (n.d.). New grant programs for students interested in becoming teachers. <http://www.readyssetgrad.org/teachers> (accessed 12/4/17); Washington Student Achievement Council. (2017). *Teacher Shortage Conditional Grant: Program guide for prospective students*. http://www.readyssetgrad.org/sites/default/files/2017_teachershortage.programguideforapplicants.pdf (accessed 12/4/17); Schultz, J. L. & Bergeson, M. Washington Student Achievement Council. (2017). WSAC update for WACTE [PowerPoint slides] Retrieved from <http://www.wacte.org/sites/default/files/files/wsac-presentation-10-26-17.pdf>.

179. Washington Student Achievement Council, (n.d.). New grant programs for students interested in becoming teachers. <https://teadyssetgrad.wa.gov/teachers> (accessed 12/4/17).
180. Sub. S. B. 5883, 65th Leg., 3rd Spec. Sess. (Wa. 2017).
181. 28A Wash Rev. Code §660.050 (2016). <http://apps.leg.wa.gov/rcw/default.aspx?cite=28A.660.050> (accessed 12/4/17); State of Washington Professional Educators Standards Board. (n.d.). Educator Retooling Conditional Scholarship Program. <https://www.pesb.wa.gov/workforce-development/developing-current-educators/educator-retooling/> (accessed 6/28/18); State of Washington Professional Educators Standards Board. (n.d.). Pipeline for Paraeducators Conditional Loan Scholarship. <https://www.pesb.wa.gov/paraeducator-board/paraeducator-board-grant-programs/pipeline-for-paraeducators-conditional-loan-scholarship/>.
182. State of Washington Professional Educators Standards Board. (n.d.). Educator Retooling Conditional Scholarship Program. <https://www.pesb.wa.gov/workforce-development/developing-current-educators/educator-retooling/> (accessed 6/28/18).
183. State of Washington Professional Educator Standards Board. (n.d.). Pipeline for Paraeducators Conditional Loan Scholarship. <https://www.pesb.wa.gov/paraeducator-board/paraeducator-board-grant-programs/pipeline-for-paraeducators-conditional-loan-scholarship/> (accessed 7/23/18).
184. State of Washington Professional Educator Standards Board. (n.d.). Alternative Route to Teaching Block Grants. <https://www.pesb.wa.gov/innovation-policy/grants-pilots/alternative-route-to-teaching-block-grants/> (accessed 8/23/18).
185. State of Washington Professional Educator Standards Board. (n.d.). Recruiting Washington teachers. <http://pathway.pesb.wa.gov/future-educators/rwt> (accessed 12/12/17).
186. Geiger, B., & Hougan, E. (2017). *Recruiting Washington Teachers: 2016–2017 annual report*. Olympia, WA: Professional Educator Standards Board. <https://drive.google.com/file/d/1tn7nCYz-OfFcY697LhHr30D1pHJU0ioc/view> (accessed 07/08/18).
187. Simmons, A. (2018, February 12). Teacher recruitment starting in high school. *Edutopia*. <https://www.edutopia.org/article/teacher-recruitment-starting-high-school> (accessed 07/20/18).
188. Geiger, B., & Hougan, E. (2017). *Recruiting Washington Teachers: 2016–17 annual report*. Olympia, WA: Professional Educators Standards Board.
189. State of Washington Professional Educators Standards Board. (n.d.). Recruiting Washington Teachers – Bilingual Educators Initiative. <https://www.pesb.wa.gov/innovation-policy/grants-pilots/bilingual-educators-initiative/> (accessed 8/26/18); State of Washington Professional Educators Standards Board. Recruiting Washington Teachers—Bilingual Educators Initiative: Grant awards 2018–2019. https://docs.google.com/document/d/1Yxx_llhKBqMViwlOMjfl3Fc7lEPbhUUVUuCbmU_W-c/edit (accessed 6/28/18).
190. State of Washington Professional Educator Standards Board. (n.d.). 2017 ARBG award display. <https://docs.google.com/spreadsheets/d/1ekAPvEPFjPh06JgisiRjxRwb20WuYHVUh8kH0ebJXc/edit#gid=0> (accessed 8/9/18).
191. Western Washington University. (n.d.). Woodring Future Teacher Fellow Program. <https://wce.wwu.edu/ftf> (accessed 8/9/18).
192. Washington Office of Superintendent of Public Instruction. (2017). Effective support for new teachers in Washington State: Standards for beginning teacher induction. <http://www.k12.wa.us/BEST/InductionStandards/default.aspx> (accessed 12/12/17).
193. Sub. S. B. 5883, 65th Leg., 3rd Spec. Sess. (Wa. 2017), 221.
194. Washington Office of Superintendent of Public Instruction. (January 12, 2018). Washington consolidated state plan under the Every Student Succeeds Act (ESSA). Olympia, WA: Washington Office of Superintendent of Public Instruction, 123. <http://www.k12.wa.us/ESEA/ESSA/pubdocs/ESSAConsolidatedPlan-Final.pdf> (accessed 05/31/18).
195. S. B. 6455, 64th Leg., Reg. Sess. (Wa. 2016).
196. Plecki, M. L., Elfers, A. M., & Van Windemens, A. (2017). *Examining beginning teacher retention and mobility in Washington state*. Seattle, WA: University of Washington Center for the Study of Teaching and Policy.

197. Washington Office of Superintendent of Public Instruction. (2017). *The teacher shortage in Washington: Current status and actions to address it*. <https://app.leg.wa.gov/CMD/Handler.ashx?MethodName=getdocumentcontent&documentId=NRoW0T3q948&att=false> (accessed 4/30/18).
198. Washington Office of Superintendent of Public Instruction. (n.d.). Beginning Educator Support Team: BEST grant recipients. <http://k12.wa.us/BEST/Grants/GrantRecipients.aspx> (accessed 4/26/18).
199. Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute; Learning Policy Institute. (2017). *The role of principals in addressing teacher shortages*. Palo Alto, CA: Learning Policy Institute.
200. Washington Office of Superintendent of Public Instruction. (January 12, 2018). Washington consolidated state plan under the Every Student Succeeds Act (ESSA). Olympia, WA: Washington Office of Superintendent of Public Instruction, 119–120. <http://www.k12.wa.us/ESEA/ESSA/pubdocs/ESSAConsolidatedPlan-Final.pdf> (accessed 05/31/18).
201. H. B. 2242, 65th Leg., 3rd Spec. Sess. (Wa. 2017).
202. Washington K–12 Salary Allocation Schedule for Certificated Instructional Staff. <http://www.k12.wa.us/LegisGov/pubdocs/K12SalaryAllocationPayforTeachersCertificatedInstructionalStaff.pdf> (accessed 7/18/17).
203. H. B. 2242, 65th Leg., 3rd Spec. Sess. (Wa. 2017).
204. H. B. 2242, 65th Leg., 3rd Spec. Sess. (Wa. 2017).
205. S. B. 6362, 65th Leg., Reg. Sess. (Wa. 2018); Washington Legislature. (2018). *2018 Report to the Washington State Supreme Court by the Joint Select Committee on Article IX Litigation*. Olympia, WA: Washington Legislature; Washington Supreme Court Order no. 84362-7, McCleary, et al. v. State of Washington (2012). <https://www.courts.wa.gov/content/publicUpload/McCleary/843627PublicOrderOther06072018.pdf> (accessed 6/21/18).
206. 2nd Sub. S. B. 6455, 64th Leg., Reg. Sess. (Wa. 2016).
207. S. B. 6455, 64th Leg., Reg. Sess. (Wa. 2016). <http://lawfilesexternal.wa.gov/biennium/2015-16/Pdf/Bills/Session%20Laws/Senate/6455-S2.SL.pdf#page=1> (accessed 8/16/18).
208. Washington Office of Superintendent of Public Instruction and Association of Washington School Principals. (2016). *Summary report: Survey of school principals regarding the teacher shortage and k–3 class size reduction, Fall 2016*. <http://www.k12.wa.us/LegisGov/pubdocs/TeacherShortagePrincipalSurveySummary-Fall2016.pdf> (accessed 12/4/17).

About the Authors

Daniel Espinoza is a Research and Policy Assistant on the Educator Quality and the Equitable Resources and Access teams at the Learning Policy Institute. He is one of the co-authors of *Supporting Principals' Learning: Key Features of Effective Programs* and *Investing in Effective School Leadership: How States Are Taking Advantage of Opportunities Under ESSA*. As an undergraduate, he worked as a research assistant for the Institute for Latino Studies, assisting in studies exploring political identity formation for multiethnic voters. He also conducted research analyzing the impact and effectiveness of Chile's national education voucher program, particularly for students from disadvantaged backgrounds.

Ryan Saunders is a Policy Advisor on the Educator Quality and Policy teams at the Learning Policy Institute. Previously, he worked at the Council of Chief State School Officers, where he supported the Network for Transforming Educator Preparation and a range of educator workforce initiatives. Prior to joining CCSSO, Ryan taught high school history and literature in the Dominican Republic; Denver, CO; and Turkey.

Tara Kini is Director of State Policy at the Learning Policy Institute. She has co-authored several LPI reports, including *Does Teaching Experience Increase Teacher Effectiveness? A Review of the Research* and *Solving the Teacher Shortage: How to Attract and Retain Excellent Educators*. Previously, she was a senior staff attorney with Public Advocates, where she represented community-based organizations, students and parents in education impact litigation. Tara taught English and history for 6 years in California public schools.

Linda Darling-Hammond is President of the Learning Policy Institute and the Charles E. Ducommun Professor of Education Emeritus at Stanford University. She has conducted extensive research on issues of educator supply, demand, and quality. Among her award-winning publications in this area are *What Matters Most: Teaching for America's Future*, *Teaching as the Learning Profession*, *Powerful Teacher Education*, and *Preparing Teachers for a Changing World: What Teachers Should Learn and Be Able to Do*.



1530 Page Mill Road, Suite 200
Palo Alto, CA 94304
p: 650.332.9797

1301 Connecticut Avenue NW, Suite 500
Washington, DC 20036
p: 202.830.0079

@LPI_Learning | LearningPolicyInstitute.org

The Learning Policy Institute conducts and communicates independent, high-quality research to improve education policy and practice. Working with policymakers, researchers, educators, community groups, and others, the Institute seeks to advance evidence-based policies that support empowering and equitable learning for each and every child. Nonprofit and nonpartisan, the Institute connects policymakers and stakeholders at the local, state, and federal levels with the evidence, ideas, and actions needed to strengthen the education system from preschool through college and career readiness.