



Solving the Teacher Shortage

How to Attract and Retain Excellent Educators

Anne Podolsky, Tara Kini, Joseph Bishop, and Linda Darling-Hammond

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Executive Summary

One of the most pressing issues facing policymakers is how to staff classrooms with a stable teaching force responsive to complex student needs and the growing demands of the knowledge economy. Recurrent teacher shortages are a function of both declines in entrants to teaching and high rates of teacher attrition, especially in low-income schools. This turnover is costly, and undermines student achievement and school improvement efforts. A better understanding of why teachers enter and leave the profession, and what might encourage them to stay or return, is critical to improving the educational opportunities for all students, especially those attending the most disadvantaged schools.

This paper reviews an extensive body of research on teacher recruitment and retention, and identifies five major factors that influence teachers' decisions to enter, stay in, or leave the teaching profession, generally, and high-need schools, specifically. Those factors are:

1. Salaries and other compensation.
2. Preparation and costs to entry.
3. Hiring and personnel management.
4. Induction and support for new teachers.
5. Working conditions, including school leadership, professional collaboration and shared decision-making, accountability systems, and resources for teaching and learning.

Based on our review and analysis, we outline local, state, and federal policies, grounded in research, that can help to recruit and retain excellent teachers, especially in the highest-need schools.

Salaries and Other Compensation

Teachers' salaries affect the supply of teachers, including the distribution of teachers across districts, and the quality and quantity of individuals preparing to be teachers. Salaries also appear to influence teacher attrition; teachers are more likely to quit when they work in districts with lower wages. Of public school teachers who left the profession in 2012 and said they would consider returning, 67% rated an increase in salary as extremely or very important to their decision to return. Teachers in high-demand fields such as mathematics and science are especially responsive to salary differences in their decisions to remain in teaching because of the opportunity costs associated with the higher-paying jobs available to them.

Despite the evidence that salaries influence teachers' decisions to stay in the profession (and the quality of teachers attracted to the profession), teachers' salaries are not competitive with those of other professions in many labor markets. Increasingly, a teacher's salary in much of the United States is too low to support a middle-class existence. A recent study from the Center for American Progress found that, in 30 states, mid-career teachers who head families of four or more are eligible for government subsidies such as subsidized children's health insurance or free or reduced-price school meals.

Compounding the problem of low wages in the teaching profession overall are great inequities in teacher salaries within states, due to unequal school-funding systems. Large disparities can occur, even among districts within the same labor market, leaving many high-need, under-resourced districts at a strong disadvantage in hiring compared to wealthier districts nearby. States, such as

Connecticut and North Carolina, that have raised and equalized salaries, have solved shortages, and when they have raised standards for preparation at the same time, they have increased quality and retention as well.

Preparation and Costs to Entry

Having strong preparation for teaching enhances teachers' efficacy, increasing the likelihood they will remain in the profession. Depending on the study, attrition rates are found to be two to three times higher for those who enter the profession without full preparation, including those without certification, than for those who are comprehensively prepared.

Individuals who enter the classroom while still undergoing their training are disproportionately concentrated in low-performing schools serving large proportions of low-income and minority students.

Given the rising costs of higher education, including teacher training, many prospective teachers may rationally choose pathways in which they can earn a salary while undergoing training, rather than taking on debt they must repay while earning a low salary. Evidence shows that willingness to enter a lower-paying field is tied to the level of debt candidates must carry. Debt loads can be offset with forgivable loans and scholarships that boost recruitment and can be designed to boost retention. In addition, pathway programs that provide financial aid and support to prospective teachers who already work in schools, often as teachers' aides or paraprofessionals in hard-to-staff schools, help to recruit teachers who are knowledgeable about the communities in which they will teach.

Hiring and Personnel Management

After teachers complete their preparation, they face the challenge of finding a teaching job. Research suggests that district and school practices related to hiring and supporting teachers influence teachers' decisions to enter, stay in, or leave the profession. Our review of the research revealed that the following issues especially contribute to the quality of teachers hired, teacher retention rates, and student achievement:

- **Timing of hiring:** Late hiring of teachers—caused by late state budgets, difficulty predicting teacher needs, and placing transferring teachers before hiring—negatively affects teacher recruitment, retention, and student achievement.
- **Information in the hiring process:** Schools and districts sometimes engage in weak hiring processes because they have outdated technology, poor capacity to transmit information, and limited time for candidate demonstration lessons.
- **School and district support for mobile teachers:** One in 10 teachers who left after the 2012 school year cited a move or geographic issue as important in their decision to leave. Of public school teachers who left and said they would consider returning to teaching, more than 40% cited state certification reciprocity as an important factor, and nearly 70% cited the ability to keep retirement benefits. Also cited is the loss of seniority when teachers move to another state or district.

Educating historically underserved communities of students requires schools and districts to recruit talented teachers to educate and lead. Some traditionally hard-to-staff schools have been successful at recruiting high-quality teachers by partnering with universities to create stronger pipelines, and leveraging personal and professional networks to develop a pool of high-quality candidates.

Induction and Support for New Teachers

After districts hire talented teachers, strong induction and support for novice teachers can increase their retention, accelerate their professional growth, and improve student learning. The most effective induction programs include mentoring, coaching, and feedback from experienced teachers in the same subject area or grade level as the novice teacher; the opportunity for novice teachers to observe expert teachers; orientation sessions, retreats, and seminars for novice teachers; and reduced workloads and extra classroom assistance for novice teachers. Teachers who receive this set of supports have been found to stay in teaching at rates more than twice those of teachers who lack these supports. However, only a small minority of teachers receive these supports.

Although mentoring and induction programs have become more widely available in the United States over the past two decades, there is great variability in the quality of these programs. High-poverty schools tend to have weaker programs.

Working Conditions

Teaching conditions—which also define learning conditions for students—are a strong predictor of teachers’ decisions about where to teach and whether to stay. Four factors are consistently cited:

1. **School leadership and administrative support:** Administrative support is often the top reason teachers identify for leaving or staying in the profession, or in a given school, outweighing even salary considerations for some teachers.
2. **Opportunities for professional collaboration and shared decision-making:** Teachers’ career decisions are shaped by their connectedness to a team working toward a common shared purpose. Opportunities for teacher collaboration and input are key factors.
3. **Accountability systems:** Approximately 25% of public school teachers who left the profession in 2012 reported that dissatisfaction with the influence of school assessment and accountability measures on their teaching or curriculum was extremely or very important in their decision to leave. Many teachers have said that the focus on testing, test preparation, and a narrower, mandated curriculum has reduced their ability to teach in ways they feel are more effective.
4. **Resources for teaching and learning:** Schools with sufficient instructional materials and supplies, safe and clean facilities, reasonable student-to-teacher ratios, and adequate support personnel can positively affect teacher retention rates, and influence the kind of teaching and learning that can occur. The reverse is also true: Inadequately resourced schools are a factor in teacher turnover.

Policy Recommendations

Our review and analysis suggest that, in many cases, federal, state, and local governments must simultaneously respond to teacher shortages because one policy, in isolation, will do little to improve the recruitment and retention of talented teachers. Informed by our research, we offer the following 15 recommendations for federal, state, and local policymakers:

1. Increase teacher salaries in schools and communities where salaries are not competitive or able to support a middle-class lifestyle. To do this, some states have funded statewide salary minimums that raise and equalize pay, as well as salary incentives for accomplishments such as National Board Certification or taking on additional responsibilities.
2. Use federal levers in the new Every Student Succeeds Act (ESSA) to provide low-income schools and districts with additional resources to attract and retain high-quality teachers. To improve educator quality, Title II of ESSA includes funding that can be used, among other things, to create financial incentives to recruit and retain teachers in high-need academic subjects and low-income schools.
3. Increase teachers' overall compensation by offering housing incentives. Such incentives include money for expenses such as rent, relocation, and down payment assistance, as well as discounted homes and subsidized teacher housing.
4. Offer career advancement opportunities that provide increased compensation, responsibility, and recognition. One example is the peer assistance and review model that often provides increased pay and responsibility to accomplished teachers to serve as mentors for beginning or struggling teachers.
5. Provide service scholarships and loan forgiveness programs to attract prospective teachers to the fields and locations where they are needed most. Successful programs cover all or a large percentage of tuition; target high-need fields and schools; recruit academically strong and committed teachers; and commit recipients to teach with reasonable financial consequences if they do not fulfill the commitment.
6. Develop teacher residencies. Urban and rural teacher residencies have been successful in recruiting talented candidates in high-need fields to work as paid apprentices to skilled expert teachers, allowing novices to earn an income and gain experience while completing a credential in return for a commitment to teach for several years.
7. Create local pathways into the profession, such as high school career pathways and “Grow Your Own” teacher preparation models. These programs recruit talented individuals from the community to a career in education and help them along the pathway into the profession.
8. Strengthen hiring practices to ensure decisions are made as early as possible with the best candidate pool and based on the best information possible. Some high-performing schools and districts invest substantial time in a multistep hiring process that allows the school staff and candidate to assess their fit based on extensive information, including teaching demonstration lessons and school visits in which the candidate meets other teachers and staff.

9. Revise timelines for voluntary transfers or resignations so that hiring processes can take place as early as possible, ideally in the spring of the prior school year. In order to give school leaders better visibility into their hiring earlier in the school year, states and districts can implement incentives for teachers to submit their intent to resign or retire earlier in the school year, and also require that the voluntary transfer process be completed earlier. States can also implement incentives to encourage state legislatures to pass budgets on time.
10. Build training and hiring pipelines for new and veteran teachers, while monitoring and reducing teacher turnover and reducing unnecessary barriers to entry for mobile teachers. Districts can develop strong partnerships with local teacher preparation programs to train and recruit student teachers. They can also monitor turnover to discover problem areas and address them.
11. Create cross-state pension portability for teachers. Current benefit plans, which are often not portable across states or districts, cause many teachers to leave the profession when they relocate. Portable plans, such as the Teachers Insurance and Annuity Association-College Retirement Equities Fund's (TIAA-CREF) model for college faculty, should be explored for p-12 teachers.
12. Invest in high-quality induction programs. States and districts can develop induction and mentoring programs using ESSA, Title II funds, and competitive grant funds, such as the Supporting Effective Educator Development program.
13. Invest in the development of high-quality principals who work to include teachers in decision-making and foster positive school cultures. Effective principal preparation programs, fundable under Title II of ESSA, tend to include problem-based learning methods, field-based internships, cohort groups, and a close collaboration between programs and districts.
14. Survey teachers to assess the quality of the teaching and learning environment, and to guide improvements. One example is the Teaching, Empowering, Leading and Learning (TELL) survey, with questions—about a school's culture, a principal's leadership, and relationships among colleagues—that are strong predictors of teachers' job satisfaction and career plans.
15. Incentivize professional development strategies and the redesign of schools to provide for greater collaboration. Systematic and sustained collaboration among teachers requires changes in scheduling and resource allocation so that they have the time necessary for productive collaboration, which improves efficacy and teacher retention.

I. The Challenge

One of the most pressing issues facing policymakers is how to staff classrooms with a stable teaching force responsive to complex student needs and the growing demands of the knowledge economy.¹ Demographic trends and economic changes have led to a surge in demand for new teachers, while the supply of new teachers has diminished at the same time that a steady stream of teachers flee the profession each year.² Since 2014–15, teacher shortages have been growing across the country, reaching crisis proportions in some teaching fields—such as mathematics, science, and special education—and in locations where wages and working conditions are least attractive.³

How policymakers address this challenge will have long-term impacts on student learning. For example, will states, as many have in the past, respond to teacher shortages by lowering standards for teachers? Or will they invest in a comprehensive human capital system to prepare and retain competent, committed teachers for long-term careers in the classroom?

In what has frequently been compared to a “leaky bucket,” the teaching workforce loses a continuous stream of educators each year for voluntary reasons other than retirement, creating a steady demand for new teachers.⁴ National estimates suggest that between 19% and 30% of new teachers leave the profession within their first five years,⁵ with turnover much higher in low-income schools. For example, in 2012, attrition of full-time teachers was approximately 55% higher in high-poverty schools (i.e., Title I eligible schools) than in lower-poverty schools (i.e., schools ineligible for Title I).⁶

Demand for educators has spiked as districts face added pressures caused by teacher retirements among the baby-boom generation and a stronger economy. Since 2014, some states and districts have started to reduce class sizes and rehire teachers laid off during the Great Recession.⁷

At the same time that demand for quality educators is rising, fewer teachers are entering the profession. Enrollment in teacher preparation programs declined dramatically from 719,081 in 2008–09⁸ to 464,250 by 2013–14.⁹ During this time, some of the decline was associated with reduced demand for teachers, as budget cuts during the recession years caused layoffs of tens of thousands of teachers and fewer jobs for beginners trying to enter the field.

Certain high-need fields (mathematics, science, bilingual/English-language development, and special education), as well as high-poverty urban and rural schools, face continual shortages.¹⁰ As student populations become increasingly diverse,¹¹ many districts are struggling to recruit new teachers who better reflect the racial, ethnic, gender, and linguistic backgrounds of their students.

This paper examines the factors that influence teachers’ decisions to enter and exit the workforce, and identifies policies that can help recruit and retain excellent teachers, especially in the highest-need schools. Section II presents an overview of the most recent, nationally representative data on who enters and leaves the profession and why.

In Sections III through VII, we provide an analysis of five major challenges influencing teachers' career decision, including:

1. Salaries and other compensation.
2. Preparation and costs to entry.
3. Hiring and personnel management.
4. Induction and support for new teachers.
5. Working conditions, including school leadership, professional collaboration and shared decision-making, accountability systems, and resources for teaching and learning.

We summarize the research on how these five factors influence teachers' decisions to enter, stay in, or leave the profession. While we treat each factor separately, we recognize the interrelatedness of each of these factors and the need for a comprehensive policy response. Because teacher recruitment and retention are especially challenging for high-need districts and schools—typically low-performing schools in low-income communities with large proportions of students of color—we also focus on how each of these five factors contributes to the recruitment and retention of teachers in high-need districts and schools.

In Section VIII, we identify policies intended to address these factors and provide recommendations to help federal, state, and local policymakers improve educator workforce growth and sustainability. Our policy recommendations are interdependent, meaning that each policy affects the others. Accordingly, when policymakers tackle recruitment and retention challenges, they should consider implementing mutually reinforcing policies, as opposed to policies that may be duplicative, or even contradictory.

II. Factors Influencing Teacher Recruitment and Retention

Teachers' decisions about whether to enter and remain in the profession are complex and often the result of multiple, interdependent factors. As in every other occupation, salaries and perceived job security are factors influencing entry to teaching and decisions to remain. Moreover, the conditions contributing to these decisions vary significantly from state to state, and from school to school, as a function of different educational, economic, and labor policies and funding schemes that have varied over time.

Influences on Teacher Recruitment

Teachers enter the profession for a variety of reasons, with economic considerations significantly contributing to their decisions. As described in Section III, higher salaries can expand the number of people seeking to enter teaching and those who are willing to stay. The converse is also true. Some potential teachers have been dissuaded from entering the profession because of the low status and low pay.¹² The relative attractiveness of teaching as a profession can also be influenced by broader economic conditions, such as whether recent college graduates have better, higher-paying job prospects in other fields.¹³ Additionally, in boom-and-bust cycles characterized by high numbers of teacher layoffs, college graduates may choose not to enter the profession because of the perceived lack of job security.¹⁴

Some potential teachers have been dissuaded from entering the profession because of the low status and low pay.

Alongside these traditional incentives, some studies have found that many teachers enter the workforce because of an altruistic desire to serve society, and some are attracted to work in schools in lower-income communities because of a commitment to social justice.¹⁵

Influences on Teacher Retention

Teachers leave the profession for many reasons. The National Center for Education Statistics, part of the U.S. Department of Education, conducts the nationally representative Schools and Staffing Survey (SASS) and the Teacher Follow-up Survey (TFS) of current and former elementary, middle, and high school teachers.¹⁶ The most recent TFS in 2012–13 highlights the factors contributing to teachers' decisions to leave the profession. Just over 8% of public school teachers—roughly 270,200 individuals—left the profession after the 2012 school year (see Figure 1).¹⁷ This was a year when a significant number of layoffs of teachers were still occurring across the country due to the Great Recession. Nonetheless, of the teachers who left, approximately 90% left voluntarily. Just over one-third (37%) left for retirement. Most teachers (53%) left for voluntary non-retirement reasons.

Who Enters the Teaching Workforce?

In recent years, the most common teacher entering the teaching workforce has been a young, white, female who is a recent college graduate. Although most new hires in the 2012 school year were young and recent college graduates, a growing proportion of new hires—almost one-third—were 29 years or older.¹⁸ In addition, while a significant proportion of individuals entering the teaching workforce are white [approximately 80% in 2011–12], the number of teachers of color has recently increased at twice the rate of white teachers, representing 20% of all entering teachers.¹⁹ Like all other aspects of teaching, this varies across the country. In California, for example, about one in three teachers—and one in two new entrants—is a person of color.²⁰

Typically, a teacher entering the teaching workforce receives his or her teaching credential through a traditional teacher preparation program,²¹ generally an undergraduate program providing coursework and supervised student teaching that occurs over two to four years of a bachelor's degree course of study. A growing share receive a credential in a post-baccalaureate program of at least one academic year.

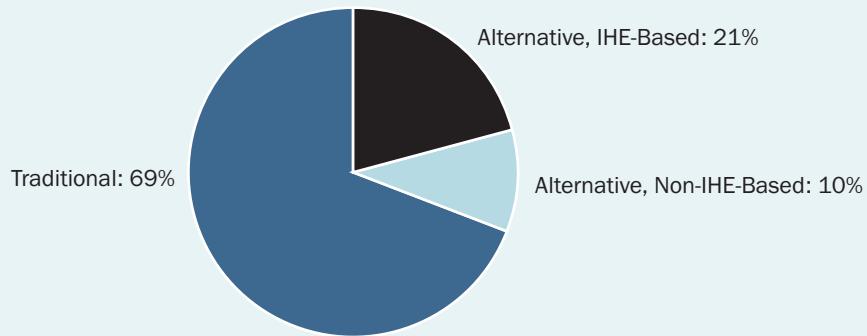
Although historically many teachers attended less selective colleges and had lower tested ability than non-teaching peers, several recent studies suggest a trend toward a more academically talented teacher pool. National studies and a study of teachers in New York State have indicated that the proportion of new teachers with higher academic ability (as measured by standardized test scores and the selectivity of undergraduate institutions) has increased since the 1990s.²² One possible explanation for this trend is the increasingly stringent set of standards for teacher preparation and certification in many states, which may have contributed to incoming teachers' improved academic ability.²³ These standards, however, vary substantially across states, along with salaries and other inducements to teaching.

Higher education institutions prepare the largest proportion of beginning teachers, approximately 88% in 2009–10.²⁴ Higher education institutions offer a variety of programs, including undergraduate, graduate, and alternative pathways (also often provided through school districts). The U.S. Department of Education found that approximately 90% of all teacher preparation programs are based in an institute of higher education (see figure below).²⁵ Nearly one in four teachers entering the profession in 2012 was prepared through alternative certification programs.²⁶ These post-baccalaureate programs take many forms; most, however, provide abbreviated preparation with on-the-job training and support.

Finally, depending on the year, between about one-third and one-half of teachers entering the workforce in public schools tend to be re-entrants, meaning that these individuals taught in a public school either full or part time for at least a year, left the teaching workforce, and then returned.²⁷

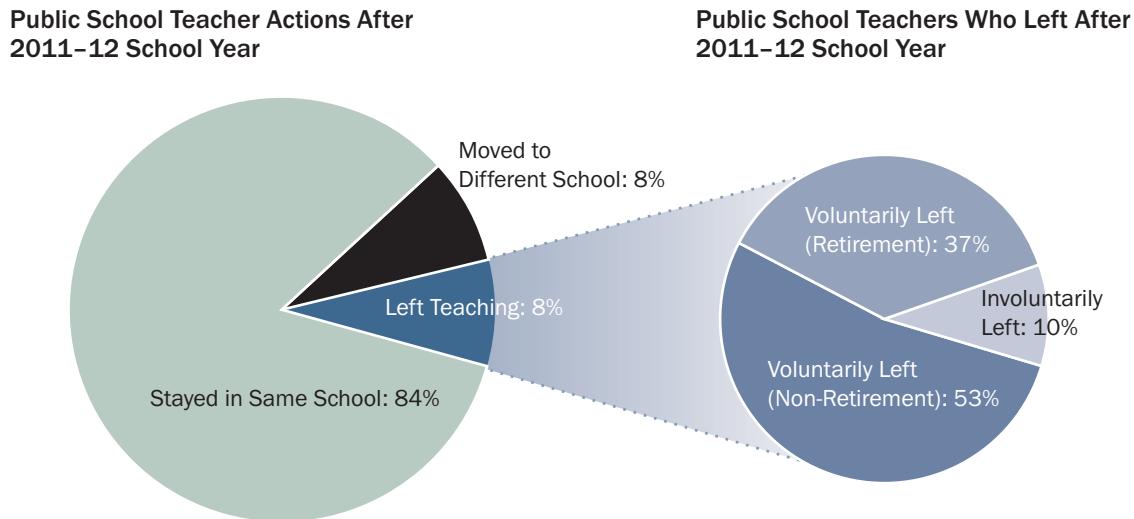
Types of Teacher Preparation Programs Based in Institutions of Higher Education (IHE)

2009–10



Note: According to the Office of Postsecondary Education, for purposes of Title II reporting, “each state determines which teacher preparation programs are alternative route programs,” and “alternative route teacher preparation programs primarily serve candidates who are the teachers of record in a classroom while participating in the route ... The 50 states, the District of Columbia, Puerto Rico, American Samoa, Northern Mariana Islands, Palau, and Virgin Islands submitted a state Title II report in 2011.”

Source: U.S. Department of Education, Office of Postsecondary Education, *Higher Education Act, Title II Reporting System* (Washington, DC: 2012).

Figure 1**U.S. Public School Teachers in the 2011–12 School Year**

Source: LPI analysis of the Teacher Follow-up Survey (TFS), 2013, from the Schools and Staffing Surveys, National Center for Education Statistics.

Teacher attrition disproportionately impacts high-poverty schools.²⁸ In 2012–13, almost one in 10 teachers in high-poverty public schools (those with 75% or more of students receiving free or reduced-price lunches) left the profession. In contrast, fewer than one in 15 teachers in low-poverty schools (those with 34% or fewer students receiving free or reduced-price lunches) left the profession.²⁹

A better understanding of why teachers voluntarily leave the profession and what might encourage them to stay or come back is critical to improving the educational opportunities for all students, especially those attending the most disadvantaged schools.

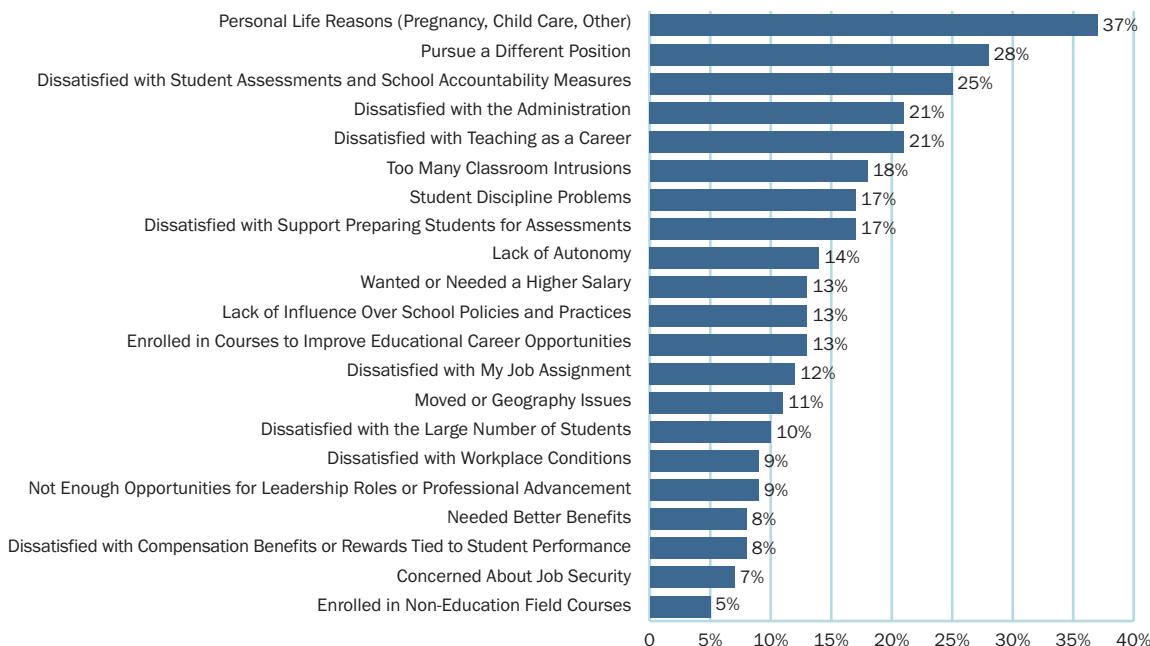
Public school teachers who voluntarily left the profession after the 2011–12 school year noted a variety of factors for their decision (see Figure 2). Those that were cited as extremely or very important include (in order of frequency):

- Personal life reasons, including pregnancy and child care (37%);
- To pursue a position other than that of a k-12 teacher (28%);
- Dissatisfaction with school assessment and accountability measures on their teaching or curriculum (25%), as well as dissatisfaction with support preparing students for assessments (17%);
- Dissatisfaction with the school's administration (21%);
- Dissatisfaction with teaching as a career (21%); and
- The need for a higher salary, lack of influence over school policies and practices, and a lack of autonomy over the classroom (13% each).

Figure 2

Why Do Teachers Leave?

The Percentage of Voluntary Leavers Who Rated the Factor as Extremely or Very Important in Their Decision to Leave



Note: Percentages do not add to 100 because teachers can select multiple reasons.

Source: LPI analysis of the Teacher Follow-up Survey (TFS), 2013, from the Schools and Staffing Surveys, National Center for Education Statistics.

Another important consideration is what might encourage those who have left the teaching profession to re-enter it. Particularly in times of teacher shortages, the pool of potential re-entrants represents a significant supply of credentialed, experienced teachers. Here, recent data from the National Center for Education Statistics offer some important insights (see Figure 3). Of the public school teachers who left the profession, a subset said they would consider returning to the classroom, citing a number of factors that would be extremely or very important in their decision to return, including:

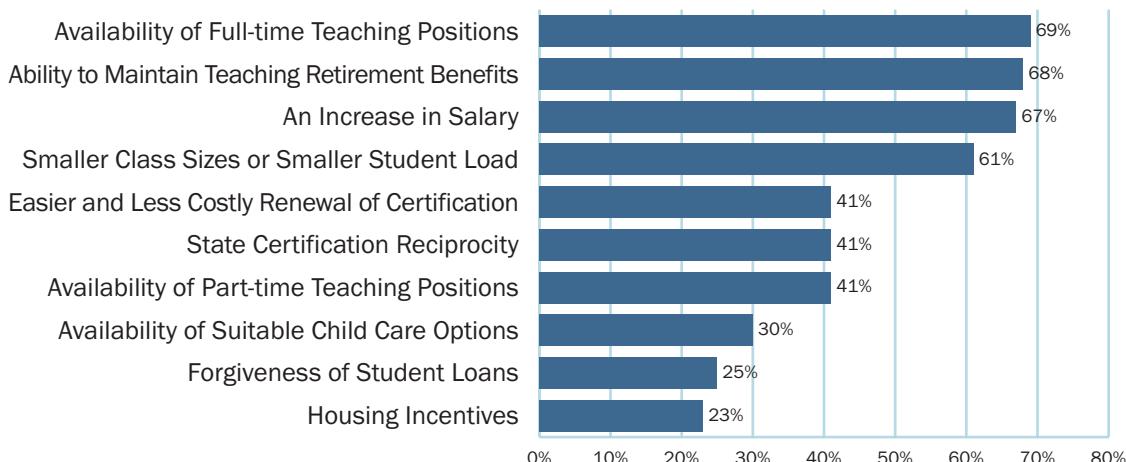
- The ability to maintain retirement benefits (68%);
- Salary increases (67%);
- Smaller class sizes/student loads (61%);
- Easier and less costly renewal of teacher certification (41%);
- State certification reciprocity (41%);
- Student loan forgiveness (25%); and
- Housing incentives (23%).

The most frequently cited factor was the availability of full-time teaching positions (69%). This might have been related to the timing of the 2012 National Center for Education Statistics survey, which fell on the heels of large numbers of layoffs during the Great Recession.³⁰

Figure 3

What Would Bring the Leavers Back?

The Percentage of Leavers Who Rated the Factor as Extremely or Very Important in Their Decision to Return



Note: Survey responses from public school teachers who left after the 2011–12 school year and said that they would consider returning to the teaching workforce. Percentages do not add to 100 because teachers can select multiple reasons.

Source: LPI analysis of the Teacher Follow-up Survey (TFS), 2013, from the Schools and Staffing Surveys, National Center for Education Statistics.

The results from this national survey suggest that the following three factors most frequently contribute to teachers' decisions to enter, remain in, and/or leave the teaching workforce:

1. Family and personal reasons, including pregnancy, child care, and geographic moves.
2. The compensation, status, and job satisfaction offered by other career opportunities as compared to teaching.
3. Working conditions, including school accountability and testing systems, the quality of administrative support, and teacher input into decision-making.

Several other studies echo these results and also highlight other factors that play a major role in teacher retention, including the quality of preparation and support that new teachers receive prior to and immediately upon entering the profession.³¹

Costs of Teacher Turnover

The costs of teacher attrition are significant. Individual teachers, as well as taxpayers—through government support for public colleges and student financial aid—invest in training costs that are often never recouped. Districts pay a substantial cost to recruit, hire, and train a steady stream of new teachers, with the highest-poverty districts shouldering an even greater burden because they have the highest rates of teacher turnover.³² High-need schools must continually invest in recruitment efforts, professional support, and training for new teachers without reaping the benefits of many of these investments.³³

Despite the costs related to the negative effects of teacher turnover on student achievement (discussed below), some researchers have suggested that districts and states benefit in some ways from the high rates of teacher attrition because novice teachers are paid less and are more likely to leave the profession before fully vesting in their pension plans.³⁴ But a cost-analysis study examining the costs of teacher turnover found that, even after incorporating salary savings associated with replacing more experienced teachers with less experienced ones, districts incurred greater costs rather than savings.³⁵

Another study examining cost data from school districts found that replacement costs for teachers ranged from \$4,366 in a small rural district to nearly \$18,000 in a large urban district in 2007—at a national price tag of \$7.3 billion a year.³⁶ When adjusted for inflation, the national cost of teacher replacement rises to approximately \$8.5 billion today.³⁷ A study of Texas school districts during the 1998–99 school year estimated that the cost for each teacher who left the district was between 25% and 200% of the leaver’s salary.³⁸

Aside from financial costs of replacement, high rates of teacher turnover negatively impact student learning.³⁹ This is likely because of the decreased proportion of experienced teachers, who are generally more effective, and the effects of staff instability within a school. Teaching experience is associated with gains in student achievement throughout a teacher’s career, with particularly steep gains in effectiveness within the first few years, and ongoing gains in the years thereafter.⁴⁰ High rates of turnover among novice teachers mean that many students never benefit from this steep learning curve for their teachers.⁴¹

In addition to achievement gains found in many studies, one study of North Carolina middle school teachers found a positive relationship between teaching experience and a variety of other student outcomes, such as reductions in student absences, increases in students’ time spent reading for pleasure, and decreases in classroom disruptions.⁴² High rates of turnover mean that fewer teachers develop the experience that often leads to compounding academic benefits for their students.

The costs of high turnover at the school level are significant and can ripple across an entire school. A recent study of 850,000 New York City 4th- and 5th-grade students over an eight-year period found that teacher turnover has a significant negative effect on student achievement, particularly in schools serving large populations of low-performing students and students of color.⁴³ The study also found that the negative effects of turnover reached the students of “stayers”—those teachers who remain in the same school from one year to the next—and new teachers alike. Other studies show that teachers help each other to improve in their effectiveness through stability and shared experience, and that they improve more rapidly in a supportive and collegial working environment.⁴⁴

For all of these reasons and more, it is important that policymakers develop strategies to recruit and retain able teachers in the profession. In the sections that follow, we summarize the research on how five factors influence teachers’ decisions to enter, stay in, or leave the teaching profession, generally, and hard-to-staff schools, specifically. These include:

1. Salaries and other compensation.
2. Preparation and costs to entry.
3. Hiring and personnel management.
4. Induction and support for new teachers.
5. Working conditions, including school leadership, professional collaboration and shared decision-making, accountability systems, and resources for teaching and learning.

III. Salaries and Other Compensation

Although teachers may be more motivated by a desire to “do good” than some other workers, altruism alone is not enough to attract high-ability candidates to the profession and keep them in the classroom. The extent to which potential teachers choose to enter and stay in teaching is highly influenced by the availability of better and higher-paying job opportunities.

Several studies show that teachers’ salaries can affect the supply of teachers both in the short run—especially the distribution of teachers across districts—and in the long run—in terms of the quality and quantity of individuals preparing to be teachers.⁴⁵ One study, for instance, estimated that an 11% increase in the weekly salary of teachers increases the proportion of college graduates who are willing to work as teachers by 26%.⁴⁶ A national analysis found that a 1% increase in teacher salaries in a metropolitan area would increase the proportion of teachers who have graduated from a selective college by 1.5%.⁴⁷

Salaries also appear to influence teacher attrition: Teachers are more likely to quit when they work in districts with lower wages.⁴⁸ Recent data from the National Center for Education Statistics show a 10 percentage-point gap in attrition rates between beginning teachers whose first-year salary was \$40,000 or more as compared to those earning less.⁴⁹

Many studies have found that both beginning and veteran teachers are more likely to leave the profession or change schools because of low salaries.⁵⁰ Our analysis of the 2011–12 Schools and Staffing Survey found that, of public school teachers who left the profession and said they would consider returning, 67% rated an increase in salary as extremely or very important to their decision to return (see

Figure 3, page 7).⁵¹ Studies have also found that teachers in high-demand fields such as mathematics and science are especially responsive to salary differences in their decisions to remain in teaching because of the opportunity costs of forgoing higher-paying jobs available to them.⁵² The same is true for those who have higher measured ability and presumably more options outside of teaching.⁵³

Raymond Thomas, a high school science teacher in North Carolina who left his \$70,000 job as an engineer in 2000 to teach and nurture students’ passion for science, describes this challenge: “Fourteen years later, my pay is still not back where I was when I left the (research) industry.”⁵⁴

Despite the evidence that salaries influence teachers’ decisions to stay in the profession (and the quality of teachers attracted to the profession), teachers’ salaries are not competitive in many labor markets. 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.⁵⁵ The difference between teachers’ compensation as compared to other workers with a college degree has grown larger over time. In 1994, public school teachers earned a similar compensation (including salary, health benefits, and pension) as other workers with a college degree.⁵⁶ In 2015, teachers earned 11% less in total compensation (including benefits).

Many studies have found that both beginning and veteran teachers are more likely to leave the profession or change schools because of low salaries.

Salaries vary widely from state to state—with more competitive wages in New England and Wyoming, and less competitive wages in much of the South and parts of the West. A study published by the Center for American Progress (CAP) examining salaries nationally for mid- and late-career teachers found that experienced teachers with 10 years of teaching experience make less than unskilled workers in a number of states.⁵⁷ In 30 states, mid-career teachers who head families of four or more qualify for three or more public benefit programs, such as subsidized children’s health insurance or free or reduced-price school meals.

Increasingly, the CAP study found, a teacher’s salary in much of the United States is too low to support a middle-class existence. In 11 states, more than 20% of teachers work second jobs to supplement their incomes (not including those who work a summer job when schools are typically closed). For example, Uber—the ride-sharing service—now actively recruits teachers to supplement their incomes as taxi drivers.⁵⁸ Even in higher-paying states, such as California, many teachers struggle with the higher cost of living and lower purchasing power.

Many teachers, too, are saddled with college debt incurred while undergoing their teacher training.⁵⁹ The more college debt that students incur, the less likely they are to choose to work in a lower-wage profession such as teaching. One study of students at a highly selective undergraduate institution found that incurring debt increased the odds that students chose “substantially higher-salary jobs” and “reduce[d] the probability that students [chose] low-paid ‘public interest’ jobs.”⁶⁰ The influence of debt on job choice was “most notable on the propensity to work in the education industry.” As discussed in Section IV, below, studies of loan forgiveness programs for teachers have found that those who receive loan forgiveness—which has the effect of increasing their overall compensation—are more likely to remain in the profession.⁶¹

The more college debt that students incur, the less likely they are to choose to work in a lower-wage profession such as teaching.

Salaries and Other Compensation in Hard-to-Staff Schools

Compounding the problem of low wages in the teaching profession overall are great inequities in teacher salaries among districts within the same labor market, leaving some high-need, under-resourced districts at a strong disadvantage in hiring. An analysis of the Schools and Staffing Survey found that the best-paid teachers in low-poverty schools earned 35% more than their counterparts in high-poverty schools.⁶² Teachers in more advantaged communities also usually experience much better working conditions, including smaller class sizes and more control over decision-making in their schools.⁶³ Given these salary differentials among districts, high-poverty districts consistently struggle to attract and retain effective teachers, who can often take a less demanding, higher-paying job in another district down the road.⁶⁴

For example, Alishia Morris, a fourth-grade teacher who transferred to a district 15 miles across the border in Arkansas after six years of teaching in Oklahoma, described her decision: “It wasn’t the school’s fault. If it was, it wouldn’t have been so difficult for me to leave. It’s just that Arkansas has more resources—they just make teaching easier.” By teaching in Arkansas, Morris received

a salary increase of \$8,000 to \$9,000 over the \$33,500 she made at Westville (in Oklahoma). In Arkansas, she also has reading and mathematics facilitators to help with her students, as well as a \$500 annual allowance for classroom materials.⁶⁵ One study of labor market decisions by teachers concluded that even larger salary increases—at least \$18,000—may be needed to retain teachers in hard-to-staff schools.⁶⁶

A study analyzing funding and salary disparities in California and New York documented large differences in school funding within both of these states, and corresponding inequities in teacher salaries, teacher qualifications, and student achievement.⁶⁷ After controlling for cost of living, New York districts with large proportions of students from low-income households paid teachers nearly \$3,000 less on average than districts with fewer low-income children. Disparities were similar for high-minority and low-minority districts. Low-salary districts in both states had higher proportions of students of color and English learners. Even within a single region or labor market, more affluent districts can pay teachers significantly more than those receiving less funding—especially those districts that have to stretch their limited resources to meet the needs of students living in poverty, or those who are newly learning English, or who have other special needs. This study and others⁶⁸ found that wage disparities within labor markets are a significant factor in explaining the prevalence of underprepared teachers in districts paying below the market wages. As one example of how this operates, the study noted:

With median salaries in Scarsdale having climbed to \$118,636 by 2009, compared to New York City's \$60,626, it is not surprising that Scarsdale had no teachers teaching without certification in their field in that year, while the East Harlem district Kozol wrote about had 12% of its teachers teaching doing so, and 28% of them deemed not "highly qualified" under No Child Left Behind. While nearly 25% of East Harlem's teachers were inexperienced, the proportion in Scarsdale was only 2%. Class sizes averaged 25 in East Harlem and 19.5 in Scarsdale. And, of course, 80% of the children in East Harlem were poor and 100% were minority, while no children in predominantly white Scarsdale lived in poverty.⁶⁹

In California, too, districts with the lowest adjusted salaries had more than twice as many teachers without permanent credentials, inexperienced teachers, and teachers with lower levels of education. In a regression elasticity analysis, which allows researchers to examine how a percentage change in one teaching characteristic (e.g., salaries) is associated with a percentage change in another teaching characteristic (e.g., experience), the authors found that increases in salaries were associated with decreases in the proportion of uncredentialed, nonpermanent, and inexperienced teachers, as well as decreases in turnover rates.

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In some cases, added stipends for teachers working in high-poverty schools have been successfully used to retain teachers. However, when implemented in isolation, this strategy appears to have a limited effect (see “Beyond Compensation: Working Conditions Matter Too” on page 46). For example, one study in North Carolina found that higher salaries (provided through bonus payments) were able, on average, to reduce teacher turnover rates by 17% in hard-to-staff subject areas in high-poverty and/or low-performing schools during the three years the incentives were in operation.⁷⁰

Another study found that a one-year \$5,000 bonus program (or approximately 10% salary increase) targeted to high-performing teachers working in the lowest-performing schools (i.e., Priority Schools) in Tennessee was effective at retaining teachers.⁷¹ The study found that the bonus, which required teachers to remain in their Priority School for the 2014 school year, increased the rate of teacher retention for teachers in tested subjects and grades within Priority Schools by approximately 20%. However, the study did not find that the bonus affected the retention of teachers in non-tested subjects.

In California, statewide stipend payments of \$20,000 to teachers who had earned National Board Certification and worked in low-performing schools may have contributed to California having a much greater share of Board-certified teachers in schools serving concentrations of low-income and minority students than was true in other states.⁷² The state stipend was paid out over four years only to teachers who stayed in the high-need schools, and many teachers from these schools applied for and were supported in achieving Board certification by support groups designed to help them reach this goal. Moreover, Los Angeles provided a 15% salary boost to teachers who became Board certified and agreed to take on additional district-determined responsibilities. In California, the targeted incentives appeared to be more successful in increasing both the expertise of teachers in high-need schools and their commitment to remain there, rather than in recruiting expert teachers away from non-needy schools to high-need schools.

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Finally, a study of the Talent Transfer Initiative offered in 10 school districts in seven states—a program that provided a \$20,000 bonus paid over two years to teachers with high value-added scores to transfer and teach in schools with low-average test scores—was associated with increased transfer and retention rates during the two-year period that teachers received the bonus.⁷³ Importantly, though, attrition rates for these teachers climbed significantly after the bonus program ended, and the study did not find any difference between the retention rates of bonus recipients and non-bonus recipients after the two-year period. This suggests that the bonus may have only been effective while teachers received the additional money.

Policy Strategies to Increase Salaries and Other Compensation

1. Increase teacher salaries in schools and communities where salaries are not competitive or able to support a middle-class lifestyle.

In an earlier era of reform, Connecticut used this strategy to great success, coupling major increases in teacher salaries—allocated on an equalizing basis—with higher standards for teacher education and licensing, as well as substantial investments in the preparation, mentoring, and development of beginning teachers. By raising minimum salaries to a state-recommended level and providing state equalization aid to incentivize districts to voluntarily do so, the state leveraged a \$300 million state investment to level the playing field among districts and allow low-wealth districts to compete in the labor market for qualified teachers. With local bargaining, the new minimum salaries created a floor that then raised veteran salaries as well. Over five years between 1986 and 1991, the average teacher's salary increased by 30%, from \$36,581 in 1986 (inflation-adjusted to 1991) to \$47,823 in 1991—a level that was, 25 years ago, above that of a number of states even today.

These incentives were combined with other strategic initiatives to bring high-quality candidates to Connecticut's classrooms: licensure reciprocity with other states as well as scholarships and forgivable loans targeted to individuals preparing to teach in high-demand fields. This comprehensive package quickly eliminated teacher shortages, even in urban districts, and created surpluses of teachers within three years. With these initiatives, plus investments in the mentoring and professional development of beginning teachers, student achievement sharply increased. By 1996, the state was ranked first in reading, writing, mathematics, and science achievement on the National Assessment of Educational Progress.⁷⁴

Even today, amid national teacher shortages, Connecticut has had an increase in the number of qualified applicants per position since 2005.⁷⁵ Unfortunately, between 2005 and 2010 the state allowed the salary gap between teachers in high-spending districts and those in low-spending districts to widen, along with the achievement gap.⁷⁶ More work will be needed to ensure that the state's benefits are once again more equitably distributed.

North Carolina engaged in similar reforms to those in Connecticut, increasing and equalizing salaries across the state in the mid-1980s and again in the 1990s using the statewide minimum salary schedule. These efforts brought North Carolina's salaries to the national average, while making them more equitable. North Carolina also adopted a groundbreaking salary increase—12% of base salary—for teachers who achieved National Board Certification. In doing so, North Carolina became the first state to link teachers' compensation to the National Board Certification process, requiring applicants to demonstrate teaching expertise through a standards-based performance assessment requiring submission of a teaching portfolio, videotapes of teaching, reflections on teaching, lesson plans, and evidence of student learning.⁷⁷ These investments have led North Carolina to have the highest number of National Board Certified teachers of any state.⁷⁸ Approximately one in five North Carolina teachers is National Board Certified, comprising nearly 20% of all National Board Certified teachers in the United States.⁷⁹

With improvements in teacher education, the introduction of teacher mentoring, and intensive professional development, North Carolina also saw achievement gains—the steepest in the country during the 1990s, with the largest progress of any state in closing the achievement gap. A

comprehensive study of North Carolina's teaching workforce found that student achievement gains were significantly greater for students whose teachers were National Board Certified, as well as for those whose teachers had the strong academic and teaching preparation the state's strategic policy investments have tried to leverage.⁸⁰

In recent years, unfortunately, North Carolina has not sustained these efforts, and its salaries have slid back to among the lowest nationally.⁸¹ This has contributed to the large number of North Carolina teachers who are leaving the state to teach elsewhere. That number has tripled over the past five years, as has the number of North Carolina teachers leaving the profession.⁸²

Where states are slow to invest in compensation adjustments to help high-need districts attract and retain high-quality teachers, individual districts can take matters into their own hands. As one example of this, San Francisco in 2008 passed an innovative local parcel tax specifically for the purpose of investing in teachers, with widespread support from the local teachers' union, the business community, parents, and grassroots community organizations.⁸³ The additional revenues—about \$500 per student per year—allowed for an overall salary increase, varying by placement on the salary schedule but targeting newer teachers, as well as bonuses for teaching in a hard-to-staff school or hard-to-staff subject area, retention bonuses after the fourth and eighth years of teaching, and stipends for mentor teachers working with novices.

The overall salary increase was much larger than surrounding districts during the same time period and helped make San Francisco's salaries more competitive with neighboring districts in Silicon Valley. A 2013 study found that the compensation reforms improved the district's attractiveness within its local teacher labor market, and increased both the size and quality of the teacher applicant pool, leading to an increase in the quality of new hires.⁸⁴

2. Use federal levers in the new Every Student Succeeds Act to provide low-income schools and districts with additional resources to attract and retain high-quality teachers.

While states and local school districts control the purse strings of education budgets and, therefore, must take the lead in reforming teacher compensation, the federal government also has an important role to play, contributing about 8% of spending for k-12 public schools nationwide.⁸⁵ Through the Elementary and Secondary Education Act (ESEA), now reauthorized as the Every Student Succeeds Act (ESSA), the federal government invests about \$40 billion per year on public education programs benefiting children in pre-k through high school, with approximately \$16 billion focused on improving educational opportunities for disadvantaged students under Title I, and nearly \$3 billion focused on improving educator quality under Title II.⁸⁶ ESSA maintains ESEA's basic funding structure, as well as provisions for ensuring that:

- federal dollars for disadvantaged students are spent to “supplement, not supplant” state and local dollars;
- states maintain their current spending level to continue to receive federal funds (i.e., “maintenance of effort”); and
- districts spend relatively equal amounts of state and local funding on Title I and non-Title I schools prior to the addition of federal funds (i.e., “comparability of services”).⁸⁷

The federal government should assertively implement and then enforce these funding-equity provisions of ESSA so that there are strong levers on the equitable distribution of state and local resources, including teachers, both within and across school districts.

ESSA includes additional important provisions to address teacher salaries, and other resource inequities that impede schools' abilities to attract and retain high-quality teachers. States and districts seeking to address resource inequities in order to increase students' access to well-prepared and effective teachers might consider taking the following steps as they work to implement ESSA:

A. Take advantage of funding opportunities under Title II to put in place programs that can improve teacher recruitment and retention.

ESSA includes flexible funding under Title II, Part A for improving educator quality. The new law also includes a change in the formula for how these funds are allocated, providing additional funding to improve educator quality to states and districts serving larger proportions of low-income students. ESSA identifies numerous possible uses of these funds, providing states and districts with flexible funding that can support programs that research shows hold the greatest promise for attracting and keeping excellent teachers. To address salaries specifically, Title II, Part A funds can be used for the development of career advancement opportunities that provide differential pay, as well as other incentives to recruit and retain teachers in high-need academic subjects and low-income schools.⁸⁸

The law also maintains the Teacher Incentive Fund—now called the Teacher and School Leader Incentive Fund—which authorizes approximately \$230 million in federal competitive grant funds to local educational agencies to support performance-based compensation systems and human-capital management systems.⁸⁹ Federal funds can also be used to implement many of the policy strategies discussed in Sections III through VII of this paper and listed among the broad allowable uses of Title II, Part A funds. These include:

- strengthening teacher preparation through stronger standards and innovative programs such as teacher residencies;
- strengthening the recruitment and hiring processes for teachers;
- providing induction and mentoring programs for new teachers;
- developing feedback mechanisms (such as surveys) to improve working conditions; and
- improving the equitable distribution of effective teachers.⁹⁰

B. Be mindful of the resource inequities associated with inequitable distributions of teachers—inequities that should be evaluated and corrected for low-performing schools, including salaries and working conditions such as class sizes, pupil loads, and the availability of supplies and materials.

ESSA includes important provisions to address teacher salaries, and other resource inequities that impede schools' abilities to attract and retain high-quality teachers.

ESSA requires districts, as part of the comprehensive support and improvement plan they develop for each of their lowest-performing schools, to identify and establish a plan for addressing resource inequities that states are then responsible for monitoring.⁹¹ This focus on addressing resource inequities may include intra-district and inter-district salary inequities that often impact teacher recruitment and retention. The strategy is new under ESSA, representing a departure from prior school-turnaround models under the No Child Left Behind Act and the School Improvement Grant Program, which were more prescriptive in nature and did not focus on resource inequities.⁹² The law also requires states and districts to report schools' per-pupil spending on annual report cards, including actual per-pupil personnel and non-personnel expenditures, thereby shining a light on resource gaps that can inform a more equitable distribution of state and local funds.⁹³

C. Assertively implement and enforce districts' compliance with ESSA's teacher-equity provisions.

ESSA maintains a federal focus on closing the equity gap with respect to students' access to expert, experienced teachers. The law requires states to develop plans describing how low-income students and students of color "are not served at disproportionate rates by ineffective, out-of-field, or inexperienced teachers," and to evaluate and publicly report on their progress in this area. Further, districts are required to "identify and address" teacher equity gaps.⁹⁴ As states work to implement these requirements, they can adopt research-based definitions of the terms ineffective, out-of-field, and inexperienced.⁹⁵ Such definitions are critical to highlighting and then correcting these inequities rather than allowing states to simply define their way out of teacher-equity gaps. States should provide districts with technical assistance and support in addressing their teacher-equity gaps, using Title II funds for this purpose. Districts can also take advantage of the weighted student-funding pilot program under ESSA to help equalize access to experienced, in-field, and expert teachers, using this funding flexibility on initiatives to attract and retain high-quality teachers in low-income schools, and in programs serving English learners and special education students.⁹⁶

ESSA maintains a federal focus on closing the equity gap with respect to students' access to expert, experienced teachers.

3. Increase teachers' overall compensation by offering housing incentives.

Lack of affordable housing is one reason teachers leave the profession or leave districts with high costs of living.⁹⁷ In the most recent nationally representative Teacher Follow-up Survey, nearly one in four public school teachers who had left the classroom and said they would consider returning cited housing incentives as a factor that would be extremely or very important in their decision to return (see Figure 3, page 7).⁹⁸ To address the lack of affordable housing, some districts across the United States have offered housing subsidies or related incentives to recruit and retain teachers.⁹⁹ Districts, sometimes with support from the U.S. Department of Housing and Urban Development, have offered money for housing-related expenses (e.g., rent, relocation expenses, down payments) targeted to teachers in high-need fields,¹⁰⁰ as well as down payment assistance,¹⁰¹ discounted homes,¹⁰² and subsidized teacher housing.¹⁰³

One local model of this program is Chicago Public Schools’ “Teacher Homebuyer Assistance Program.” Launched in April 2005 with the goal of improving teacher retention, the program existed through 2013 and helped 524 teachers buy homes in Chicago by offering forgivable loans as long as teachers remained employees of the school system for five years.¹⁰⁴

Housing incentive programs have not yet been studied to determine whether they are effective at recruiting and retaining teachers. Consequently, it is important that existing programs that provide housing incentives document and analyze the extent to which they have been successful in recruiting and retaining teachers. Federal, state, and local governments can provide financial support, perhaps through grants, to launch pilot programs and fund research that assesses the cost-effectiveness of these programs at recruiting and retaining teachers.

4. Offer career advancement opportunities that provide increased compensation, responsibility, and recognition.

Many professions have institutionalized career ladders and upward trajectories that allow their high performers to count on increased responsibility, salary, and status. In contrast, teaching is a relatively “flat” profession in which the typical way to move up is to enter school administration—a role that many excellent teachers may not be interested in pursuing. The leadership positions that do exist in schools, such as mentor, coach, or department chair, are generally limited and often not associated with a commensurate increase in salary.

Opportunities to assume leadership roles and share expertise appear associated with teachers’ interests in remaining in the profession. For example, one national survey of 1,210 pre-k through 12th-grade teachers found that holding multiple leadership roles was associated with increased intentions to remain in teaching for the upcoming three years.¹⁰⁵

A study of Missouri’s 25-year-old career ladder program found that, after controlling for district characteristics (e.g., wealth, size, level of urbanization), teachers (especially mid-career teachers) in districts with career ladder programs were less likely to leave their district than those in non-career ladder districts.¹⁰⁶ Teachers in career ladder districts were also less likely to leave the profession overall and reported increased job satisfaction due to their participation in the program.¹⁰⁷

Many expert teachers can and want to provide professional support to their colleagues while remaining in the classroom teaching, and teachers with formal leadership positions are more likely to provide advice or information to colleagues.¹⁰⁸ Bolstering such leadership opportunities could offer a way for districts and schools to recognize in-house talent and retain high-quality teachers who can provide additional support to colleagues while also increasing professional growth and job satisfaction.

One well-established approach for recognizing teacher expertise is the National Board Certification (NBC) process described above, which has allowed tens of thousands of teachers to remain in the classroom while pursuing greater recognition, career and leadership opportunities, and

Opportunities to assume leadership roles and share expertise appear associated with teachers’ interests in remaining in the profession.

increased compensation. Teachers who pass the rigorous NBC process—112,000 in total¹⁰⁹—are widely recognized as experienced, accomplished teachers. Importantly, one study noted that the introduction of numerous state and district incentives for NBC teachers in 2008 in Washington (i.e., bonuses, conditional loans, awards of professional development credit) increased the number of NBC teachers from 2,703 in 2008 to 6,739 in 2012.¹¹⁰ Several studies have found that teachers who become nationally certified are on average, more effective teachers (as measured by their students' standardized test score gains) than non-NBC teachers with similar experience, when controlling for student and classroom characteristics.¹¹¹ Other studies have found that NBC teachers appear to offer even greater educational benefits to low-income students than to their more affluent peers.¹¹²

Although not yet widely practiced, many districts use NBC teachers as mentors to new and struggling teachers, as experts in curriculum design and support, and as instructional leaders in their schools. In some states and districts, NBC teachers also are eligible for salary increases as well as bonuses or other incentives, and teachers are reimbursed for the costs they incur in undergoing the NBC process.¹¹³ A disproportionate number of NBC teachers work in locations offering these financial incentives and supports.¹¹⁴

Another variation of a career ladder policy is a peer assistance and review model that provides “a program of structured mentorship, observation, and rigorous, standards-base[d] evaluation of teachers by teachers.”¹¹⁵ For example, Rochester, NY, and Cincinnati have developed career ladders using this model in which “the accomplished teachers identified through more advanced evaluations of practice serve as mentors for beginning teachers, among other leadership roles. These evaluations depend both on standards-based assessments of teaching—through local evaluations and/or National Board Certification—and in the case of Rochester’s career ladder, evidence of student learning assembled by the teacher in a portfolio.¹¹⁶

Another variation of a career ladder policy is a peer assistance and review model that provides “a program of structured mentorship, observation, and rigorous, standards-base[d] evaluation of teachers by teachers.”

Career ladder models, which offer both increased responsibilities and compensation for expert teachers, while filling a need for additional instructional leadership in schools, have been a recurring but under-researched policy for decades.¹¹⁷ Building on promising models such as the NBC process and peer assistance and review, states and districts can support the development of career ladders through financial incentives and support for productive performance-based assessments. Federal funds under Title II, Part A of the Every Student Succeeds Act can be used to support these efforts, which are explicitly identified as allowable uses of funds.¹¹⁸ Additional federal grant funding is authorized through ESSA’s Teacher and School Leader Incentive Program and the STEM Master Teacher Corps program.¹¹⁹ Such strategies could be combined with an explicit research agenda examining the extent to which these models increase teacher effectiveness, satisfaction, and retention.

IV. Preparation and Costs to Entry

Having strong preparation for teaching increases teachers' efficacy, a key factor related to the likelihood that teachers will remain in the profession.¹²⁰ Growing evidence demonstrates that attrition is higher for those who enter the profession without adequate preparation. First-year teachers who feel they are well prepared for teaching are much more likely to plan to stay in teaching than those who feel poorly prepared.¹²¹ One signal of preparation is whether or not a teacher has completed teacher certification. According to data from the National Center for Education Statistics, 30% of uncertified entrants leave the profession within a five-year span, compared to 15% of certified entrants.¹²² Approximately 21% of first-year public school teachers in the 2012 school year were not fully certified.¹²³

The quality of preparation matters as well.

An analysis of the nationally representative Schools and Staffing Survey found that new recruits who had a semester or more of practice teaching prior to employment were more than three times less likely to leave teaching after a year than those who had no practice teaching.¹²⁴ Further analysis that examined other aspects of new teacher preparation found that beginning teachers who had received comprehensive preparation (i.e., observing others teaching, student teaching a full semester, receiving feedback, taking courses in teaching methods, learning theory, and selecting instructional materials) were two-and-a-half times less likely to leave teaching after a year in the profession than teachers with little or no pedagogical training or practice teaching. About 15% of first-year teachers fell into the latter category (see Figure 4). While a greater percentage of new teachers are entering the profession having undergone some student teaching, the most recent Schools and Staffing Survey data show that one in 10 first-year teachers still enters the profession without any student teaching experience.¹²⁵

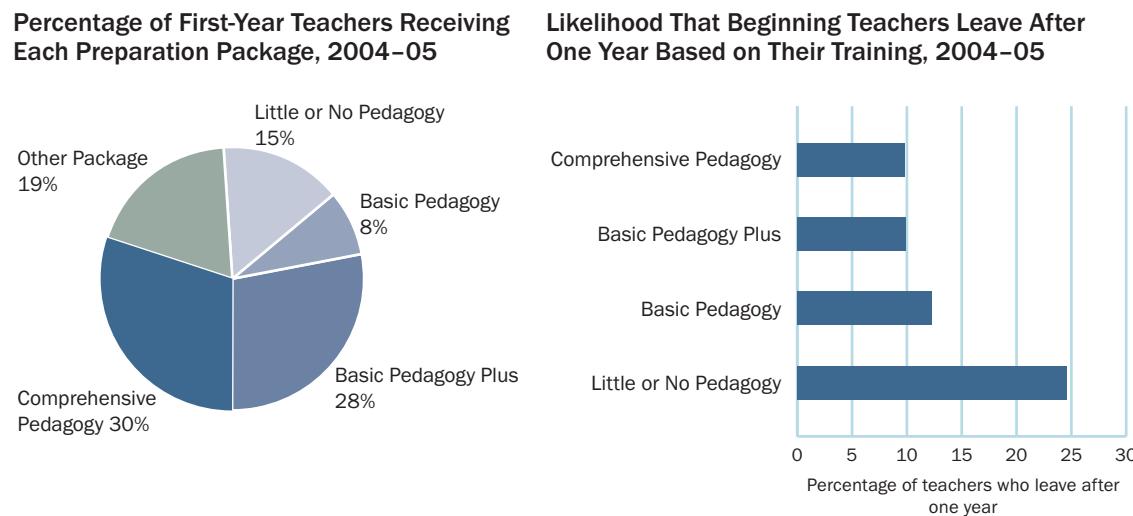
New recruits who had a semester or more of practice teaching prior to employment were more than three times less likely to leave teaching after a year than those who had no practice teaching.

While some studies have examined the relationship between teacher preparation and teacher attrition in terms of the content of the preparation, other research has focused on the pathway toward certification, distinguishing between traditional and alternative programs. Most scholars conclude that there is more variability within pathways than between pathways, so it is most helpful to distinguish teacher preparation pathways by the length of clinical experience and amount of coursework, as opposed to whether they are "traditional" or "alternative." Nonetheless, the research we reviewed for this report frequently uses this distinction, so these labels may be thought of as heuristics for the amount of fieldwork and coursework, even though there is variation within each type of program.

Traditional preparation programs encompass university-based undergraduate or post-graduate programs that provide both coursework and clinical training through student teaching.

Alternative programs, offered both by universities and by school districts and other entities, can vary substantially. Most of these kinds of programs, however, offer a route to teaching in which

Figure 4
Beginning Teacher Preparation



Little or No Pedagogy: Little or no practice teaching; one course or less in teaching methods; little or no other pedagogical preparation (i.e., how to select and adapt instructional materials, coursework in learning theory and child psychology, observation of others' classroom teaching, formal feedback on their own teaching).

Basic Pedagogy: Full semester of practice teaching; no course in teaching methods; most other pedagogical preparation.

Basic Pedagogy Plus: Same as Basic Pedagogy, plus one to four courses in teaching methods.

Comprehensive Pedagogy: Same as Basic Pedagogy, plus five or more courses in teaching methods.

Other Package: Other mix of preparation.

Note: Percentages as reported from a personal correspondence with Richard Ingersoll.

Source: Richard Ingersoll, Lisa Merrill, and Henry May, *What Are the Effects of Teacher Education and Preparation on Beginning Teacher Attrition?* Consortium for Policy Research in Education, CPRE Report (#RR-82) (2014).

participants serve as the teacher of record while undertaking their coursework at night or on weekends, typically with little or no prior student teaching. Many candidates choose alternative programs because they cannot afford to forego a salary while undergoing preservice preparation, given the lack of financial support for intensive preservice clinical training.

A recent analysis of the nationally representative Schools and Staffing Survey found that the proportion of the teaching workforce entering via alternative programs has increased from 13% in 1999–2000 to 24% in 2011–12. At the same time, there is a widening gap in the turnover rate between alternatively certified and traditionally certified teachers. The authors note that “[f]ollowing the 2007–08 school year, [alternatively certified] teachers had more than two-and-a-half times the relative risk of leaving than [traditionally certified] teachers.”¹²⁶ Several studies have found that alternatively certified teachers leave the profession at higher rates than regularly certified teachers, and that disparities are even greater in high-minority schools.¹²⁷ As discussed above, these higher teacher turnover rates can negatively impact student achievement in these schools, both among the students in the classrooms of teachers who leave as well as those in the classrooms of those teachers who stay.¹²⁸

Other studies similarly have found that teachers’ perceptions of their preparedness and plans to stay in teaching are stronger for those who undertake preservice programs in which they complete

pedagogical and other coursework and student-teaching programs before they enter teaching, in contrast to many alternative programs.¹²⁹ A study of attrition among New York City middle school teachers found that teachers were more likely to consider leaving their school if they had entered teaching through an alternative pathway.¹³⁰ (The study did not provide detail about the length of the preparation or clinical experience in the studied alternative pathways).

Other studies have found that teachers who enter through teacher certification pathways that provide less extensive preparation prior to teaching have higher attrition rates. A study of North Carolina teachers found that 68% of in-state certified teachers were still teaching in North Carolina public schools after five years, compared to just over 40% of alternatively certified teachers.¹³¹

Entry for Teachers in Hard-to-Staff Schools

Although preparation matters for teachers' efficacy and continuation in the profession, the cost of preparation is increasingly difficult for candidates to afford. More than two-thirds of individuals entering the field of education—many of whom are new teachers—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.¹³² Unlike in other professions, such as law or medicine in which future high professional salaries better justify large upfront training costs, teaching pays a relatively low salary. In this context, prospective teachers may rationally choose a pathway in which they can earn a salary while undergoing training rather than taking on debt, which they must repay on a low salary.

Individuals entering the classroom while undergoing their training are disproportionately concentrated in hard-to-staff schools, typically low-performing schools serving large proportions of low-income and minority students.¹³³ By definition, hard-to-staff schools are often the most under-resourced, racially segregated schools,¹³⁴ with the highest concentrations of students living in poverty. Furthermore, the skills needed to teach in these schools are greater because teachers must be much more expert at diagnosing student learning, differentiating instruction to address gaps while accelerating progress, and supporting a range of social, emotional, health, and psychological needs, in addition to sometimes complex academic needs.

Hard-to-staff schools often struggle to attract talented, well-prepared teachers, hiring individuals who have not yet completed (and sometimes have not yet begun) their preparation.

Hard-to-staff schools consequently often struggle to attract talented, well-prepared teachers, hiring individuals who have not yet completed (and sometimes have not yet begun) their preparation. Many studies have documented the disproportionate concentration of underprepared and inexperienced teachers in low-income, high-minority schools.¹³⁵

Policy Strategies to Improve Preparation and Costs to Entry

1. Provide service scholarships and loan forgiveness programs to attract prospective teachers to the fields and locations where they are most needed.

Individuals who have left the teaching profession identify loan forgiveness as a factor that would bring them back to the classroom. In the most recent nationally representative Schools and Staffing Survey, one in four public school teachers who left teaching and said they would consider returning to the profession identified loan forgiveness as extremely or very important in their decision to return (see Figure 3, page 7).¹³⁶

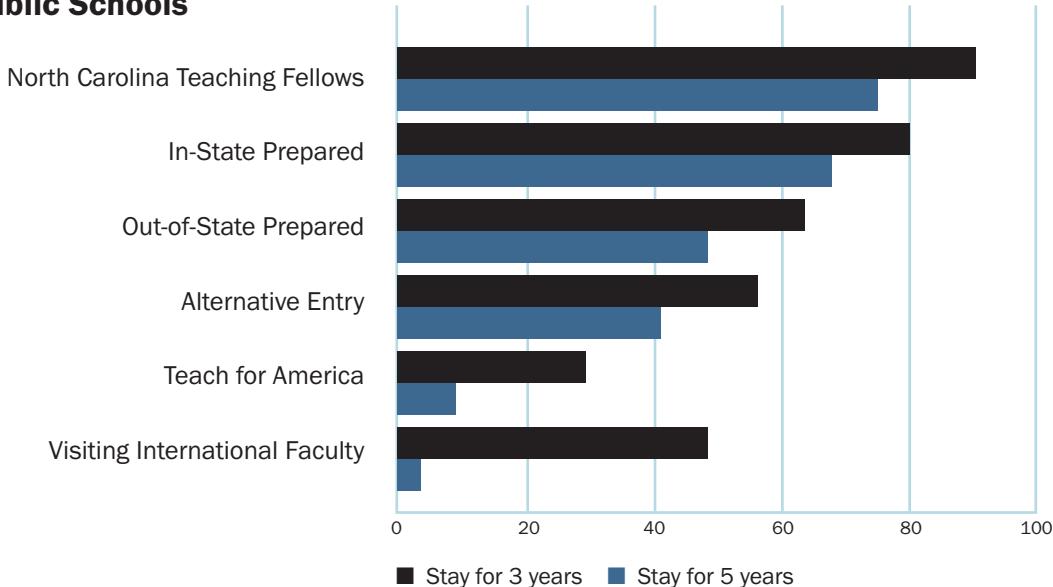
Since 1958, when the National Defense Student Loans were enacted, the federal government and more than 40 states have at various points offered loan forgiveness and/or service scholarship programs to individuals interested in teaching.¹³⁷ These approaches underwrite preparation—often in particular high-need fields—in exchange for a number of years of service in the profession—often in particular high-need locations. A recent review of research on these policies, used both in medicine and teaching, found that they can be effective in attracting and preparing high-ability candidates and recruiting them to the places or fields where they are needed.¹³⁸ Successful program models tend to:

- offer a substantial enough award to be an effective inducement, such as covering all or a large percentage of tuition;
- target high-need fields and/or schools;
- recruit and select candidates who are academically strong, committed to teaching, and well-prepared;
- 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
- be bureaucratically manageable for participating teachers, districts, and higher education institutions.

Two well-developed state models include the South Carolina and North Carolina Teaching Fellows programs, which offer students a four-year scholarship and preparation in an enhanced teacher preparation program in exchange for a commitment to teach in each state's public schools for at least four years.¹³⁹ The North Carolina program recruited nearly 11,000 candidates into teaching over 30 years, representing close to 10% of all North Carolina teachers credentialed each year.¹⁴⁰ A longitudinal study of the program, examining data on all North Carolina teachers with less than five years of experience, found that North Carolina Teaching Fellows were generally more effective than their peer teachers, as measured by test-score gains of their students.¹⁴¹ Equally compelling, scholarship recipients were more likely to stay in teaching. Approximately 90% of fellows stayed in teaching at least three years, and 75% were teaching as of their fifth year, a significantly higher percentage than other in-state prepared teachers, and far higher than those who had entered through alternative routes (see Figure 5). Many of the remaining fellows were still in education as administrators.

Figure 5

Percentage of Teachers Who Remain Teaching in North Carolina Public Schools



Note: This figure depicts the percentage of teachers who return for a third and fifth year of teaching in North Carolina public schools for three cohorts of first-year teachers, regardless of subject taught, 2004–05, 2005–06, and 2006–07.

Source: Gary T. Henry, Kevin C. Bastian, and Adrienne A. Smith, “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, no. 3 (2012): 83–92.

South Carolina’s program has demonstrated similar success. Approximately 72% of the program’s 1,502 graduates from 2000 to 2011 were still employed in South Carolina public school districts in 2016.

In some states, such as California, loan forgiveness and grant programs were eliminated during fiscal crises,¹⁴² but other states, including Connecticut, Delaware, Massachusetts, Michigan, Missouri, Montana, West Virginia, and Washington, are placing a renewed focus on programs that provide financial support for new teachers as a means to attract and retain high-ability teachers.¹⁴³

2. Develop teacher residencies.

Another increasingly popular strategy to recruit and retain talented and diverse candidates in high-need schools is the teacher residency model. In contrast to alternatives that require teachers to train while teaching in order to maintain a source of income, teacher residencies offer an alternative model that underwrites the cost of preparation for candidates while still allowing for full preparation prior to employment.

Teacher residencies offer an alternative model that underwrites the cost of preparation for candidates while still allowing for full preparation prior to employment.

Over the past decade, leveraged by federal funding, teacher residencies have grown in number in response to hiring needs in hard-to-staff regional areas (urban and rural) and subject areas (e.g., special education, mathematics, science, bilingual/English language development). School districts partner with local teacher preparation programs to recruit the teachers that districts know they will need, and to prepare the teacher candidates to excel and remain in these hard-to-staff areas. When used in this deliberate manner, teacher residencies address a crucial recruitment need while also building the capacity of the districts to offer high-quality instruction to the students they serve.

Patterned on a medical residency, this model provides residents with a yearlong apprenticeship teaching alongside an expert mentor teacher. Residents simultaneously complete credential coursework that is tightly integrated with their clinical placement. Residents are paid a stipend and/or receive tuition remission to enable them to devote the full year to their preparation, and in exchange commit to teach for three to five years in the districts' schools.¹⁴⁴ These programs are funded from sources such as Higher Education Act Teacher Quality Partnership grants, AmeriCorps stipends, and foundations. Funds from Title II of the Every Student Succeeds Act can also be used to support residency programs for teachers and school leaders. A network of more than 50 urban teacher residencies has emerged to support learning and research about these models across the country.¹⁴⁵

Initial studies on residencies suggest that they have attracted greater diversity into the teaching workforce and supplied more teachers in hard-to-staff subjects.

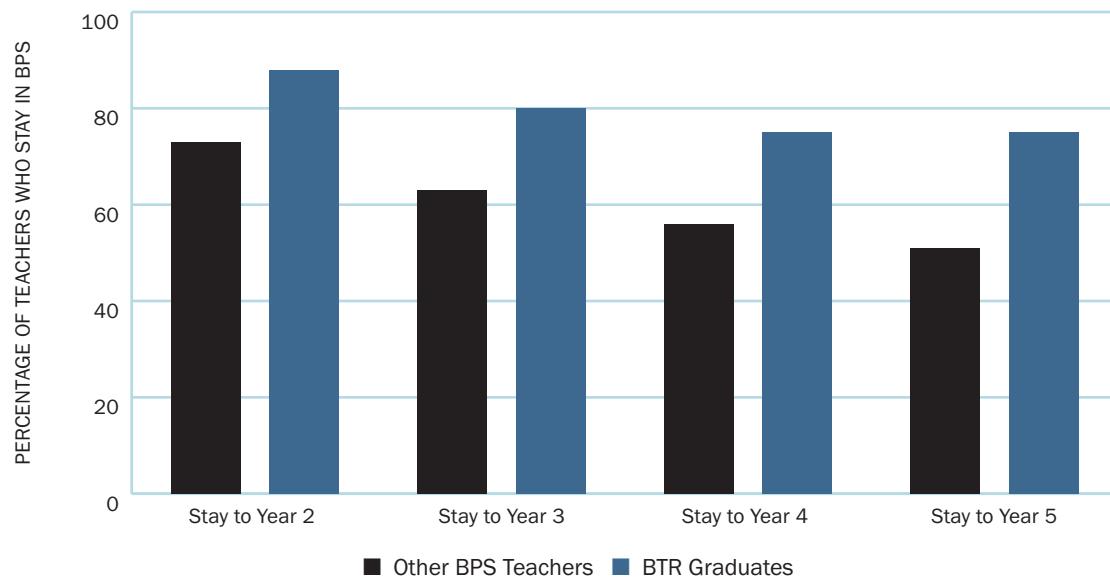
Initial studies on residencies suggest that they have attracted greater diversity into the teaching workforce and supplied more teachers in hard-to-staff subjects, while retaining them in the sponsoring districts at much higher rates than other new teachers.¹⁴⁶ Across teacher residency programs nationally, nearly half of residents (45%) in 2015–16 were people of color,¹⁴⁷ more than double the national rate of teachers of color entering the field (19%).¹⁴⁸ Typically, these teachers are prepared to teach in shortage fields.

Moreover, studies of the longest-standing teacher residency programs have found higher retention rates of residency graduates. This is particularly important since hard-to-staff urban¹⁴⁹ and rural schools¹⁵⁰ can frequently experience very high turnover rates and often lose 50% or more of their beginning teachers within the first few years on the job.

A recent study of graduates of the 12 oldest and largest residency programs found that 82% of graduates were still teaching in their same district in their third and fourth year, compared to 72% of nonresidency graduates.¹⁵¹ A longitudinal study of the Boston Teacher Residency found that by the fifth year, 75% of residents remained in the Boston Public Schools, as compared to only 51% of all novice teachers in the district (see Figure 6).¹⁵² Recent data from the San Francisco Teacher Residency indicate that 80% of residents are still teaching in the city after five years, as compared to only 38% of other new hires over that time.¹⁵³

The research, when taken as a whole, suggests that the residency model holds promise for both recruiting diverse individuals and retaining effective teachers.

Figure 6
Percentage of First-Year Boston Teacher Residency (BTR) and Non-BTR Teachers Who Remain Teaching in Boston Public Schools (BPS)



Source: John P. Papay, Martin R. West, Jon B. Fullerton, and Thomas J. Kane, "Does an Urban Teacher Residency Increase Student Achievement? Early Evidence From Boston," *Educational Evaluation and Policy Analysis* 34, no. 4 (2012): 413–34.

3. Create local pathways into the profession, such as high school career pathways and Grow Your Own teacher preparation models.

Some enterprising states and districts are investing in innovative, localized pipeline programs into teaching, such as high school career pathways and "Grow Your Own" teacher preparation models. These programs motivate and expose talented individuals to a career in education, and may help them along the pathway into the profession. These strategies are a response to the research demonstrating that teachers often prefer to teach near where they grew up and attended high school.¹⁵⁴ Thus, one solution for hard-to-staff schools is to recruit graduates of those schools and members of the school's community into teaching.

One model for developing interest in the teaching profession is with high school-level coursework that introduces students to the profession. One example is the South Carolina Teacher Cadet Program. This program offers a college-level, Advanced Placement course for approximately 2,700 junior and senior high school students annually.¹⁵⁵ South Carolina offered one of the first high school pathway teaching programs in the United States, and has had more than 60,000 graduates in its 30-year history. The annual cost of the program is approximately \$100 per student, with one out of five cadets eventually earning a teacher certification.¹⁵⁶

Another example, the North Carolina Teacher Cadet Program, offers junior and senior high school students a college-level course that is transferable to many North Carolina schools of education.¹⁵⁷ More than 31% of these cadets have received a scholarship to study teaching at a postsecondary

institution. Pathway models like the South and North Carolina Teacher Cadet programs can be supported with federal Perkins Career Technical Education Act funds.

Even more extensive are high school career-pathway programs, such as teaching academies that can embed career-focused courses on education topics alongside work-based experiences, as part of their overall program of college-preparatory high school courses aligned to state standards. Such academies often partner with colleges to provide as much as a year or two of college courses during high school to give students a running start. These academies can offer a clear and articulated sequence of academic and professional courses needed throughout secondary and postsecondary schooling, along with personalized supports and real-world experiences.¹⁵⁸

Teaching academies can offer a clear and articulated sequence of academic and professional courses needed throughout secondary and postsecondary schooling, along with personalized supports and real-world experiences.

One model of this more extensive career pathway program is the California Teacher Pathway Program. This program recruits young people interested in becoming educators and supports them through the process of earning their associate degree, bachelor's degree, and teaching credential. The program also helps participants find stable employment in after-school programs so that they can gain experience working with youth and earn income while studying for their teaching credential.¹⁵⁹

Another kind of solution, Grow Your Own programs, offers incentives and partnerships to individuals who want to teach, and to two- and four-year colleges to recruit community members into teaching. These programs also support participants as they complete their bachelor's degree and earn their teaching credential. Specifically, the programs provide financial aid to candidates, and help colleges provide counseling and programmatic supports. These programs are sometimes focused on paraprofessionals who are already in schools, often as special education or bilingual teachers' aides—individuals who are knowledgeable about and committed to these subject areas and who are often from the communities in which they plan to teach.¹⁶⁰

At least two career pathway programs have been found to be associated with the recruitment and retention of diverse teachers. One study analyzed a Wallace Foundation-funded national program, “The Pathways to Teaching Careers Program,” which offered scholarships and other support to paraprofessionals, Peace Corps members, and noncertified teachers working in public schools to become fully certified teachers.¹⁶¹ In return, participants committed to teach in public schools for a set period of time. The study found that:

- 74% of the paraprofessionals recruited in the program were from a minority background;
- 75% of the participants completed the program (as compared to a 60% national completion rate at the time for traditional teacher education students); and
- 91% of paraprofessionals taught in high-need schools in targeted districts.

In California's Paraprofessional Teacher Training Program, which was funded from 1995 to 2011, 65% of participants were people of color and bilingual.¹⁶² By its 13th year of operation, sponsors reported that of the 1,708 program graduates, 92% remained current California public school employees. In 2014, the program reported more than 2,200 graduates, and in 2016, the California Legislature updated and re-funded the program. Federal Workforce Innovation and Opportunity Act funds can be used to support these types of comprehensive teacher training programs designed to address local workforce needs in times of teacher shortages.

V. Hiring and Personnel Management

After teachers complete their preparation, they face the challenge of finding a teaching job, ideally one in a supportive school that will help them grow. Some studies suggest that district and school practices related to hiring and supporting teachers influence teachers' decisions to enter, stay in, or leave the profession. In other words, schools and districts that adopt effective hiring practices are, unsurprisingly, more successful at attracting and hiring effective teachers, leading to greater rates of schoolwide achievement.¹⁶³ A review of the research revealed that issues of timing and information in particular contribute to the quality of teachers hired by schools and districts, the retention rates of teachers, and most importantly, to student achievement.¹⁶⁴

Timing of Hiring

Several studies document that hiring teachers late in the year negatively affects teacher recruitment, retention, and student achievement. Multiple studies suggest that between 11% and 30% of newly hired teachers are hired after the school year begins, varying by year and geographic location.¹⁶⁵ Teachers hired after the start of the school year are generally less effective and more likely to leave the teaching workforce than other newly hired teachers.¹⁶⁶ For example, teachers hired after the school year begins have less time to plan their curriculum, develop engaging lessons, and understand school and district operations. Moreover, teachers hired after the school year begins must balance these activities with their teaching and could become discouraged with these concurrent responsibilities. Finally, districts that hire teachers later may be selecting from a pool of weaker teachers because the most talented, best-prepared teachers may have already been hired.¹⁶⁷

Despite the few potential benefits to hiring later in the process (e.g., more time to identify stronger applicants), a recent study found that the costs of later hiring far outweighed the benefits.¹⁶⁸ This study of 130,000 students and 9,000 teachers in a large urban, southern school district in the United States found that teachers who were hired after the school year started were associated with a significant and negative impact on student achievement in 4th grade through 8th grade, with a decrease of "approximately two months of instruction for a typical middle-school student" in mathematics and reading. The authors found that in mathematics, "late-hired teachers remain persistently less effective," suggesting that teachers hired after the school year began were generally weaker teachers. Accordingly, this study suggests that districts will likely find more effective teachers when their hiring processes allow them to search earlier. In addition, this study suggests that hiring earlier provides teachers time to better prepare for the school year.

Teachers who were hired after the school year started were associated with a significant and negative impact on student achievement.

Some studies suggest that late hiring is rooted in multiple structural barriers. One such barrier is school budgets, which generally depend on slow-moving state and local budgets that can become mired in politics and result in late adoption.¹⁶⁹ A second barrier is schools and districts that are unable to accurately predict student enrollment. A third barrier is collective bargaining agreements that often delay new hires until districts complete school transfers for more senior teachers.¹⁷⁰

Information in the Hiring Process

Hiring processes at schools and districts that lack quality information may negatively influence teacher recruitment and retention.¹⁷¹ Districts, principals, and teacher-candidates all need quality information to assess the fit between the teacher candidate and the needs of the school. This process is critically important to hiring effective teachers and, therefore, to increasing student learning. In the words of Kilian Betlach, an elementary school principal in Oakland, California, “Hiring is hard, and hiring is the single most important thing you can do to improve your school.”¹⁷²

One study found numerous barriers cited by districts and schools that struggled to use information-rich sources, such as teacher observations.¹⁷³ The authors noted that the time commitment of demonstration lessons, challenges of reviewing videos submitted by candidates, and late hiring that took place over the summer when candidates could not give demonstration lessons to students reduced the district’s and school’s collection of quality information about teacher-candidates. In addition, many principals are also not aware of the information resources available to them or do not know how to access the data even when they are aware of the resources.¹⁷⁴

School and District Support for Mobile Teachers

Many teachers inevitably face geographic moves. Whether they decide to continue teaching in their new location or instead leave the profession is influenced by state and district policies related to teacher certification requirements, pensions, and salary schedules. An analysis of the recent Schools and Staffing Survey reveals that more than one 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.

The limited research on the cross-state mobility of the teacher workforce suggests that some state-imposed barriers, such as licensure requirements, seniority rules, and pension systems, can discourage teachers from staying in the teaching profession when they move to a different state. These barriers vary from state to state and over time. Although some states have worked to remove obstacles in recent years, our analysis of the most recent Schools and Staffing Survey found that certification-reciprocity issues were cited by 42% of potential teacher re-entrants as extremely or very important in their decision about whether to return to teaching. More than two-thirds (68%) also cited the ability to maintain retirement benefits, which is also a cross-state issue (see Figure 3, page 7).¹⁷⁵

More than one 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.

One study of the teacher workforce in Oregon and Washington found that within-state mobility rates were much larger than cross-state mobility rates, suggesting that professional barriers to moving to a different state may have deterred teachers from interstate moves.¹⁷⁶ The study of approximately 72,035 teachers between 2001 and 2014 focused on districts near the border and found, for example, that “among Washington school districts in the Portland-Vancouver Metropolitan Statistical Area the rate of within-state mobility [was] seven times higher than the

rate of cross-state mobility in spite of the fact that the majority of teaching jobs in that regional labor market [were] on the Oregon side of the border.”¹⁷⁷ Moreover, the authors noted that even though Oregon and Washington share a reciprocity agreement, the steps teachers must take to switch teaching positions between these two states were difficult to locate and understand.

The most frequently cited barriers to cross-state and cross-district mobility include the expense and time associated with each state’s licensure procedures, the loss of the level of tenure and seniority when teachers leave a state or district (and related effects on their salary), and the negative effects of mobility on teacher pensions.¹⁷⁸ For example, another study found that state licensure rules that aim to establish minimum teacher standards often impose barriers through testing, course and preparation requirements, fees, slow and duplicative administrative processes and requirements, and unclear licensure standards.¹⁷⁹ Similarly, other scholars found that out-of-state candidates seeking California teaching positions encountered many challenges, such as “costs of courses and exams, confusion about how to complete the many and varied requirements, and redundancy with other requirements teachers had already met elsewhere.”¹⁸⁰ These are barriers that are amenable to policy solutions.

Hiring and Personnel Management in Hard-to-Staff Schools

Educating historically underserved communities of students requires schools and districts to recruit talented teachers to educate and lead. Many districts in underserved communities, however, take a more passive approach to recruiting teachers by not actively identifying top prospective teachers, instead simply posting a job announcement or attending a career fair to attract teachers.¹⁸¹ For example, one study of five well-regarded urban districts found that principals in hard-to-staff schools found district recruitment efforts inadequate, in part because the pool of candidates the district provided did not meet principals’ needs.¹⁸² In the study, the authors hypothesized that because of the district’s limited effectiveness at recruiting appropriate teachers, principals relied on their personal networks and individual, informal channels for recruiting teachers. One principal reported that “[I] seek out and recruit my own teachers because I know what I’m looking for ... I kind of grow my own.”¹⁸³

Some traditionally hard-to-staff schools have been successful at recruiting high-quality teachers. One study of six high-performing public schools in Walker City, MA, found that these schools—with primarily students of color and in which more than 70% of students were eligible for free or reduced-price lunch—were successful at recruiting talented teachers.¹⁸⁴ Specifically, the study found each of these six schools typically

actively developed a pool of candidates from which it could hire when teaching positions arose ... by cultivating relationships with nonprofits, universities, and the school district, and with the personal and professional networks of those working in the school. Often, they depended most on those who shared their mission of educating low-income, minority students.

These studies suggest that hard-to-staff schools might pursue additional strategies to successfully recruit and hire talented candidates, often going beyond the resources provided by their central district offices.

Policy Strategies to Improve Hiring and Personnel Management

1. Strengthen hiring practices to ensure decisions are made as early as possible with the best candidate pool and based on the best information possible.

Research on hiring practices in high-performing urban schools finds that these schools invest substantial time in a multistep hiring process that allows the school staff and candidate to assess their mutual fit based on extensive information: initial screening of resumes and cover letters, a pre-interview screening, an interview with the principal, a teaching demonstration and debrief, and a school visit in which the candidate meets other teachers and members of the school community.¹⁸⁵

Schools and districts can create such processes and increase the involvement of current staff in recruitment and vetting of candidates by compensating staff for time spent attending recruitment fairs and interviewing candidates, as well as offering bonuses to staff who refer a new hire.¹⁸⁶ Such strategies offer multiple benefits in terms of lightening principals' hiring loads, promoting shared leadership and decision-making, and ensuring a good fit between the candidate and existing staff.¹⁸⁷ These strategies also prove to be successful in recruiting candidates of color, especially where current teachers of color are actively involved in recruitment efforts.¹⁸⁸

In the late 1990s, New York City's personnel department improved its "cumbersome and dysfunctional hiring procedures," which contributed to the hiring of thousands of uncertified teachers annually.¹⁸⁹ Some of the key improvements to the district's hiring processes included:

- District recruiters visiting students in local preparation programs each spring and offering interviews at college campuses.
- Working with universities to bring well-trained prospective teachers into hard-to-staff schools as student teachers and interns.
- Making offers to well-qualified candidates earlier in the year.
- Streamlining the submission of applicant information and the processing of applications.

These improvements in New York City's hiring were associated with the district filling "two-thirds of its 5,500 vacancies with fully qualified teachers [by 1997], as compared to one-third of a smaller number in 1992."

2. Revise timelines for voluntary transfers or resignations so that hiring processes can take place as early as possible, ideally in the spring of the prior school year.

If districts organize a proactive and efficient hiring system, then they also will have more time for effective processes, such as watching candidates teach demonstration lessons and structuring interviews with teachers and principals. Both research and common sense suggest these practices lead to better matching of candidates to schools and more effective new hires.

If districts organize a proactive and efficient hiring system, then they also will have more time for effective processes, such as watching candidates teach demonstration lessons.

To that end, some states have taken steps to allow schools to hire teachers earlier so that hiring processes occur before the school year ends. One approach is to lessen the impact of in-district transfers on hiring. For example, California law requires that seniority-based voluntary-transfer processes be completed by April 15, thereby freeing principals to consider all teacher candidates equally after this date.¹⁹⁰ Some districts have also implemented creative incentive programs to minimize the impact of late retirements or resignations. For example, in response to data showing that 82% of resignations and 39% of retirements occurred after May 1, including 85 resignations after the first day of school, San Francisco Unified School District instituted an incentive program whereby teachers who submit their intent to resign or retire by March 1 receive a small stipend.¹⁹¹

To address the ripple effects of late state budgets, which in turn affect districts' personnel budgets and hiring needs, states have incentivized legislatures to pass budgets on time, giving school leaders better clarity about their hiring budgets. California voters enacted a set of incentives to encourage the state legislature to pass the budget on time, including denying legislators their pay for each day that the budget is not passed after the budget deadline.¹⁹²

3. Build training and hiring pipelines for new and veteran teachers, while monitoring and reducing teacher turnover and reducing unnecessary barriers to entry for mobile teachers.

Among schools that are most successful, principals shoulder much of the responsibility for hiring, but districts also play a key role. In addition to providing guidance and support to principals, districts can develop strong partnerships with local teacher preparation programs, because where a candidate does her student teaching is strongly associated with where she later teaches.¹⁹³ Long Beach Unified School District in southern California is one district that has aggressively pursued this strategy, which according to the superintendent, allows prospective teachers to “lear[n] the Long Beach way” while enabling the district to vet teachers and encourage strong candidates to apply.”¹⁹⁴ As discussed in Section IV, districts also are increasingly investing in Grow Your Own models and residency models whereby districts build their teacher pipeline from within.¹⁹⁵ States can support these approaches by providing grants and expertise to districts interested in implementing Grow Your Own or residency models. For example, Illinois provided planning grants to districts interested in training school employees, parents, and other community members without an undergraduate degree in low- and moderate-income communities to become fully certified teachers.¹⁹⁶ Localities could use the grants to pay for forgivable loans, the cost of a full-time coordinator for the Grow Your Own program, community organization, and support services.

(D)istricts also are increasingly investing in Grow Your Own models and residency models whereby districts build their teacher pipeline from within.

Districts—particularly high-need districts—could consider revisions to salary schedules that place a cap on the number of years of experience a teacher can transfer in on the salary scale, so that expert, experienced teachers who want to transfer into the district do not lose salary credit. This would expand the pool of available hires during times of shortages. Districts should also develop systems for tracking teacher turnover—including exit interviews—to better target programs

aimed at reducing turnover and to hold themselves accountable.¹⁹⁷ States also can include teacher turnover data in their school accountability systems to encourage districts to systematically track teacher turnover. Recently some states, such as Iowa, have built teacher turnover data into their accountability systems.¹⁹⁸

States can support mobile teachers by developing reciprocity agreements with other states that recognize the prior preparation and experience of out-of-state teachers. States also can invest in the design and implementation of online hiring platforms where teachers can easily identify the steps necessary to be hired in the state, as well as an online interface where mobile teachers can easily add their prior experiences and credentials to become certified in a given state.

4. Create cross-state pension portability for teachers.

Current defined-benefit pension plans—which are not portable across states, and even within states in some cases—create disincentives for teachers to remain in the profession when they choose to relocate, as most states do not allow teachers to bring their retirement benefits with them. A national discussion around pension portability is particularly timely given that the teaching workforce has changed in recent years—with fewer teachers spending their entire careers in the classroom in a single district, and many teachers working in charter schools that are not always part of state pension systems.¹⁹⁹ TIAA-CREF, the well-known provider of defined-contribution pensions, offers one helpful model worth exploring with its retirement benefits in higher education that allow for cross-state mobility in the profession.²⁰⁰ Implementing such a model would likely require a federal or national foundation initiative. Initial research on Washington State’s switch from offering only a traditional defined-benefit plan to offering teachers a choice between that and a more portable retirement benefit option suggests that the more portable option did not cause unhealthy teacher attrition and that it in fact raised the quality of the teacher workforce.²⁰⁰

VI. Induction and Support for New Teachers

After districts hire talented teachers who have received high-quality preparation, strong induction and support for novice teachers during their first years in the profession can increase their retention. The first few years of a teacher’s career are formative ones as teachers make the leap from preparation to practice. Depending on the amount and quality of support they encounter in their first teaching job, new teachers can grow into highly competent ones—or they may develop counterproductive approaches or leave the profession entirely. Teachers with a strong start are much more likely to become and remain effective teachers over time.²⁰²

Over the past three decades, states and districts have begun to recognize the long-term benefits of investing in induction and support for new teachers. Induction refers to a variety of activities for new teachers, including orientation sessions, retreats and seminars for novice teachers, coaching and feedback from experienced teachers, the opportunity for novice teachers to observe expert teachers, extra classroom assistance, reduced workloads, and mentoring.²⁰³ Teachers who receive these sets of supports have been found to stay in teaching at rates more than twice those of teachers who lack these supports.²⁰⁴ The goals of induction vary, but they generally focus on improving the performance and retention of novice teachers, with the ultimate goal of improving student outcomes. Induction serves as a bridge supporting new teachers as they enter the profession.

Depending on the amount and quality of support they encounter in their first teaching job, new teachers can grow into highly competent ones—or they may develop counterproductive approaches or leave the profession entirely.

The research on these programs shows that well-designed induction programs for beginning teachers lead to teachers staying in the profession at higher rates, accelerated professional growth among new teachers, and improved student learning. Approximately 84% of first-year teachers reported that they participated in an induction program in a 2011–12 nationally representative sample of teachers.²⁰⁵ However, when asked about their participation in specific elements of induction, 73% reported receiving mentoring, 78% reported receiving regular supportive communication with principals and administrators, 64% reported receiving seminars or classes for beginning teachers, 58% reported receiving common planning time with teachers in their subject, and 12% reported receiving a reduced teaching schedule.²⁰⁶ These data suggest that while induction programs are prevalent across the United States, they may not include many of the characteristics that research has found to be associated with effective programs.

Induction supports, of course, are not the only determinants of teachers’ job decisions. Both district hiring and layoff decisions and external labor market options have an effect. During the period when the Great Recession caused widespread layoffs of new teachers across the country and a sharp drop in the number of alternative jobs available, at least one study found little influence of a statewide induction program on retention rates for new teachers.²⁰⁷ The authors noted that the state of the economy in 2009 was likely to be a more prominent factor in teachers’ employment decisions than the presence or absence of an induction program.

Retention rates are not the only outcome of interest. Also important is the development of teacher competence and effectiveness. One research review found a consensus that beginning teachers who participated in induction were more able to keep students on task, develop workable lesson plans, use effective questioning practices, adjust classroom activities to meet students' interests, maintain a positive classroom atmosphere, and demonstrate successful classroom management.²⁰⁸ Finally, two studies show that students of beginning teachers who had participated in induction had higher scores, or gains, on academic achievement tests.²⁰⁹

Induction and Support for New Teachers in Hard-to-Staff Schools

The extent of challenges for early career teachers is generally greater in high-poverty schools where, evidence suggests, the quality of induction programs tends to be weaker. For example, one study of 374 randomly selected first- and second-year teachers in Florida, Massachusetts, and Michigan found that new teachers in low-income schools were less likely to have formal mentors during their first year as compared to new teachers in high-income schools (65% versus 91%).²¹⁰ The study also found that teachers in low-income schools were less likely to have mentors in the same school (53% versus 82%), same grade level (28% versus 61%), and same subject area (40% versus 60%). Moreover, novice teachers in low-income schools were less likely to have even three conversations with their mentors about classroom management, lesson planning, and classroom instruction during their first year of teaching (approximately 45% versus 65%). These weaker programs may be a function of fewer resources spent on induction in high-poverty districts, limited resources spent over a greater number of beginning teachers, and/or too few effective, experienced teachers in low-income schools to serve the disproportionate concentrations of inexperienced teachers in these schools.²¹¹

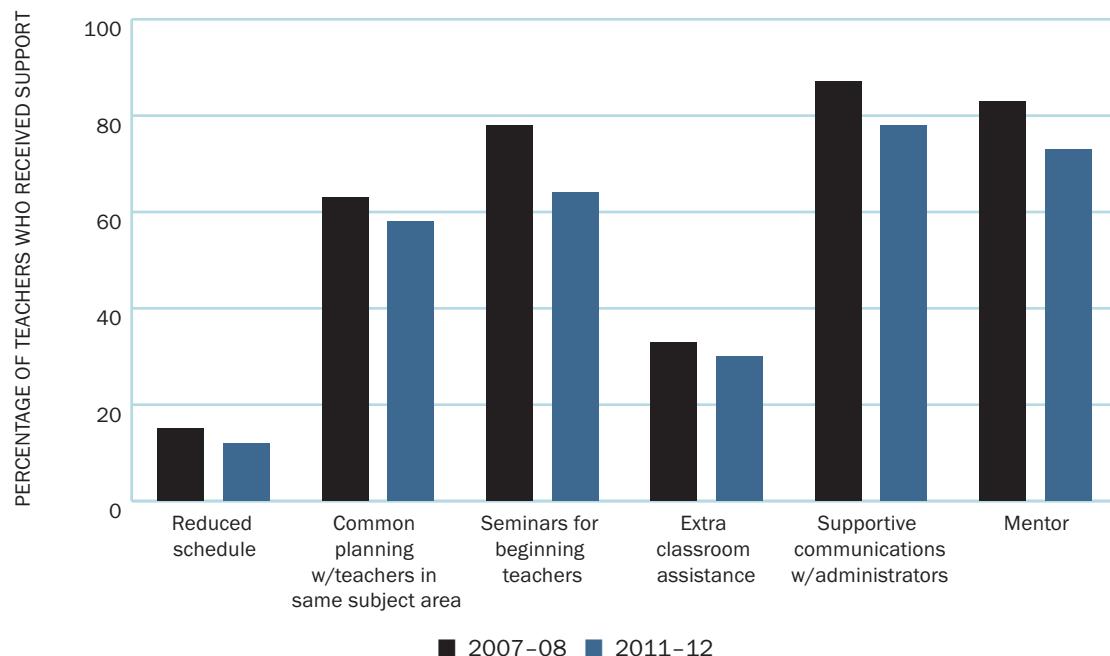
Novice teachers in low-income schools were less likely to have even three conversations with their mentors about classroom management, lesson planning, and classroom instruction during their first year of teaching.

Policy Strategies to Increase Induction and Support for New Teachers

1. Invest in high-quality induction programs.

Although programs for mentoring and induction have become more widely available in the United States over the past two decades, variability in the quality of these programs exists, with not all beginning teachers receiving the kind of comprehensive program found to be most effective for increasing beginning teacher retention and effectiveness. For example, only 58% have common planning time, and only 12% have a reduced teaching load (see Figure 7).²¹² In many places, novice teachers in the United States are more likely to face more non-teaching duties than their more experienced colleagues, as well as the most challenging teaching assignments—with more diverse and higher-need students and multiple courses to prepare for.²¹³

Furthermore, evidence suggests that during times of budget cuts, induction programs are among the first to go, affecting both the quality of such programs and equitable access to them.²¹⁴ Whereas

Figure 7**Percentage of First-Year Teachers Who Received Various Induction Supports, 2008 vs. 2012**

Source: LPI analysis of the Schools and Staffing Survey (SASS), 2012, National Center for Education Statistics.

91% of first-year teachers reported participating in some kind of induction program in 2008, just 84% participated by 2012. Meanwhile, the share of novices with a mentor dropped from 83% to 73% over the same period.²¹⁵

Importantly, induction programs have been shown to provide a significant return on investment. A 2007 analysis of a medium-size California school district found that after five years, the \$13,000 cost of the comprehensive, two-year induction program brought \$21,500 in benefits, or an approximately 65% return on investment.²¹⁶ The benefits came from the increased effectiveness of beginning teachers who had gone through induction; the study found that these teachers were as effective as more highly paid fourth-year teachers who had not experienced induction. Another benefit of the two-year induction program included lower attrition and therefore lower recruiting costs. According to the study, after five years, society sees a \$1.66 return for every \$1 invested into induction programs.

The effectiveness of high-quality induction programs for increasing retention, accelerating novice teachers' professional learning, and improving student achievement suggests that states and districts—with support from the federal government—should invest in these programs. The federal government can provide matching grants to states and districts that implement research-based induction programs, including selecting and training expert mentors, and providing adequate release time to allow mentors and beginning teachers to engage in a full range of instructional support activities, such as classroom observations, coaching, shared lesson planning, and

reflection.²¹⁷ Under the Every Student Succeeds Act, federal Title II funds can be used to support induction and mentoring programs, both through flexible Title II, Part A funds available to every state and district as well as through competitive grant programs such as the Supporting Effective Educator Development program.²¹⁸

States can develop statewide programs that require a range of induction supports as well as provide training and technical assistance for districts to implement these programs. Districts can design induction programs with the features that research suggests are most important for program effectiveness, providing the time and resources to support induction structures such as mentoring, classroom observations, and collaborative planning time. Given the benefits of induction for retention and effectiveness, these programs should be made available to all new teachers.

VII. Working Conditions

The success of recruiting and retaining teachers by raising salaries, along with providing effective preparation, hiring, and induction can be enhanced when teachers work in collaborative and supportive environments. Teachers' working conditions are a strong predictor of teacher retention, along with salaries, in educators' decisions about where to teach and whether to stay. For example, efforts to institute one-time bonuses to attract teachers to hard-to-staff schools, often called "combat pay," have proven largely unsuccessful when they do not also address underlying poor working conditions.²¹⁹

Research has long shown that teachers' working conditions affect their ability to teach well. The same conditions can also have direct implications for teacher attitudes about their work and their decisions to remain at their school or in the profession. A 20-year public school teacher in Minneapolis noted,

For the past decade, I've worked at a school where 97% of the children qualify for free and reduced-price lunch. I stay because the school climate is good for children and teachers alike. I stay because my principal is wonderful, supports us, does what's best for children, and because I trust her. I stay because my colleagues are gifted teachers and good company and because I continually learn from them.²²⁰

Importantly, as noted by the Minneapolis teacher, teachers' working conditions are also students' learning conditions. When teachers and students are in schools with weak leadership, little collaboration time, punitive accountability systems, inadequate facilities, and limited instructional resources, students often struggle to learn, and teachers are less likely to experience professional success.

Teachers' working conditions are also students' learning conditions.

At least four interdependent factors consistently rise to the top as among the most important teaching and learning conditions for teachers and most highly related to their decisions to remain teaching in a given school:

1. School leadership and administrative support.
2. Opportunities for professional collaboration and shared decision-making.
3. High-stakes accountability systems.
4. Resources for teaching and learning.²²¹

Working conditions are often much worse in high-poverty than in low-poverty schools. Teachers in more economically advantaged communities often experience smaller class sizes and pupil loads, and greater influence over school decisions.²²² Teacher turnover is 50% higher in high-poverty schools compared to low-poverty schools. Multiple studies suggest, however, that teachers are not leaving high-poverty schools because they do not want to teach high-need students, but rather because of lower salaries and more stressful teaching conditions.²²³ Higher attrition rates in these schools have been linked to poorer facilities, fewer textbooks and supplies, fewer administrative supports, and larger class sizes.²²⁴

Jose Vilson, a middle school mathematics teacher in New York City, illustrated how under-resourced schools negatively affect students and schools:

With the way poverty manifests itself in our schools, schools can't always take the same trips, have the same lunches, or afford the same speakers to galvanize students. Schools in these environments are more likely to get shut down or restructured, and their teachers and administrators turn over more often because it's that much more difficult.²²⁵

These findings suggest that addressing working conditions should be an important target for policies aimed at retaining qualified teachers in high-need schools.

School Leadership

The quality of administrative support is often the top reason teachers identify for leaving or staying in the profession, often more important than salaries.²²⁶ Several studies have found that support from principals and other school leaders is one of the best predictors of teacher attrition.²²⁷

Research identifies three major factors in school leadership that contribute to teachers' decisions about whether and where to stay in teaching. First, teachers are more likely to remain teaching when they feel supported by administrators.²²⁸ Support from administrators can take many forms, including providing emotional, environmental, and instructional support.²²⁹ As a principal from one school in a small urban district in a southeastern state noted:

My role is primary. It's setting the climate and culture, making sure that these things are supportive of new teachers. It's being supportive myself of new teachers, making sure I'm visible, making sure I'm having conversations with them, making sure they're getting the resources they need, making sure they feel connected.²³⁰

One correlational study of principal support and teacher retention in 17 schools in a western state in the United States found that teachers who expected to remain teaching in their school rated emotional and environmental support as the attributes they valued most highly from their principals.²³¹ Examples of this type of support included when a principal supported "a teacher's decision in front of parents and colleagues" or when a principal "recognized them for a job well done."

Teachers who expected to remain teaching in their school rated emotional and environmental support as the attributes they valued most highly from their principals.

Interestingly, a study of survey data from a charter management organization with more than 25 schools found that teachers' perceptions of their workload did not predict turnover after their perceptions of their principal's support and the effectiveness of their school's professional development were taken into account.²³² In addition, a study of 45 urban schools in a southeastern state found that schools with the lowest teacher attrition rates tended to have school leaders that provided support through instructional resources, teaching materials, and professional learning opportunities.²³³ As one principal observed, ensuring adequate "resources and supplies and providing the structures and procedures [is] necessary to keep the focus on helping all children achieve at higher levels."

Second, teachers are more likely to remain in their school and in the profession when school leaders effectively communicate with them. The correlational study of 17 schools mentioned above found that teachers valued principals' "communication and being notified of events in their building."²³⁴ At the same time, negative communications appear to have the opposite effect. Teachers who recently left teaching positions in New York City charter schools between 2010 and 2011 consistently noted that principals' "high and often implicit expectations" contributed to their feeling a lack of trust with their principals that, in turn, influenced their decisions to leave the school.²³⁵ As one teacher in the study explained:

There was a kind of like, inner martyrdom [on the leadership team] ... that's what it is, martyrdom, like, "I can't believe they left at 6:30 today." Or "When they left at 6 today, they had two of their kids waiting for rides still." That was always the big deal, like if you left, and you had kids with you after school and you left before you knew they were in a car with their folks, that was always, "I can't believe they didn't stay until the rides came." Sometimes the rides didn't come until 9 o'clock. And that was so normal for so long, that was the expectation.

The study's findings and the teachers' comments highlight the importance of principals setting explicit, high (and reasonable) expectations for teachers, and then providing positive reinforcement when teachers achieve the expectations.

Third, a principal's leadership style is associated with teachers' decisions to leave the school or profession.²³⁶ The study mentioned above of 45 urban schools noted that most of the leaders in the schools with low attrition rates did not "view themselves as traditional, omnipotent, 'top-down' administrations."²³⁷ Instead, these principals described their responsibilities as facilitators, collaborators, team leaders, or leaders of leaders. To execute this type of leadership style, these principals often used leadership teams, interview teams, or site-based management teams to make school-based decisions, "with the new teacher's opinion just as important as the person that's been here 25 years." One principal of a school with a low attrition rate described her leadership style as follows:

I have a style that encourages people to share their opinions, to talk through issues, to try to reach consensus. When necessary, I will make a clear decision and say, "This is the way it has to be." But when I can, I really try to view my role as the facilitator of an entire team more than I do the person that comes in and says, "This is the way it has to go and we're going to do it this way."

Teachers who perceived that they had more influence over their school's policies were more likely to remain in the profession, and in their school.

An analysis of the 1999–2000 Schools and Staffing Survey found that teachers who perceived that they had more influence over their school's policies were more likely to remain in the profession and in their school.²³⁸ In contrast, principals' ratings of their own influence on their school policies were associated with an increased likelihood that the teachers in the school would leave. The authors suggest that school leaders should "cultivate opportunities for teachers in general to exercise influence over decision-making in the school. Teachers need to feel that their concerns are being heard and that their professional judgment is valued within the school community."

School Leadership in Hard-to-Staff Schools

Teachers working in schools with large proportions of low-income and minority students tend to rate their principals as less effective,²³⁹ with one study of Miami-Dade County Public Schools finding that principals in high-poverty schools, on average, tend to be more inexperienced and academically weaker (as measured by the selectivity of the principals' undergraduate institutions).²⁴⁰

Principal quality impacts teacher attrition even more in these schools than in others. 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 in the school.²³¹ One large national study found that a principal's teacher-reported effectiveness was strongly related to teacher attrition, and that this impact was much larger in high-need schools.²³² Effectiveness was measured by six questions about administrator performance on the survey, including "setting clear expectations, providing support and encouragement, and recognizing staff for a job well done." A 1.5 standard deviation increase in principal effectiveness on this measure reduced teacher attrition "enough to offset the turnover differential between disadvantaged schools and other schools, as defined by student demographics."

A synthesis of six studies analyzing teacher turnover in high-poverty schools found that effective school leaders were:

- effective school managers (ensuring that teachers have the necessary resources, communication channels, sensible budgets);
- effective instructional leaders (strategically hiring teachers and staff, providing regular and fair teacher evaluations, and helping their teachers to continually improve); and
- inclusive decision-makers (listening to teachers' ideas and engaging them in change, and providing teacher autonomy within their classroom as appropriate).²⁴³

Professional Collaboration and Shared Decision-Making

A combination of teaching conditions related to the quality of school leadership, the caliber of collegial relationships, and specific aspects of school culture most greatly influence teachers' job satisfaction and their anticipated or actual career decisions.²⁴⁴ As with other professions, teachers' job satisfaction—and therefore career decisions—are shaped by their connectedness to a team working toward a common shared purpose.²⁴⁵ The amount of voice that teachers have in decision-making on issues directly affecting their ability to do their job well also contributes to teachers' satisfaction. The most important factors identified in a survey of more than 2,000 current and former California teachers about why they chose to stay were the opportunity to participate in school decision-making and the quality of relationships among the staff.²⁴⁶ Also important was adequate time for planning and adequate teaching and learning resources. The nationally representative Schools and Staffing Survey shows that 13% of teachers who voluntarily left the profession after the 2011–12 school year cited a lack of influence over school policies and practices as extremely or very important in their decision to leave.²⁴⁷

Teachers' job satisfaction—and therefore career decisions—are shaped by their connectedness to a team working toward a common shared purpose.

Schools that foster these types of professional working environments typically empower teachers to direct and collaborate in their professional learning. A survey of teachers in their first three years of experience in Michigan and Indiana found that novice teachers who intended to remain in their schools were generally working in schools characterized by a good professional fit in terms of interests and goals, relational trust, and collective responsibility among colleagues for setting expectations, maintaining discipline, and helping one another.²⁴⁸

Smaller qualitative studies of rural STEM teachers²⁴⁹ and teachers in Teach for America²⁵⁰ have similarly found that close relationships with supportive school colleagues and administrators strongly contributed to teachers' decisions to remain in the profession.

More collaborative work environments where professional learning is emphasized can have a positive effect on teacher retention. For example, a study surveying urban teachers in a Midwest city with four, five, or six years of teaching experience found that relationships with coworkers, support, and collaboration with fellow teachers positively influenced job satisfaction and teachers' decisions to remain teaching at their school.²⁵¹ As a teacher in the study explained,

[We are] a shared learning community. We are very involved with each other in planning, learning ... lots of team preparation. We all hold the same vision. We believe in our mission and work together to achieve that.

In a qualitative study of novice teachers, one teacher, Victoria, described the formal and informal school structures that contributed to the collegial and supportive school environment that encouraged her to remain in the school, including schoolwide and grade-level meetings about topics ranging from how to handle bullying to how to assess learning.²⁵² Victoria also described that she met with her grade-level team weekly to review the prior week and plan for the next. Victoria emphasized the importance of teamwork in establishing the supportive, professional school culture:

We have a good team. The third-grade team, we try to plan together. We teach pretty much the same curriculum, but we, within our own room, we do our own style of teaching it. So, we stay with the same units, and we plan the same field trips. So that part is good. You feel like you're supported. So that was good, especially last year. ... And then this year, I feel like I can stand on my own two feet ... And the team is good; it's strong ... I do my own thing, but I'm also a team player and that's what you need here. And you can't come here and say, "Well, I'm going to do everything my way" and survive here. It's a lot of teamwork and you have to be a team player.

A culture of collaboration and shared decision-making does not spontaneously occur within schools. Instead, schools that foster these types of professional working environments typically empower teachers to direct and collaborate in their professional learning through thoughtfully designed school structures. Schools with lower retention rates have been found to do the following:

- cultivate a “strong sense of collective responsibility—where there is a shared commitment among the faculty and staff to improve the school so that all students can learn;”²⁵³
- promote a school culture “characterized by mutual trust, respect, openness, and commitment to student achievement;”²⁵⁴

- establish time for teachers to collaborate, plan, examine student work, and self-reflect;²⁵⁵
- provide expanded roles for teachers; and²⁵⁶
- support shared decision-making so that “teachers feel they have control over various aspects of their work.”²⁵⁷

Importantly, schools that create the necessary conditions for productive working relationships within and across academic departments or grade levels often provide numerous benefits, in addition to increased teacher retention. These benefits include greater consistency in instruction,²⁵⁸ more willingness to share practices and try new ways of teaching,²⁵⁹ more success in solving problems of practice,²⁶⁰ increased job satisfaction,²⁶¹ and increased student achievement.²⁶² In addition, teachers who work in schools with these strong professional environments improve at much faster rates than their peers working in schools with weaker professional environments.²⁶³ Moreover, strong professional environments also can have a positive effect on teacher attitudes, and fuel a desire to remain in the profession.²⁶⁴ This is mirrored in an international study finding that “in all countries, when teachers reported more positive relationships with students and collaborative relationships with other teachers, they also reported significantly higher levels of self-efficacy.”²⁶⁵

Collegial Relationships in Hard-to-Staff Schools

Relationships among teachers and administrators significantly contribute to teacher retention decisions in hard-to-staff schools. As one study described, “In schools where students’ needs are greater—as they often are in high-poverty schools—it is plausible that teachers depend on one another even more than they do in other schools.”²⁶⁶ For example, one longitudinal study in the Chicago Public School district between 2003 and 2007 found that over 75% of the variation among schools’ teacher retention rates was explained by teachers’ reports of the “climate and organization of work at their school.”²⁶⁷ Teachers were more likely to remain in their schools when they reported that they felt a collective responsibility in their school to ensuring that all children learn, and when they perceived their colleagues “have a ‘can-do’ attitude and work together on improving the school.”

“In schools where students’ needs are greater—as they often are in high-poverty schools—it is plausible that teachers depend on one another even more than they do in other schools.”

These factors are echoed in a review of studies finding that, for teachers in high-poverty, collegial schools, the following are important:

- an inclusive environment characterized by respect and trust among colleagues;
- formal structures that promote collaboration; and
- the presence of a shared mission among teachers.²⁶⁸

Accountability Systems

A recent development in the literature on teacher retention is the impact of federal and state accountability systems on teachers’ career decisions. As noted earlier, of the teachers who voluntarily left the profession after the 2011–12 school year for reasons other than retirement, approximately

- 25% reported that dissatisfaction with the influence of school assessment and accountability measures on their teaching or curriculum was extremely or very important in their decision to leave teaching; and
- 17% reported that dissatisfaction with support preparing students for assessments was extremely or very important in their decision to leave teaching.²⁶⁹

With the passage of the No Child Left Behind Act (NCLB) in 2001, the federal government required a testing and accountability system that outlined a series of annual targets for increases in test scores, followed by sanctions for schools not meeting “Adequate Yearly Progress” overall or for any single student group. Under the Race to the Top and NCLB waiver programs, many states adopted policies to use test scores as a basis for evaluating teachers. Consequently, in some cases the stakes attached to students’ standardized test scores grew even higher, and the number of tests expanded. A recent study from the Council of the Great City Schools, which reviewed testing for more than 7 million students in about three dozen states, found that students in the 66 surveyed districts were required to take an average of 112 districtwide tests between pre-k and the 12th grade.²⁷⁰

Some scholars have hypothesized that hallmarks of the high-stakes accountability systems—mandated curricula and test preparation activities—“de-skill” teachers and serve students poorly, pushing many enterprising and effective teachers to seek out other schools better organized for student learning where they can do their best work.²⁷¹ One 25-year veteran kindergarten teacher explained how the effects of high-stakes accountability policies contributed to her resignation:

I have watched as my job requirements swung away from a focus on the children, their individual learning styles, emotional needs, and their individual families, interests, and strengths to a focus on testing, assessing, and scoring young children, thereby ramping up the academic demands and pressures on them ... I have changed my practice over the years to allow the necessary time and focus for all the demands coming down from above. Each year there are more. Each year I have had less and less time to teach the children I love in the way I know best—and in the way child development experts recommend. I reached the place last year where I began to feel I was part of a broken system that was causing damage to those very children I was there to serve.²⁷²

Even though many teachers report dissatisfaction with increased accountability, the research about the effect of accountability on teacher retention is limited, with mixed results. One study of the impact of accountability policies on teachers in Florida found that teacher attrition increased in schools that experienced a negative accountability “shock” due to a change in the grading system, even when controlling for student demographics, socioeconomic status, test scores, and disciplinary incidents.²⁷³ The study found some evidence that teacher attrition decreased in schools that experienced a positive change in their rating.

Another study that looked across states during the 1990s, when accountability systems were generally less focused on sanctions than after the introduction of NCLB, found that teachers in states with what the authors identified as stronger accountability systems were just as likely to indicate that accountability reforms were important in their attrition decision as teachers in states with weaker accountability systems.²⁷⁴ The study did not find an increase in attrition rates after state accountability systems were introduced between 1993 and 1994 and 1999 to 2000. In a review of the studies exploring attrition and accountability, the authors note that the research to date “suggests that accountability has not dramatically changed the career choices of teachers overall,

but that it has likely increased attrition in schools classified as failing relative to other schools,” and that the teachers leaving are not the least effective teachers.²⁷⁵

Accountability Systems in Hard-to-Staff Schools

The literature suggests that attrition appears higher in schools designated as low performing under accountability systems, which are very likely among those already struggling most to retain teachers. A study in North Carolina found that the state’s accountability system made it more difficult for all schools to retain staff, but the negative effects on teacher retention were greater in low-performing schools.²⁷⁶ These studies suggest that, ironically, a policy intended to improve education for low-achieving students may have had the opposite effect by making it harder for their schools to retain teachers. Moreover, other studies suggest that teachers may worry about the security of their jobs, particularly if they teach in schools with low-performing students, which are more likely to encounter repercussions from the state.²⁷⁷

Resources for Teaching and Learning

Schools with sufficient instructional materials and supplies, safe and clean facilities, reasonable student-to-teacher ratios, and adequate support personnel can positively affect teacher retention rates.²⁷⁸ Studies have found that the availability of adequate instructional resources (e.g., books, paper and student supplies, technology access) influences morale and teachers’ self-perceived effectiveness.²⁷⁹ Our analysis of the 2011–12 Schools and Staffing Survey found that of the public school teachers who left the profession and said they would consider returning, 61% reported that smaller class sizes would be extremely or very important in their decision to return (see Figure 3, page 7).²⁸⁰ Such factors as extremely large pupil-staff ratios and smaller levels of expenditures for teaching materials have been found to be associated with higher staff turnover.²⁸¹ Similarly, inadequate and unsafe facilities contribute to teachers’ job dissatisfaction and attrition.²⁸²

Studies have found that the availability of adequate instructional resources (e.g., books, paper and student supplies, technology access) influences morale and teachers’ self-perceived effectiveness.

Inevitably, a lack of resources such as books, a library, computers and Internet access, or reliable photocopy machines limits the kind of teaching and learning that can occur.²⁸³ Although many teachers do their best to cope with resource deficits—often spending hundreds of dollars of their own money to backfill shortages—many also become demoralized when required to teach in such conditions.²⁸⁴ Although these factors are not typically the primary reason for teachers’ decisions to change schools or leave the profession, they do influence school morale and teachers’ self-perceived effectiveness and career decisions.²⁸⁵ As Rebecca Fulop, a science teacher in California, described her frustration:

I signed up for reduced pay in my life to make a difference in students’ lives. And the worst thing that I deal with is this daily frustration that I can’t be there for all of my students the way I want to, because I don’t have enough time, resources, and capacity to do it.²⁸⁶

Beyond Compensation: Working Conditions Matter Too

Many schools in economically disadvantaged communities struggle to recruit and retain effective teachers.²⁹⁰ In response, some schools and districts offer a financial bonus to entice teachers to move to hard-to-staff schools, which typically serve a large proportion of low-income students and students of color.²⁹¹ Sometimes this bonus is referred to with the phrase, “combat pay,” which suggests that teaching in an economically disadvantaged community is similar to entering a military combat zone. This policy assumes that financial enticements will attract well-prepared, effective teachers to the school that will be sufficient to improve school and student achievement.²⁹² However, a recent study challenges these assumptions, with its finding that many teachers prefer to teach in high-poverty schools as long as they have the working conditions required to provide effective instruction (e.g., supportive relationships with colleagues and the necessary resources).²⁹³

While some financial bonuses have increased the number of teachers in high-poverty schools or decreased turnover during the period the financial incentive was provided (see Section III), these bonuses have been largely unsuccessful in improving the long-term stability and talent of teachers in such schools. One explanation is that financial bonuses do not address the other dysfunctions of under-resourced, high-need schools, such as poor working conditions.²⁹⁴ More specifically, “teachers in high-poverty schools are much less likely to be satisfied with their salaries or to feel they have the necessary materials available to them to do their job. They also are much less likely to say that they have influence over decisions concerning curriculum, texts, materials, or teaching policies.”²⁹⁵ All of these factors are associated with teachers’ decisions to stay in or leave a particular school. Moreover, the federal Schools and Staffing Survey has found that the best-paid teachers in low-poverty schools earn over 35% more than those in high-poverty schools.²⁹⁶

States and localities that have implemented these types of financial incentives have largely failed to attract effective teachers to hard-to-staff schools. For example, one analysis noted:

Several years ago, South Carolina tried to recruit “teacher specialists” for the state’s weakest schools, and despite an \$18,000 bonus, the state attracted only 20% of the 500 teachers they needed in the first year of the program, and only 40% after three years.²⁹⁷

By contrast, investments that have improved leadership, learning opportunities, and teaching conditions in low-performing schools have been found to both reduce attrition and increase student achievement. For example, the successful turnaround of nine of Tennessee’s lowest-performing schools in Chattanooga’s Hamilton County School District sought to recruit teachers identified as highly effective to the schools with bonuses of \$5,000. A few of these teachers were willing to transfer, but not nearly enough. The school district replaced many of the previous principals, created a leadership program for teachers, and funded teacher-coaches, while transforming professional development from one-shot workshops to job-embedded activities led by teachers. Teachers also were supported to pursue a specialized master’s degree in urban education.

This comprehensive investment led to a more stable teaching force and dramatic gains in reading and mathematics achievement. At the end of the day, it turned out that the largest student gains were produced not by the teachers who had been imported with bonuses but by existing staff who had become much more effective. A study of the intervention concluded the initiative “was about much more than pay incentives and reconstitution; the district invested heavily in programs to train teachers, in additional staff to support curriculum and instruction, and in stronger and more collaborative leadership at the school level.”²⁹⁸

Brenda, a mid-career entrant into the profession who taught Spanish in an urban middle school, had a similar response:

You know, it's not like I'm in awful conditions, like rats running around the room or anything. But [in the nonprofit I came from], if I needed to photocopy something, there was a photocopier there. There were computers. There were phones. And to think that we expect to educate kids not having any—we have one copier at the school. And of course, no phone in the rooms—that goes without saying. So put that together with just feeling kind of beaten down and so exhausted at the end of the day, every day. I think it's a wonder that anyone stays.²⁸⁷

Resources in Hard-to-Staff Schools

Hard-to-staff schools also tend to suffer from inadequate school resources that contribute to teacher retention, albeit not as significantly as school leadership and climate. Nonetheless, one study using survey data from k-12 public school teachers in Washington, DC, found that teachers' plans to leave their school were associated with the teachers' rating of their school's facilities.²⁸⁸ Another study noted that high-poverty schools tend to lose teachers when they are assigned large classes.²⁸⁹

Policy Strategies for Improving Working Conditions

1. Invest in the development of high-quality principals who work to include teachers in decision-making and foster positive school cultures.

Improving principal preparation may contribute to more effective school leaders who are able to attract and retain talented teachers. Because of the importance of school leadership in teachers' recruitment and retention decisions, local and state policies can invest in the development of high-quality principals who work to include teachers in decision-making, foster positive school cultures, and create learning communities that can have a significant positive impact on teacher retention.²⁹⁹ A rigorous study of a principal preparation program aimed at developing such leaders found that it reduced both teacher and principal turnover.³⁰⁰ The randomized control trial of 126 public schools serving 3rd through 5th grade in Michigan's rural schools analyzed schools that either received McREL's Balanced Leadership Professional Development program (BLPD) or whatever the district typically provided to principals. The BLPD program for school leaders, including principals, focuses on:

- shaping a vision of academic success for all students;
- creating a climate hospitable to education;
- cultivating leadership in others;
- improving instruction; and
- managing people, data, and processes to foster school improvement.

Local and state policies can invest in the development of high-quality principals who work to include teachers in decision-making, foster positive school cultures, and create learning communities.

The program was staffed by a full-time team of training consultants with school-level experience. The independent study found a “16 percentage-point reduction in principal turnover and a five percentage-point reduction in teacher turnover in treatment schools,” meaning that teachers and principals who did not participate in BLPD but worked with others who did were less likely to leave their school. The study found even larger effects for teachers and principals who participated in BLPD, with a “seven percentage-point reduction for teachers and a 23 percentage-point reduction for principals.”

State and federal policies can also support the development and analysis of principal preparation programs. Research has established the core features of effective principal preparation programs include research-based content, curricular coherence, problem-based learning methods, field-based internships, the existence of cohort groups, and close collaboration between programs and districts.³⁰¹ Effective programs provide principals an opportunity to learn by practicing aspects of the daily tasks of the principalship, such as learning to listen to and include teachers in school-site decision-making. States could encourage the widespread development of these high-quality principal preparation programs by incorporating these elements into policy through program accreditation or state licensing standards, a practice that several states have already undertaken.³⁰²

States can also provide funding for principals to receive training. States such as Mississippi have funded training grants for principals through a sabbatical program that allows them to participate in internships that strengthen their preparation, leveraging funds from the U.S. Department of Education’s Fund for the Improvement of Postsecondary Education program.³⁰³ States also can leverage funds under Title II of ESSA, which provides funding to support high-quality programs for principal preparation, including school leader residency programs, offering a full year of clinical training.³⁰⁴ In a notable change, the law now permits states to set aside 3% of their Title II formula funds to strengthen principal quality, including by investing in principal recruitment, preparation, induction, and development.³⁰⁵ As states develop their state plans under ESSA, they may want to consider taking advantage of these potentially more targeted funds to make strategic investments in their school-leader workforce.

State and federal policies can also support efforts to recruit promising candidates for school leadership positions, something that has become increasingly important as the challenges of the job often discourage strong candidates from entering the field.³⁰⁶ State and federal entities could offer grant funding and technical assistance for competitive service scholarship programs for principal preparation to attract exemplary candidates to the field.³⁰⁷ For example, the North Carolina Principal Fellows Program offers \$20,000 annually in scholarship loans to attract outstanding aspiring principals to the field, providing two years of preparation that encompasses both coursework and a yearlong, full-time internship under the mentorship of an expert principal.³⁰⁸ In exchange, principal candidates agree to four years of service as a principal or assistant principal in one of the state’s public schools.³⁰⁹ The program has trained more than 1,200 principal fellows since

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its inception in 1993; as of 2007, more than 12% of the state's principals and assistant principals were graduates of the program.³¹⁰ One source of funds to support these types of programs is ESSA's School Leader Recruitment and Support Program, which authorizes competitive grants to recruit and train principals for high-need schools.³¹¹

2. Survey teachers to assess the quality of the teaching and learning environment, and to guide improvements.

More than 18 states and many school districts have implemented teacher surveys to determine the quality of a school's environment.³¹² The Teaching, Empowering, Leading and Learning (TELL) survey is one of the most commonly used assessment tools. While there is limited research on the impact of these types of surveys on improving teaching and learning conditions, an analysis of the TELL surveys' impact on policy and practice in North Carolina shows promising results.³¹³ For example, the results of North Carolina's TELL survey spurred statewide education initiatives ranging from providing five hours of weekly planning for teachers to increasing funding for professional development. Another study of a representative sample of 25,135 k-12 teachers in 2008 used a subset of questions from the TELL survey in Massachusetts to identify the elements of working conditions that predicted teacher satisfaction, teacher career intentions, and student achievement growth.³¹⁴ The study found that teachers' responses to TELL questions about the school's culture, the principal's leadership, and relationships among colleagues most strongly predicted teachers' job satisfaction and career plans. The study also found that the responses on this subset of TELL questions was associated with student achievement growth, even when controlling for student demographics. This finding suggests that responses from survey questions, such as those from the TELL survey, could help districts identify and work with schools whose working conditions do not support teacher retention and student achievement.

The use of these kinds of tools is encouraged under ESSA, which allows states to select additional indicators beyond test scores for measuring student outcomes, school functioning, and students' opportunities to learn. Surveys on teaching and learning conditions may be considered as one measure in a multiple-measures school accountability system.³¹⁵ Additionally, funding under Title II of ESSA can be used to develop "feedback mechanisms to improve school working conditions, including through periodically and publicly reporting results of educator support and working conditions feedback."³¹⁶ As the federal government and the states work to implement ESSA over the coming months and years, accountability systems may begin to have a positive, rather than a negative, impact on teacher retention, depending on what states decide to do in setting up these systems.

3. Incentivize professional development strategies and the redesign of schools to provide for greater collaboration.

Systematic and sustained collaboration among teachers requires changes in school design, scheduling, and resource allocation so that teachers have the time necessary for productive collaboration.³¹⁷ Schedules must allow for regular blocks of time (e.g., common preparation periods) for teachers of the same subject or who share groups of students to collaborate and plan curricula together.³¹⁸ For example, redesigned high schools have secured seven to 10 hours of shared time per week by hiring more teachers and fewer non-teaching personnel; offering a more streamlined curriculum with fewer

low-enrollment courses; organizing time in longer blocks, thus requiring reduced teaching loads; and using time when students are in clubs or internships for teacher collaboration.³¹⁹

Extra resources may be required to hire additional staff and/or compensate teachers for professional learning time scheduled for after their contract day or school year has ended.³²⁰ The federal government could consider reinstating the former federal Smaller Learning Communities grant, which provided funds to public high schools with more than 1,000 students to, among other things, offer common planning time for teachers who share the same students or teach the same subject.³²¹ The grant also funded projects that provided collaborative professional development for teachers, including coaching and classroom observations among teachers.

New Jersey is an example of how states can support schools in developing greater collaboration.³²² The state enacted a series of regulations that required 100 hours of professional learning for teachers annually, along with mentoring and induction for beginning teachers. Since 2009, all New Jersey schools have a School Professional Development Committee, which includes three teachers and an administrator that create professional development plans for the school. The state has supported schools to create professional learning communities and has offered training to principals for this purpose. New Jersey's State Action for Educational Leadership Project supports professional development for school leaders and focuses on how to create productive, collaborative school environments that foster continuous improvement.

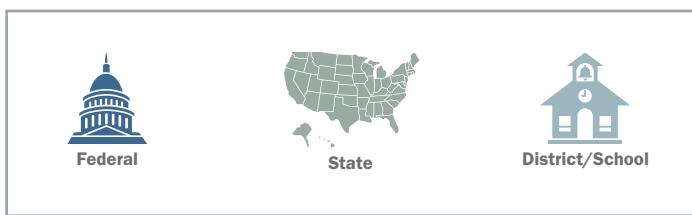
VIII. Policy Recommendations

In the sections above, we described a number of policies that have the potential to improve the recruitment and retention of excellent educators, including teachers in hard-to-staff schools. Below we summarize this set of recommendations, informed by our review of the factors influencing teachers' decisions to enter and exit the workforce as well as research on existing efforts to address these causes.

The recommendations are broken down by the five categories previously discussed:

1. Salaries and other compensation.
2. Preparation and costs to entry.
3. Hiring and personnel management.
4. Induction and support for new teachers.
5. Working conditions, including school leadership, professional collaboration, shared decision-making, accountability systems, and resources for teaching and learning.

For each recommendation, we suggest the appropriate level of government for carrying out the policy. In many cases, federal, state, and local governments must respond simultaneously because one policy, in isolation, will do little to improve teacher recruitment and retention. For example, research on salaries and working conditions in hard-to-staff schools suggests that policymakers should both raise salaries as well as provide for more collegial, supportive, well-resourced environments in order to recruit and retain teachers in hard-to-staff schools. Similarly, research suggests that policymakers interested in induction programs should also consider policies that encourage collaboration and mentorship within a school, as opposed to a standalone induction policy. The interdependency of the recommended policies suggests that policymakers should adopt a suite of mutually reinforcing strategies.



1. Salaries and Other Compensation



States and districts should increase teacher salaries in schools and communities where existing salaries do not provide for a middle-class living or where significant salary differentials exist. **States** have sought to accomplish this by establishing a minimum statewide salary minimum, with state support to districts to achieve this outcome, coupled with higher standards for teacher preparation and licensing. An effective strategy would also include adjusting salaries for regional cost-of-living differentials so that purchasing power is equalized. **Districts** can negotiate salary structures that incentivize retention and make compensation packages more competitive in the local labor market. Other strategies include salary incentives for teachers who demonstrate effectiveness through National Board Certification.



States and **districts** should use federal levers in the new Every Student Succeeds Act (ESSA) to provide low-income schools and districts with additional resources to attract and retain high-quality teachers. States and districts can take advantage of the funding opportunities under Title II to put in place programs that can improve teacher recruitment and retention. To address salaries specifically, Title II, Part A funds can be used for the development of career-advancement opportunities that provide differential pay, as well as other incentives to recruit and retain teachers in high-need academic subjects and low-income schools.³²³ The law also maintains the Teacher Incentive Fund—now called the Teacher and School Leader Incentive Fund—which authorizes approximately \$230 million in federal competitive grant funds to local educational agencies to support performance-based compensation systems and human-capital management systems.³²⁴



Districts should be mindful of resource inequities associated with inequitable distributions of teachers, providing the public with accurate school spending and teacher quality data on annual report cards. ESSA requires districts, as part of the comprehensive support and improvement plan they develop for each of their lowest-performing schools, to identify and establish a plan for addressing resource inequities (e.g., salaries and working conditions such as class sizes and pupil loans) that **states** are then responsible for monitoring.³²⁵



The **federal** government should assertively implement and enforce ESSA's provisions for funding equity and teacher equity. The law requires states to develop plans describing how low-income students and students of color "are not served at disproportionate rates by ineffective, out-of-field, or inexperienced teachers" and to evaluate and publicly report on their progress in this area. Further, districts are required to "identify and address" teacher equity gaps.³²⁶ **States** can adopt research-based definitions of the terms ineffective, out-of-field, and inexperienced and provide technical assistance and support to districts in addressing teaching equity gaps using Title II funds.³²⁷ **Districts** also can take advantage of the weighted student-funding pilot program under ESSA to help equalize access to experienced, in-field, and expert teachers, using this funding flexibility on initiatives to attract and retain high-quality teachers in low-income schools and in programs serving English learners and special education students.³²⁸



States and **districts** could pilot other strategies to increase teachers' overall compensation. These might include housing incentive programs as well as career-advancement opportunities that offer increased pay when teachers demonstrate expertise and take on additional leadership roles. Federal funding can be used to support these efforts, leveraging Title II, Part A funds under the Every Student Succeeds Act to support career advancement opportunities tied to increased pay and Housing and Urban Development initiatives, such as "The Teacher Next Door" program to support housing incentive programs in hard-to-staff communities. Given the paucity of existing research on these strategies, the **federal** government and **states** also should fund research to study how these types of creative compensation structures impact teacher recruitment and retention.

2. Preparation and Costs to Entry



Federal and state governments should cover the entire cost (through service scholarships or loan forgiveness programs) of high-quality preparation programs for new teachers who commit to teaching in high-need communities or in grade levels or subjects with shortages for a significant period of time (typically four years or more), so that more new teachers can receive the financial support they need to enter the profession well prepared to succeed.



The **federal** government should increase existing investments in the teacher residency model (e.g., Teacher Quality Partnership Grants) to support the creation or expansion of additional teacher residency programs in high-need districts that provide intensive clinical training, tightly integrated with rigorous coursework to prepare high-ability candidates to meet local workforce needs in key teaching areas. **States** should consider developing similar state grant programs. **Districts**, in partnership with local institutions of higher education, could develop teacher residencies by investing a portion of the funds they receive under Title II of ESSA as well as accessing funds under the Higher Education Act (HEA) Title II and AmeriCorps, to develop teacher residencies, partnering closely with local institutions of higher education to support the development of these programs.



Districts and states could create high school courses and programs such as the South Carolina and North Carolina teacher cadet programs that offer pathways into the teaching profession for interested high school students, leveraging federal Perkins Career Technical Education Act funds for this purpose. School districts, especially those with hard-to-staff schools, can also partner with teacher preparation programs to create Grow Your Own pathways to train paraprofessionals, teachers' aides, afterschool program providers, and other local community members who want to become teachers and who are most likely to remain in the community. **States** can fund statewide pathway programs, such as California's Paraprofessional Teacher Training Program, and provide matching grants to districts to support these types of programs. Federal Workforce Innovation and Opportunity Act funds also can be used to support these types of comprehensive teacher training programs designed to address local workforce needs in times of teacher shortages.

3. Hiring and Personnel Management



Districts and schools can strengthen recruitment and hiring practices and ensure decisions are made with the best candidate pool, under the right timing for a successful transition for a new teacher and based on the best information possible. This might include investing in teacher development pipelines, strengthening relationships with local teacher preparation programs, involving existing staff and community members in recruitment and hiring processes, and instituting a multistep hiring process that includes a demonstration lesson and school visit.



States and **districts** can, through legislative changes, collective bargaining agreements, or incentive programs, revise timelines for voluntary transfers or resignations, and for budget deadlines so that hiring processes can take place as early as possible, ideally in the spring of the prior school year.



Districts can build training and hiring pipelines for new and veteran teachers. To do this, districts can develop strong partnerships with local teacher preparation programs for student teaching placements. **Districts** can also invest in Grow Your Own models and residency models whereby districts build their teacher pipeline from within.³²⁹ **States** can support these approaches by providing grants and expertise to districts interested in implementing Grow Your Own or residency models.



Additionally, **districts** should develop systems for tracking teacher turnover, including exit interviews, to better target programs aimed at reducing turnover. **States** also can include teacher-turnover data in their school accountability systems to encourage districts to systematically track teacher turnover.

Districts—particularly high-need districts—should consider revisions to salary schedules so that expert, experienced teachers who want to transfer into the district do not lose salary credit based on years of experience—a needless disincentive for highly desirable teachers who might otherwise choose to work in a high-need district. **States** can develop reciprocity agreements with other states to attract mobile, out-of-state teachers. **States** might also consider investing in the design and implementation of online hiring platforms where teachers can easily identify the steps necessary to be hired by the state or transfer into the state, as well as an online interface where mobile teachers can easily add their prior experiences and credentials to become certified in a given state.



States, with support from the **federal** government, should examine the issue of pension portability for teachers. Current defined-benefit plans, which are not portable across states and even within states in some cases, create disincentives for teachers to remain in the profession when they choose to relocate, as most states do not allow teachers to bring their retirement benefits with them. A national discussion around pension portability is particularly timely given that the teaching workforce has changed in recent years, with fewer teachers spending their entire careers in the classroom in a single district, and many teachers working in charter schools that are not part of state pension systems.

4. Induction and Support for New Teachers



States and **districts**—with support from the **federal** government—should invest in high-quality mentoring and induction programs, which have been shown to increase retention, accelerate novice teachers’ professional learning, and improve student achievement. Given the benefits of induction for retention and effectiveness, these programs should be made available to all new teachers. The **federal** government can provide matching grants to states and districts that implement research-based induction programs. Particular attention should be paid to selecting and training expert mentors, and providing adequate release time to allow mentors and beginning teachers to engage in a full range of instructional support activities, such as classroom observations, coaching, shared lesson planning, and reflection. **States** can leverage funds through Title II of the Every Student Succeeds Act to develop statewide programs that require a range of induction supports as well as provide training and technical assistance for districts to implement these programs. **Districts** can design induction programs with the quality features that research suggests are most important for program effectiveness and provide the time and resources to support induction structures like mentoring, classroom observations, and collaborative planning time.

5. Working Conditions



States can invest in the development of high-quality principals by establishing a strong preparation standard for administrators. **States** and the **federal** government can also support efforts to recruit promising candidates into leadership positions and pay for their training through competitive service-scholarship programs. Such efforts can help ensure that administrators are prepared and ready to be effective leaders who can foster positive, collegial teaching and learning conditions.³³⁰ **States** can leverage funds under Title II of ESSA, which provides funding to support high-quality principal preparation programs, including school-leader residency programs offering a full year of clinical training. **States** and **districts** can apply for funds from ESSA’s School Leader Recruitment and Support Program, which authorizes competitive grants to recruit and train principals for high-need schools. **Federal** and **state** policies can support principal mentoring and professional development opportunities to continuously hone effective school leadership skills throughout their careers.



States and **districts** can invest, in part using funding under Title II of ESSA, in developing and implementing surveys of teachers to assess the quality of the teaching and learning environment and to help guide school improvement. As **states** develop new accountability systems under the Every Student Succeeds Act, they should include measures of teaching and learning resources in their systems, moving away from a “test and punish” approach and toward an “assess and support” approach. Such measures could incorporate teacher surveys and help identify schools in need of improvement, and bolster the capacity of principals to support teachers and create positive working conditions.



Federal and **state** policies can incentivize professional development strategies and the redesign of schools to provide for greater collaboration, such as by offering the former federal Smaller Learning Communities grants that provided financial support for large schools to establish common planning time and collaborative professional development for teachers. **Districts** and schools should update school design, scheduling, and the allocation of resources in order to provide teachers with the time necessary for productive collaboration.³³¹ For example, schedules must allow for regular blocks of time (e.g., common prep periods) for teachers who teach the same subject or those who share groups of students to collaborate and plan curricula together.³³²

IX. Conclusion

Recruiting and retaining excellent teachers is critically important for the success of future generations, especially for those living in underserved communities. Fortunately, decades of research on the factors that contribute to attracting and keeping teachers in the classroom can guide strategies to meet this challenge. Some states have proved that transforming human-capital systems to support a quality, stable educator workforce is possible. Comprehensive investments in the preparation, induction, and professional learning of teachers and principals as well as in the conditions necessary to support high-quality teaching and learning should be considered simultaneously.

There is no silver bullet solution to recruiting and retaining a 3-million person teaching workforce serving more than 50 million students across 50 states. Local contexts will determine what set of research-based policies are most appropriate for a given state, district, or school to ensure their teachers lead rather than leave the profession. School officials and policymakers also must recognize that there are many factors influencing teachers' decisions to enter and remain in teaching—and these factors are interdependent. A comprehensive set of policies is needed to address our emerging teacher shortage and to ensure every child is taught by a competent, committed teacher.

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