WHY BLACK WOMEN TEACHERS LEAVE AND WHAT CAN BE DONE ABOUT IT

Desiree Carver-Thomas and Linda Darling-Hammond

ABSTRACT

This study uses the most recent national data from the National Center for Education Statistics, Schools and Staffing Survey (SASS), 2011−2012 and Teacher Follow-up Survey (TFS), 2012−2013 to investigate attrition trends among Black teachers, and Black female teachers in particular, to inform a qualitative analysis of proposed and adopted teacher retention policy interventions. This study asks: Why do Black teachers report leaving, and what would bring them back to the classroom? What working conditions are associated with Black teacher attrition? What policy interventions can meet the needs of Black teachers in having successful and supported teaching experiences? How have these interventions been successful, and what are the considerations for applying them more broadly? We find that Black teacher turnover rates are significantly higher than those of other teachers and that there are several substantive differences in their preparation, school characteristics, and reasons for leaving. We describe policy interventions that target these conditions, such as teacher residencies, loan forgiveness, mentoring and induction, and principal training programs. We include in that discussion the relative benefits and challenges of each implications for policymaking.

Keywords: Black teachers; turnover; attrition; teacher residencies; loan forgiveness; mentoring

INTRODUCTION

Black teachers and Black women teachers, in particular, comprise a perpetually small share of the teacher workforce. While the Black teacher workforce has grown from 191,000 teachers in 1987−1988 to 231,000 in 2011−2012, the proportion of Black teachers decreased from 8.2% to 6.8% of the teacher workforce during the same period. Black women comprise 78% of Black teachers, or 5.3% of all teachers. Meanwhile, Black students comprised nearly 16% of the public school student population in 2013.

Black teachers play a critical role in the workforce. In a review of the arguments for diversifying the teacher workforce, Villegas and Irvine (2010) identify two major arguments supported by empirical evidence. First, teachers of color improve the schooling experiences and academic outcomes of students of color. Nine out of 15 of the works they analyze investigate the impact of race-matching Black students and teachers and all showed positive effects for Black students. Second, Villegas and Irvine find that teachers of color are more likely to feel called to teaching in low-income, communities of color where openings are difficult to fill. Four of 10 of the works supporting that conclusion deal specifically with the reasons Black teachers are motivated to teach. Considering the important role Black teachers play in the workforce, it is essential to identify ways to increase their representation in classrooms.

Prior research suggests teacher turnover and attrition have significant effects on teacher labor market conditions (Ingersoll, 2001). With regard to the relationship between teacher race and teacher turnover, the focus of most recent research has been on teachers of color as a general category (Achinstein, Ogawa, & Sexton, 2010; Ingersoll & May, 2011). This inclusive focus has multiple benefits, including allowing larger sample sizes for both qualitative and quantitative analysis, including individuals who would otherwise be excluded entirely due to having very small sample sizes or limited previous research to draw on such as, Native Americans, Asian American Pacific Islanders, and those identifying with two or more races, and identifying common trends across groups. This research has yielded the significant finding that, as with teacher shortages generally, shortages of teachers of color are generally caused less by recruitment shortfalls than by retention problems (Ingersoll & May, 2011; Ingersoll & May, 2016). Although there has been a substantial increase in the entry rates of teachers of color, more of them exit than enter the profession in a given year. However, a focus on teachers of color also risks conflating the experiences of students and teachers with different racial identifications and may, indeed, obfuscate important distinctions between them. Of course, there is also variation within racial groups, across gender, language, socioeconomic status, and so on. Thus, the particular experiences of Black women that inform their retention decisions may differ markedly from those of either Black men or non-Black women.

Statement of Purpose

The purpose of this study is to investigate the conditions that contribute to Black teacher attrition and turnover, in addition to identifying promising interventions to improve Black teacher retention rates, with a specific focus on Black women. In this study, *teacher attrition* refers to teachers leaving the teaching profession, while *teacher turnover* refers to any movement out of schools, whether to teach in a different school or to leave the profession. Both of these measures—teacher attrition and teacher turnover—are important indicators of the teacher labor market nationally and at the state and local levels. In addition to contributing to shortages of Black teachers, high rates of teacher attrition and turnover have been shown to negatively impact student achievement (Ronfeldt, Loeb, & Wyckoff, 2013). Furthermore, high rates of teacher attrition often result in introducing a "revolving door" of inexperienced teachers into classrooms (Ingersoll, 2001), undermining the increases in teacher effectiveness that occur with experience (Kini & Podolsky, 2016). Thus, these questions are critically important for students' welfare as well as for the shape of the teaching force.

Specifically, this study asks: Why do Black teachers report leaving, and what would bring them back to the classroom? What working conditions are associated with Black teacher attrition? What policy interventions can meet the needs of Black teachers in having successful and supported teaching experiences? How have these interventions been successful, and what are the considerations for applying them more broadly?

First, we define our conceptual framework based on previous research on teacher retention generally, and for teachers of color and Black teachers specifically. Next, we describe the data and methodology used to answer our research questions. We share our findings in relation to the factors of teacher turnover described in the conceptual framework, and finally discuss policy implications based on evidence from successful policy interventions.

CONCEPTUAL FRAMEWORK AND REVIEW OF PRIOR RESEARCH

This study draws on the literature on causes of teacher attrition and turnover among teachers overall and teachers of color. There is scant research on the attrition and turnover factors for Black female teachers, specifically. As detailed below, the primary sources of teacher attrition cited in prior studies include, compensation, school characteristics, teacher preparation and experience, and working conditions (Guarino, Santibanez, & Daley, 2006; Borman & Dowling, 2008).

Compensation

Baugh and Stone (1982), using national Current Population Survey (CPS) data, found that teachers were more likely to continue teaching when their wages became more comparable to the wage they could expect to earn in other occupations. In Oregon, specifically, they found that teachers were less likely to move schools when their wages were more comparable to what they could expect to earn teaching in another district. Other scholars have found similar results, showing that teachers are more likely to continue teaching at their school when their wages increase and are comparable with other job opportunities (Murnane & Olsen, 1990; Loeb & Beteille, 2009; Loeb, Darling-Hammond, & Luczak, 2005). More recently, Ondrich, Pas, and Yinger (2008) found that, consistent with previous research, teachers were less likely to leave teaching when their wages were higher relative to nonteaching jobs; teachers were also less likely to leave their districts if their wages were higher relative to those in other nearby districts. In addition to wage comparability, data from the National Center for Education Statistics 5-year longitudinal study (Gray & Taie, 2015) show that absolute teacher wage is also associated with attrition. In this study, teachers whose first-year salary was less than $40,000 had an attrition rate 10 percentage points higher than teachers who earned more in their first year.

School Characteristics

In response to arguments relating turnover to compensation, many studies have investigated the role of school characteristics in teacher turnover. These studies have often suggested that teachers prefer teaching in schools with wealthier, higher-performing, and more White students (Hanushek, Kain, & Rivkin, 2004; Scafidi, Sjoquist, & Stinebrickner, 2007). A study of Texas public school teachers using data from the 1990s found that turnover was more strongly related to student race and test scores than to changes in salary (Hanushek et al., 2004). Another study of Georgia elementary school teachers found that, in settings with comparable wages, teachers were far more likely to leave their first teaching assignment when they had more students who were Black, had low-test scores, and were eligible for free or reduced-price lunch (Scafidi et al., 2007). In both studies, the authors acknowledged that there could be a relationship between student characteristics and other unobserved conditions that might be discouraging teachers from staying, but neither attempted to disentangle those factors.

Interestingly, Freeman, Scafidi, and Sjoquist (2005) found that between 1995 and 2000, White teachers in Georgia public schools were far more likely to

leave schools with the greatest proportions of Black students than Black teachers were.

Other research emphasizes the desire of many teachers to work with vulnerable student populations and illustrates how a host of factors, including workplace conditions and teacher preparation, can make that commitment difficult to sustain (Allensworth, Ponisciak, & Mazzeo, 2009; Boyd et al., 2011; Loeb et al., 2005; Johnson, Kraft, & Papay, 2012; Ladd, 2011; Marinell & Coca, 2013).

Working Conditions

Poor workplace conditions are common in schools with disadvantaged student populations and explain a large share of the high turnover rates those schools experience (Simon & Johnson, 2015). In many studies that control for working conditions, teachers' decisions to leave are no longer strongly associated with the racial and economic characteristics of students. In a study of Massachusetts teachers, for example, Johnson, Kraft, and Papay (2012) found that teachers working in positive work environments expressed greater satisfaction and planned to continue teaching longer than other teachers, regardless of their school's student demographic characteristics. Similarly, a study of California teachers found that the correlation between student characteristics and teacher attrition disappeared when working conditions and salaries were taken into account (Loeb et al., 2005; see also, Ladd, 2011; Boyd et al., 2011).

In an effort to account for the previously unobserved factors influencing teacher turnover, researchers have identified several workplace conditions associated with teacher turnover. For example, in a meta-analysis of 34 studies and 63 attrition factors, Borman and Dowling (2008) found that working conditions, such as instructional resources, teacher collaboration, and administrative support were associated with greater teacher retention rates. Similarly, Simon and Johnson (2015) reviewed six studies that investigated the relationship between teacher turnover and working conditions including, professional development, facilities, parental involvement, instructional leadership, time for collaboration and planning, resources, school culture, collegial relationships, and decision-making power. They found that the most significant workplace conditions associated with teacher turnover were teachers' perceptions of their principal, collegial relationships, and school culture (Simon & Johnson, 2015).

Teacher Preparation and Experience

Another influence on attrition is the nature and extent of teachers' preparation. Throughout the country, states and districts offer a variety of pathways by

which teachers can become certified. The vast majority of teachers become certified via a *regular*, or preservice pathway—enrolling in a teacher preparation program at a college or university where they complete coursework and student teaching before they teach. About 15% of all teachers surveyed in the 2011−2012 SASS, and nearly one in four first-year teachers surveyed, had entered teaching through an *alternative* pathway, in which they began teaching before completing coursework, often with little or no student teaching experience. Studies of the relationship between teacher certification pathways and teacher turnover generally find that better prepared teachers, including those who complete their certification before entering, are less likely to leave teaching in the first few years (see, e.g., Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2006; Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005; Marinell & Coca, 2013).

The nature of coursework and other requirements varies significantly within these different pathways, however, and Ingersoll, Merrill, and May (2014) found that preservice pedagogical preparation was far more predictive of first-year teacher turnover than pathway type. In their study, teachers who had received little or no pedagogical training were 2.5 times as likely to leave teaching after a year than teachers who had comprehensive preparation that included observing others' teaching, student teaching a full semester and receiving feedback, taking five or more courses in teaching methods, and receiving training in learning theory and selecting instructional materials. Indeed, a 5-year longitudinal study of new teachers found that those who had not student taught were almost twice as likely to leave the profession within 5 years (29% left compared to 15% of teachers who had student taught) (Henke, Chen, & Geis, 2000).

In addition to high-quality preservice preparation, research has also found that high-quality induction and mentoring for beginning teachers can reduce teacher turnover (Ingersoll & Strong, 2011). An analysis that looked at the features of such programs found that turnover was reduced by 34% for novices who received mentoring from an experienced teacher, collaboration with other teachers for planning instruction, and a beginning teacher seminar. And for those who received mentoring, plus collaboration, a strong teacher network, a reduced teaching load, and a teacher's aide, turnover rates were cut by more than half, from 41% for an unsupported teacher to 18% for a well-supported one (Ingersoll & Smith, 2004).

This study builds upon several key findings from previous research, providing an overview of variables associated with teacher attrition and their prevalence for Black women teachers. These include absolute and perceived salaries, student characteristics, the comprehensiveness of teacher preparation, and working conditions. To our knowledge, this is the first analysis undertaken to understand the relationship between these conditions and Black women teachers' attrition and retention decisions.

STUDY DESIGN

This study draws primarily on data from the US Department of Education, National Center for Education Statistics Schools and Staffing Survey (2011−2012) and Teacher Follow-up Survey (2012−2013). The SASS is a set of questionnaires administered to a nationally representative sample of teachers across the country. The TFS has three components: (1) the teacher status form, completed by the principal to identify "stayers," "movers," and "leavers" since the previous year; (2) a questionnaire for a subset of former teachers (all beginners plus a stratified sample of others, by school sector (i.e., public or private), teacher status (stayer, leaver, movers, and unknown), experience, grade level, and race/ethnicity); and (3) a questionnaire for a subset of current teachers. The dataset is completed with imputed data and sampling weights.[1]

Measures

As stated, this study discusses both teacher attrition rates (the rate of "leaving") and teacher turnover rates (the rate of "moving" and "leaving"), with an emphasis on turnover. Teacher attrition is an important metric in understanding overall teacher shortages, because when teachers leave the profession they must be replaced with new teachers or re-entrants, teachers who have left the profession and are returning. When attrition is high, more teachers must be hired. When there are not enough new or re-entering teachers to make up for high attrition rates, shortages occur and schools often respond by hiring unqualified teachers, increasing class sizes, or cutting class offerings (Sutcher, Darling-Hammond, & Carver-Thomas, 2016). While several factors create teacher shortages, attrition is the driving factor. Other factors, like decreasing teacher preparation enrollment and completer rates and a growing student population, contribute to the increasing severity of shortages, but explain a relatively small share of the problem.

In schools experiencing teacher shortages, high turnover rates can further exacerbate those shortages. When teachers move between schools, even if they stay in the profession, the effect on students in those schools is essentially the same as if they had left teaching all together.

Teacher turnover, especially in hard-to-staff schools, often requires schools to replace movers and leavers with relatively inexperienced teachers. Turnover has been found to negatively impact student performance in classrooms beyond those which teachers left (Ronfeldt et al., 2013). This can occur because (1) turnover changes the distribution of teacher quality and experience in schools, and (2) it disrupts school stability as it undermines collegial relationships, common teaching practices, and the accumulation of institutional knowledge.

The impacts are particularly severe on historically underserved students and communities, since turnover rates tend to be highest in schools with more low-income students, students of color, and lower-performing students (Allensworth et al., 2009; Hanushek et al., 2004; Ingersoll, 2001; Johnson, Berg, & Donaldson, 2005; Marinell & Coca, 2013; Ronfeldt et al., 2013). By highlighting these disparate turnover rates, in addition to attrition rates, and investigating not just what impacts their decision to leave teaching, but also to move schools, we can better understand the extent of Black teacher mobility in our schools and develop policies that more comprehensively address the factors that influence it.

Data Analysis Methods

We use descriptive statistics and differences of means test results to identify differences in turnover rates and key characteristics, informed by the literature, of Black and non-Black teachers. Consistent with prior literature, we describe teacher gender and age. Age has a U-shaped relationship with turnover, and so we describe the age distribution of Black teachers, including the average age and those older than 50. We also describe trends in district types (rural, town, suburb, and city) using the NCES specification.[2]

We examine teacher turnover for teachers in schools with different proportions of students eligible for the National School Lunch Program (NSLP) and students of color, examining these by quartiles across the nation. Schools in the quartile with the fewest students of color have less than 9% and those with the most students of color have greater than 56%. Students of color include Asian American, Pacific Islander, Black, Latino, Native American, and multiracial students. Of course, these groups are economically heterogeneous both within and across racial categories. However, we expect to find some similar trends among schools serving different proportions of students of color. Because of the distributions of income and advantage, these differences are more extreme when looking at outcomes concerning Black and Latino students alone.

The Black teacher variable is coded as "1" when teachers self-identify as Black and "0" for all other responses. Alternative pathway is an indicator variable coded as "1" if a teacher reports she/he entered teaching through an alternative certification program and "0" if she/he indicates entering through a regular pathway. It should be noted that regular pathway and regular certification are not interchangeable terms. A teacher who enters teaching through an alternative pathway may eventually complete all the requirements to earn a regular certification, but would still be coded as an alternative pathway teacher.

For elementary school teachers and other self-contained classroom teachers, average class size is the class size they report in the base year. For secondary school teachers, average class size is calculated by averaging the number of

students they report in each class or section they teach in the base year. "Push-in" and "pull-out" teachers are excluded from this portion of the analysis, since they do not manage a full class in the same way that classroom teachers do. Self-contained special education classes are included in class size. We divide average class size into quartiles from 12 to greater than 50 students. Next we describe the main subject a teacher reports teaching. We combine math and science subjects, due to their similarities. Similarly, we combine English and social studies into humanities. We also include the following main assignments: elementary, special education, teaching English learners, arts, foreign languages, career technical education, physical education, and miscellaneous subjects.

Finally, we create working conditions constructs from survey responses, using Cronbach's alpha to combine multiple responses on the same topic. All Cronbach alphas are equal to at least 0.7. The working conditions constructs are defined as follows:

- *Administrative support* is a construct that measures teacher attitudes on four questions about their administrator and is on a scale from 1 to 4, where 1 is the most favorable attitude toward their administrator and 4 is the least favorable attitude.
- *Salary satisfaction* is a report of how satisfied teachers are with their salary, where 1 means they strongly agree that they are satisfied with their salary and 4 means they strongly disagree that they are satisfied with their salary.
- *Student behavior problems* is a construct created from seven survey responses about whether student behaviors are a problem (i.e., tardiness, misbehavior).
- *Parent support* is a measure of whether teachers agree that they have the support they need from parents, where 1 means they strongly agree that they have the parent support and 4 means that they strongly disagree.
- *Resources* is a measure of whether teachers agree that resources are available to them in their school, where 1 means they strongly agree that they have resources available and 4 means they strongly disagree.
- *Interference* is measure of whether teachers believe that paperwork and other duties interfere with their teaching time, where 1 means they strongly disagree that paperwork and duties interfere with their teaching time and 4 means they strongly agree.
- *Collegiality* is a construct that combines three survey questions that measure the degree to which staff collaborate and hold similar values and is scaled from 1 to 4, where 1 represents the most positive attitude of colleagues and 4 represents the least positive attitudes about colleagues.
- *Job security* is a measure of how worried teachers are about their job security due to assessment and accountability measures, where 1 indicates that a teacher strongly disagrees that she/he is worried and 4 indicates that a teacher is strongly agrees that she/he is worried about job security.
- *Classroom control* and *school influence* are constructs created from six and seven survey questions, respectively, and measure the degree of either control

or influence a teacher feels she/he has, where 1 represents having lots of control or influence and 4 represents having none at all.

We also describe teachers' beginning salary in the district and the highest possible salary in the district.

FINDINGS

Trends in Black Teacher Employment

Based on our analysis of the 2011−2012 SASS and 2012−2013 TFS, Black teachers continue to be under-represented in the teacher workforce, compared to both labor force rates and student enrollment rates. As illustrated in Fig. 1, Black teachers made up just 6.8% of the public school teacher workforce during the 2011−2012 school year. In comparison, African-Americans made up 11.6% of the US labor force[3] in 2011 (US Department of Labor, 2012), and 15.8% of public school enrollment during the 2011−2012 school year (National Center for Education Statistics, 2016). Black women in the teacher workforce are more representative of the labor force at 5.3% of all teachers and 6.2% of the entire US labor force in 2011.

Black representation in the teaching force has declined noticeably since 1990, when the proportion was 8.3%. Since then, about 26,000 African-American teachers have disappeared from the nation's public schools—even as the overall teaching workforce has increased by 134,000 (Rizga, 2016). This has been substantially a function of teacher layoffs during the recession and school closings in urban districts due both to declining enrollments and sanctions targeted to schools with low-test scores under No Child Left Behind. Decreases in the numbers of Black teachers have been proportionally much greater than
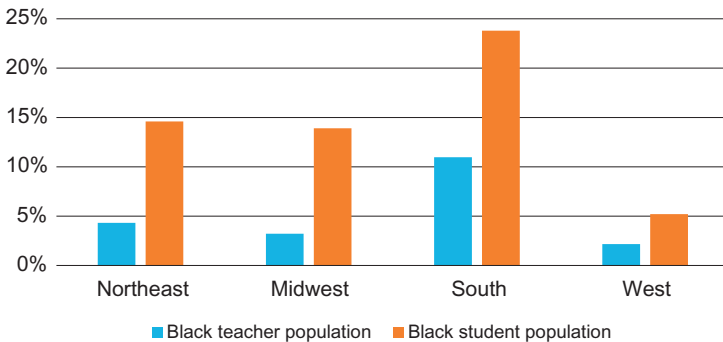

Fig. 1. Black Teacher and Black Student Population, by US Region.

Table 1. Percentage Change in Teacher Population by Race and Ethnicity, 2002−2012.

City	Overall	White	Black	Hispanic
Boston	−3.3	−0.8	−18.3	1.1
Chicago	−13.4	−3.2	−39.2	6.4
Cleveland	−17.4	−12.0	−33.9	−9.4
Los Angeles	−16.9	−28.0	−33.2	6.5
New Orleans	−44.4	3.3	−62.3	43.5
New York City	−2.0	−1.9	−15.1	2.4
San Francisco	−11.9	−21.9	−32.4	8.1

Source: Albert Shanker Institute (2015). *The state of teacher diversity in American education*. Washington, DC: Albert Shanker Institute, http://www.shankerinstitute.org/resource/teacherdiversity. Accessed on November 2016.

decreases in the size of the overall teaching force in all of these cities (See Table 1.) In New Orleans, more than 7,000 teachers—most of whom were Black—were fired en masse after Hurricane Katrina. They were replaced by predominantly young, White teachers brought into charter schools that replaced the district schools. When the courts found the move illegal years later, the new teachers stayed on and the former teachers were not rehired. As a result, the number of Black teachers declined there by more than 62%.

The age distribution of Black teachers is not meaningfully different from that of other teachers. On average Black teachers are a year older (43.7 vs. 42.3, $p = 0.15$) and slightly more likely to be over age 50 (33.3% vs. 30.5%, $p = 0.44$). Most Black teachers and Black female teachers teach in Title I schools and in the schools with the most students of color. While about 36% of all teachers teach in schools in the top quartile of students of color, nearly 79% of Black teachers and Black female teachers do. Black teachers make up over 14% of teachers in those schools despite comprising just 6.8% of all teachers, and Black women make up over 11% of teachers in those schools despite comprising just 5% of all teachers. Similarly, 71% of Black teachers teach in Title I-eligible schools and 75% of Black women teachers do. In comparison, just 44% of teachers overall teach in Title I-eligible schools. While about a quarter of all teachers teach in schools that are both high-poverty and high-minority schools, about 60% of Black teachers and 62% of Black female teachers do.

Black teachers are especially concentrated in the South and in cities. Just over 70% of Black teachers, and Black female teachers, teach in the South, compared to just 40% of non-Black teachers (see Fig. 1). In 2000, 57% of the US Black population[4] lived in the South suggesting that Black teachers are under-represented in other regions of the country (Rastogi, Johnson, Hoeffel,
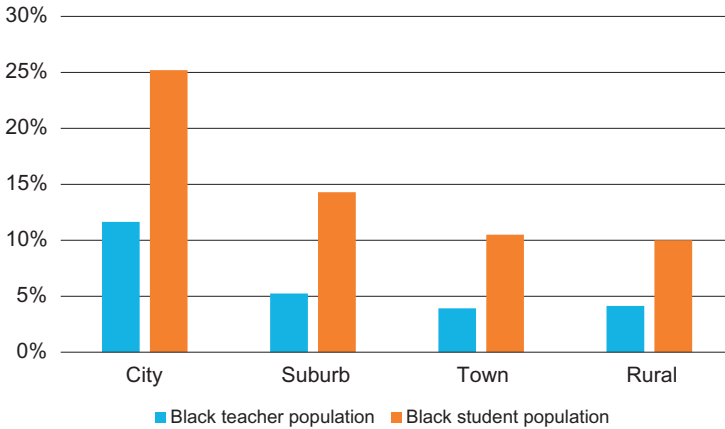
Fig. 2.   Black Teacher and Black Student Population, by Community Type.

& Drewery, 2011). Even so, Black women teachers make up under 9% of all teachers in the South, while 24% of students enrolled in the South in 2012 were Black. Nearly half of Black female teachers teach in cities, compared to one in four non-Black teachers (see Fig. 2). Black teachers overall, and Black women teachers specifically, are less likely than non-Black teacher to teach in suburbs, towns, or rural areas.

While over 70% of Black teachers teach in the South, there is wide variation in the population of Black students and teachers across southern states. Black teachers make up over 10% of teachers in the South, however, in 9 out of 17 southern states, Black teachers comprise an even greater proportion of the teacher workforce. In Washington DC, for example, about 56% of teachers are Black. In the remaining states, Black teachers are more scarce. For example, they comprise only 1.2% of the teacher workforce in West Virginia.

BLACK TEACHER ATTRITION TRENDS

Black teacher and Black female teacher turnover rates are high. At 21.1%, the Black teacher turnover rate is nearly 60% greater than the non-Black teacher turnover rate (13.4%). The turnover rate for black women, 21.8%, is significantly greater than that of non-Black women (13.4%, $p = 0.01$) but not discernably greater than that of Black men (18.54%, $p = 0.48$) (see Fig. 3). Black teacher turnover rates are particularly high in the region of the United States where Black teachers are most likely to teach: the South. While overall turnover rates in the South are higher than other regions of the country at 16% annually, the rate among Black women is still higher, at 26%.
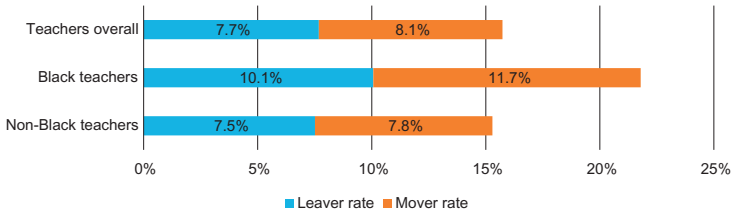
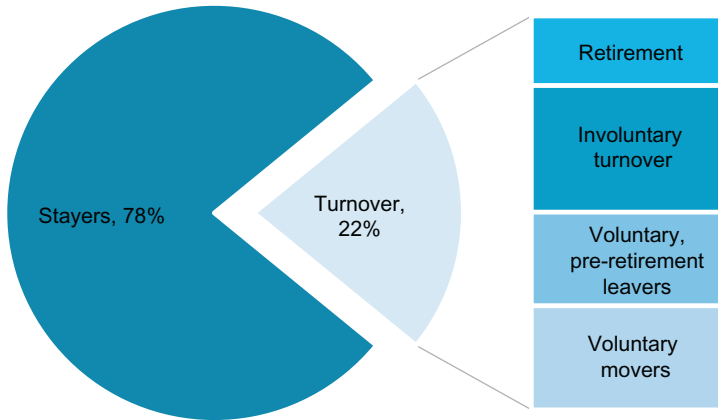*Fig. 3.*   Teacher Leaver and Mover Rates, 2012.

Fig. 4.   Black Teacher Turnover Trends.

Patterns of attrition and turnover for Black teachers are different in many respects than those for White teachers. The rate of involuntary turnover was much higher for Black teachers (12%) than for others (10%) (Sutcher et al., 2016). Perhaps because of school closings and layoffs that were frequent in 2012, the proportions of those leaving their schools involuntarily were surprisingly high, and especially so for Black teachers (Executive Office of the President, 2012). While about 30% of all movers did so involuntarily (Goldring, Taie, & Riddles, 2014), over 50% of Black teachers moved involuntarily. All told, among Black teachers, involuntary turnover constituted nearly a third of all turnover.

Retirement was a relatively small component of Black teacher turnover, accounting for less than 18% of total annual turnover and about 38% of the leaver rate (Fig. 4). This was a higher rate, however, than for other teachers. In comparison, fewer than a third of all teachers reported that retirement was a very or extremely important reason for why they left teaching. Finally, about half of Black teachers who left their schools did so voluntarily before retirement.

Table 2.   Reasons for Leaving and Moving: Personal Reasons.

Very and Extremely Important Reasons Teachers Report for Leaving and Moving	Overall Mean *(Standard Error)*	Black Teachers Mean *(Standard Error)*	Black Woman Teachers Mean *(Standard Error)*
Reasons for Leaving			
Location	9.83%	5.19%	4.71%
	(1.81)	*(4.65)*	*(5.10)*
Personal & family reasons	33.48%	9.67%	9.85%
	(4.69)	*(5.40)*	*(5.99)*
Reasons for Moving			
Location	30.23%	14.48%	15.37%
	(3.83)	*(4.91)*	*(6.38)*
Personal and family reasons	19.91%	9.47%	6.68%
	(3.46)	*(4.17)*	*(3.44)*

Note: Involuntary turnover includes both movers and leavers, but excludes those who go on to retire. Retirement includes involuntary leavers.

Black teachers who left or moved were far less likely to cite personal life reasons than teachers on average (see Table 2). While 30% of teachers, overall, reported moving schools to be in a more convenient location, less than 15% of Black women teachers did so (see Table 2). Similarly, about a third of all leavers reported that personal or family reasons were very or extremely important in their decision to leave, but less than 10% of Black women did. Instead Black women teachers tended to cite specific issues with respect to their teaching conditions that can be addressed by policy interventions, which can be a tool for increasing Black teacher retention.

FACTORS AFFECTING BLACK TEACHER RETENTION

Below, we share findings for Black teachers based on each of the key factors for turnover identified in the literature: compensation, school characteristics, teacher preparation and experience, and working conditions.

Compensation

In our sample, average teacher salaries were not statistically or meaningfully different by race and gender, but Black women were more likely to report dissatisfaction with their salary (65%) than other teachers were (just over 50%). Black

women and men earned about the same beginning salaries. Average Black teacher beginning salaries, $38,933, were about $948 higher than beginning salaries for other teachers ($p = 0.0099$), however this does not take into account cost of living differences common in cities where Black teachers are over-represented, nor does it take into account the comparability of teacher wages with those of other professions requiring similar hours and education. Black teachers were about twice as likely to be teaching in cities compared to other teachers and were more than twice as likely to teach in high-poverty, high-minority schools that face additional challenges, which may contribute to salary dissatisfaction.

Teacher Preparation and Experience

Black women had about the same teacher experience distribution as all other teachers (13.9 years of experience, on average, compared to 13.8 years for teachers overall, with 12.9% of the sample being new teachers as compared to 11.3% overall).

However, Black women in their first year of teaching in 2012 were 3.5 times more likely to have no student teaching experience than all other first-year teachers (29.4% vs. 8.3%), a discrepancy driven by disproportionate entry through alternative certification routes. Three in four Black women beginning teaching with no student teaching experience were alternatively certified and nearly half of newly hired Black teachers were certified through an alternative pathway compared to just 22% of all other first-year teachers. First-year teachers who entered teaching through an alternative certification program were less likely to have completed student teaching and had fewer preparation classes.

Black first-year teachers were just as likely as first-year teachers on average to report being offered induction and mentoring, but found their mentoring experiences to be less effective (Fig. 5). About 63% of Black first-year teachers reported being assigned a mentor who had taught the same subject as they taught, slightly higher than the first-year teacher average of 57%. Similarly, Black first-year teachers reported meeting with their mentor weekly slightly lower rates as first-year teachers on average (44% and 46%, respectively). Only 56% of Black first-year teachers reported meeting with their mentor at least once or twice a month, as compared to 66% of first-year teachers on average. And, Black teachers were less than half as likely to report that their mentor contributed to improving their teaching to a great degree (11.4% did compared to 28% of all other teachers). This finding indicates that there may be differences in mentoring quality as well as frequency.

In addition to mentoring, teachers reported their participation in a series of induction supports, including having a reduced schedule, common planning, seminars, extra help, supportive communication, and ongoing mentoring. While very few teachers reported receiving the most comprehensive induction package
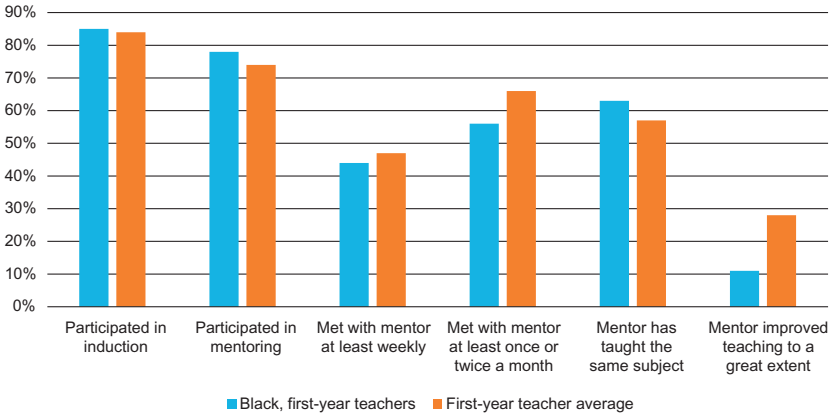
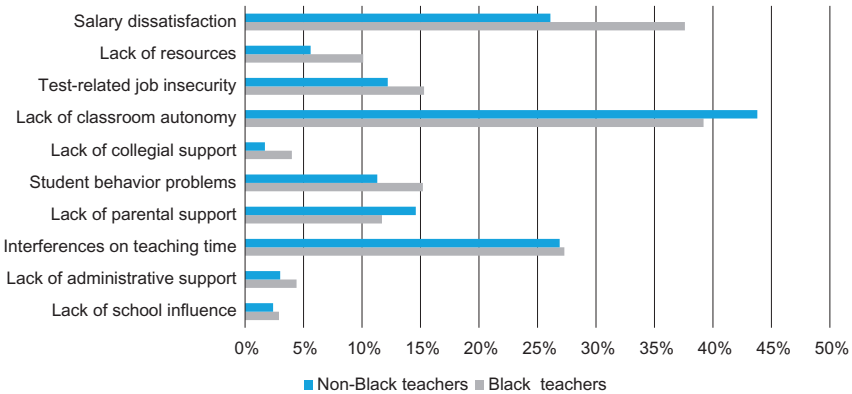*Fig. 5.* Mentoring and Induction Experiences.

Fig. 6. Reports of Working Conditions (% of Teachers Who Report Agreeing with Each Survey Statement).

that includes each of those supports, Black women teachers were one-tenth as likely to report receiving that set of supports as other teachers (0.26% vs. 2.6%).

Working Conditions

Black teachers cited different concerns with working conditions than teachers on average (see Fig. 6). Black teachers were more likely to express dissatisfaction with their salary (a key component of compensation), lack of resources, worries about job security due to accountability measures, lack of classroom autonomy, and lack of collegial support. Nearly twice as many Black teachers,

and Black female teachers, strongly disagree that the materials they need to teach were readily available to them (e.g., textbooks, supplies, copy machines, and so on). On the other hand, Black teachers were no more likely to cite dissatisfaction with student behavior problems, lack of parental support, interferences on teaching time, lack of administrative support, or lack of school influence. In addition, Black teachers and non-Black teachers had similar class sizes (25 and 26 students, respectively, $p = 0.14$).

POLICY IMPLICATIONS

Black teachers occupy an important space in the teacher workforce, and policy interventions designed to increase teacher retention can help increase the Black teacher population. Policy interventions should address the particular reasons Black teachers tend to leave the profession, as these differ in some specific ways from the rest of the teacher population. Furthermore, policy interventions should be long-term solutions, rather than quick-fixes that might exacerbate shortages in the long run. Given the experiences of Black teachers, policy interventions should address compensation, teacher preparation and ongoing support, and school working conditions.

Create Compensation Packages That Make Living as a Teacher More Affordable, Including Housing Supports and Childcare Supports

Black teachers were both more likely to report salary dissatisfaction and to report that they could be brought back to the teaching profession with financial incentives. Nearly 37.6% of Black teachers (and 37.9% of Black female teachers) reported that they strongly disagree that they are satisfied with their salary (as compared to 26% of non-Black teachers) and over 65% of Black teachers and Black female teachers strongly or somewhat disagreed that they were satisfied with their salaries (as compared to 52% of non-Black teachers).

Black teacher leavers were also far more likely to report that the following aspects of compensation would be very or extremely important to bringing them back to the profession, compared to teachers overall: better salaries (52% vs. 36%), loan forgiveness (49% vs. 13%), housing incentives (42% vs. 12%), and the availability of childcare options (39% vs. 16%).

Support High-Retention Preparation Programs That Better Prepare and Support Black Teachers to Have Successful, Lasting Careers in the Classroom

Black teachers were more likely than non-Black teachers to have entered the teaching profession with little teacher preparation, often through an alternative

certification pathway, which is associated with a much higher probability of teacher turnover. This is likely a function of both the costs of training and the opportunity costs of foregoing a salary while training.

According to Baum and O'Malley (2003), Black undergraduate and graduate students are more likely than students of other racial or ethnic identities to report that they wish they had borrowed less to fund their postsecondary education, that they changed their career plans because of their loans, or that their loan payments were burdensome. With fewer family assets in most Black families, student loan debt is much greater for Black students than for White ones, and both the amount of debt and the gap grow substantially over time (Scott-Clayton & Li, 2016)

States and districts should put the financial supports in place that allow prospective teachers to receive the kind of high-quality training and support they need to be successful in the classroom, without having to go into debt in order to be well prepared. Research shows that when teachers have stronger training, they have a greater sense of self-efficacy, and they are encouraged to continue teaching for the long haul (Darling-Hammond, Chung, & Frelow, 2002; DeAngelis, Wall, & Che, 2013; Yost, 2006).

Loan Forgiveness and Service Scholarships

According to Podolsky and Kini (2016), when loan forgiveness and service scholarships are well-designed—providing enough of an incentive to offset tuition costs and living expenses—they can be an effective tool for recruiting and retaining teachers to high-need positions. They are especially effective at recruiting teachers when they cover a greater proportion of tuition.

Promising models include the North Carolina Teaching Fellows Program, which produced very high retention rates in teaching for its high-ability entrants by subsidizing all 4 years of college education, including teacher preparation, in exchange for 4 years of service in teaching (Henry, Bastian, & Smith, 2012), and the Woodrow Wilson-Rockefeller Brothers Fund Fellowship for Aspiring Teachers of Color, which provides 3 years of mentoring and a $30,000 stipend to put toward a master's degree in education, in exchange for a commitment to teach in an urban or rural high-need school for 3 years. The Minority Teachers of Illinois (MTI) Scholarship Program is much larger scale, but with variable service requirements. It offers $5,000 scholarships to about 400 undergraduate or graduate students of color each year who are interested in becoming teachers. Students commit to teaching at least 1 year for each year that they receive the MTI scholarship. More information is needed to determine the effects on retention rates among teachers of color.

Teacher Residencies

Teacher residences provide another promising high-retention approach to preparation of teachers of color. Teacher residencies are partnerships between districts and universities designed to subsidize and improve teachers' training to

teach in high-needs schools and in high-demand subject areas (Guha, Hyler, & Darling-Hammond, 2016). There are at least 50 residency programs currently operating around the country. Participants spend a year working closely as an apprentice with a highly effective mentor teacher while doing related course-work at a partnering university. During this time, residents receive financial support, often in the form of a stipend and tuition assistance. After their year of training, they commit to teaching an additional 3−4 years in their district, with ongoing mentoring support, for a total of 4−5 years of teaching.

This model improves upon alternative certification programs in a few ways. Teachers have extensive classroom experience with best practices in a high-needs school before becoming solely responsible for their own class. This increases their chances of success once they are classroom teachers and gives the residency pro-gram an opportunity to assess resident performance before entrusting them with students of their own. The service commitment has the dual effect of filtering out candidates not willing to make a serious commitment to teach and ensures that they continue to teach in high-needs schools as their effectiveness increases (Wiswall, 2013). The residency model helps new teachers build strong relation-ships, by clustering cohorts in university classes and school sites and by providing ongoing mentoring and support once residents become teachers. Thus, residents are able to collaborate and support one another through the challenges of being beginning teachers (Guha, Hyler, & Darling-Hammond).

Nationally, about 49% of residents are people of color, which is the same pro-portion of public school students of color and far exceeds the 18% of teachers who are people of color nationally (Boston Teacher Residency, n.d.). Principals find graduates of residency programs to be well prepared, and in many cases to be bet-ter prepared than typical new teachers. In addition, a review of residency program evaluations shows that residents tend to have higher retention rates over time than nonresident teachers (Guha et al., 2016; see also National Center for Teacher Residencies, 2016; Solomon, 2009; Sloan & Blazevski, 2015). The San Francisco Teacher Residency (SFTR) program, for example, focuses on recruiting teachers in areas of high need, such as math, science, and bilingual education and two-thirds of their residents are people of color. In an evaluation of the program, over 80% of graduates still taught in San Francisco Unified School District (SFUSD) after 5 years, compared to 38% of other teachers hired by SFUSD (Guha et al., 2016; San Francisco Teacher Residency & DataUse Consulting Group, n.d.).

Support Ongoing Development of Black Teachers through High-Quality Mentoring and Induction, Improved Working Conditions, and Opportunities for Career Development

Mentoring and Induction
While beginning Black teachers are just about as likely to report being offered mentoring and induction support as non-Black teachers, they are only half as

likely to report that their mentor greatly improved their teaching and about a tenth as likely to have received the most comprehensive induction package. In a review of the impact of mentoring and induction on first-year teacher outcomes, Ingersoll and Strong (2011) find that induction programs have a positive relationship with teacher retention and commitment to continue teaching. In particular, they find that teachers who participated in the most comprehensive induction programs, which involved multiple forms of support, were far more likely to report having a positive first-year teaching experience and were far more likely to continue teaching and to stay at the same school. As we noted earlier, Black teachers were one-tenth as likely to experience these combinations of supports.

The New Teacher Center (NTC) offers one model for improving the quality of mentorship by training experienced teachers to become high-quality mentors and providing tools and dedicated time for them to mentor new teachers. An evaluation of their model in Broward County Public Schools (BCPS), Chicago Public Schools, and Grant Wood Area Education Agency, found that NTC supported teachers were more likely than a control group to be assigned a mentor (90% vs. 52%) and met their mentor with much greater frequency (75% vs. 16%). More importantly, NTC supported teachers were more likely to report that the time they spent with their mentor was used for high-quality activities, including for observation and feedback (57% vs. 9%), to discuss the strengths and needs of students (55% vs. 18%), to discuss instructional issues (50% vs. 20%), and to develop a professional growth plan (42% vs. 9%) (Picucci, 2016a). An initial analysis of the impact of the NTC model on teacher retention found that 86% of teachers receiving NTC support continued teaching in their district compared to 80% of teacher receiving traditional support (Picucci, 2016b). While these data do not address outcomes for Black teachers specifically, both CPS and BCPS are racially diverse districts with about 40% Black students and over 20% Black teachers in each.

Improved Working Conditions through Better Prepared Principals
Even if teachers are prepared for the challenges of teaching, poor working conditions can drive them to other schools or out of the profession entirely. The most frequently cited reason for moving schools among Black teachers is dissatisfaction with administration (Appendix B). School administrators are tasked with making hiring decisions, being instructional leaders, setting norms for students and staff, nurturing a positive and encouraging culture, keeping schoolwide systems running smoothly, and more. When they are not able to do those things well, it has consequences for teachers and students that make it difficult for teachers to stay. Poor school leadership more than doubles the likelihood that teachers will move or leave their classrooms and schools. Effective school leaders, on the other hand, can help keep teachers in their classrooms and improve the chances that students will have access to high-quality educators and learn at higher levels.

The 2015 Professional Standards for Educational Leaders (formerly Interstate School Leaders Licensure Consortium (ISLLC) Standards) provide a research-based summary of the skills school leaders need: the abilities to develop and enact a school-wide vision; act ethically and professionally; create an equitable, culturally responsive environment; develop a rigorous and coherent academic program; cultivate a caring school environment; provide relevant and effective professional development and leadership opportunities for all staff members; foster a professional community; engage families meaningfully; and manage school operations effectively (Darling-Hammond, LaPointe, Meyerson, Orr, & Cohen, 2007; National Policy Board for Educational Administration, 2015. For a comprehensive description of the research basis for leadership standards, see Taylor, Tucker, & Pounder, 2012).

Unfortunately, many school leadership-training programs do not prepare principals to be effective in all of those roles. A 2005 study of school administrator training programs found that these programs were among the weakest US education school programs (Levine, 2005, see also Fry, Bottoms, & O'Neill, 2005). Clinical training requirements, for example, varied considerably between programs with some requiring as few as 45 hours at a school site and others requiring as many as 300, while the actual assessment of their clinical work was lax. Many prospective principals report that their coursework fails to prepare them for the realities of leading a school and that some programs face barriers to providing meaningful clinical and mentorship experiences (The Wallace Foundation [Wallace], 2016). Some researchers recommend that states influence changes in university schools of education through accreditation and licensure, so that they restructure their leadership programs to have more rigorous admission and graduation requirements, to offer more relevant coursework, and to organize practical internships for prospective principals (Darling-Hammond et al., 2007; Wallace, 2016).

The Promise of University-District Partnerships
Progress in training effective school principals has been made by some university-district partnerships, which actively recruit talented future administrators, and especially those who have demonstrated a commitment to working in hard-to-staff schools.

The nationally recognized educational leader cohort program at Delta State University (DSU) in the Mississippi Delta, for example, partners with local school districts to recruit excellent teachers with strong school leadership potential (LaPointe, Davis, & Cohen, 2007). Half of their recruits each year are African-American. Most of these teachers have been working in the Delta—a mostly rural region plagued by poverty and racial segregation—and they have braved a demanding selection process to be nominated for the program by their district. With state, federal, district, and university funding, DSU is able to fund their full-time paid internships at school sites. This joint investment of

funds allows well-qualified candidates to participate regardless of their financial means. According to DSU, 85% of all their graduates since the program began in 1998 are currently holding administrative positions in Delta schools and districts (Delta State University [DSU], 2016). While not perfectly comparable,[5] the school leader placement rate in over 60 Texas principal preparation programs was about 60% over 5 years (Fuller & Hollingworth, 2014). In one California preparation program, the placement rate was just 38% over 5 years (Adams, 1999). It is clear that DSU is able to recruit candidates who are committed to being leaders in a hard-to-staff region, while some programs struggle to recruit and train candidates who will become administrators at all.

The Chicago Leadership Collaborative and the Bank Street Principals Institute in New York City have similar models, with the addition of ongoing mentorship and support (Wallace, 2016). In fact, DSU recently received a federal grant, in part, to add ongoing support for new principals once they are hired as well (DSU, 2016). While successful university-district partnerships offer models and strategies to aspire to, there is no guarantee that they will scale on their own or that the quality of every program will truly be a departure from business as usual (Hess & Kelly, 2005)

The Power of State Accreditation and Licensure Standards
State standards can leverage universities to take action where they might otherwise be reticent to do so. In Iowa, for example, changes to principal licensure requirements and principal preparation approval led to significant changes in principal preparation programs and greater uniformity across programs (Hackmann & Wanat, 2007). Due to the new standards, five preparation programs terminated their programs while five were approved by the state. Approved programs developed conceptual frameworks and cohort models, required significantly greater clinical hours than they had before (360−400 hours), and had greater consistency in coursework across programs. The 2015 Report on the State of Educator Preparation in Iowa found that the vast majority of newly trained principals in the state felt they performed well or very well in each of the principal standards. Even more telling, superintendents rated new principal performance similarly (Iowa Department of Education, 2015).

Similar strategies for sunsetting programs and requiring them to meet new standards led to much stronger and better-rated programs in Mississippi and New York, as well (Darling-Hammond et al., 2007). These strategies need to take into account the skills that will allow principals to support teaching and teachers, as well as to develop equitable learning environments that support diverse learners. State principal preparation and licensure regulations ultimately play a significant role in shaping the content and format of principal preparation programs and can help ensure that they are held to a standard of excellence. These regulatory strategies could help improve Black teacher retention by requiring that program participants have clinical experiences in schools with diverse students and

staff and learn to create collaborative, supportive work environments for the teachers they work with. In the program accreditation process, states can require that programs survey graduates on how well prepared they felt to handle each of the duties, including supporting a diverse staff.

CONCLUSION

Previous research on teacher retention and the retention of teachers of color, while instructive, misses some of the key factors associated with Black teacher attrition and turnover. This study, with a focus on Black teachers and Black women in the field, reveals that policymakers should take note of the striking rate at which Black teachers are involuntarily pushed out of their schools and out of the profession entirely. Involuntary movers and leavers make up a sizable share of all Black teacher turnover (about a third), and would benefit from further investigation.

In addition, the data suggest that policymakers should take special care to develop interventions that create competitive compensation packages, improve subsidized, high-quality preparation pathways and mentoring, and enable principals to create supportive professional teaching conditions that can help retain Black female teachers if they want to ensure that our schools reflect the rich diversity of our country.

NOTES

1. The NCES Handbook of Survey Methods includes a thorough discussion of the survey methods used to produce the SASS and TFS data (Burns, Wang, & Henning, 2011).
2. For more information, please refer to Documentation to the NCES Common Core of Data Public Elementary/Secondary School Universe Survey: School Year 2009−2010 (NCES 2008-332).
3. The Bureau of Labor Statistics measures the labor force as those 16 years of age or older, employed or looking for work.
4. Here we refer to data for the "black alone" population, which the US Census defines as those who marked only the "Black or African American" category option on the 2010 Census.
5. These rates were calculated in different time spans and in locations that might have experienced different employment opportunities.

REFERENCES

Achinstein, B., Ogawa, R. T., & Sexton, D. (2010). Retaining teachers of color: A pressing problem and a potential strategy for "hard-to-staff" schools. *Review of Educational Research*, *80*(1), 71−107.
Adams, J. P. (1999). Good principals, good schools. *Thrust for Educational Leadership*, *29*(1).
Albert Shanker Institute. (2015). *The state of teacher diversity in American education*. Washington, DC: Albert Shanker Institute.

Allensworth, E., Ponisciak, S., & Mazzeo, C. (2009). *The schools teachers leave: Teacher mobility in Chicago public schools*. Chicago: Consortium on Chicago School Research.

Baugh, W. H., & Stone, J. A. (1982). Mobility and wage equilibration in the educator labor market. *Economics of Education Review*, *2*(3), 253−274.

Baum, S., & O'Malley, M. (2003). College on credit: How borrowers perceive their education debt. *Journal of Student Financial Aid*, *33*(3), 7−19.

Borman, G. D., & Dowling, N. M. (2008). Teacher attrition and retention: A meta-analytic and narrative review of the research. *Review of Educational Research*, *78*(3), 367−409.

Boston Teacher Residency (n.d.). *Impact*. Retrieved from http://www.bpe.org/boston-teacher-residency/about/impact/

Boyd, D., Grossman, P., Ing, M., Lankford, H., Loeb, S., & Wyckoff, J. (2011). The influence of school administrators on teacher retention decisions. *American Educational Research Journal*, *48*(2), 303−333.

Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2006). How changes in entry requirements alter the teacher workforce and affect student achievement. *Education Finance & Policy*, *1*(2), 176−216.

Burns, S., Wang, X., & Henning, A. (2011). *NCES handbook of survey methods*. Washington, DC: US Department of Education, National Center for Education Statistics.

Darling-Hammond, L., Chung, R., & Frelow, F. J. (2002). Variation in teacher preparation: How well do different pathways prepare teachers to teach? *Journal of Teacher Education*, *53*(4), 286−302.

Darling-Hammond, L., Holtzman, D., Gatlin, S. J., & Heilig, J. V. (2005). Does teacher preparation matter? Evidence about teacher certification, Teach for America, and teacher effectiveness. *Education Policy Analysis Archives*, *13*(42). http://epaa.asu.edu/epaa/v13n42/.

Darling-Hammond, L., LaPointe, M., Meyerson, D., Orr, M. T., & Cohen, C. (2007). *Preparing school leaders for a changing world: Lessons from exemplary leadership development programs*. Stanford, CA: Stanford University, Stanford Educational Leadership Institute.

DeAngelis, K. J., Wall, A. F., & Che, J. (2013). The impact of preservice preparation and early career support on novice teachers' career intentions and decisions. *Journal of Teacher Education*, *64*(4), 338−355.

Delta State University. (2016). *Master of educational administration and supervision: About the program*. http://www.deltastate.edu/college-of-education/teacher-education-leadership-and-research/master-of-education-educational-leadership/. Accessed on October 24, 2016.

Executive Office of the President. (2012). *Investing in our future: Returning teachers to the classroom*. Washington, DC: Executive Office of the President. https://obamawhitehouse.archives.gov/sites/default/files/Investing_in_Our_Future_Report.pdf. Accessed on February 3, 2017.

Freeman, C. E., Scafidi, B., & Sjoquist, D. L. (2005). Racial segregation in Georgia public schools, 1994-2001. In J. C. Boger & G. Orfield (Eds.), *School resegregation: Must the south turn back?* (pp. 148−163). Chapel Hill, NC: University of North Carolina Press.

Fry, B., Bottoms, G., & O'Neill, K. (2005). *The principal internship: How can we get it right*. Atlanta, GA: Southern Regional Education Board.

Fuller, E., & Hollingworth, L. (2014). Evaluating principal-preparation programs based on placement rates: Problems and prospects for policymakers. *Journal of Research on Leadership Education*, 1−35.

Goldring, R., Taie, S., & Riddles, M. (2014). *Teacher attrition and mobility: Results from the 2012−13 teacher follow-up survey*. Washington, DC: US Department of Education.

Gray, L., & Taie, S. (2015). *Public school teacher attrition and mobility in the first five years: Results from the first through fifth waves of the 2007−08 Beginning Teacher Longitudinal Study*. Washington, DC: US Department of Education, National Center for Education Statistics.

Guarino, C. M., Santibanez, L., & Daley, G. A. (2006). Teacher recruitment and retention: A review of the recent empirical literature. *Review of Educational Research*, *76*(2), 173−208.

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

Hackmann, D. G., & Wanat, C. L. (2007). Licensing principals: Iowa's preparation reform initiative. *Journal of Research on Leadership Education*, *2*(3), 1−36.

Hanushek, E. A., Kain, J. F., & Rivkin, S. G. (2004). Why public schools lose teachers. *Journal of Human Resources*, *39*(2), 326−354.

Henke, R. R., Chen, X., & Geis, S. (2000). *Progress through the teacher pipeline: 1992 − 93 College graduates and elementary/secondary school teaching as of 1997*. Washington, DC: US Department of Education, National Center for Education Statistics.

Henry, G. T., Bastian, K. C., & Smith, A. A. (2012). Scholarships to recruit the "best and brightest" into teaching: Who is recruited, where do they teach, how effective are they, and how long do they stay? *Educational Researcher*, *41*(3), 83−92.

Hess, F. M., & Kelly, A. P. (2005). *Learning to lead? What gets taught in principal preparation programs*. Cambridge, MA: Harvard Kennedy School, Program on Education Policy and Governance.

Ingersoll, R., & May, H. (2016). *Minority teacher recruitment, employment, and retention: 1987 to 2013* (research brief). Palo Alto, CA: Learning Policy Institute.

Ingersoll, R. M. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal*, *38*(3), 499−534.

Ingersoll, R. M., & May, H. (2011). *Recruitment, retention and the minority teacher shortage*. Philadelphia: University of Pennsylvania, Consortium for Policy Research in Education.

Ingersoll, R. M., Merrill, L., & May, H. (2014). *What are the effects of teacher education and preparation on beginning teacher attrition?* Philadelphia, PA: University of Pennsylvania, Consortium for Policy Research in Education.

Ingersoll, R. M., & Strong, M. (2011). The impact of induction and mentoring programs for beginning teachers: A critical review of the research. *Review of Educational Research*, *81*(2), 201−233.

Ingersoll, R. M., & Smith, T. M. (2004). Do teacher induction and mentoring matter? *NASSP Bulletin*, *88*(638), 28−40.

Iowa Department of Education. (2015). Report on the state of educator preparation in Iowa. Retrieved from https://www.educateiowa.gov/documents/educator-quality/2016/02/report-state-educator-preparation-iowa-2015

Johnson, S. M., Berg, J. H., & Donaldson, M. L. (2005). *Who stays in teaching and why? A review of the literature on teacher retention*. Cambridge, MA: Harvard Graduate School of Education, The Project on the Next Generation of Teachers.

Johnson, S. M., Kraft, M. A., & Papay, J. P. (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*(100306), 1−39.

Kini, T., & Podolsky, A. (2016). *Does teaching experience increase teacher effectiveness? A review of the research*. Palo Alto: Learning Policy Institute.

Ladd, H. F. (2011). Teachers' perceptions of their working conditions: How predictive of planned and actual teacher movement? *Educational Evaluation and Policy Analysis*, *33*(2), 235−261.

LaPointe, M., Davis, S., & Cohen, C. (2007). *School leadership study: Developing successful principals* (Case study series: Principal preparation at Delta State University—A bold strategy to improve practice). Stanford, CA: Stanford University, Stanford Educational Leadership Institute.

Levine, A. (2005). *Educating School Leaders*. Princeton, NJ: The Woodrow Wilson National Fellowship Foundation, The Education Schools Project.

Loeb, S., & Beteille, T. (2009). Teacher quality and teacher labor markets. In G. Sykes, B. Schneider, & D. N. Plank (Eds.), *Handbook of education policy research* (pp. 596−612). London: Routledge.

Loeb, S., Darling-Hammond, L., & Luczak, J. (2005). How teaching conditions predict teacher turnover in California schools. *Peabody Journal of Education*, *80*(3), 44−70.

Marinell, W. H., & Coca, V. M. (2013). *Who stays and who leaves? Findings from a three-part study of teacher turnover in NYC middle schools*. New York, NY: The Research Alliance for New York City Schools.

Murnane, R. J., & Olsen, R. J. (1990). The effects of salaries and opportunity costs on length of stay in teaching: Evidence from North Carolina. *Journal of Human Resources*, *25*(1), 106−124.

National Center for Education Statistics. (2016). Table 203.50: Enrollment and percentage distribution of enrollment in public elementary and secondary schools, by race/ethnicity and region: Selected years, fall 1995 through fall 2025. In *2015 Digest of Education Statistics*. US Department of Education, Washington, DC. Retrieved from http://nces.ed.gov/programs/digest/d15/tables/dt15_203.50.asp

National Center for Teacher Residencies. (2016). *2015 Network impact overview*. Chicago, IL: Author.

National Policy Board for Educational Administration. (2015). *Professional standards for educational leaders 2015*. Reston, VA: Author.

Ondrich, J., Pas, E., & Yinger, J. (2008). The determinants of teacher attrition in upstate New York. *Public Finance Review*, 36(1), 112–144.

Picucci, A. (2016a, May 13). Early results are in: NTC model leads to student learning [Blog post]. Retrieved from https://newteachercenter.org/blog/2016/05/13/early-results-ntc-model-leads-student-learning/

Picucci, A. (2016b, August 10). New I3 research shows student achievement gains continue with NTC support [Blog post]. Retrieved from https://newteachercenter.org/blog/2016/08/10/new-i3-research-shows-student-achievement-gains-continue-with-ntc-support/

Podolsky, A., & Kini, T. (2016). *How effective are loan forgiveness and service scholarships for recruiting teachers?* Palo Alto: Learning Policy Institute.

Rastogi, S., Johnson, T. D., Hoeffel, E. M., & Drewery, M. P., Jr. (2011). *The black population: 2010*. Washington, DC: US Department of Commerce, US Census Bureau.

Rizga, K. (2016). Black teachers matter. *Mother Jones*, http://www.motherjones.com/politics/2016/09/black-teachers-public-schools-education-system-philadelphia. Accessed on November 5, 2016.

Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Educational Research Journal*, 50(1), 4−36.

San Francisco Teacher Residency & DataUse Consulting Group. (n.d.). *SFTR impact analysis, 2010−2015*. San Francisco: https://www.dropbox.com/s/nc86nyvll6a3ly7/SFTR%20Development%20Evaluation%20Study%20%2B.pdf?dl=0. Accessed on November 8, 2016.

Scafidi, B., Sjoquist, D. L., & Stinebrickner, T. R. (2007). Race, poverty, and teacher mobility. *Economics of Education Review*, 26(2), 145−159.

Scott-Clayton, J., & Li, J. (2016). *Black-white disparity in student loan debt more than triples after graduation*. Economic Studies Reports, Washington, DC: Brookings Institution.

Simon, N. S., & Johnson, S. M. (2015). Teacher turnover in high-poverty schools: What we know and can do. *Teachers College Record*, 117(030308), 1−36.

Sloan, K., & Blazevski, J. (2015). *New visions Hunter College urban teacher residency: Measures of success*. Bloomington, IN: Rockman.

Solomon, J. (2009). The Boston teacher residency: District-based teacher education. *Journal of Teacher Education*, 60(5), 478−488.

Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). *A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S.* Palo Alto, CA: Learning Policy Institute.

Taylor, D., Tucker, P., Pounder, D., Crow, G., Terry Orr, M., Mawhinney, H., & Young, M. D. (2012). *The research base supporting the ELCC standards: Grounding leadership preparation & the Educational Leadership Constituent Council Standards in empirical research*. In M. D. Young & H. Mawhinney (Eds.). Charlottesville, VA: University Council for Educational Administration.

US Department of Labor. (2012). *The African American labor force in the recovery*. Available from https://www.dol.gov/_sec/media/reports/blacklaborforce/

Villegas, A. M., & Irvine, J. J. (2010). Diversifying the teaching force: An examination of major arguments. *The Urban Review*, 42, 175−192.

The Wallace Foundation. (2016). *Improving university principal preparation programs: Five themes from the field*. New York, NY: The Wallace Foundation.

Wiswall, M. (2013). The dynamics of teacher quality. *Journal of Public Economics*, 100, 61−78.

Yost, D. S. (2006). Reflection and self-efficacy: Enhancing the retention of qualified teachers from a teacher education perspective. *Teacher Education Quarterly*, 33(4), 59−76.