

Why a Diverse Leadership Pipeline Matters: The Empirical Evidence

Frank Perrone, PhD, Indiana University-Bloomington

[FINAL DRAFT]

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Abstract

This overview of the research revealed that diversity in the pipeline leading to the principalship is lacking and critical. The article first provided a synopsis of educator demographics, illustrating clear disparity in principal representation by race/ethnicity and sex/gender. A subsequent review of relevant empirical research demonstrated clear benefits of having a diverse principal workforce, especially for students and teachers of color. Further examination showed that educators of color and females/women, particularly those of color, face biases and barriers in advancing to the principalship. These biases and barriers have negative implications for individuals in the principal pipeline and educational quality overall.

Keywords: principalship, diversity, leadership preparation, race/ethnicity, sex, gender

Introduction

This article provides a detailed description of how and why empirical educational research indicates that increased diversity, primarily along the lines of race/ethnicity and gender and sex, in the principalship and principal pipeline is imperative. Research has established that the principal plays a prominent role in student, teacher, and school outcomes. For instance, principal leadership impacts student achievement (e.g., Leithwood et al., 2004), is one of if not the most salient factor in teacher retention (e.g., Ladd, 2011), and is closely related to student attendance (e.g., Bartanen, 2020), class placement (e.g., Grissom, Rodriguez, & Kern, 2017), and disciplinary referrals (e.g., Skiba et al., 2014). These example principal outcomes and conditions are also more likely to be negatively experienced by teachers of color (e.g., turnover; Achinstein et al., 2010) and students of color (e.g., disciplinary referrals; Skiba et al., 2002) relative to their White peers. As explored in this article, increasing the proportions of principals of color and female principals may help ameliorate some of these disparate conditions. Currently, though, potential school leaders of color and women appear more likely to face various obstacles in reaching the principalship that others do not.

Principal workforce demographics are not representative of national student and adult populations, which calls for questions about equity of opportunity for advancement to school leadership positions and has implications for K-12 education quality. The principalship continues to be overrepresented by White (80%), male (46%), and White male (37%) school leaders.¹ In contrast, roughly half of U. S. students are students of color (NCES, 2019), and the teacher workforce from which principals emerge is predominantly female. Such disproportionate

¹ All uncited principal and teacher counts come from survey-weighted descriptive analyses of the restricted-use National Center for Education Statistics' Schools and Staffing Survey and National Teacher and Principal Survey data unless indicated otherwise.

representation may have detrimental effects on U. S. education quality, especially when considering the benefits that a same-race principal seems to have for teachers and students of color (e.g., Castro et al., 2018). Further, research to date suggests discrimination in operation (e.g., Bailes & Guthery, 2020; Davis et al., 2017), which is an issue of both injustice and educational quality. Professional discrimination, by its nature, means that the most qualified person(s) for a position may have lower odds of their desired outcome. Thus, discrimination in the pipeline would naturally negatively impact individuals qualified for school leadership and national principal workforce quality because such discrimination excludes many highly qualified candidates of color and females/women.

This article focuses on the principal pipeline leading up to the principalship (i.e., from entry to leadership preparation training through to first-time principal recruitment and selection; Hitt et al., 2017) to provide a state of the field for this special issue and growing body of research. To illustrate the continued lack of diversity and disproportionate representation in the principalship, I first compare the principal workforce's composition by race/ethnicity and sex/gender compared to U. S. teachers, adults, students, and educational leadership preparation program graduates. I next provide a short overview of scholarship on diversity in the teacher pipeline as the teacher pipeline serves as the entry point for and shares patterns with the principal pipeline. I then outline methods for a literature review on (1) the educational outcomes linked to principals of color and women principals and (2) evidence of discrimination in the principal pipeline. This is followed by a combined findings and discussion section before offering concluding thoughts.

Lacking Diversity and Representation in the Pipeline

Before presenting disparities in representation in the principalship and principal pipeline, it is important to note that several groups of educators receive little mention in this report on the state of the field and why. Generally, quantitative education research, including that centered on educator diversity, makes findings limited to one or more of four race and ethnicity categories: Black, Hispanic, Latino/a, and White (Faircloth et al., 2015). Part of this limitation is attributable to relatively small population sizes of educators and students who are American Indian / Alaska Native (AI/AN), Asian, Pacific Islander, and/or of two or more races in more commonly analyzed state-level and nationally representative datasets. These smaller population sizes present statistical limitations in small effect sizes and confidence levels (e.g., Faircloth et al., 2015), which means that meaningful findings associated with these individual educator races/ethnicities are rarely reported and often grouped under the category of “Other.”

Oversampling approaches can help unearth patterns along racial/ethnic lines for students and teachers. Still, it is much more challenging to oversample or obtain large samples of principals who are AI/AN, Asian, Pacific Islander, and/or of two or more races/ethnicities (see Méndez-Morse et al. (2015) for example of an exception to general limitations for Latino/a principals); there are only roughly 90,000 public school principals for approximately 51 million public K-12 students and 3.2 million public school teachers. The scarcity of research findings beyond Black, Hispanic, Latino/a, and White educators seen in this overview for the field illuminates the importance of research, such as Liang and colleagues (2018) and Secatero and colleagues (this issue), that helps provide a fuller representation of diversity and representation in the principal pipeline research.

Essential for readers to note before proceeding is that several demographic terms are used across the following text as reported in the research reviewed. First, the terms Latina/o and

Hispanic have distinctly different definitions and are not interchangeable in this text. The changes in term use across this manuscript were made to maintain consistency with the operational definitions of each respective study and data collection agency cited. Similarly, sex and gender are two different constructs, but the body of research relevant to this overview varies in usage, often using terms for sex and gender interchangeably within a single study. Before reporting their respective results, I examined each study's data collection methods to determine whether the researchers identified participants by sex (i.e., biological characteristics) or gender (i.e., social construct). No relevant studies used sex or gender labels outside of female, male, woman, and man.

Principalship

A view of national educator, adult, and student demographics reveals a public K-12 educator workforce that is neither diverse nor representative of the larger U. S. adult and student populations. This is perhaps most glaring when looking across educator race and ethnicity demographics. The educator workforce is overwhelmingly and disproportionately White: 80% of principals and 79% of teachers are White (see Table 1), sharply contrasting those of the nation's adult population (63% White, 16% Hispanic, 12% Black, 2% Asian, 1% two or more races, <1% Pacific Islander and AI/NA; U. S. Census, 2018). The mismatch between national educator and student race and ethnicity demographics is even more pronounced. While four of every five principals and teachers in 2018 were White, the U.S. K-12 student population is no longer majority White (NCES, 2020).

[INSERT TABLE 1 ABOUT HERE]

Educators of color are more prevalent in the U.S. today than in the past, but improvements in diversity in the K-12 public school educator workforce severely lag student

population shifts. As illustrated in Figure 1, the overall proportion of non-White educators increased by approximately four percentage points in this timeframe, while the representation of public school students of color grew by 15 percentage points from 2000 to 2016. The increased proportion of principals of color was driven by an increased share of Hispanics in the principalship (8.9% of principals were Hispanic in 2017-18 versus just 5% in 1999-2000). Meanwhile, the percentage of Black principals has remained stable, going from 11% to 10.5%, and increases in percentage compositions by “Other” have been by roughly half a percentage point or cannot be estimated with confidence because of sampling issues raised earlier (e.g., Faircloth et al., 2015).

[INSERT FIGURE 1 ABOUT HERE]

Inadequate diversity and representation in the principalship are also visible by sex. In the 2017-18 school year, only 54% of acting principals were female despite 77% of the U. S. public school teacher workforce identifying as female. As seen in Figure 2, the gap between the proportion of female teachers and principals in the educator workforce decreased by almost ten percentage points, from 31 percentage points in 1999-2000 to 22 percentage points in 2017-18 (see Figure 2). This change indicates more measurable strides towards representativeness than those seen for principals by race and ethnicity this century. Still, current representation by sex also seems to call for further progress towards representing the teacher population.

[INSERT FIGURE 2 ABOUT HERE]

Looking at the intersection of race/ethnicity and sex demographics, principals in 2015-16 were roughly 41% White female, 37% White male, 7% Black female, between 4% and 5% Hispanic female, between 3% and 4% Hispanic male, and between 3% and 4% Black male. In terms of representation by locale, educators of color comprised roughly 39% of city and 21% of

suburban principal workforces in 2017-18, while town and rural schools were overwhelmingly led by White head administrators (88% and 90%, respectively). Schools in cities, suburbs, and towns were also more often headed by females (61%, 54%, and 51%, respectively), while rural schools were more often led by male principals (53%).

Principal Preparation Programs

There also seems to be a potential divergence in the percentages of principal preparation program (PPP) graduates and principals according to race/ethnicity and sex in the path from teacher to building administrator. Utilizing the best available proxies for building-level school leader master's degree graduates, Table 1 shows that roughly two-thirds of program graduates were female in 2015-16. This graduate percentage of 66% is higher than the 54% of acting female principals in 2017-18 but lower than the 76% of the teaching field comprised of females. Meanwhile, Black and Hispanic representation in PPP graduate classes may be similar to that of the principal workforce, depending upon the races and ethnicities of the 8% of program graduates reported without racial/ethnic identifiers (i.e., "Unknown"). Unfortunately, precise representation in PPPs cannot be definitively determined with available data (e.g., Anderson et al., 2020).

The discrepancies outlined above raise questions about why the principal pipeline lacks diversity, what impacts a more diverse principal pipeline might have on educational quality, and how greater pipeline diversity can be achieved. However, to answer these questions, it is vital first to understand diversity issues in the teacher pipeline because the teacher pipeline constitutes the entrance point to the principal pipeline.

Teacher Pipeline

Understanding the importance of diversity in the teacher pipeline is necessary to understand the inadequate diversity in the principal pipeline and the potential ramifications of lacking principal pipeline diversity, particularly along the lines of race and ethnicity. The teacher pipeline's lack of racial/ethnic diversity has received increased attention in recent years (e.g., Carver-Thomas, 2018) as a body of research indicates meaningful benefits of teachers of color for students of color (e.g., Redding, 2019). Race/ethnicity congruence between teacher and student is positively associated with higher student achievement for children of color, especially in elementary schools and southern states (see Redding (2019) for a full review of the research connecting teacher-student race/ethnicity congruence to student conditions and outcomes). Other conditions positively related to teacher-student race/ethnicity congruence are teacher perceptions of academic ability and behavior of students of color (e.g., Redding, 2019), placement of students of color in gifted education programs (Grissom & Redding, 2016), and odds of high school graduation (Gershenson et al., 2017).

Teaching experience is generally a prerequisite for principal licensure (e.g., Anderson & Reynolds, 2015), and lacking diversity in the principalship is often attributed to a "leaky" pipeline for teachers of color (e.g., Williams & Loeb, 2012). The most substantial loss of potential leaders of color occurs before college graduation when students do not graduate high school, enroll in college, or graduate from college (see Carver-Thomas (2018) for an overview of the state of racial/ethnic diversity in the teacher pipeline). Reports demonstrate lower proportional decreases in Black and Hispanic teacher preparation program graduates than White graduates (Partelow, 2019). However, research also strongly suggests systemic bias in teacher hiring (D'Amico et al., 2017) that may be replicated in the principal pipeline (e.g., Bailes & Guthery, 2020). Teachers of color are also more likely to switch schools and leave the teaching

profession at slightly higher rates than White teachers (e.g., Carver-Thomas, 2018). These hiring and retention patterns may contribute to low proportions of teachers of color on a national level and, thus, a smaller pool of candidates to enter the national principal pipeline. Therefore, the principal's ability to retain teachers of color appears critical to the number of teachers of color in the teacher workforce, the number of potential candidates to enter the principal pipeline, and the quality of education for students of color.

Research Supporting Needs for a Diverse Principal Pipeline

This section provides an overview of two central ways in which empirical research has demonstrated the needs for attention to and increases in diversity in the principal pipeline:

1. Benefits of principals of color for students, teachers, and parents; and
2. Discrimination in the principal pipeline.

Methods

The search for research addressing (1) and (2) above employed a systematic approach (e.g., Booth et al., 2012). Initial scoping revealed two pertinent reviews that informed subsequent search terms: Fuller and colleagues' (2017) review of research on the recruitment, selection, and placement of PPP graduates and Lee and Mao's (2020) review of research on the recruitment and selection of principals. This study's inclusion criteria consisted of empirical studies published in journals, reports, and chapters between 2000 and 2020 to align with and inform mechanisms related to the demographic shifts reported in Figures 1 and 2. I also borrowed from Guarino and colleagues' (2006) quantitative and Dixon-Woods and colleagues' (2006) qualitative systematic review inclusion criteria for study rigor and reliability.

I conducted literature searches using EBSCO and GoogleScholar using terms that emerged from the scoping review and others directly related to this review's points of interest.

For (1), I conducted searches for *principal* AND student, teacher, community, and parental conditions and potential outcomes (*achievement, attendance, advanced, attrition, college, community, discipline, expulsion, gifted, grad*, health, hiring, human resources, math, outcome, parent*, read*, retention, satisfaction, special, turnover, wellness*) AND terms for race/ethnicity and sex/gender (*African American, Alaskan Native, American Indian, Asian, Black, Caucasian, female, gender, Hispanic, Indigenous, Latin*, male, man, minorit*, Native American, sex, White, woman*). In answering (2), I conducted searches for *principal* AND the same terms for race/ethnicity and sex/gender used in (a) AND various aspects of the principal pipeline (*applicat*, career, coach*, hir*, induction, mentor*, placement, preparation, promot*, recruit*, support, trajectory*). I also conducted snowballing with included studies' reference sections. The search was completed at the end of December 2020.

I screened study abstracts against inclusion criteria for relevance and empirical research. Empirical articles passing the initial abstract screening were then coded for findings relevant to the review (e.g., principal gender, teacher outcomes, barriers within PPPs) and data, methods, and meeting or not meeting inclusion criteria of relevance, rigor, and reliability (i.e., Dixon-Woods et al., 2006; Guarino et al., 2006). In total, 50 studies met the inclusion criteria. Due to space limitations and the overview's purpose for the special issue, I only report on 38 of these studies (below 20 qualitative, 18 quantitative). In cases in which multiple studies made the same findings, the more prominent studies were reported because the review is meant to provide a larger landscape of the field. Thus, a non-report is not indicative of study quality; all 50 studies considered met the inclusion criteria for rigor and reliability and make meaningful contributions to the field.

Review Findings and Discussion

Below are both findings and discussion stemming from the review process. Again, while I initially attempted to include all pertinent review findings, this state of the field's space limitations and purpose preclude the inclusion of all identified references. In the few cases that necessitated condensing literature bases, I presented the more prominent and recent research.

Measurable Benefits of Principals of Color and Female Principals

As stated earlier, a racially and ethnically diverse teacher pipeline is beneficial for national-level educational outcomes. This disproportionate representation is critical as demographic shifts continue and equity issues coinciding with socioeconomic status, race, and ethnicity persist (e.g., Hanushek et al., 2019). The largest concentration of research finding benefits of principals of color and female principals was their associations with teacher conditions and outcomes. This was expected as the principal generally impacts student outcomes through their direct effects on teachers (e.g., Leithwood et al., 2004).

Teacher Career Trajectories. Principals of color have prominent roles in teachers of color's career trajectories who, in turn, predict critical positive outcomes for students of color (e.g., Redding, 2019), while evidence of female principals' roles in such outcomes was not found. In particular, principals of color have significant roles in recruiting/hiring and retaining teachers of color, meaning that principals of color tend to add diversity to the principal pipeline by increasing and/or maintaining numbers in the pool of teachers of color. The relationship between principals of color and the supply and hiring of teachers of color has received scant attention. Still, it shows a long-standing relationship between teacher and principal of color pipelines. Kaprinski's (2006) document analysis found that Black principals' loss during school desegregation resulted in the decimation of strong, established Black teacher and Black principal pipelines that have yet to be restored. More recently, Bartanen and Grissom's (2019)

examination of longitudinal administrative state data in Missouri and Tennessee found that Black teachers were significantly more likely to be hired by Black principals than White principals. Schools with Black principals who replaced White principals also had increased likelihoods of newly hired teachers being black. Bartanen and Grissom could not test for principal-teacher congruence among other races and ethnicities because of limited representation in the Missouri and Tennessee principal ranks.

Slightly more research has focused on principal-teacher race/ethnicity and sex/gender congruence in teacher retention. Similar to their study's findings regarding teacher recruitment and hiring, Bartanen and Grissom (2019) also found that Black teachers were more likely to continue teaching in the same school when they had a Black principal. In addition, Grissom and Kaiser's (2011) analyses of the National Center for Education Statistics' (NCES) nationally representative 2004 Schools and Staffing Survey (SASS) and Teacher Follow-up Survey (TFS) found that principal-teacher congruence predicted higher retention holding all other variables constant. Examining teacher-principal gender congruence with the same SASS/TFS data, Grissom and colleagues (2012) found that female teachers turned over at the same rate regardless of principal sex while male teachers were more likely to turn over when led by a female principal.

Teacher Job Satisfaction and Other Outcomes. Job satisfaction has a wide range of positive relationships with teacher attitudes and conditions related, in turn, to important teacher outcomes about effectiveness and teacher labor market supply (e.g., retention; Skaalvik & Skaalvik, 2011). Evidence of principal-teacher race/ethnicity congruence's relationship with job satisfaction may call for a new investigation. Grissom and Keiser (2011) and Fairchild and colleagues' (2012) examinations of the 2004 SASS both found that principal-teacher congruence

predicted higher teacher job satisfaction levels. Viano and Hunter's (2017) analyses of the 2000, 2004, 2008, and 2012 SASS confirmed these earlier results. However, the researchers determined that the levels of teacher satisfaction predicted became less pronounced across survey administrations and varied according to geography (i.e., Southern state, not Southern state). Further, Viano and Hunter found that Black teachers were equally satisfied with Black and White principals but that White teachers were less satisfied working for Black principals. Whether these predictive relationships persist today is unknown.

Additional studies determined relationships between principal-teacher congruence and other necessary teacher conditions and outcomes in pay, workload, and trust. Grissom and Keiser (2011) found that Black teachers earned less supplemental income than White teachers when a Black and a White teacher each had a White principal in 2004. To what extent these relationships hold today is undetermined. The findings strongly suggest unfair treatment taking place. Given that supplemental pay tends to compensate for leadership and extracurricular duties, this discrepancy may further indicate unequal opportunities to advance as teacher leaders. If so, these findings suggest that a pathway for school leadership advancement in teacher leadership is constricted.

Marvel's (2015) analysis of 2008 and 2012 SASS data determined that female principal-teacher gender congruence was associated with more female overtime hours than under male principals or when a teacher was male and principal female. Male gender congruence was not related to overtime work. Marvel found some evidence that female principal-teacher congruence's relationship with overtime hours may be attributable to role-modeling based on full findings. As described later, this explanation may have merit as female principal candidates and principals have traditionally struggled to find same-gender school leader role models (e.g.,

Young & McLeod, 2001). Last, Brezicha and Fuller's (2019) analysis of fall 2005 North Carolina teacher surveys found positive associations between principal-teacher race/ethnicity congruence, though, again, this relationship may have been subject to change since. Brazicha and Fuller's finding may contribute to understanding why principals of color may be more likely to retain teachers of color.

Student Outcomes and Parental Involvement Policies. Research has also demonstrated that principals of color are positively associated with favorable outcomes and conditions for students of color and their parents. Most prominently, Bartanen and Grissom's (2019) study found that Black principals seemed to positively impact Black student test scores unrelated to more Black teachers' hiring and presence. Also pertinent to students' academic outcomes, Grissom, Rodriguez, and Kern (2017) revealed that schools led by a Black principal or higher numbers of Black teachers had higher proportions of Black students in gifted programs, holding all other variables constant. The researchers did not find evidence of the same for Hispanic principal-teacher congruence, potentially because of the relatively small number of Hispanic principals in the Missouri and Tennessee sample. Using the 2000 and 2004 SASS, Marschall and Shah (2020) found that Black principals were more likely to report having school-based (e.g., parent volunteering, parent workshops) and home-based parental involvement policies (e.g., homework assignments involving parents) in place in schools with predominantly Black student populations than White principals did. The same was determined for Latino/a principals in majority-Latino/a schools. Most striking, Latino/a and Black principals were more likely to report parental involvement policies in schools with *either* majority-Latino/a or Black student bodies than White principals were.

The findings above by no means indicate ubiquitous relationships across all schools. This becomes clear in Khalifa's (2015) ethnographic study of two Black principals perceived by Black students and parents as employing abusive and exclusionary practices towards Black students. However, these principals' behaviors were attributable to the district's institutional dynamics, which calls for systemic change. Though slightly outside the scope of this review, change from the superintendent's office may be a place in which such institutional shifts must also occur. While there are continued evident inequities for principals of color in advancing to the superintendency (e.g., Davis & Bowers, 2019), a larger pool of principals of color may provide a path to more proportional representation at the superintendent rank.

Many of the findings above regarding principals of color were posited to be explained by networks and cultural competence of principals of color (e.g., Bartanen & Grissom, 2019). Race and ethnicity do not necessarily equate to cultural competence (e.g., Khalifa, 2018), but research does describe how cultural upbringing and identity can impact principal leadership, identity, and advocacy (e.g., Murakami et al., 2016; Reed, 2012). As research continues to examine culturally responsive school leadership (CRSL) and its effectiveness (see Khalifa et al., (2016) for review of CRSL framework research), the field may find further empirical support for these logical hypotheses.

Evidence of Discrimination in the Principal Pipeline

The literature review revealed substantial evidence of discrimination taking place in advancing to the principalship and noticeable advantages for White educators who are male or men. This section's findings are separated into two parts: (1) advancement to principal licensure and (2) advancement from licensure to the principalship.

Advancement to Principal Licensure. Research shows bias present in the principal pipeline apparent in even the encouragement educators do and do not receive to pursue school leadership in the first place. Myung and colleagues' (2011) examination of tapping—when an administrator encourages a teacher to pursue school leadership positions—in 2008 Miami-Dade County Public Schools revealed that roughly 90% of both principals and assistant principals had been tapped, strongly signaling the importance of the informal practice. Principal-teacher race/ethnicity congruence positively predicted principal tapping, even when accounting for factors such as teacher leadership experience and satisfaction. Sex congruence was not, though, more likely to be associated with tapping, though males were more likely to be tapped than females. Subsequent studies of PPP experiences of females and candidates of color provide more detail and further support for Myung's findings of preferential tapping's role in advancing non-White, non-male teachers to PPP enrollment in other contexts (e.g., Liang & Peters-Hawkins, 2017). In sum, and based on extant patterns, the principalship's predominantly White composition further advantages White teacher pathways to school leadership.

Barriers within PPPs. After deciding to pursue the school leadership pathway, aspirant school leaders typically enroll in a university-based or alternative PPP because PPP graduation is generally required to advance to the principalship (e.g., Anderson & Reynolds, 2015). Research demonstrates continued systemic bias against teachers of specific demographic descriptions applying to enroll in PPPs. For instance, Karanxha and colleagues (2014) unearthed one program's PPP admissions decisions preferencing White applicants over applicants of color. It is unknown how widespread this type of admissions discrimination is. However, qualitative research has repeatedly provided examples of PPP programs and faculty that fail to address equity issues and marginalize non-White and women students (e.g., Rusch, 2004). For example,

Weiner and colleagues (2019) provided a detailed exploration of ten practicing Black female administrators who received limited to no opportunity to discuss discrimination or identity in their PPPs, which also committed repeated microaggressions towards these Black female leaders across their courses of study. Boske (2010) made similar findings in her study of Black women PPP students in a predominantly White program. Weiner and Burton's (2016) study of one PPP detailed the negative influence of internship mentors who reinforced challenges women may face in advancing to and acting as a principal, going so far as to diminish one woman candidate's confidence in her ability to become a principal. Suppose such structure and delivery are more common than not across PPPs as there is no evidence suggesting that inclusiveness and equity focus are the norms on the national level. In that case, many PPPs may collectively be advantaging aspirant White and male and men leaders over most students enrolled in their programs (see Table 1).

Licensure Test Barriers. Large-scale quantitative research has also found bias in widely used building leader licensure exams. The most utilized licensure exam is the School Leaders Licensure Assessment (SLLA), currently a passageway to principalship in 20 states. Grissom, Mitani, and Blissett's (2017) longitudinal analysis of SLLA scores in Tennessee found that White SLLA exam takers received significantly and substantially higher scores than exam takers of color. Candidates with higher SLLA scores were subsequently more likely to be hired as principals and assistant principals, yet SLLA scores were not predictive of those leaders' leadership performances. Based on passing cut scores that vary by state, substantial portions of SLLA test takers of color may be precluded from reaching the principalship based on an assessment that is not entirely predictive of leadership ability.

Advancement from Licensure to the Principalship. As seen in other sections, various factors may play a role in continuing or not continuing to pursue a principal position (e.g., discouragement; Weiner et al., 2019). One potential indicator of continued intent to advance from licensure to administration has been captured in applications to school leadership positions with mixed findings. Lankford and colleagues' (2003) examination of New York State educator job applications from 1971-2000 found that males were more likely to apply for school leadership positions than females. DeAngelis and O'Connor's (2012) random sample of 199 building-level leader licensed educators in Illinois were more likely to have applied for school leadership positions within six years of obtaining principal licensure in 2000. More recent research on differential application rates is not available.

Much of the recent and most cited evidence of principal pipeline barriers for licensed PPP graduates comes from Texas state administrative data. Though findings differ according to methods and variable selection, these studies find evidence of systemic bias in the pipeline. Davis and colleagues' (2017) survival analysis of Texas administrative data from 1997-2013 revealed that Black and Latino/a teachers with principal licensure were less likely to reach the principalship than White peers but that this was contingent upon race *and* sex; Black and Latino/a male candidates were more likely to become principals than female teachers were. Bailes and Guthery's (2020) survival analysis complemented Davis and colleagues' study by examining separate steps from teacher promotion to assistant principal and assistant principal promotion to the principalship. Bailes and Guthery (2020) found that Black assistant principals were less likely to advance to the principalship than White assistant principals and that when Black assistant principals did, it took them longer to do so than White assistant principals. Crawford and Fuller's (2017) logistic regression analysis of longitudinal Texas data suggested

that Black and Latino/a teachers had higher odds of becoming assistant principals within ten years but lower odds of becoming principals. Fuller and colleagues' (2016, 2019) similar analyses of the same data also proposed that Black and Latino/a PPP grads were less likely to gain principalship than White graduates within five years of obtaining licensure. Other descriptive evidence supports the nature of the above findings with higher White PPP graduate placement in administrator positions in 2000s Indiana (Black et al., 2007) and Texas (Fuller & Hollingworth, 2014).

A preponderance of research also provides compelling evidence that males are strongly favored in advancement to the principalship based on much of the same research as presented in the section above, though race/ethnicity can also play a role. Davis and colleagues (2017) and Davis and Anderson (2020) determined that female Texas educators were less likely to advance to the principalship than males, regardless of educator race. Bailes and Guthery (2020) further revealed that when female educators did reach the principalship, it took longer to do so than their male peers. Fuller, Pendola, and colleagues (2018) and Fuller, Hollingworth, and colleagues' (2019) analyses showed increases in female principals across Texas over time, following trends in the national principal workforce (see Figure 2). Fuller, Pendola, and colleagues (2018) found that city and suburban schools were more likely to fill a principal position with a female than rural schools were, which would be suggested by earlier noted national geographic demographics. Fuller, Hollingworth, and colleagues went on to find that odds of a school having a female principal were positively associated with having a female superintendent. Crawford and Fuller's (2017) analysis also suggested that males were twice as likely to become principals than females in Texas.

The empirical evidence demonstrates that race/ethnicity and sex/gender *combined* are prominent factors in the pathway to the principalship, especially for females of color and women of color (see Agosto et al. (2018) for review of intersectionality in educational leadership research). Quantitative research finds statistical advantages at the intersections of race/ethnicity and sex for White males (Davis et al., 2017). However, the larger body of research reviewed documents clear and substantial barriers educators of color, female and woman educators, and, especially, female and woman educators of color face in the path to the principalship, much as women and female educators of color often face after reaching the principalship (e.g., Peters, 2012). Some of the many prominent examples of these critical but often under-discussed studies reside in Boske (2004), Enomoto and colleagues (2000), Jean-Marie (2013), Peters (2010), and Weiner and colleagues (2019). Quantitative and qualitative research overwhelmingly support one another in finding evidence of implicit and explicit bias for aspiring school leaders who are not White and male.

Continuing along the lines of race/ethnicity *and* sex/gender, the importance of school leader mentors and role models who are of the same race/ethnicity and sex or gender as prospective school leaders emerged from this review. As Table 1, Figure 1, and Figure 2 naturally imply, the reality is that aspiring leaders of color and females and women leader candidates have historically had fewer available educational leadership role models and mentors of the same race/ethnicity and/or sex/gender for inspiration, support, and guidance. For instance, Méndez-Morse (2004) described the experiences of Hispanic woman school leaders whose primary Hispanic woman leader role models were outside education. A substantial body of literature in Enomoto and colleagues (2000), Hoff (2006), Méndez-Morse (2004), Peters (2010), and Young and McLeod (2001), for a handful of examples, demonstrates the need for and power

of same-race/ethnicity and same-sex/same-gender mentors and role models for the principal pipeline, often focused on women and females of color. Thus, it stands to reason that continued increases in representation at the principal level can further propel future progress through role modeling and mentoring in addition to earlier mentioned networking.

Conclusion

This overview for the field first provided a statistical overview of national principal, teacher, adult, K-12 student, and PPP graduate demographics that clearly illustrated a lack of diversity in the principalship. This inadequate diversity continues to be marked by the clear underrepresentation of principals of color and females. These disparities raise questions that an investigation of the literature to date answers: diversity in the principal pipeline matters and discrimination has played a role in lacking diversity to date. A strong body of evidence shows that principals of color are, on average and holding other factors constant, better than their White peers at recruiting and retaining teachers of color and are more likely to lead teachers of color with higher levels of job satisfaction, trust, and supplementary pay. These outcomes and conditions are highly consequential given (a) the importance of teachers of color to the achievement and conditions of students of color, who make up the majority of U.S. K-12 students, and (b) the fact that the teacher workforce is a fundamental component of the principal pipeline. Further, research finds that principals of color are associated with students of color's placement in gifted education. Research also suggests benefits of principals of color and females and women that include CRSL, providing school leader mentors and role models for women and female teachers and teachers of color.

The extant research also demonstrates a variety of barriers that educators of color and women and females face on the path to the principalship. Some of these barriers are defined and

seen on the route from teacher to building-level administrator licensure, such as differences in encouragement to pursue leadership, discrimination in PPP admittance, and PPP experiences, all of which often vary by race/ethnicity and sex/gender. Further, the final door to entry to official principal candidacy, the administrator licensure test, demonstrates bias against candidates of color and scores unproductive of leadership performance. Other barriers in the advancement from licensure to the principalship also exist, prominently implied by the quantitative research and repeatedly confirmed by qualitative research.

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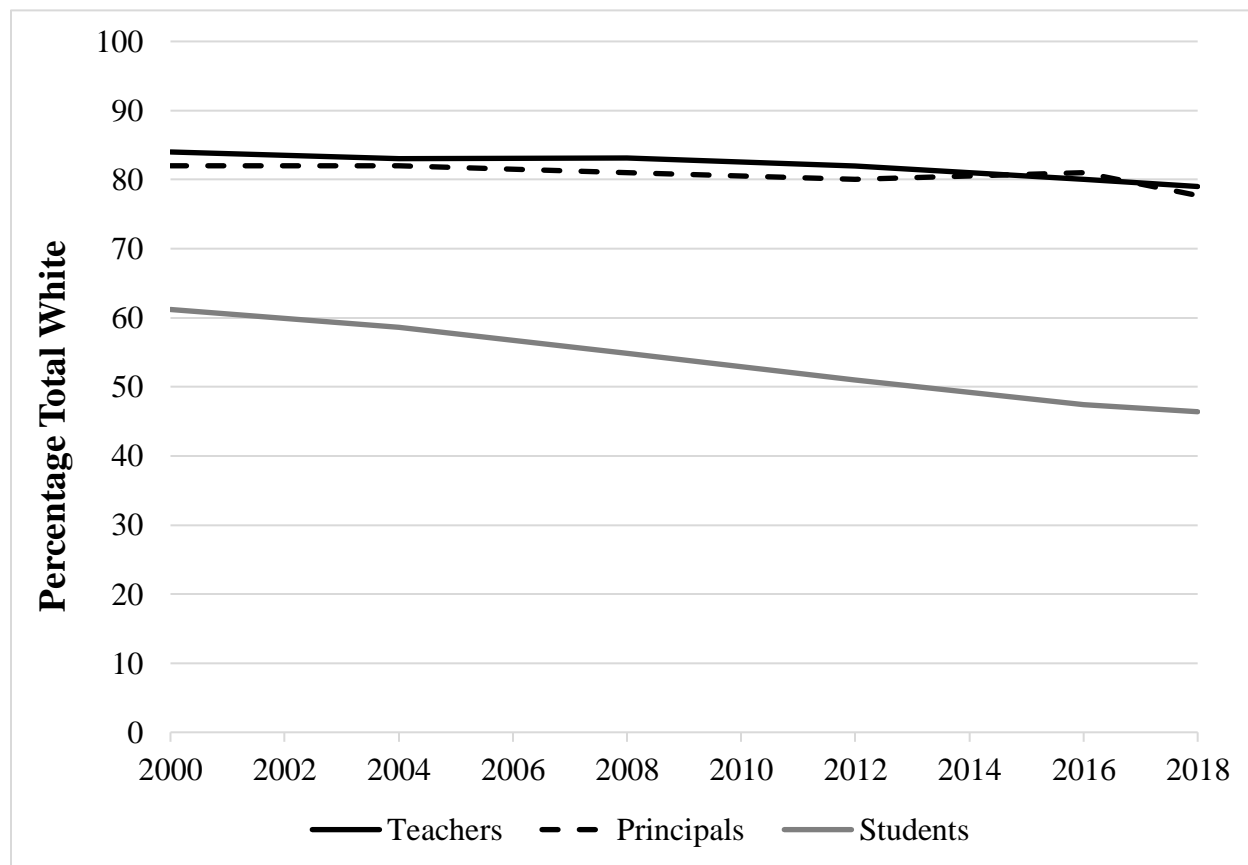
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Figure 1

Changes in percentages of White public school principals, teachers, and K-12 students: 1999-2000, 2003-04, 2007-08, 2011-12, 2015-16, 2017-18

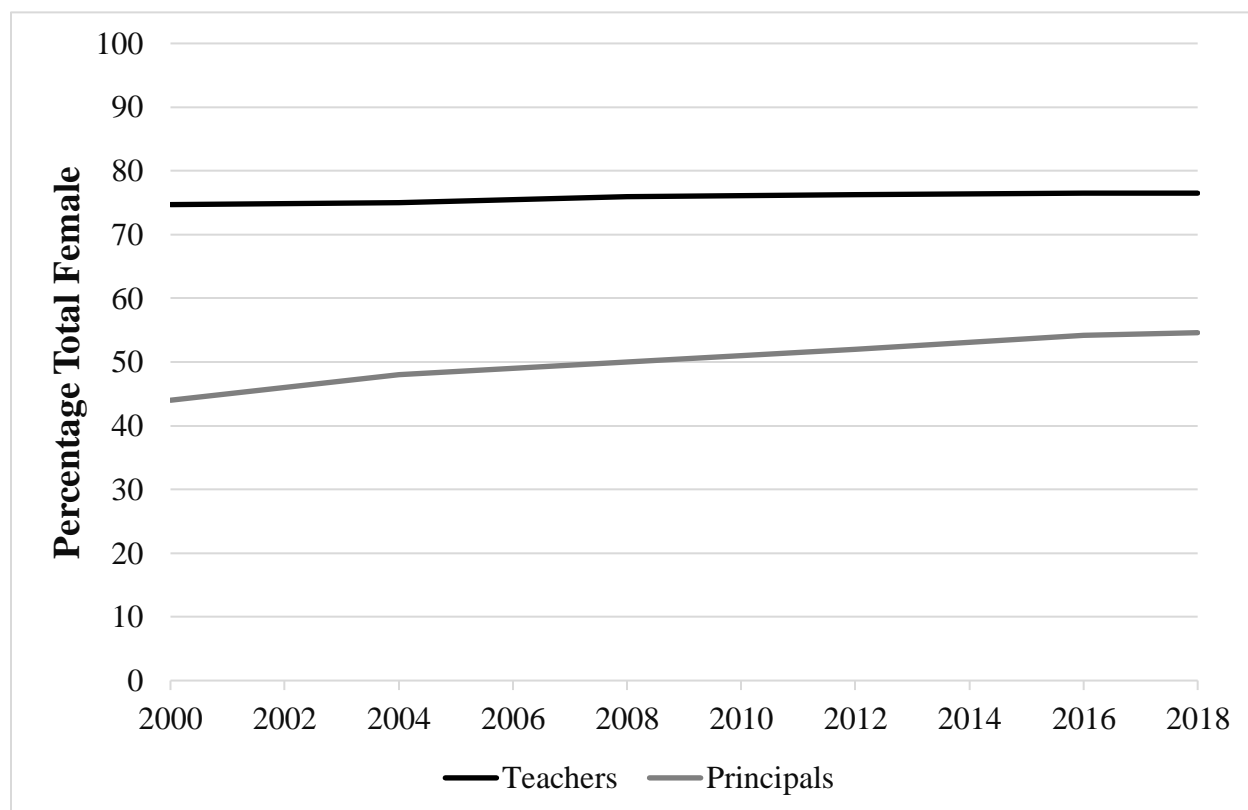


Notes. Principal and teacher percentages were calculated from weighted descriptive analyses of restricted-use NCES National Teacher and Principal Survey. K-12 student population demographics were obtained from Common Core of Data files.

Teacher figures for 2017-18 were consistent with state trends and other sources, but precision is questionable because of issues with the original NTPS Teacher Survey weights.

Figure 2

Changes in percentages of female public school principals, teachers, and K-12 students: 1999-2000, 2003-04, 2007-08, 2011-12, 2015-16, 2017-18



Notes. Principal and teacher percentages were calculated from weighted descriptive analyses of restricted-use NCES National Teacher and Principal Survey. K-12 student population demographics were obtained from Common Core of Data files.

Teacher figures for 2017-18 were consistent with state trends and other sources, but precision is questionable because of issues with the original NTPS Teacher Survey weights.

Table 1

Most recently available demographics

Race/ethnicity and gender	Principals (2017-18)	Teachers (2017-18)	U.S. Adults (2019)	K12 students (2017-18)	ELPP grads (2015-16)
Black	11%	7%	12%	15%	12%
Hispanic	9%	9%	16%	27%	9%
White	78%	79%	63%	48%	64%
Other	3%	4%	9%	11%	5%
Unknown	-	-	-	-	8%
Female	54%	77%	51%	51%	66%
Male	46%	24%	49%	49%	34%

Notes. Principal and teacher findings are from weighted descriptive analyses of restricted-use NCES National Teacher and Principal Survey. U.S. adult population figures reflect estimates made by the U.S. Census Bureau in 2020 for 2019. K-12 student figures reflect the 2017-18 school year (National Center for Education Statistics, 2019). Graduates of principal preparation programs data reflect figures from the 2015-16 academic year using NCES Integrated Postsecondary Education Data Systems data. Other in Census and NCES-generated figures include and combine people classified as Asian, American Indian, Alaska Native, Native Hawaiian, Pacific Islander, or two or more races. U.S. Census population figures count Hispanics as being of any race and were included under more than one category.

Teacher figures for 2017-18 are consistent with state trends and other sources, but precision is questionable because of issues with the original NTPS Teacher Survey weights.