Economic Policy Institute

The role of early career supports, continuous professional development, and learning communities in the teacher shortage

The fifth report in 'The Perfect Storm in the Teacher Labor Market' series

Report • By Emma García and Elaine Weiss • July 17, 2019

Economic Policy Institute • Washington, DC

View this report at epi.org/164976

This report is the fifth in a series examining the magnitude of the teacher shortage and the working conditions and other factors that contribute to the shortage.

What this series finds: The teacher shortage is real, large and growing, and worse than we thought. When indicators of teacher quality (certification, relevant training, experience, etc.) are taken into account, the shortage is even more acute than currently estimated, with high-poverty schools suffering the most from the shortage of credentialed teachers.

What this report finds: Our review of the early career supports, ongoing professional development, and opportunities for cooperation and influence offered to public school teachers reveals a mixed picture, with clear room to improve the system of professional supports that play a role in teacher retention and expand the knowledge base of the teaching workforce.

On the positive side, the set of supports already broadly offered in the schools is a strong foundation to build upon. Large shares of first-year teachers work with a mentor (79.9 percent) or participate in teacher induction programs (72.7 percent). And large shares of teachers generally are accessing certain types of professional development, including workshops or training sessions (91.9 percent), activities focused on the subjects that teachers teach (85.1 percent), regularly scheduled collaboration with other teachers on issues of instruction (80.8 percent), and opportunities to observe or be observed by other teachers in their classrooms (67.0 percent).

On the negative side, there are multiple weaknesses to address if we want to help teachers do their jobs better and advance in their careers:

- **First, there is limited access to some of the types of professional development that are highly valued and more effective.** Small shares of teachers attend university courses related to teaching (26.6 percent), present at workshops (23.1 percent), or make observational visits to other schools (21.6 percent).
- **Second, novice and veteran teachers largely don't get the time and resources they need to study, reflect, and prepare their practice.** Small shares of first-year teachers are released from classroom instruction to participate in support activities for new or beginning teachers (37.1 percent); small shares receive teachers' aides to enhance classroom management and one-on-one attention for students (26.9 percent); and small shares get a reduced teaching schedule (10.7 percent). For all teachers, only half have released time from teaching to participate in professional development (50.9 percent), less than a third are reimbursed for conferences or workshop fees (28.2 percent) or receive a stipend for professional development

accessed outside of regular work hours (27.3 percent), and only one in 10 teachers (9.4 percent) receives full or partial reimbursement of college tuition.

- **Third, teachers are not highly satisfied with their professional development experiences.** Less than a third of teachers found any of the activities they accessed "very useful," and over a third of novice teachers felt that working with a mentor was only a little or not at all helpful.
- **Fourth, teachers are not by and large immersed in the kind of learning community that can support their teaching and career growth.** In a learning community, teachers have opportunities to cooperate and coordinate and have a say in school policy and classroom instruction and management. We find that more than two-thirds of teachers report that they have less than a great deal of influence over what they teach in the classroom (71.3 percent) or what instructional materials they use (74.5 percent), which suggests low consideration for their knowledge and judgment. Just 11.1 percent of teachers report having a great deal of influence in determining the content of professional development programs.
- **Fifth, some key resources and professional development opportunities are particularly lacking in high-poverty schools,** where, if anything, stronger supports for teachers are needed. In high-poverty schools, compared with low-poverty schools, smaller shares of first-year teachers work with a mentor (78.3 percent vs. 83.7 percent) and say that working with a mentor helps a lot (32.1 percent vs. 34.5 percent). Compared with teachers in low-poverty schools, larger shares of teachers in high-poverty schools participate in professional development activities that they consider less useful (such as workshops, 92.7 percent vs. 90.8 percent) and smaller shares participate in activities that they find more useful (such as observational visits to other schools, 20.9 percent vs. 22.5 percent, and teacher-led research, 42.7 percent vs. 49.5 percent). High-poverty schools also score lower on most indicators that a school has a strong learning community.

Our data suggest a relationship between these systems of professional supports and teacher retention. When we compare teachers who stayed in teaching with those who quit teaching, we observe that larger shares of staying teachers had received early support in the form of an assigned mentor (77.0 percent vs. 69.2 percent) or induction programs (85.9 percent vs. 80.0 percent), had found their subject-specific professional development activities to be very useful (27.4 percent vs. 19.5 percent), had worked in highly cooperative environments (38.7 percent vs. 33.9 percent), and had felt they had more influence over the content taught in their classrooms (28.6 percent vs. 25.4 percent).

Why professional supports matter: The demands of teaching are constantly changing and teachers need to continually adapt their knowledge and practice. By failing to provide teachers with broad access to effective training and professional development, as well as to learning communities where their professional judgment is considered, we hurt teachers' effectiveness, sense of purpose, and career advancement opportunities. This likely plays a role in the teacher shortage. And the teacher shortage—which is more acute in high-poverty schools—harms students and teachers and challenges the U.S. education system's goal of providing a sound education equitably to all children.

What we can do to support teachers: We must improve both the types and the usefulness of the professional supports offered and ensure that teachers have the resources needed to access those opportunities. Strengthening the system of supports includes increasing teachers' influence over their day-to-day work and developing cultures of learning. High-poverty schools and their teachers, in particular, require additional funding to close gaps in these resources and supports.

Update, October 2019: *The National Center for Education Statistics (NCES) has announced that weights developed for the teacher data in the 2015–2016 National Teacher and Principal Survey (NTPS) were improperly inflated and that new weights will be released (release date to be determined). According to the NCES, counts produced using the original weights would be overestimates. The application of the final weights, when they are available, is not likely to change the estimates of percentages and averages (such as those we report in our analyses) in a statistically significant way. EPI will update the analyses in the series once the new weights are published but does not expect any data revisions to change the key themes described in the series. Please note that EPI analyses produced with 2011–2012 Schools and Staffing Survey (SASS) data, 2012–2013 Teacher Follow-Up Survey (TFS) data, and 2015–2016 NTPS school-level data are unaffected by NCES's reexamination.*

Introduction

The teacher shortage—the gap between the number of qualified teachers needed in the nation's K–12 schools and the number available for hire in a given year—is an increasingly recognized but still poorly understood crisis. The shortage is discussed by the media and policymakers, and researchers have estimated its size (about 110,000 teachers short in the 2017–2018 school year, according to Sutcher, Darling-Hammond, and Carver-Thomas [2016]) and even quantified part of its cost.[1] The shortage constitutes a crisis because of its negative effects on students, teachers, and the education system at large.[2] But the shortage is poorly understood because it has multiple complex and interdependent causes. The first report in this series, *The Teacher Shortage Is Real, Large and Growing, and Worse Than We Thought* (García and Weiss 2019a), establishes that current national estimates of the teacher shortage likely understate the magnitude of the problem: When issues such as teacher qualifications and the unequal distribution of highly credentialed teachers across high- and low-poverty schools are taken into consideration, the teacher shortage problem is much more severe than previously identified.

The second report in this series, *U.S. Schools Struggle to Hire and Retain Teachers* (García and Weiss 2019b), builds on the research in the first report, employing the same quality and equity angles to show that schools are having difficulties filling teacher vacancies and are, in some cases, leaving vacancies unfilled despite actively trying to hire teachers to fill them. High-poverty schools are hit hardest: They find it more difficult to fill vacancies than do low-poverty schools and schools overall, and they experience higher turnover and attrition rates than do low-poverty schools. One factor behind staffing difficulties is the high share of public school teachers leaving their posts: 13.8 percent were either leaving their school or leaving teaching altogether in a given year, according to the most recent data. Another factor is the dwindling pool of applicants to fill vacancies: From the 2008–2009 to the 2015–2016 school year, the annual number of education degrees awarded fell by 15.4 percent, and the annual number of people who completed a teacher preparation program fell by 27.4 percent. Schools are also having a harder time retaining credentialed teachers, as is evident in the small but growing share of all teachers who are both newly hired and in their first year of teaching (4.7 percent) and in the substantial shares of teachers who are quitting who are certified and experienced. It is even more difficult for high-poverty schools to retain credentialed teachers.

The third report in the series focuses on one likely reason teachers are leaving the profession and fewer people are becoming teachers: low teacher pay. Specifically, *Low Relative Pay and High Incidence of Moonlighting Play a Role in the Teacher Shortage, Particularly in High-Poverty Schools* (García and Weiss 2019c) describes how teacher compensation compares with compensation in nonteaching occupations, and calls attention to the high share of teachers who supplement their earnings by moonlighting during the school year. The report shows a correlation between measures of teacher compensation and teachers leaving the profession. Specifically, it finds that teachers who ended up quitting teaching reported receiving, on average, lower salaries than those who stayed at their schools. They also reported participating less in the kinds of paid extracurricular activities that might complement their professional development (activities like coaching students or mentoring other teachers) than did teachers who stayed, and they reported participating more in working options outside the school system than did teachers who stayed. In high-poverty schools, teachers face compounded challenges. Relative to their peers in low-poverty schools, teachers in high-poverty schools are paid less and receive smaller amounts of income from moonlighting, and the moonlighting that they do is less likely to involve paid extracurricular or additional activities for the school system that also help them grow professionally.

The fourth report, *Challenging Working Environments ('School Climates'), Especially in High-Poverty Schools, Play a Role in the Teacher Shortage* (García and Weiss 2019d), explores another likely factor behind the exodus of teachers from the profession and the shrinking supply of future teachers: the working environments, or school climates, in which teachers do their work. We show that school climate is challenging because of the presence of widespread barriers to teaching and learning, threats to teachers' emotional well-being and physical safety, and a troubling lack of teacher influence over school policy and over what and how they teach in their classrooms. We observe that poor school climate affects teacher satisfaction, morale, and expectations about staying in the

profession, and that there is a correlation between these indicators of difficult working environments and teachers leaving the profession a year later. Consistent with other gaps being more acute in high-poverty schools, we also document that school climates are more challenging in high-poverty schools than in low-poverty schools.

This report, the fifth in the series, examines the early career supports available to novice teachers in the first year of their careers, as well as the continued learning opportunities available to teachers throughout their careers. We also explore the extent to which certain aspects of the working environment—the presence or absence of supportive and collaborative relationships; cooperation among teachers, colleagues, and principals; and teachers' influence over policy and day-to-day classroom decisions—establish a culture of learning in which teachers' knowledge and professionalism are recognized and cultivated.

Unlike with some of the stressors identified in our earlier reports, it is not easy to trace a direct link between suboptimal professional supports and the teacher staffing crisis that is the focus of our series. (We discuss the less clear-cut nature of the role of professional supports in the next section of this report.) However, all the professional development and continuous training components we examine have the potential to help teachers do their jobs better, progress in their profession, and gain satisfaction with and a sense of ownership of their careers. These supports are essential to guaranteeing the quality of the teaching workforce and to professionalizing teaching. And, as we show, there is evidence, albeit less direct, that these supports play a role in the teacher shortage. Professional development and continuous training opportunities and the learning climate—or the lack thereof—can directly influence teacher retention and recruitment. In some cases, these factors can also indirectly influence retention and recruitment when they mitigate—or compound—problems already identified in previous reports in "The Perfect Storm in the Teacher Labor Market" series. The findings here suggest that efforts to address teacher shortages must include providing teachers with strengthened continuous training opportunities that professionalize teaching and support teachers, especially in high-poverty schools where the teacher shortage and the lack of meaningful professional development opportunities are most concerning.

Why professional development and continuous training are needed in teaching and how they are implicated in the teacher shortage

It is important to begin this installment of the "Perfect Storm" series with some clarifications about the limitations we face in this study. In the prior reports, we are able to identify shares of teachers experiencing factors that are objectively negative stressors. For example, we show that teachers are paid less than comparable workers and that their safety is not guaranteed. In those cases, their experiences are objectively bad, and the correlations between those experiences and the teachers' choices to quit or stay in the

profession could be seen as decisive.

With regard to professional development and continuous training opportunities, there is no universally accepted set of supports that constitutes a good, supportive early training and ongoing professional development system as opposed to a bad, unsupportive system. We lack research, policy, or practice recommendations that say, "This specific set of supports offered in this mode and style for this duration and on these contents is unequivocally essential to helping teachers succeed and keeping them in the classrooms." Little is known regarding how teachers get assigned to training and professional development opportunities; whether teachers have any say in the opportunities presented to them; who offers the opportunities; the optimal duration, location, and timing of professional development opportunities; and who oversees the quality—let alone what funding is available. We also lack knowledge of how professional development needs may change depending on the teacher's profile (including teacher credentials, his or her experience, the field of teaching, etc.) and circumstances (including whether he or she teaches in a high- or in a low-poverty school, etc.). And we lack confirmation of how these components of the system affect teachers' effectiveness and transitions in and out of the teacher labor markets.

Nevertheless, this report analyzes the currently offered set of supports based on common sense—what should be broadly accepted assumptions about the importance of professional development and a helpful, supportive environment—and on evidence from research on professional development and school climate. With regard to our assumptions, we take as given that good professional development is critical in education just as it is in medicine, law, engineering, and other professions where continuous learning and professionalization are expected or mandated. Continuous learning via professional development helps teachers do their jobs more effectively and efficiently and advance in their careers, increasing their sense of dedication, purpose, satisfaction, and professionalism and, significantly, helping their students' learning and performance as well. A strong learning community and a positive working environment also help teachers in these ways. It should thus be evident that professional supports can play an important role in increasing the availability of teachers and that they are critical to improving the quality of the teaching workforce—both key aspects of the teacher shortage problem.

With regard to the evidence, existing research presents many reasons why, in general, good professional development and continuous training opportunities (those that result in improvements to teacher practices and student outcomes) matter greatly (see Bill & Melinda Gates Foundation 2014; Darling-Hammond, Burns, et al. 2017; Darling-Hammond, Hyler, et al. 2017; ESSA 2015; Hill 2009; Ingersoll and Collins 2018; Jensen et al. 2016; Kraft, Blazar, and Hogan 2018; Learning Forward 2019; Mizell 2010; Robinson 2019).

First, teachers pursue professional development opportunities to earn a master's degree, credit toward recertification, or other credential, or to gain additional qualifications to prepare for a leadership position.[3]

Second, continuous training and professional development help teachers develop new knowledge and skills to better serve their students. This includes helping teachers update

their instructional techniques in response to new research on learning and teaching processes and to adjust to the needs of a more diverse student body.

Third, evidence-driven public policies have identified professional development as a key component in building systems of professional learning. For example, the Every Student Succeeds Act of 2015 (ESSA) made professional development an important cornerstone of schools' improvement plans.[4] ESSA's recommendations and guidance are in part based on a body of research showing that solid early career supports and continuous training can strengthen teachers' practices and effectiveness—i.e., that when teachers use what they learned in professional development, their practice improves in ways that benefit children.

Fourth, early career supports help new teachers transition successfully from teacher training programs to actually being in a classroom, and continuous training helps veteran teachers adapt to changes in what they need to teach and test—and in how they need to teach and test—to accommodate changes in state and federal laws and standards.

Fifth, when teachers have these training and professional development opportunities, it nurtures a culture of learning schoolwide: Teachers and staff routinely develop their own knowledge and skills; they model, for students, the belief that learning is important and useful; they feel more respected; and they see ways to progress in their careers.

And sixth, intense early supports, continuous training, and professional development are actually recommended, and the norm, in the most highly regarded systems—systems in which teaching is also a more prestigious and sought-after profession.

In this report we draw upon national public school teacher data to describe early career supports and ongoing professional development opportunities in detail: the kinds of opportunities available to teachers, how many teachers access them, whether teachers get fee reimbursements or other help accessing them, and how useful they are to teachers. We also examine teachers' assessments of their relationships with school administrators and peer teachers and their involvement in setting schoolwide and classroom policies. All three of these components—early career supports, ongoing professional development, and relationships that capitalize on teachers' professional judgment—are necessary to establish a culture of learning in the school and to provide teachers with meaningful career advancement pathways.[5]

Overview of findings

We find reasons for both optimism and concern. On the positive side, a great majority of teachers participate in some form of training, which could be seen as an asset of the system to be further cultivated.[6] However, some of the most common types of professional development and training activities are also those that receive lower teacher satisfaction ratings. Teachers also report that they don't get to choose or help design the professional development options offered to them. Together, these findings suggest critical weaknesses in the menu of options available, in how opportunities are assigned to teachers, or in the quality of the offerings (or all of the above). This disconnect between

what teachers are receiving and what they find useful suggests that there is significant room for improvement in the supports and career advancement opportunities that schools and the profession offer. Teachers may be participating in the types of activities that are less useful to them because they are required to, either by law or to maintain certification, suggesting that these mandates are not informed by the type of support or the quality needed—but we can't test any of these hypotheses with the available data.

With regard to the culture of learning, we present evidence that teachers have low levels of autonomy and influence in general, and that teachers' relationships with one another, with administrators, and with parents have clear room for improvement. And, as past research shows, despite substantial shares of teachers moonlighting, they are not always taking on second jobs that foster collaboration and allow them to learn from or support one another (García and Weiss 2019c; García and Weiss 2019d; Mizell 2010; Ingersoll and Collins 2018).[7] In short, there are many features of schools today that are not conducive to building a culture of learning, a culture in which obtaining useful and needed training is the norm and in which training benefits teachers and their students.

Finally, we demonstrate that there is a relationship between systems of professional supports—professional development, career-building supports, and teachers' autonomy and influence—and whether or not teachers stay in the profession. This finding contributes to our efforts in this series of reports to identify factors that can help explain the most troubling trends in the teacher labor market: decreased interest in becoming a teacher and in staying in teaching (Ingersoll 2004, 2014; Sutcher, Darling-Hammond, and Carver-Thomas 2016; Darling-Hammond, Burns, et al. 2017; García and Weiss 2019b). Strengthening professional development and career-building supports would help professionalize teaching and provide teachers with opportunities for career advancement, which would make teaching a more appealing profession[8] (and may mitigate some of the other factors driving the teacher shortage, such as tough working environments).

It is important to note that suboptimal professional supports not only likely play a role in the teacher shortage, but also directly affect the knowledge base of the teacher workforce. Thus while we are discussing professional development in the context of the teacher shortage, these broader repercussions add to the urgency of identifying whether ineffective and insufficient professional development is a problem in U.S. schools, i.e., affecting not only teacher recruitment and retention but also teacher effectiveness, student learning, school performance, and the health of the educational system overall.[9]

Novice teachers are not getting the support they need to translate their training into effective teaching

The first few years that a teacher spends in the classroom tend to be among the most difficult of his or her career. As is true of every job, getting to know and adjusting to the workplace—in this case, the school, district, colleagues, students, students' parents, and

surrounding communities—poses challenges. In the education context, these natural difficulties are compounded by the steep learning curve to balancing engaging instruction with effective classroom control. Regardless of how solid teachers' preparation and innate ability may be, and despite new-job energy and motivation, all young teachers need to acclimate to the job and practice to strengthen their teaching. New teachers must translate what they learned in their teacher preparation programs into real classroom practices, and research shows that this process can be sped up if they receive specific supports to help them with the transition and make their teaching practice more effective. It is especially in teachers' early years, then, that appropriate supports (including induction programs, mentors, and other classroom-based resources) are critical, both to helping teachers succeed and to retaining them—but these supports are not universally available to teachers (Darling-Hammond, Burns, et al. 2017; Liston, Whitcomb, and Borko 2006; NCEE 2016; Smith and Ingersoll 2004; Ingersoll and Collins 2018).[10]

Our analysis confirms that more supports for teachers are needed early in their careers. **Table 1** shows that it is actually very common for novice teachers to feel less than very well prepared to handle all the tasks required in their classrooms in their first year on the job. The table shows the results of our analysis of questions posed to early-career teachers (teachers in their first five years of teaching) about how prepared they were, in their first year of teaching, to handle a range of classroom tasks. There is only one task out of the 10 listed here that even one in every three teachers felt "very well prepared" to perform: teaching their subject matter. For the other nine tasks listed in Table 1—including using a variety of instructional methods, assessing students, and differentiating instruction—the shares of teachers who reported that they felt very well prepared are much smaller. To look at this data another way, the shares of novice teachers who felt less than very well prepared ("not at all prepared," "somewhat prepared," or "well prepared") to handle all the tasks in their classrooms and, thus, who could significantly benefit from early career supports, are large: For example, fully two-thirds (66.8 percent) of teachers reported feeling less than "very well prepared" to teach their subject matter and nine in 10 teachers (91.6 percent) reported not feeling "very well prepared" to teach English language learners (ELLs).[11]

As noted earlier in this report, research to date on the topic of early career supports has produced no set menu of the exact supports schools need to offer to ensure that teachers are ready to teach from the start of their careers.[12] However, it is obvious that a lack of these supports leaves novice teachers struggling to adjust by themselves, hurting their ability to use their time wisely and effectively, and precluding opportunities for novice teachers to learn from one another. Unfortunately, as other researchers have noted, novice teachers suffer from inadequate support for teacher learning, including inadequate peer support, challenging emotional experiences, and lack of development programs for teachers when they are on the job (i.e., "in-service education") (Liston, Whitcomb, and Borko 2006; Dias-Lacy and Guirguis 2017). In our data, we also find that while most teachers do receive some forms of support and do participate in preparation programs in the early years, these supports and programs are not universally available, i.e., not all teachers get them. Some of the most important supports are available to only a minority of new teachers. We present the evidence for general supports in **Table 2** and for specific

Table 1

Shares of teachers who reported that they were or were not 'very well prepared' to perform key activities in their first year, in all schools and in low- and high-poverty schools

	All	Low-poverty	High-poverty	Gap (high-minus low-poverty)
Teach their subject matter				
Very well prepared	33.2%	35.9%	31.6%	-4.3 ppt.
Less than "very well prepared"	66.8%	64.1%	68.4%	4.3 ppt.
Use computers in classroom instruction				
Very well prepared	25.2%	27.1%	24.5%	-2.6 ppt.
Less than "very well prepared"	74.8%	72.9%	75.5%	2.6 ppt.
Teach to state content standards				
Very well prepared	24.3%	27.7%	22.4%	-5.3 ppt.
Less than "very well prepared"	75.7%	72.3%	77.6%	5.3 ppt.
Use a variety of instructional methods				
Very well prepared	18.3%	22.0%	16.9%	-5.1 ppt.
Less than "very well prepared"	81.7%	78.0%	83.1%	5.1 ppt.
Assess students				
Very well prepared	17.0%	18.0%	16.7%	-1.3 ppt.
Less than "very well prepared"	83.0%	82.0%	83.3%	1.3 ppt.
Differentiate instruction				
Very well prepared	16.9%	18.0%	16.6%	-1.4 ppt.
Less than "very well prepared"	83.1%	82.0%	83.4%	1.4 ppt.
Teach students with special needs				
Very well prepared	15.7%	16.4%	15.8%	-0.6 ppt.
Less than "very well prepared"	84.3%	83.6%	84.2%	0.6 ppt.
Handle classroom management or discipline situations				
Very well prepared	14.9%	16.3%	14.6%	-1.7 ppt.
Less than "very well prepared"	85.1%	83.7%	85.4%	1.7 ppt.
Use data from assessments to inform instruction				
Very well prepared	14.1%	14.8%	13.8%	-1.0 ppt.
Less than "very well prepared"	85.9%	85.2%	86.2%	1.0 ppt.
Teach English language learners (ELLs)				
Very well prepared	8.4%	8.7%	8.6%	-0.1 ppt.
Less than "very well prepared"	91.6%	91.3%	91.4%	0.1 ppt.

Notes: Data are for teachers in public noncharter schools. The table shows shares of teachers in their first five years of teaching who did or did not answer "very well prepared" when asked, "In your first year of teaching, how well prepared were you to" do the different activities. Teachers were asked to check whether they were "very well prepared," "well prepared," "somewhat prepared," or "not at all prepared." A teacher is considered to be in a low-poverty school if less than 25 percent of the students in his/her classroom are eligible for free or reduced-price lunch programs; a teacher is considered to be in a high-poverty school if 50 percent or more of the students in his/her classroom are eligible for those programs.

Source: 2015–2016 National Teacher and Principal Survey (NTPS) microdata from the U.S. Department of Education's National Center for Education Statistics (NCES)

Economic Policy Institute

early preparation programs in **Table 3**.

Table 2

Shares of teachers who said they received or did not receive key supports in their first year, in all schools and in low- and high-poverty schools

	All	Low-poverty	High-poverty	Gap (high-minus low-poverty)
Regular supportive communication with principal and others				
Yes	74.5%	76.3%	74.1%	-2.2 ppt.
No	25.5%	23.7%	25.9%	2.2 ppt.
Observation and feedback on their teaching aimed at helping them develop and refine their teaching practice				
Yes	69.0%	70.1%	69.0%	-1.1 ppt.
No	31.0%	29.9%	31.0%	1.1 ppt.
Seminars or classes for beginning teachers				
Yes	66.4%	68.0%	66.3%	-1.7 ppt.
No	33.6%	32.0%	33.7%	1.7 ppt.
Common planning time with teachers in their subject				
Yes	61.2%	61.4%	61.9%	0.5 ppt.
No	38.8%	38.6%	38.1%	-0.5 ppt.
Release time to participate in support activities for new or beginning teachers				
Yes	37.1%	37.1%	37.1%	0.0 ppt.
No	62.9%	62.9%	62.9%	0.0 ppt.
Extra classroom assistance (e.g., teachers' aides)				
Yes	26.9%	25.2%	27.8%	2.6 ppt.
No	73.1%	74.8%	72.2%	-2.6 ppt.
Reduced teaching schedule				
Yes	10.7%	9.2%	11.0%	1.8 ppt.
No	89.3%	90.8%	89.0%	-1.8 ppt.

Notes: Data are for teachers in public noncharter schools. The table shows shares of teachers in their first five years of teaching who answered "yes" or "no" when asked if they received the different kinds of supports during their first year of teaching. A teacher is considered to be in a low-poverty school if less than 25 percent of the students in his/her classroom are eligible for free or reduced-price lunch programs; a teacher is considered to be in a high-poverty school if 50 percent or more of the students in his/her classroom are eligible for those programs.

Source: 2015–2016 National Teacher and Principal Survey (NTPS) microdata from the U.S. Department of Education's National Center for Education Statistics (NCES)

Economic Policy Institute

As Table 2 shows, three resources that would increase the time that young teachers have to study, reflect, and prepare their practice are unavailable to large shares of new teachers: a reduced teaching schedule, teachers' aides, and time away from the classroom to receive new-teacher supports. Only a little more than one-third (37.1 percent) of all

teachers are released from classroom instruction to have time to participate in support activities for new or beginner teachers. Only about one-fourth (26.9 percent) receive aides to enhance classroom management and one-on-one attention for students, and only about one in ten (10.7 percent) get a reduced teaching schedule.

Four other classroom-based supports were more widely available, though still unevenly so, with less than two-thirds of first-year teachers enjoying common planning time with their fellow subject-matter teachers (61.2 percent), two-thirds participating in new-teacher classes (66.4 percent), and just over two-thirds receiving constructive feedback based on classroom observations (69.0 percent). About three in four (74.5 percent), however, did report "regular supportive communication" with the principal and others.

Differences between teachers based on the concentration of low-income students in their classrooms were small and mixed, with a split pattern of advantage and disadvantage for those in high-poverty schools. For example, teachers in low-poverty schools are slightly less likely than their peers in high-poverty schools to benefit from a reduced teaching schedule and from having teachers' aides. Teachers in high-poverty schools are less likely than their peers in low-poverty schools to report having regular supportive communication with the principal and others, being observed and receiving feedback, and participating in seminars or classes for beginning teachers.

Other interventions that effectively facilitate young teachers' adaptation to the profession, and that foster cooperation and collegiality, include teacher induction and mentoring programs. These programs are designed to support inexperienced teachers in their early years through role modeling, feedback, and support, and to keep those who have strong potential from leaving the school or the profession before they have a chance to master the art of teaching (Sorensen and Ladd 2018; Ingersoll and Strong 2011; Goldhaber, Krieg, and Theobald 2018b). They can thus somewhat reduce the inadequacies described above and improve new teachers' skills and confidence.

However, our analysis shows that though some of these programs are fairly widely offered, they are not always rated as useful, which suggests room for improvement in their quality and how they are offered. As Table 3 shows, most—though not all—first-year teachers had access to induction programs and to mentors. Overall, 72.7 percent of teachers participated in a teacher induction program, and 79.9 percent were assigned a master or mentor teacher.

Figure A provides a more in-depth look at first-year teachers' experience with mentors. More than half (53.5 percent) of teachers reported having met with the mentor frequently when they were in their first year (top panel). Somewhat surprisingly, this relatively high access to mentors was not accompanied by an equally high share of teachers reporting benefiting from working with mentors (bottom panel). Only a third of teachers (33.2 percent) said that working with a mentor teacher improved their teaching a lot, whereas a slightly larger share (35.7 percent) said that working with a mentor improved their teaching only a little or not at all. In essence, the data in Table 3 and Figure A indicate that while mentoring programs are extensively available, almost half of teachers in such programs only rarely or occasionally work with their mentors, and over a third felt that working with

Table 3

Shares of teachers participating in early support programs in their first year, in all schools and in low- and high-poverty schools

	All	Low-poverty	High-poverty	Gap (high-minus low-poverty)
Participated in a teacher induction program				
Yes	72.7%	75.8%	70.9%	-4.9 ppt.
No	27.3%	24.2%	29.1%	4.9 ppt.
Was assigned a master or mentor teacher				
Yes	79.9%	83.7%	78.3%	-5.4 ppt.
No	20.1%	16.3%	21.7%	5.4 ppt.

Notes: Data are for teachers in public noncharter schools. The table shows shares of teachers in their first five years of teaching who answered "yes" or "no" when asked if they participated in these programs in their first year of teaching. A teacher is considered to be in a low-poverty school if less than 25 percent of the students in his/her classroom are eligible for free or reduced-price lunch programs; a teacher is considered to be in a high-poverty school if 50 percent or more of the students in his/her classroom are eligible for those programs.

Source: 2015–2016 National Teacher and Principal Survey (NTPS) microdata from the U.S. Department of Education's National Center for Education Statistics (NCES)

Economic Policy Institute

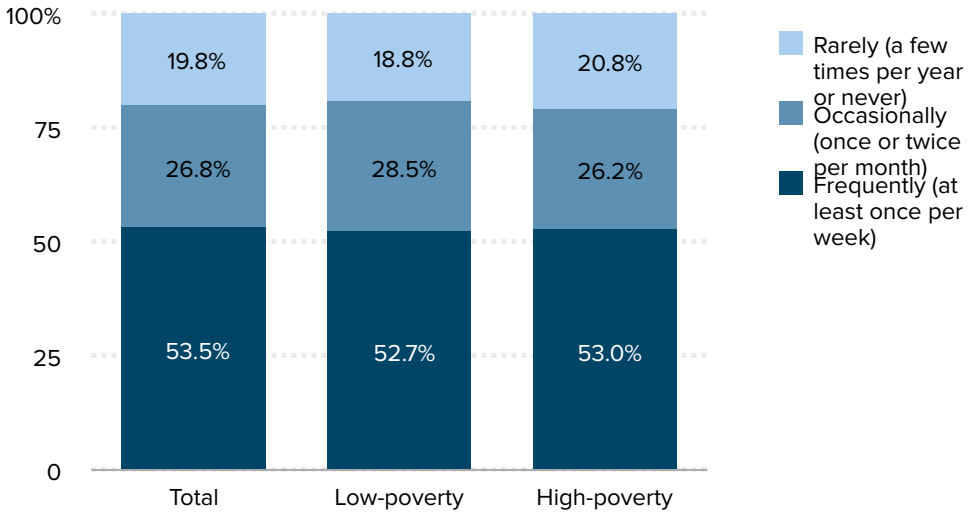
their mentors helped them only a little or not at all.

Going back to Table 3, we see that teachers in low-poverty schools are about 5 percentage points more likely to have had access to induction programs and mentor programs than were teachers in high-poverty schools. The disparity across types of school is consistent with data showing that high-poverty schools have higher shares of novice teachers (and lower shares of experienced teachers; see García and Weiss 2019a), so there are simply relatively fewer veteran teachers available to serve as effective mentors.[13] This disparity in access across low- and high-poverty schools is amplified when we explore the characteristics of interactions between mentors and the teachers they are mentoring, as shown in Figure A. Although teachers in high-poverty schools are just as likely to work with mentors at least once a week, they are more likely to work with them only rarely (top panel). Also, they are less likely than their peers in low-poverty schools to find these mentoring relationships very effective (bottom panel): Only 32.1 percent of teachers receiving mentoring in high-poverty schools felt that working with mentors improved their teaching a lot, compared with 34.5 percent in low-poverty schools. And 37.3 percent of teachers receiving mentoring in high-poverty schools thought that working with their mentors improved their teaching only a little or not at all, compared with 32.3 percent of teachers receiving mentoring in low-poverty schools. The implication that mentoring programs are less helpful in high-poverty schools could be attributable to a number of factors, including fewer highly credentialed teachers being available for mentoring, as well as to the presence of many other stressors that affect teachers' early readiness.[14]

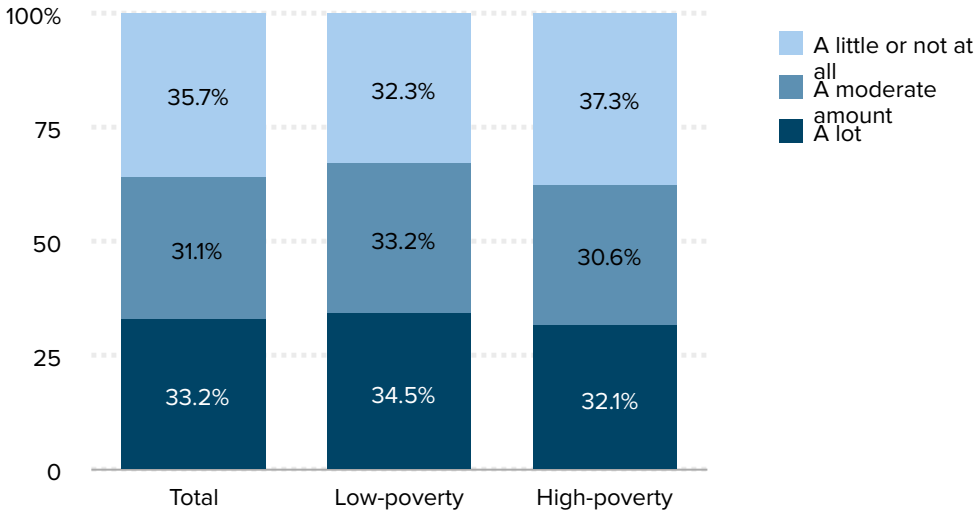
Figure A

First-year teachers' frequency working with mentor and how useful that was for their teaching

Frequency working with mentor



How much working with a master or mentor teacher improved their teaching in their first year



Notes: Data are for teachers in public noncharter schools. The figure shows shares of teachers in their first five years of teaching who answered as shown to questions about working with a mentor in their first year of teaching. A teacher is considered to be in a low-poverty school if less than 25 percent of the students in his/her classroom are eligible for free or reduced-price lunch programs; a teacher is considered to be in a high-poverty school if 50 percent or more of the students in his/her classroom are eligible for those programs.

Source: 2015–2016 National Teacher and Principal Survey (NTPS) microdata from the U.S. Department of Education's National Center for Education Statistics (NCES)

Economic Policy Institute

Teachers do not receive resources for accessing meaningful professional development activities and do not find those experiences particularly useful

Teaching is a profession in which continuous training is needed to complement the know-how acquired with experience. It is therefore important to examine patterns of professional development supports and activities that teachers receive throughout their careers. The highest-performing systems in the world provide professional development as part of the regular daily and weekly experience of teaching and continuous training, which are "inextricably linked together," as the authors of *Empowered Educators* note (Darling-Hammond, Burns, et al. 2017). In the book, they explain that continuous learning is provided through "incentives and infrastructure for [teacher] learning; time and opportunity for collaboration; curriculum development and lesson study; teacher research; teacher-led PD; appraisal and feedback" (Darling-Hammond, Burns, et al. 2017).[15]

Our analyses of teacher survey data allow us to assess the prevalence or absence of some of these ingredients of a high-performing professional development regime for our public school teachers, as well as whether teachers have the resources to access professional development activities.[16]

As the tables and figures in this section show, access to some form of professional development is widespread overall, but some supports and resources needed for participation (time and economic support, among others) are not. It is also troubling that, despite generalized participation in professional development, it is not perceived as being very useful to the majority of teachers who accessed it.[17]

Table 4 shows that large shares of teachers lack important resources needed to access professional development—mainly time and reimbursements. Although four in five teachers have scheduled time in their contracts for professional development, only half (50.9 percent) of teachers have released time from teaching to participate in professional development, less than a third are reimbursed for conferences or workshop fees (28.2 percent) or receive a stipend for activities that take place outside regular work hours (27.3 percent), and only one in 10 teachers (9.4 percent) receives full or partial reimbursement of college tuition.

Teachers in high-poverty schools are at a disadvantage when it comes to accessing several of these resources, but have an advantage in some others. We cannot determine why access is not uniform across high- and low-poverty schools and how consequential the gaps may be.[18] A smaller share of teachers in high-poverty schools have scheduled time in their contracts for professional development compared with teachers in low-poverty schools (77.7 percent vs. 80.1 percent), though the very small advantage teachers in high-poverty schools have in released time from teaching (51.2 percent versus 50.1

Table 4

Shares of teachers who said they received or did not receive various resources for professional development activities, in all schools and in low- and high-poverty schools

	All	Low-poverty	High-poverty	Gap (high-minus low-poverty)
Scheduled time in the contract year for professional development				
Yes	78.7%	80.1%	77.7%	-2.4 ppt.
No	21.3%	19.9%	22.3%	2.4 ppt.
Released time from teaching				
Yes	50.9%	50.1%	51.2%	1.1 ppt.
No	49.1%	49.9%	48.8%	-1.1 ppt.
Reimbursement for conference or workshop fees				
Yes	28.2%	32.0%	25.1%	-6.9 ppt.
No	71.8%	68.0%	74.9%	6.9 ppt.
Stipend for professional development activities that took place outside regular work hours				
Yes	27.3%	22.2%	31.3%	9.1 ppt.
No	72.7%	77.8%	68.7%	-9.1 ppt.
Reimbursement for travel and/or daily expenses				
Yes	20.5%	19.2%	20.2%	1.0 ppt.
No	79.5%	80.8%	79.8%	-1.0 ppt.
Full or partial reimbursement of college tuition				
Yes	9.4%	12.4%	7.3%	-5.1 ppt.
No	90.6%	87.6%	92.7%	5.1 ppt.
Credits received toward recertification or advanced certification in their main teaching assignment or other teaching field(s)				
Yes	49.6%	46.2%	50.0%	3.8 ppt.
No	50.4%	53.8%	50.0%	-3.8 ppt.

Notes: Data are for teachers in public noncharter schools. Teachers were asked to answer "yes" or "no" to the following question: "For the PD in which you participated in the past 12 months, did you receive the following types of support?" A teacher is considered to be in a low-poverty school if less than 25 percent of the students in his/her classroom are eligible for free or reduced-price lunch programs; a teacher is considered to be in a high-poverty school if 50 percent or more of the students in his/her classroom are eligible for those programs.

Source: 2011–2012 Schools and Staffing Survey (SASS) microdata from the U.S. Department of Education's National Center for Education Statistics (NCES)

Economic Policy Institute

percent in low-poverty schools) could counter that a bit. Larger shares of teachers in high-poverty schools also get a stipend for activities outside of regular hours, have their travel expenses reimbursed, and receive credits toward recertification or advanced certification,

but the shares of these teachers who get reimbursement for college tuition, workshops, or conferences are smaller than the shares for their peers in low-poverty schools.

Just as important as resources being available to facilitate professional development are the types of activities that teachers can access to advance their skills. Curriculum development and lesson study, teacher research, teacher-led professional development (i.e., professional development that is more self-directed by teachers and more actively informed and overseen by them), and appraisal and feedback are key components of solid systems of professional supports (Darling-Hammond, Burns, et al. 2017). Researchers note that professional development programs that are effective are content-focused; they support collaboration and job-embedded practice;[19] they are of intense and sustained duration; they focus on discrete skill sets; they offer opportunities for feedback and reflection; and they are characterized by active learning and collaboration (Darling-Hammond, Hyler, et al. 2017; Kraft, Blazar, and Hogan 2018; OECD 2019).[20]

The survey data presented in **Table 5** show that while large shares of teachers are participating in some form of professional development, the most prevalent activities—the ones serving the largest shares of teachers—are not always the most effective types of professional development. They tend to be much more passive than the types of professional development described above.

The top panel of Table 5 shows the shares of teachers who participated in four standard types of professional development activities. More than nine in 10 teachers attended workshops, conferences, or training sessions, by far the most common category of activity as well as the least effective and least highly regarded (see Kraft, Blazar, and Hogan 2018; ESSA 2015; Bill & Melinda Gates Foundation 2014; Hirsh et al. 2016; Quint 2011).[21] In contrast, only between one-fifth and one-fourth of the teachers participated in what these studies argue are the more effective and highly regarded of these four activities: attending university courses related to teaching; presenting at workshops, conferences, or training sessions; and making observational visits to other schools.

The middle panel of Table 5 shows the shares of teachers engaged in any type of professional development that is focused on a specific area. As we note above, professional development that is content-specific is considered more effective than general professional development, and thus the high shares of teachers participating in some sort of content-specific professional development is encouraging. More than four-fifths of teachers have accessed professional development that is specific to the subject or subjects they teach, about two-thirds have participated in activities focused on the use of computers for instruction, and well over half have participated in professional development for reading instruction.

But some critical subject areas or classroom management practices appear to be neglected. Only about four in 10 teachers received instruction in student discipline and classroom management, about a third got training in teaching students with disabilities, and just over a quarter got training in teaching English language learners (ELLs).

Nevertheless, the hours that teachers report spending in content-focused professional development activities (the activities in the middle panel) add up to about 44 hours—more

Table 5

Shares of teachers who reported participating in various professional development activities in the past 12 months, by type and by subject, in all schools and in low- and high-poverty schools

	All	Low-poverty	High-poverty	Gap (high- minus low-poverty)
Four standard types of professional development				
Workshops, conferences, or training sessions (teacher is not the presenter)				
Yes	91.9%	90.8%	92.7%	1.9 ppt.
No	8.10%	9.20%	7.3%	-1.9 ppt.
University courses related to teaching				
Yes	26.6%	27.5%	25.3%	-2.2 ppt.
No	73.4%	72.5%	74.7%	2.2 ppt.
Workshops, conferences, or training sessions (teacher is the presenter)				
Yes	23.1%	23.4%	23.0%	-0.4 ppt.
No	76.9%	76.6%	77.0%	0.4 ppt.
Observational visits to other schools				
Yes	21.6%	22.5%	20.9%	-1.6 ppt.
No	78.4%	77.5%	79.1%	1.6 ppt.
Any type of professional development focused on a specific area (content or subject)				
Content of the subject(s) they teach				
Yes	85.1%	84.0%	86.4%	2.4 ppt.
No	14.9%	16.0%	13.6%	-2.4 ppt.
Use of computers for instruction				
Yes	67.7%	70.4%	66.8%	-3.6 ppt.
No	32.3%	29.6%	33.2%	3.6 ppt.
Reading instruction				
Yes	57.0%	51.7%	61.1%	9.4 ppt.
No	43.0%	48.3%	38.9%	-9.4 ppt.
Student discipline and management in the classroom				
Yes	42.3%	35.7%	47.2%	11.5 ppt.
No	57.7%	64.3%	52.8%	-11.5 ppt.
Teaching students with disabilities				
Yes	37.2%	36.6%	38.3%	1.7 ppt.
No	62.8%	63.4%	61.7%	-1.7 ppt.

Table 5 (cont.)

	All	Low-poverty	High-poverty	Gap (high- minus low-poverty)
Teaching English language learners (ELLs)				
Yes	26.7%	19.3%	33.6%	14.2 ppt.
No	73.3%	80.7%	66.5%	-14.2 ppt.
Other activities that offer professional development opportunities				
Engage in research on a topic of interest to them professionally				
Yes	45.1%	49.5%	42.7%	-6.8 ppt.
No	54.9%	50.5%	57.3%	6.8 ppt.
Participate in regularly scheduled collaboration with other teachers on issues of instruction (excluding administrative meetings)				
Yes	80.8%	81.2%	81.1%	-0.1 ppt.
No	19.2%	18.8%	18.9%	0.1 ppt.
Observe, or be observed by, other teachers in the classroom				
Yes	67.0%	65.8%	68.7%	2.9 ppt.
No	33.0%	34.2%	31.3%	-2.9 ppt.

Notes: Data are for teachers in public noncharter schools. Teachers were asked, "In the past 12 months, have you participated in any of the following professional development activities?" For "other activities," teachers were asked, "In the past 12 months, did you do any of the following?"

Source: 2011–2012 Schools and Staffing Survey (SASS) microdata from the U.S. Department of Education's National Center for Education Statistics (NCES)

Economic Policy Institute

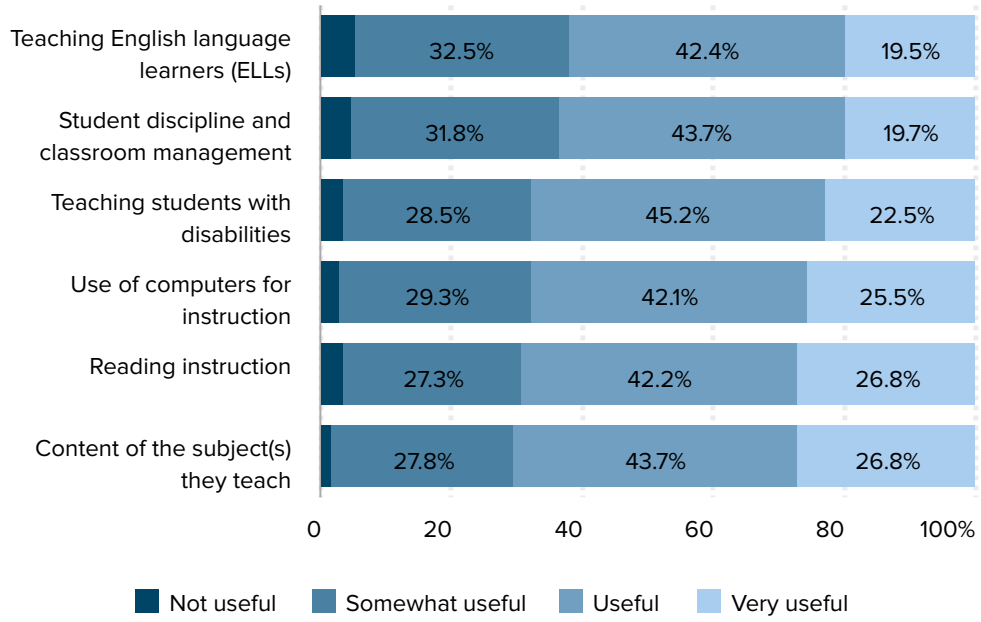
than a full week of work hours—over the course of the school year. And those 44 average hours spent on professional development do not even include the activities presented in the top and bottom panels. (Note that the hours estimate is not provided directly in the survey, but is reported through a categorical variable; we use standard interpolation to calculate the midpoint between the hours-intervals, use that as an estimate of the hours for each activity, and add these individual estimates to get the total hours.)

The activities presented in the table's bottom panel reflect teachers' access to teacher-led research and to opportunities for feedback and appraisal, which are important components of teacher training and professional development systems in some of the world's highest-performing school systems, such as those in Finland, Singapore, Canada (specifically Alberta, Canada), and Shanghai (Darling-Hammond, Burns, et al. 2017). The shares of teachers who have participated in these activities are in general notable. More than four-fifths of teachers have participated in regularly scheduled collaboration with other teachers on issues of instruction (80.8 percent), and two-thirds have been observed or have observed other teachers in their classrooms (67.0 percent). The exception is the more modest, though still substantial, share of teachers who have engaged in research on a topic of interest for them, with less than half of the teachers (45.2 percent) having done so.

Figure B

Low shares of teachers find professional development 'very useful'

Shares of teachers giving content-specific professional development activities a given ranking of usefulness, by subject area



Notes: Data are for teachers in public noncharter schools. The figure shows shares of teachers who answered "very useful," "useful," "somewhat useful," or "not useful" when asked, for specific professional development activities, "Overall, how useful were these activities to you?"

Source: 2011–2012 Schools and Staffing Survey (SASS) microdata from the U.S. Department of Education's National Center for Education Statistics (NCES)

Economic Policy Institute

A key lesson from Table 5 is that, while professional development is widespread and teachers are devoting time to it, some of the more effective types of professional development, and some of the critical professional development subject areas, are not being accessed by the majority of teachers. In **Figure B**, we explore this issue in more depth by analyzing data that indicate how useful (or not useful) specific professional development activities are to teachers.

Figure B shows that teachers generally are not highly satisfied with their professional development experiences. Across the range of professional development opportunities listed, only 19.5 to 26.8 percent of teachers found any of the activities very useful, with larger shares (29.6 to 38.1 percent) finding the activities either not useful or just somewhat useful. (Note that this information is only available for the professional development activities by subject—the middle panel of Table 5—not for other activities listed in the table.)

Moreover, not all teachers have access to those activities that are reported to be most useful. A larger share of teachers (26.8 percent) say they are very satisfied with

professional development received on the subject they teach—but while this activity is available to most teachers (85.1 percent have access to it), about one in seven (14.9 percent) still lack access to such training. Smaller shares (less than 20 percent) of teachers found training very useful when they were trained on how to teach ELL students (26.7 percent of teachers received training in this area) or on student discipline and management in the classroom (42.3 percent of teachers received training in this area).

Now we turn to disparities between teachers in high- and low-poverty schools with respect to accessing different types of professional development offerings (shown in the last three columns in Table 5) and disparities in professional development usefulness ratings (shown in **Appendix Table 1**). The data here raise further questions about the responsiveness of professional development systems to teachers'—and students'—needs. Relative to their peers in low-poverty schools, teachers in high-poverty schools were more likely to attend workshops, conferences, or training sessions—the professional development category deemed least meaningful, as mentioned above. The findings (in the bottom panel of Table 5) also point to gaps in teachers' access to other activities that are highly regarded in education, although teachers in high-poverty schools are not always at a disadvantage. For example, while the share of teachers engaging in teacher-led research is close to 7 percentage points lower in high-poverty schools than in low-poverty schools, the share of teachers engaged in peer observation is about 3 percentage points higher in high-poverty schools than in low-poverty schools.

There are also some gaps between teachers in high- and low-poverty schools with regard to how useful they find specific professional development activities. Indeed, we find an inverse relationship between level of participation in a type of activity shown in Table 5 and its utility for teachers (shown in Appendix Table 1), by school type. We identify two areas of concern with regard to high-poverty schools: Teachers in high-poverty schools are participating more often in professional development activities that they find less useful, and less often in activities that they find more useful, relative to teachers in low-poverty schools. Specifically, while larger shares of teachers in high-poverty schools participate in subject-specific professional development or in classroom management and discipline programs than teachers in low-poverty schools do, smaller shares find those activities very useful. Conversely, while smaller shares of teachers in high-poverty schools participate in computer-for-instruction programs, larger shares find such programs useful.[22]

While these differences in the shares of teachers finding these activities very useful are small, it is important to note that even small differences tend to become cumulatively large problems in high-poverty schools, as the challenges compound one another (García and Weiss 2019a, 2019b, 2019c, 2019d). The lower levels of preparation and first-year support for new teachers in high-poverty schools described in this report, as well as the gaps in meaningful professional development opportunities, can not only widen the gaps in the qualifications and credentials of the teaching workforce in high- versus low-poverty schools, but may also further demoralize teachers in high-poverty schools and erode their sense of purpose.

Teachers' lack of support and limited say in school and classroom policies impedes the development of learning communities

As we discuss in our previous report on school climate (García and Weiss 2019d), teacher satisfaction and retention are affected by teachers' working environments, including their relationships with other teachers and with administrators in their schools. Having nurturing and supportive relationships with colleagues and with administrators, being listened to as professionals, and having a say over the policies of their schools and practices in their classrooms are important components of teachers' overall satisfaction and sense of purpose. These attributes of a supportive school climate also correlate with their retention in the profession (García and Weiss 2019d; Ladd 2011).

In this report on professional development, we return to these indicators because they also shed important light on how positive learning communities for teachers can support their teaching and career growth. Different sources point out that collegial relationships, opportunities to cooperate and coordinate, and consideration for teachers' say in school policy and classroom practices are just as important to creating learning communities in schools as formal training and other, more standard forms of professional development (Quint 2011; Warner-Griffin, Cunningham, and Noel 2018; Schwartz 2019; Ingersoll and Collins 2018; OECD 2016, 2019).[23] As shown in **Tables 6** and **7** (reproduced from Tables 3 and 4 in García and Weiss 2019d), relationship-related indicators of a learning community are far from universal. The text below borrows heavily from our language in García and Weiss 2019d, but discusses what the findings mean for teacher professionalism and for building learning communities in our nation's schools.

Table 6 shows that, across the board, there is a troubling lack of support for teachers from administrators and colleagues. This means that schools are not providing teachers with strong learning communities characterized by solid administrative supports and leadership, time for peer collaboration, and a shared sense of purpose among school staff.

In six of the seven categories reviewed in the table, less than half of the teachers report feeling fully supported by the school administration, their colleagues, or the community in general. The one exception is a proxy for leadership: whether "the principal knows what kind of school he or she wants and has communicated it to the staff." Just over half (51.6 percent) of teachers surveyed said that their principals exhibit that attribute. And about half (49.6 percent) of teachers report that they see "supportive and encouraging behavior" by school administrators (a proxy for a positive working environment set by the administration). Slightly less than half (47.9 percent), however, strongly agree with the statement, "I make a conscious effort to coordinate the content of my courses with that of other teachers" (a proxy for the community environment created by teachers to facilitate coordination). Only slightly more than a third strongly agree that "there is a great deal of cooperative effort among the staff members" (38.4 percent) or that their colleagues share

Table 6

Teachers' perceptions of being supported by administrators, colleagues, and parents of students

Shares of teachers who strongly agree and who do not strongly agree with the statements presented, in all schools and in low- and high-poverty schools

	All	Low-poverty	High-poverty	Gap (high-minus low-poverty)
The principal knows what kind of school he or she wants and has communicated it to the staff.				
Strongly agrees (feels fully supported)	51.6%	53.4%	50.8%	-2.6 ppt.
Does not strongly agree (experiences some level of conflict or disagreement)	48.4%	46.6%	49.2%	2.6 ppt.
The school administration's behavior is supportive and encouraging.				
Strongly agrees (feels fully supported)	49.6%	52.0%	47.9%	-4.1 ppt.
Does not strongly agree (experiences some level of conflict or disagreement)	50.4%	48.0%	52.1%	4.1 ppt.
I make a conscious effort to coordinate the content of my courses with that of other teachers.				
Strongly agrees (feels fully supported)	47.9%	50.0%	47.4%	-2.6 ppt.
Does not strongly agree (experiences some level of conflict or disagreement)	52.1%	50.0%	52.6%	2.6 ppt.
There is a great deal of cooperative effort among the staff members.				
Strongly agrees (feels fully supported)	38.4%	41.0%	36.6%	-4.4 ppt.
Does not strongly agree (experiences some level of conflict or disagreement)	61.6%	59.0%	63.4%	4.4 ppt.
Most of my colleagues share my beliefs and values about what the central mission of the school should be.				
Strongly agrees (feels fully supported)	36.0%	37.3%	35.6%	-1.7 ppt.
Does not strongly agree (experiences some level of conflict or disagreement)	64.0%	62.7%	64.4%	1.7 ppt.
In this school, staff members are recognized for a job well done.				
Strongly agrees (feels fully supported)	32.4%	34.9%	31.3%	-3.6 ppt.
Does not strongly agree (experiences some level of conflict or disagreement)	67.6%	65.1%	68.7%	3.6 ppt.

Table 6 (cont.)

	All	Low-poverty	High-poverty	Gap (high-minus low-poverty)

Table 6 (cont.)

	All	Low-poverty	High-poverty	Gap (high-minus low-poverty)
I receive a great deal of support from parents for the work I do.				
Strongly agrees (feels fully supported)	13.3%	20.6%	9.4%	-11.2 ppt.
Does not strongly agree (experiences some level of conflict or disagreement)	86.7%	79.4%	90.6%	11.2 ppt.

Notes: Data are for teachers in public noncharter schools. The table shows, for each of the statements listed, the share of teachers who responded that they "strongly agree" versus the share who checked one of the other options on the survey form: "somewhat agree," "somewhat disagree," or "strongly disagree." The statement "I make a conscious effort to coordinate the content of my courses with that of other teachers" is a proxy for the community environment created by teachers to facilitate coordination; an answer of "strongly agrees" indicates that the teacher belongs to a supportive learning community. A teacher is considered to be in a low-poverty school if less than 25 percent of the students in his/her classroom are eligible for free or reduced-price lunch programs; a teacher is considered to be in a high-poverty school if 50 percent or more of the students in his/her classroom are eligible for those programs.

Source: 2015–2016 National Teacher and Principal Survey (NTPS) microdata from the U.S. Department of Education's National Center for Education Statistics (NCES)

Economic Policy Institute

their views of what the school's mission should be (36.0 percent). Fewer than one in three teachers affirm that they are recognized for a job well done (32.4 percent), and only 13.3 percent of teachers, or about one in 10, affirm that they receive a great deal of support from the parents of their students for the work they do. Put another way, the survey responses indicate that high shares of teachers experience some level of conflict or disagreement in their schools.[24]

Table 7 shows that there is also a troubling lack of consideration for teachers' say in school policy and in their classrooms, which impedes efforts to build strong learning communities (not to mention that it demonstrates disrespect for teachers' professional knowledge and judgment). Schools are missing out when it comes to learning and benefiting from the contributions of teachers, including when determining the content of in-service professional development programs. As the table shows, meager shares of teachers report having a great deal of influence or control over school policy, suggesting a lack of control over key aspects of their working environments. (And, as noted in our May 2019 report, this generalized disrespect for teachers' knowledge of their jobs and professional judgment also hurts morale and satisfaction and even affects teachers' plans as to whether they will or will not stay in teaching indefinitely.) Just 11.1 percent of teachers have a great deal of influence determining the content of in-service professional development programs; this is quite troubling, given national and international surveys and testimonies showing that teachers want to play a more direct role in selecting the types and content of professional development opportunities offered to them (see Bill & Melinda Gates Foundation 2014; Loewus 2019; OECD 2019; Kirk 2019; Schwartz 2019). Only a tiny share (3.2 percent) of teachers report having a great deal of influence over how they are evaluated. The other school policy categories with shares under 10 percent are "setting discipline policy" and "hiring new teachers." The category with the highest share of teachers reporting a great deal of influence is "establishing curriculum," but even that is true for just one in five teachers (20.4 percent).

Although teachers report much more influence in their classrooms than on school policies, they still indicate a surprisingly small level of control over their daily activities. This indicates that they see little room for contributing to and self-guiding their professional growth and exercising their own judgment and expertise. The shares of teachers who report a great deal of influence or control range from 60 to 70 percent for the most basic actions, such as evaluating and grading students or assigning the amount of homework, but fall to much lower sub-30-percent shares when the actions involve selecting textbooks and other instructional materials and controlling topics and skills to be taught. To put it another way, a large majority of teachers lack authority with respect to how they teach and how their classrooms operate.[25]

Strengthening professional development and the culture of learning could help attract and retain

Table 7

Teachers' influence over school policy and in the classroom

Shares of teachers reporting that they do and do not have a 'great deal' of influence/control over the factors presented, in all schools and in low- and high-poverty schools

	All	Low-poverty	High-poverty	Gap (high-minus low-poverty)
School policy at this school				
Establishing curriculum				
A great deal of influence	20.4%	21.4%	18.6%	-2.8 ppt.
Not a great deal of influence	79.6%	78.6%	81.4%	2.8 ppt.
Setting performance standards for students				
A great deal of influence	17.6%	17.8%	17.5%	-0.3 ppt.
Not a great deal of influence	82.4%	82.2%	82.5%	0.3 ppt.
Determining the content of in-service professional development programs				
A great deal of influence	11.1%	11.6%	10.9%	-0.7 ppt.
Not a great deal of influence	88.9%	88.4%	89.1%	0.7 ppt.
Setting discipline policy				
A great deal of influence	8.9%	8.5%	9.7%	1.2 ppt.
Not a great deal of influence	91.1%	91.5%	90.3%	-1.2 ppt.
Hiring new full-time teachers				
A great deal of influence	5.3%	6.2%	5.1%	-1.1 ppt.
Not a great deal of influence	94.7%	93.8%	94.9%	1.1 ppt.
Evaluating teachers				
A great deal of influence	3.2%	2.9%	3.4%	0.5 ppt.
Not a great deal of influence	96.8%	97.1%	96.6%	-0.5 ppt.
Classroom planning and teaching				
Determining the amount of homework to be assigned				
A great deal of control	68.3%	67.6%	67.8%	0.2 ppt.
Not a great deal of control	31.7%	32.4%	32.2%	-0.2 ppt.
Evaluating and grading students				
A great deal of control	61.2%	62.0%	59.8%	-2.2 ppt.
Not a great deal of control	38.8%	38.0%	40.2%	2.2 ppt.

Table 7 (cont.)

	All	Low-poverty	High-poverty	Gap (high-minus low-poverty)

Table 7 (cont.)

	All	Low-poverty	High-poverty	Gap (high-minus low-poverty)
Disciplining students				
A great deal of control	42.3%	45.0%	41.0%	-4.0 ppt.
Not a great deal of control	57.7%	55.0%	59.0%	4.0 ppt.
Selecting contents, topics, and skills to be taught				
A great deal of control	28.7%	29.2%	27.0%	-2.2 ppt.
Not a great deal of control	71.3%	70.8%	73.0%	2.2 ppt.
Selecting textbooks and other instructional materials				
A great deal of control	25.5%	27.3%	23.0%	-4.3 ppt.
Not a great deal of control	74.5%	72.7%	77.0%	4.3 ppt.

Notes: Data are for teachers in public noncharter schools. The table shows the shares of teachers who answered "A great deal of [influence/control]" on the survey instrument versus "moderate," "minor," or "no [influence/control]" when asked "How much actual influence do you think teachers have over school policy at this school in each of the following areas?" or "How much actual control do you have in your classroom at this school over the following areas?" A teacher is considered to be in a low-poverty school if less than 25 percent of the students in his/her classroom are eligible for free or reduced-price lunch programs; a teacher is considered to be in a high-poverty school if 50 percent or more of the students in his/her classroom are eligible for those programs.

Source: 2015–2016 National Teacher and Principal Survey (NTPS) microdata from the U.S. Department of Education's National Center for Education Statistics (NCES)

Economic Policy Institute

teachers

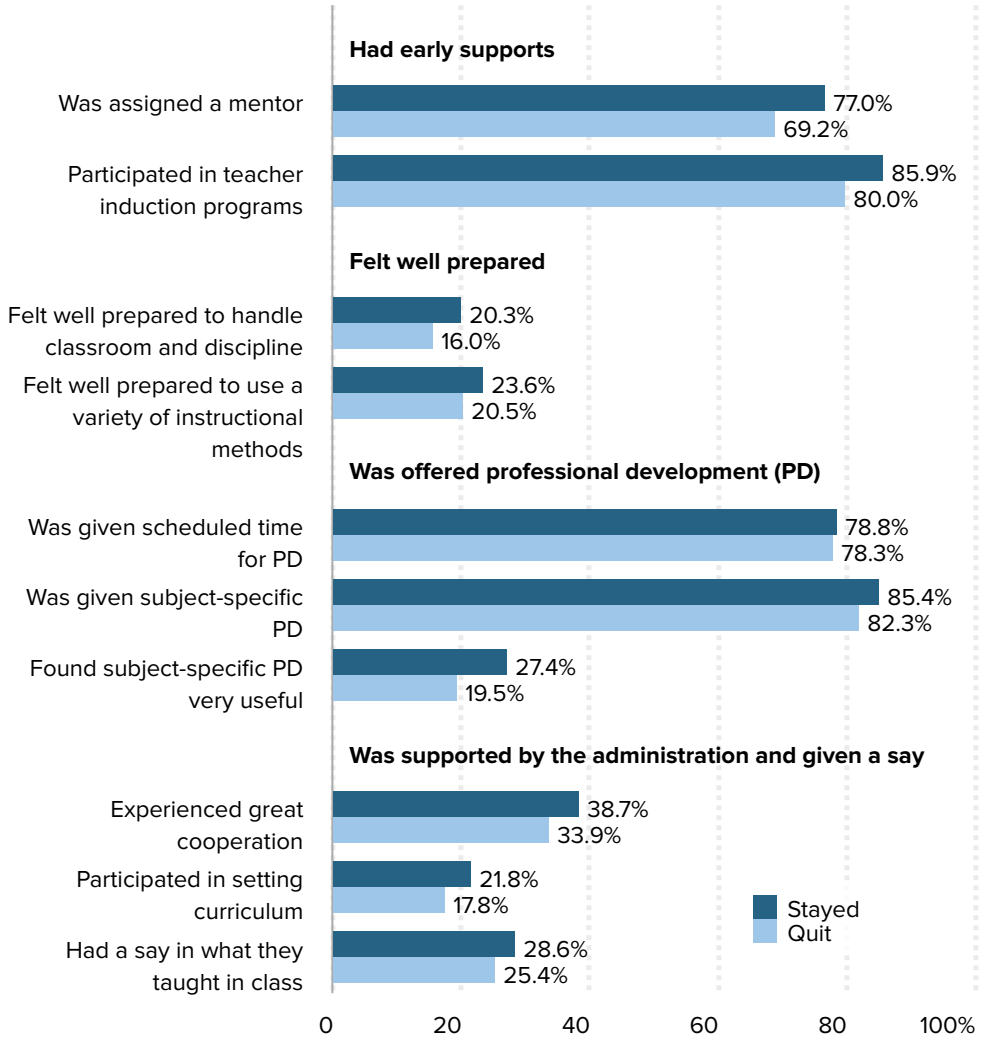
Proper professional development should not be seen as an extraneous luxury good in education. As mentioned previously, it is the norm in other countries, where it is embedded as part of the regular daily and weekly experience of teaching and learning (Darling-Hammond, Burns, et al. 2017). And in the United States it has gained growing visibility since the passage of ESSA in 2015. Proper professional development not only validates teachers' professional standing and strengthens the teaching workforce, but it also correlates with teacher retention and thus could contribute to ameliorating the national teacher shortage. In our two most recent reports (García and Weiss 2019c, 2019d), we argue that low salaries and difficult school climates make teaching less attractive for both potential teachers and highly credentialed teachers already in the profession; here, we likewise argue that lack of early career supports and lack of meaningful professional development opportunities diminish the attractiveness of the teaching profession. Conversely, early career supports, meaningful professional development opportunities, and a supportive climate and culture of learning can help mitigate some of the factors that make it harder for many schools to attract and retain teachers and to strengthen the quality of the teaching workforce overall.

Figure C lists a subset of the early career, continuous training, and influence indicators we have examined so far and shows the shares of "staying" and "quitting" teachers who reported, in their responses to the 2011–2012 Schools and Staffing Survey, that they received the support or experienced the indicator. "Staying" teachers are those who, in the 2012–2013 Teacher Follow-Up Survey, were still at the same school, while "quitting" teachers are those who had left the school *and* were not in the teaching profession at the time of the follow-up survey. (Those teachers who left to teach at another school are not included in the figure.) Across the board, larger shares of teachers who stayed in teaching had reported the year before that they felt well prepared, received early supports, had more useful professional development opportunities, worked in more cooperative environments, and felt they had more influence over the school and in their classrooms. More than three-quarters of teachers who stayed at their school had participated in teacher mentoring programs, versus just over two-thirds among teachers who quit. Larger shares of staying teachers reported that the professional development that was specific to their subject of main assignment was useful. And relative to quitting teachers, larger shares of teachers who stayed felt that they had had real influence over policy or classroom decisions or worked in cooperative environments.

Figure C

Teachers who stayed had received more supports and professional development opportunities than teachers who quit

Shares of staying and quitting teachers who reported that they felt well prepared and received the listed supports and opportunities in the previous year



Notes: Data are for teachers in public noncharter schools. Teaching status is determined by the reported status of teachers in the Teacher Follow-Up Survey conducted for the 2012–2013 school year, one year after the Schools and Staffing Survey. "Staying" teachers are those whose status in 2012–2013 is "Teaching in this school." "Quitting" teachers are those who generated a vacancy in the 2012–2013 school year and are not in the profession (they left teaching, were on long-term leave, or were deceased). Not included in the figure are teachers who generated a vacancy in the school year but remained in the profession (i.e., left to teach in another school or were on short-term leave and planned to return to the school). See notes to Tables 1–7 and Figure B for full definitions of the given indicators.

Source: 2011–2012 Schools and Staffing Survey (SASS) and 2012–2013 Teacher Follow-Up Survey (TFS) microdata from the U.S. Department of Education's National Center for Education Statistics

Economic Policy Institute

Conclusion

In a knowledge-based profession such as teaching, continuous learning—through professional development, career ladder systems that enable teachers to progress in their profession, and collaborative relationships—is critical for novice and experienced teachers alike. Continuous learning helps teachers keep up with advances in research on effective teaching and learning and with the changing demands of the profession. In addition, early supports and continuous training can make teaching a more attractive occupation, and thus help maintain a stable workforce of highly credentialed teachers. Finally, continuous learning helps professionalize teaching, enhancing respect for the profession.

This report portrays a mosaic of indicators that describe teachers' continuous training and the degree to which their schools function as learning communities. Our analyses uncover a few areas where opportunities and supports are strong and can be expanded on; but we also uncover other, more numerous areas where there is substantial room to improve the professional supports offered. With regard to the latter, schools should work to ensure that more teachers can access the types of training and development that they find most helpful and most effective, and allow teachers to exercise their judgement and autonomy. As we note at the beginning of the report, there is no established benchmark for what a universal, optimal set of professional development activities looks like. We are thus understandably in gray areas in terms of how continuous learning indicators act as stressors or facilitators that affect the teacher labor market. Yet, even with the limitations of our analyses, it is clear that these supports play a potentially important role in teacher recruitment and retention.

For one, the fairly broad access to certain types of professional development—workshops and conferences or training sessions, activities focused on the subjects that teachers teach, and, for novice teachers, the opportunity to work with a mentor in the first year of teaching—suggests that there already is, in most schools or for most teachers, a foundation for providing professional development that could be expanded to incorporate other types of opportunities. However, neither access to resources for professional development (such as reimbursement or released time for teaching) nor participation in other reportedly more useful forms of early and continuous training (such as teachers leading training sessions or participating in observational visits to other schools) are nearly as widespread. Teachers' reported satisfaction with the training and professional development they are offered is also limited, suggesting that there may be issues with both the quality and quantity, broadly speaking, of the options offered. The low shares of teachers participating in the types of professional development shown by research to be most effective, and the low shares of teachers reporting that the activities they do access are "very useful," suggest that a significant portion of what is being offered is suboptimal. The high shares of teachers reporting that they have less than a great deal of influence over what they teach in the classroom (71.3 percent), and over what instructional materials they use (74.5 percent), show a clear need to amplify teachers' say in their schools.

Put another way, there is an opportunity to greatly improve our understanding of the use

of early supports and continuous training opportunities and to make sure these are helping our teachers do their jobs well, feel more valued, and perceive possibilities to advance in their careers. There is also room to further professionalize teaching by giving teachers a greater say in their day-to-day actions and over the policies and rules in place in their schools. In short, there is an opportunity to effect a total shift toward establishing a real culture of learning in our schools that seems ripe for exploration.

Given the associations between optimal professional development (early career supports, ongoing professional development, and relationships that capitalize on teachers' professional judgment) and teacher retention and recruitment, efforts to establish a system of supports and a real learning community would also help address the teacher shortage. To ensure that both early supports and ongoing professional development fulfill their intended missions, they need to be adequate, sustained, and meaningful to teachers. In order to improve the system's quality as a whole and elevate the teaching profession, it is also essential that we improve these conditions across the board, so that the needs of teachers in high-poverty schools are not overlooked. As suggested in our companion pieces in this series, only if policymakers think holistically about how to address the teacher shortage will they find the necessary resources to adequately fund our schools, to eliminate the barriers to teaching and learning, and to elevate the level of respect for teachers' knowledge, experience, and judgment.

About the authors

Emma García is an education economist at the Economic Policy Institute, where she specializes in the economics of education and education policy. García's research focuses on the production of education (cognitive and noncognitive skills); evaluation of educational interventions (early childhood, K–12, and higher education); equity; returns to education; teacher labor markets; and cost-effectiveness and cost–benefit analysis in education. She has held research positions at the Center for Benefit-Cost Studies of Education, the Campaign for Educational Equity, the National Center for the Study of Privatization in Education, and the Community College Research Center; she has consulted for MDRC, the World Bank, the Inter-American Development Bank, and the National Institute for Early Education Research; and she has served as an adjunct faculty member at the McCourt School of Public Policy, Georgetown University. García received her Ph.D. in economics and education from Columbia University Teachers College.

Elaine Weiss is the lead policy analyst for income security at the National Academy of Social Insurance, where she spearheads projects on Social Security, unemployment insurance, and workers' compensation. Prior to her work at the academy, Weiss was the national coordinator for the Broader, Bolder Approach to Education (BBA), a campaign launched by the Economic Policy Institute, from 2011–2017. BBA promoted a comprehensive, evidence-based set of policies to allow all children to thrive in school and life. Weiss has authored and co-authored EPI and BBA reports on early achievement gaps and the flaws in market-oriented education reforms. She is co-author, with former Massachusetts Secretary of Education Paul Reville, of *Broader, Bolder, Better*, published by

Harvard Education Press in 2019. Weiss came to BBA from the Pew Charitable Trusts, where she served as project manager for Pew's Partnership for America's Economic Success campaign. She has a Ph.D. in Public Policy from the George Washington University Trachtenberg School and a J.D. from Harvard Law School.

Acknowledgments

The authors are grateful to Lora Engdahl for her edits and suggested additions to this piece and for her extraordinary contributions to structuring the contents of this series of papers. We also appreciate John Schmitt's supervision of this project and Lawrence Mishel's guidance in earlier stages of this research. We acknowledge Julia Wolfe for her assistance with the tables and figures in this report, Kayla Blado for her work disseminating the report and her assistance with the media, Krista Faries for her work proofreading the text and wordsmithing sentences in several sections, John Carlo Mandapat for the infographics that accompany this report, and the rest of the communications staff at EPI for their contributions to the different components of this report and the teacher shortage series. We appreciate EPI Communications Director Pedro da Costa's coordination of all the steps required for the publication of this report and of the series.

Data sources used in this report

The analyses presented in this report rely mainly on the 2011–2012 Schools and Staffing Survey (SASS), the 2012–2013 Teacher Follow-Up Survey (TFS), and the 2015–2016 National Teacher and Principal Survey (NTPS). The surveys collect data on and from teachers, principals, and schools in the 50 states and the District of Columbia.[26] All three surveys were conducted by the U.S. Census Bureau for the U.S. Department of Education. The survey results are housed at the National Center for Education Statistics (NCES), which is part of the Department of Education's Institute of Education Sciences (IES).

The NTPS is the redesigned SASS, with a focus on "flexibility, timeliness, and integration with other Department of Education data" (NCES 2019). Both the NTPS and SASS include very detailed questionnaires at the teacher level, school level, and principal level, and the SASS also includes very detailed questionnaires at the school district level (NCES 2017). The TFS survey, which is the source of data on teachers who stay or quit, was conducted a year after the 2011–2012 SASS survey to collect information on the employment and teaching status, plans, and opinions of teachers in the SASS. Following the first administration of the NTPS, no follow-up study was done, preventing us from conducting an updated analysis of teachers by teaching status the year after the NTPS. NCES plans to conduct a TFS again in the 2020–2021 school year, following the 2019–2020 NTPS.

The 2015–2016 NTPS includes public and charter schools only, while the SASS and TFS include all schools (public, private, and charter schools).[27] We restrict our analyses to public noncharter schools and to teachers in public noncharter schools.

Appendix Table 1

Shares of teachers reporting that the following professional development activities were 'very useful,' in all schools and in low- and high-poverty schools

	All	Low-poverty	High-poverty	Gap (high-minus low-poverty)
Focus of professional development:				
Reading instruction	26.8%	26.0%	28.4%	2.5 ppt.
Content of the subject(s) they teach	26.8%	27.3%	26.9%	-0.4 ppt.
Use of computers for instruction	25.5%	24.8%	26.8%	2.0 ppt.
How to teach students with disabilities	22.5%	19.7%	24.1%	4.4 ppt.
Student discipline and management in the classroom	19.7%	20.2%	19.8%	-0.4 ppt.
How to teach English language learners (ELLs)	19.5%	19.1%	20.9%	1.8 ppt.

Notes: Data are for teachers in public noncharter schools. The table shows shares of teachers who answered "very useful" on the survey instrument versus "useful," "somewhat useful," or "not useful" when asked, for specific professional development activities, "Overall, how useful were these activities to you?"

Source: 2011–2012 Schools and Staffing Survey (SASS) microdata from the U.S. Department of Education's National Center for Education Statistics (NCES)

Economic Policy Institute

Appendix Table 2

Moonlighting by public school teachers

Share of teachers receiving additional compensation, by source, in all schools and in low- and high-poverty schools

	All	Low-poverty	High-poverty	Gap (high-minus low-poverty school)
Shares of teachers who reported that they received additional compensation:				
For extracurricular or additional activities for the school system	44.1%	45.9%	42.0%	-3.9 ppt.
From other sources from the school system (e.g., supplements)	8.5%	7.0%	9.3%	2.3 ppt.
For work outside of the school system	18.2%	19.5%	17.0%	-2.4 ppt.
Based on student performance in the school system (merit pay, etc.)	5.7%	5.8%	5.9%	0.1 ppt.
At least one of the above	59.0%	60.3%	57.5%	-2.9 ppt.

Notes: Data are for teachers in public noncharter schools. A teacher is considered to be in a low-poverty school if less than 25 percent of the students in his/her classroom are eligible for free or reduced-price lunch programs; a teacher is considered to be in a high-poverty school if 50 percent or more of the students in his/her classroom are eligible for those programs.

Source: 2015–2016 National Teacher and Principal Survey (NTPS) microdata from the U.S. Department of Education's National Center for Education Statistics (NCES)

Economic Policy Institute

Endnotes

1. For a more detailed review of media coverage on the shortage, see García and Weiss 2019a. Research on costs comes from Carver-Thomas and Darling-Hammond (2017) and the Learning Policy Institute (2017), who estimate that filling a vacancy costs $21,000 on average, and from Carroll (2007), who estimates the total annual cost of turnover at $7.3 billion per year. According to Strauss (2017), that estimated annual cost of turnover would exceed $8 billion at present.

2. A lack of sufficient, qualified teachers threatens students' ability to learn (Darling-Hammond 1999; Ladd and Sorensen 2016). Instability in a school's teacher workforce (i.e., high turnover and/or high attrition) negatively affects student achievement and diminishes teacher effectiveness and quality (Ronfeldt et al. 2013; Jackson and Bruegmann 2009; Kraft and Papay 2014; Sorensen and Ladd 2018). And high teacher turnover consumes economic resources (i.e., through costs of recruiting and training new teachers) that could be better deployed elsewhere.

3. The two main surveys we reviewed for this report did not ask teachers directly why they need professional development, and we are unaware of other surveys that include such a question.

4. ESSA 2015 provides opportunities for professional development under all titles in the Act and focuses on how to allow teachers to grow (*Education Week* 2018). Under the term "professional development," ESSA includes the following: activities that "are an integral part of school and local educational agency strategies for providing educators with the knowledge and skills necessary to enable students to succeed in a well-rounded education and to meet the challenging state academic standards"; activities that are "sustained (i.e., not stand-alone, 1-day, or short term workshops), intensive, collaborative, job-embedded, data-driven, and classroom-focused"; and activities that "improve…teachers' knowledge of the subjects they teach, their understanding of how students learn…; or are aligned with…academic goals of the school or local education agency" (ESSA 2015; Learning Forward 2019; *Education Week* 2018). ESSA expands the reach of professional development activities to encompass activities offered to other educators who work with students—including principals and paraprofessionals—and suggests building systems of professional learning (educator development, retention, and advancement) (Hirsh et al. 2016).

5. Our analyses of professional development activities and resources rely on the 2011–2012 Schools and Staffing Survey (SASS). Our analyses of early career supports, the influence and autonomy teachers have, and the culture of learning rely on the 2015–2016 National Teacher and Principal Survey (NTPS). Note that some figures in this report also appear in our May 2019 report on working environments in schools (García and Weiss 2019d). The professional development module that delivered data for the 2011–2012 SASS is rotating and was not included in the most recent data set available when we were conducting our study (2015–2016), but will be in the next cycle, 2017–2018, as noted in the questionnaire here: https://nces.ed.gov/surveys/ntps/question1718.asp. Most questions in this module have been modified, which will prevent comparative analyses over time in any event. We also remind readers that NTPS 2017–2018 will not include the Teacher Follow-Up Survey (TFS), which means it will not be possible to examine the correlation between professional development opportunities and retention with the next release of this study.

6. Other sources confirm widespread access to some sort of professional development for teachers in the U.S. (Bill & Melinda Gates Foundation 2014) and internationally (OECD 2019).

7. See Appendix Table 2 for shares of teachers receiving additional compensation from working for

the school district.

8. Croft, Guffy, and Vitale (2018) show that when a sample of students taking the ACT were asked to say why they were not interested in teaching, the lack of opportunities for career development was the second most cited reason, behind low salary. It is reasonable to assume that the presence of such opportunities would play some role in attracting more students into teaching.

9. See Darling-Hammond 1999; Ladd and Sorensen 2016; Ronfeldt et al. 2013; Jackson and Bruegmann 2009; Kraft and Papay 2014; Moore-Johnson, Kraft, and Papay 2012; Ladd 2011; Loeb, Darling-Hammond, and Luczak 2005; and Warner-Griffin, Cunningham, and Noel 2018.

10. In addition to preparation, induction programs are critical to making sure that teachers are ready to teach from the start of their careers (Darling-Hammond, Burns, et al. 2017; NCEE 2016; Ingersoll and Collins 2018). (An induction program is defined in the 2011–2012 Schools and Staffing Survey (SASS) questionnaire as "a program for beginning teachers that may include teacher orientation, mentoring, coaching, demonstrations, and/or assessments aimed at enhancing teacher effectiveness." An induction program is defined in the 2015–2016 NTPS as "a program for beginning teachers aimed to enhance teachers' effectiveness by providing systematic support.") Kraft, Blazar, and Hogan (2018) conducted a meta-analysis to show the significant effect of teacher coaching on both instruction and student performance (pooled effect sizes were 0.60 of a standard deviation (SD) and 0.18 SD, respectively). (Coaching programs include "all in-service PD programs where coaches or peers observe teachers' instruction and provide feedback to help them improve," according to the authors.) Other evaluations have demonstrated a positive influence of mentoring programs on both the teachers receiving mentoring and the mentors, as measured by the performance of their students, especially later in teachers' careers and especially in math (Goldhaber, Krieg, and Theobald 2018a, 2018b; Papay et al. 2016).

11. In keeping with the patterns identified in the previous reports in this series, teachers' perceived lack of preparedness is greater in high-poverty schools than in low-poverty schools. While our main focus in this report is to document patterns of career-building supports and gaps in them, it is important to acknowledge that, if anything, we need stronger, not weaker, supports for early-career teachers in high-poverty schools. That is because high-poverty schools already suffer from lower shares of highly credentialed teachers (García and Weiss 2019a), and thus teachers in high-poverty schools are especially in need of these early supports. Similarly, high-poverty schools also have higher shares of teachers who came into the profession through alternative certification programs (19 percent of teachers in high-poverty schools entered teaching this way, versus just over 13 percent in low-poverty schools). While research says that the route into teaching is not consistently associated with any significant differences in teacher effectiveness, our data show that, in practice, teachers who entered teaching from alternative programs feel less than "very well" prepared to do well in class. But we cannot disentangle how much of that difference is due to effective versus ineffective preparation, how much is due to concentration of these teachers in low-poverty schools, and how much is due to nongeneralized access to supports or to the quality of those supports: As mentioned in the text explaining Table 2, six of the nine types of supports that could be offered to teachers are being provided to at least 60 percent of teachers in high-poverty schools, so access is relatively broad—although not universal—in those schools. Therefore, we offer this information as complementary evidence that there is a need for strong preparation and early supports to ensure strong preparation of novice teachers, and that professional preparation and early career supports are worthy topics for future research.

12. Preparation received in teacher preparation programs and standards for becoming a teacher obviously play an important role in whether teachers are ready to teach in their first year, but teacher preparation programs and certification standards are beyond the scope of this report.

With regard to teacher preparation programs, see note 11. With regard to certification standards, earlier reports in this series identify certain trends in our exploration of Title II data from the U.S. Department of Education (2017a, 2017b) that could negatively affect teacher qualifications at the beginning of their careers. For example, we find that the number of states requiring content-specific bachelor's degrees for initial teaching credentials decreased between 2008–2009 and 2015–2016. Examining the requirements across all initial certificates available nationwide, we also note a large decrease in the share of initial teaching certificates requiring a content-specific bachelor's degree for middle school, which fell from 38.6 percent of all initial certificates in 2008–2009 to 22.8 percent of all initial certificates in 2015–2016, a 15.8 percentage-point decrease. Over the same period there were also drops in the share of initial certificates requiring performance assessments (down 16.2 percentage points), supervised clinical experience (down 10.8 percentage points), or a police record examination (down 17.2 percentage points). However, there was an increase in the share of initial certificates requiring "prescribed coursework" (up 10.8 percentage points) (see García and Weiss 2019b).

13. Indeed, the ratio of mentors to teachers was 1.01 in low-poverty schools—i.e., there were just enough mentors to have one per teacher—versus just 0.86 in high-poverty schools—i.e., there were more teachers who needed a mentor than there were mentors available.

14. As mentioned earlier, the share of novice teachers who felt they were very well prepared to teach in their classrooms was lower in high-poverty schools than in low-poverty schools (Table 1). Earlier reports in this series discuss the other stressors heightened in high-poverty schools, which we summarize here. On average, the credentials of teachers in high-poverty schools—overall and for staying teachers (versus those who quit)—are worse than in low-poverty schools. "Lower credentials" here means higher shares of inexperienced teachers, teachers who entered into teaching via alternative routes and who are not fully certified or do not have a background in the subject of main assignment (García and Weiss 2019a). There is a larger churn rate and therefore more staff instability in high-poverty schools (García and Weiss 2019b). Teacher pay is lower in high-poverty schools, on average, and teachers in high-poverty schools not only receive a smaller amount of income from moonlighting (if they moonlight), but also the moonlighting that do is less likely to involve paid extracurricular or additional activities for the school system that would not only generate extra pay but also help them grow professionally (García and Weiss 2019c; see Appendix Figure B). Finally, school climates are more challenging in high-poverty schools, where, relative to low-poverty schools, larger shares of teachers report facing barriers to teaching, experiencing threats to physical and mental safety, being dissatisfied, and not planning to stay in teaching indefinitely (García and Weiss 2019d).

15. See also Learning Forward 2019; ESSA 2015; Bill & Melinda Gates Foundation 2014; Kraft, Blazar, and Hogan 2018; and Darling-Hammond, Hyler, et al. 2017.

16. Unfortunately, we cannot assess when professional development is offered and whether all teachers can access it, nor what assignment mechanisms to professional development are in place. Information on time and effectiveness is also limited.

17. Although U.S. teachers share this broad access to professional development with their rich-country peers, U.S. teachers may be less satisfied than their peers with the usefulness of these activities. New data from the Teaching and Learning International Survey (TALIS) administered by the Organization for Economic Cooperation and Development in 48 countries and economies show that more than 90 percent of teachers and principals in OECD countries attended "at least one professional development activity" in the year prior to the survey and 82 percent of teachers reported that the training had a positive impact on their teaching practice (OECD 2019).

18. For instance, in some cases, resources to access professional development may be limited due

to insufficient funding or for other reasons. There is also not sufficient information in our data to discern how consequential the gaps across schools may be, but the important point is to emphasize that there is a lack of these important resources for accessing professional development, and more so in high-poverty schools (with the exception of scheduled time in the contract, which is provided for a majority of teachers).

19. According to Croft et al. 2010, job-embedded professional development "refers to teacher learning that is grounded in day-to-day teaching practice and is designed to enhance teachers' content-specific instructional practices with the intent of improving student learning" (Croft et al. 2010, citing work by Darling-Hammond and McLaughlin 1995 and Hirsh 2009).

20. The research by Kraft, Blazar, and Hogan (2018) to identify these features of effective professional development builds on Darling-Hammond et al. 2009; Desimone 2009; Desimone and Garet 2015; Garet at al. 2001; and Hill 2007 (see p. 548).

21. With regard to workshops, Kraft, Blazar, and Hogan (2018) explain that they "are often viewed as insufficient to address the inherently multifaceted nature of teachers' practice" (see p. 551, citing Kennedy 2016; Opfer and Pedder 2011; Schachter 2015). Quint (2011) acknowledges that professional development is criticized for being offered in the form of a "one-shot" (low-cost) lecture or workshop, rather than in the forms that teachers prefer, including "intensive summer institutes, follow-up group sessions, and coaching of individual teachers."

22. The exception to this trend is that larger shares of teachers in high-poverty schools participated in ELL teacher training than in low-poverty schools (33.5 percent vs. 19.3 percent), and larger shares of teachers in high-poverty schools *also* found such training "very useful" compared with teachers in low-poverty schools (20.9 percent vs. 19.1 percent). This differential may be partly attributable to the fact that teachers in high-poverty schools serve larger shares of students in ELL programs.

23. As some of these sources argue, teachers' relationships and influence are important components of teacher professionalism. For example, Ingersoll and Collins (2018) assess whether teaching meets the model attributes of a professional career—including workplace authority and high prestige, among other attributes. The OECD reports on the Teaching and Learning International Survey (TALIS) (OECD 2016, 2019) argue that there are several pillars in teaching professionalism, including perceived prestige, career opportunities, collaborative culture, and level of professional autonomy and responsibility. Other sources discuss teachers' relationships and influence on a practical level, including as components of a learning community for teachers. For example, Quint (2011) emphasizes the idea of "a broader conception of teaching learning that involves all teachers in a school in a professional learning community that is engaged in a continuous and collegial cycle of learning, practice, reflection, and improvement."

24. As discussed in García and Weiss 2019d, indicators of a poor learning community are more pronounced in high-poverty schools. A larger share of teachers in high-poverty schools indicate some level of conflict or disagreement in attitudes or beliefs with the administration or colleagues than do teachers in low-poverty schools. By far the biggest gap between high- and low-poverty schools is in support teachers receive from their students' parents: Nine out of 10 teachers in high-poverty schools do not feel fully supported by parents for the work they do compared with a still-very-high eight in 10 teachers in low-poverty schools. See research on comprehensive supports that include engaging parents in Weiss and Reville 2019.

25. The usual gaps between shares of teachers reporting positive working conditions in high- and low-poverty schools also appear here. In the areas of school policy, the gaps between teachers' autonomy or influence in high- and low-poverty schools are small, in general (under 2 percentage

points for all categories except "establishing curriculum"), and in fact a slightly greater share of teachers in high-poverty schools report having a great deal of control over setting discipline policy and evaluating teachers. In terms of autonomy in their classrooms: The bottom half of the table shows that in all tasks listed except assigning homework, teachers in high-poverty schools have less of a say than their counterparts in low-poverty schools and that the gaps range from 2.2 to 4.3 percentage points.

26. The 2015–2016 NTPS does not produce state-representative estimates. The forthcoming 2017–2018 NTPS will support state-level estimates.

27. The forthcoming 2017–2018 NTPS will include private schools.

References

Bill & Melinda Gates Foundation. 2014. *Teachers Know Best: Teachers' Views on Professional Development*. December 2014.

Carroll, Thomas G. 2007. *Policy Brief: The High Cost of Teacher Turnover*. National Commission on Teaching and America's Future.

Carver-Thomas, Desiree, and Linda Darling-Hammond. 2017. *Teacher Turnover: Why It Matters and What We Can Do About It*. Learning Policy Institute, August 2017.

Croft, Michelle, Gretchen Guffy, and Dan Vitale. 2018. *Encouraging More High School Students to Consider Teaching*. ACT Policy Research, June 2018.

Croft, Andrew, Jane G. Coggshall, Megan Dolan, and Elizabeth Powers (with Joellen Killion). 2010. *Job-Embedded Professional Development: What It Is, Who Is Responsible, and How to Get It Done Well*. National Comprehensive Center for Teacher Quality, Mid-Atlantic Comprehensive Center, and National Staff Development Council.

Darling-Hammond, Linda. 1999. *Teacher Quality and Student Achievement: A Review of State Policy Evidence*. Center for the Study of Teaching and Policy, University of Washington, Seattle.

Darling-Hammond, Linda, Dion Burns, Carol Campbell, A. Lin Goodwin, Karen Hammerness, Ee Ling Low, Ann McIntyre, Mistilina Sato, and Kenneth Zeichner. 2017. *Empowered Educators: How High-Performing Systems Shape Teaching Quality Around the World*. San Francisco: Jossey-Bass.

Darling-Hammond, Linda, Maria E. Hyler, and Madelyn Gardner, with assistance from Danny Espinoza. 2017. *Effective Teacher Professional Development*. Learning Policy Institute, May 2017.

Darling-Hammond, Linda, and Milbrey W. McLaughlin. 1995. "Policies That Support Professional Development in an Era of Reform." *Phi Delta Kappan* 76, no. 8: 597–604.

Darling-Hammond, Linda, Ruth Chung Wei, Alethea Andree, Nikole Richardson, and Stelios Orphanos. 2009. *Professional Learning in the Learning Profession: A Status Report on Teacher Development in the United States and Abroad*. National Staff Development Council and School Redesign Network at Stanford University, February 2009.

Desimone, Laura M. 2009. "Improving Impact Studies of Teachers' Professional Development: Toward Better Conceptualizations and Measures." *Educational Researcher* 38, no. 3: 181–199. https://doi.org/10.3102/0013189X08331140.

Desimone, Laura M., and Michael S. Garet. 2015. “Best Practices in Teachers’ Professional Development in the United States.” *Psychology, Society and Education* 7, no. 3: 252–263.

Dias-Lacy, Samantha L., and Ruth V. Guirguis. 2017. “Challenges for New Teachers and Ways of Coping with Them.” *Journal of Education and Learning* 6, no. 3. https://doi.org/10.5539/jel.v6n3p265.

Education Week. 2018. “How ESSA Affects You: Shifting Focus to Support Today’s Educators” (Expert Presenters: Francie Alexander and Sue Gendron)” (webinar).

ESSA. 2015. Every Student Succeeds Act of 2015, Pub. L. No. 114-95 § 114 Stat. 1177 (2015–2016).

García, Emma, and Elaine Weiss. 2019a. *The Teacher Shortage Is Real, Large and Growing, and Worse Than We Thought: The First Report in ‘The Perfect Storm in the Teacher Labor Market’ Series*. Economic Policy Institute, March 2019.

García, Emma, and Elaine Weiss. 2019b. *U.S. Schools Struggle to Hire and Retain Teachers: The Second Report in ‘The Perfect Storm in the Teacher Labor Market’ Series*. Economic Policy Institute, April 2019.

García, Emma, and Elaine Weiss. 2019c. *Low Relative Pay and High Incidence of Moonlighting Play a Role in the Teacher Shortage, Particularly in High-Poverty Schools: The Third Report in ‘The Perfect Storm in the Teacher Labor Market’ Series*. Economic Policy Institute, May 2019.

García, Emma, and Elaine Weiss. 2019d. *Challenging Working Environments (‘School Climates’), Especially in High-Poverty Schools, Play a Role in the Teacher Shortage: The Fourth Report in ‘The Perfect Storm in the Teacher Labor Market’ Series*. Economic Policy Institute, May 2019.

Garet, Michael S., Andrew C. Porter, Laura Desimone, Beatrice F. Birman, and Kwang Suk Yoon. 2001. “What Makes Professional Development Effective? Results from a National Sample of Teachers.” *American Educational Research Journal* 38, no. 4: 915–945. https://doi.org/10.3102/00028312038004915.

Goldhaber, Dan, John Krieg, and Roddy Theobald. 2018a. “Exploring the Impact of Student Teaching Apprenticeships on Student Achievement and Mentor Teachers.” National Center for Analysis of Longitudinal Data in Education Research (CALDER) Working Paper no. 207-1118-1, November 2018.

Goldhaber, Dan, John Krieg, and Roddy Theobald. 2018b. “Effective Like Me? Does Having a More Productive Mentor Improve the Productivity of Mentees?” National Center for Analysis of Longitudinal Data in Education Research (CALDER) Working Paper no. 208-1118-1, November 2018.

Hill, Heather C. 2007. “Learning in the Teacher Workforce.” *Future of Children* 17, no. 1: 111–127. https://doi.org/10.1353/foc.2007.0004.

Hill, Heather C. 2009. “Fixing Teacher Professional Development.” *Phi Delta Kappan* 90, no. 7: 470–477.

Hirsh, Stephanie. 2009. “A New Definition.” *Journal of Staff Development* 30, no. 4: 10–16.

Hirsh, Stephanie, et al. 2016. “Re: Proposed Regulations for Consolidated Plans Under the Every Student Succeeds Act (ESSA).” Comments submitted on behalf of Learning Forward to U.S. Department of Education Secretary John King, July 29, 2016.

Ingersoll, Richard M. 2004. “Revolving Doors and Leaky Buckets.” In *Letters to the Next President: What We Can Do About the Real Crisis in Public Education*, edited by Carl D. Glickman, 141–150. New York: Teachers College Press.

Ingersoll, Richard M. 2014. "Why Do High-Poverty Schools Have Difficulty Staffing Their Classrooms with Qualified Teachers?" Presentation for panel discussion *How Do We Get Experienced, Accomplished Teachers into High-Need Schools?*, Albert Shanker Institute, October 8, 2014.

Ingersoll, Richard M., and Gregory J. Collins. 2018. "The Status of Teaching as a Profession." In *Schools and Society: A Sociological Approach to Education*, 6th ed., edited by Jeanne H. Ballantine, Joan Z. Spade, and Jenny M. Stuber, 199–213. Los Angeles: SAGE.

Ingersoll, Richard M., and Michael Strong. 2011. "The Impact of Induction and Mentoring for Beginning Teachers: A Critical Review of the Research." *Review of Educational Research* 81, no. 2: 201–233. https://doi.org/10.3102/0034654311403323.

Jackson, Kirabo, and Elias Bruegmann. 2009. "Teaching Students and Teaching Each Other: The Importance of Peer Learning for Teachers." *American Economic Journal: Applied Economics* 1, no. 4: 85–108.

Jensen, Ben, Julie Sonnemann, Katie Roberts-Hull, and Amélie Hunter. 2016. *Beyond PD: Teacher Professional Learning in High-Performing Systems*. National Center on Education and the Economy.

Kennedy, M. Mary. 2016. "How Does Professional Development Improve Teaching?" *Review of Educational Research* 86, no. 4: 945–980. https://doi.org/10.3102/0034654315626800.

Kirk, Joy. 2019. "Teachers Are Always There to Help, But Now We're the Ones Who Need a Boost." *Working Economics Blog* (Economic Policy Institute), June 14, 2019.

Kraft, Matthew A., and John P. Papay. 2014. "Can Professional Environments in Schools Promote Teacher Development? Explaining Heterogeneity in Returns to Teaching Experience." *Educational Evaluation and Policy Analysis* 36, no. 4: 476–500.

Kraft, Matthew A., David Blazar, and Dylan Hogan. 2018. "The Effect of Teacher Coaching on Instruction and Achievement: A Meta-Analysis of the Causal Evidence." *Review of Educational Research* 88, no. 4: 547–558. https://doi.org/10.3102/0034654318759268.

Ladd, Helen. 2011. "Teachers' Perceptions of Their Working Conditions: How Predictive of Planned and Actual Teacher Movement?" *Educational Evaluation and Policy Analysis* 33, no. 2: 235–261.

Ladd, Helen F., and Lucy C. Sorensen. 2016. "Returns to Teacher Experience: Student Achievement and Motivation in Middle School." *Education Finance and Policy* 12, no. 2: 241–279.

Learning Forward. 2019. "Definition of Professional Development" (web page). Accessed June 18, 2019.

Learning Policy Institute. 2017. *What's the Cost of Teacher Turnover?* (calculator). September 2017.

Liston, Dan, Jennie Whitcomb, and Hilda Borko. 2006. "Too Little or Too Much: Teacher Preparation and the First Years of Teaching." *Journal of Teacher Education* 57, no. 4: 351–358.

Loeb, Susanna, Linda Darling-Hammond, and John Luczak. 2005. "How Teaching Conditions Predict Teacher Turnover in California Schools." *Peabody Journal of Education* 80, no. 3: 44–70.

Loewus, Liana. 2019. "A Clearer Vision for Teacher Professional Learning." *Education Week*, May 14, 2019.

Mizell, Hayes. 2010. *Why Professional Development Matters*. Learning Forward.

Moore-Johnson, Susan, Matthew A. Kraft, and John P. Papay. 2012. "How Context Matters in High-

Need Schools: The Effects of Teachers' Working Conditions on Their Professional Satisfaction and Their Students' Achievement." *Teachers College Record* 114, no. 10: 1–39.

National Center on Education and the Economy (NCEE). 2016. *Preparing Profession-Ready Teachers*. Policy brief from the Empowered Educators Project.

National Center for Education Statistics (NCES) (U.S. Department of Education). 2011–2012. Licensed microdata from the 2011–2012 Schools and Staffing Survey (SASS).

National Center for Education Statistics (NCES) (U.S. Department of Education). 2012–2013. Licensed microdata from the 2012–2013 Teacher Follow-Up Survey (TFS).

National Center for Education Statistics (NCES) (U.S. Department of Education). 2015–2016. Licensed microdata from the 2015–2016 National Teacher and Principal Survey (NTPS).

National Center for Education Statistics (NCES) (U.S. Department of Education). 2017. *Documentation for the 2011–12 Schools and Staffing Survey*. March 2017.

National Center for Education Statistics (NCES) (U.S. Department of Education). 2019. "NTPS Overview" (web page). Accessed March 2019.

OECD. 2016. *Supporting Teacher Professionalism: Insights from TALIS 2013*. Paris: TALIS, OECD Publishing. https://dx.doi.org/10.1787/9789264248601-en.

OECD. 2019. *TALIS 2018 Results (Volume I): Teachers and School Leaders as Lifelong Learners*. Paris: TALIS, OECD Publishing. https://doi.org/10.1787/1d0bc92a-en.

Opfer, V. Darleen, and David Pedder. 2011. "Conceptualizing Teacher Professional Learning." *Review of Educational Research* 81, no. 3: 376–407. https://doi.org/10.3102/0034654311413609.

Papay, John P., Eric S. Taylor, John H. Tyler, and Mary Laski. 2016. "Learning Job Skills from Colleagues at Work: Evidence from a Field Experiment Using Teacher Performance Data." National Bureau of Economic Research Working Paper no. 21986. https://doi.org/10.3386/w21986.

Quint, Janet. 2011. *Professional Development for Teachers: What Two Rigorous Studies Tell Us*. MDRC.

Robinson, Java. 2019. "Why Professional Development Matters." *NEA Today*, February 11, 2019.

Ronfeldt, Matthew, Hamilton Lankford, Susanna Loeb, and James Wyckoff. 2013. "How Teacher Turnover Harms Student Achievement." *American Educational Research Journal* 50, no. 1: 4–36.

Schachter, Rachel E. 2015. "An Analytic Study of the Professional Development Research in Early Childhood Education." *Early Education and Development* 26, no. 8: 1057–1085. https://doi.org/10.1080/10409289.2015.1009335.

Schwartz, Sarah 2019. "What Do Teachers Really Want from Professional Development? Respect." *Education Week*, May 15, 2019.

Smith, Thomas M., and Richard Ingersoll. 2004. "What Are the Effects of Induction and Mentoring on Beginning Teacher Turnover?" *American Educational Research Journal* 41, no. 3: 681–714. https://doi.org/10.3102/00028312041003681.

Sorensen, Lucy C., and Helen Ladd. 2018. "The Hidden Costs of Teacher Turnover." National Center for Analysis of Longitudinal Data in Education Research (CALDER) Working Paper no. 203-0918-1, September 2018.

Strauss, Valerie. 2017. "Why It's a Big Problem That So Many Teachers Quit—and What to Do About It." *Washington Post*, November 27, 2017.

Sutcher, Leib, Linda Darling-Hammond, and Desiree Carver-Thomas. 2016. *A Coming Crisis in Teaching? Teacher Supply, Demand, and Shortages in the U.S.* Learning Policy Institute, September 2016.

U.S. Department of Education. 2017a. "Requirements for an Initial Teaching Credential, by State" [data table]. Data from the Higher Education Act Title II State Report Card (SRC) Reporting System. Spreadsheet downloadable at https://title2.ed.gov/Public/DataTools/NewExcels/Requirements.aspx.

U.S. Department of Education. 2017b. "States Requiring Content Specific Bachelor's Degrees for All Initial Teaching Credentials" [data table]. Data from the Higher Education Act Title II State Report Card (SRC) Reporting System. Spreadsheet downloadable at https://title2.ed.gov/Public/DataTools/NewExcels/ContentDegrees.aspx.

Warner-Griffin, Catharine, Brittany C. Cunningham, and Amber Noel. 2018. *Public School Teacher Autonomy, Satisfaction, Job Security, and Commitment: 1999–2000 and 2011–12*. Institute of Education Statistics, National Center for Education Statistics, U.S. Department of Education, *Stats in Brief* no. 2018-103, March 2018.

Weiss, Elaine, and Paul Reville. 2019. *Broader, Bolder, Better: How Schools and Communities Help Students Overcome the Disadvantages of Poverty*. Cambridge, Mass.: Harvard Education Press.