

High hopes and harsh realities The real challenges to building a diverse workforce

By Hannah Putman, Michael Hansen, Kate Walsh, and Diana Quintero

INTRODUCTION

Editor's Note: The report presented here is the outcome of a joint effort by scholars and analysts from the National Council on Teacher Quality and the Brookings Institution to understand how much change is necessary to achieve a teacher workforce as racially diverse as the student population it serves. Neither organization received any funding to produce this report. The statements contained herein are accurate representations of the state of research and the teacher workforce, based on the authors' analyses and expert opinions, and do not represent the views of either organization.

If the headlines are any indication, school districts' biggest priority right now is to hire more teachers of color. No matter which corner of the country (e.g. California, Wisconsin, New York, Indiana and Alabama), districts are pledging to employ more teachers who look like their students. They're supported by lots of well-wishers urging immediate and dramatic progress on this problem. Slate dubbed this "the one cause in education everyone supports."¹ In its own analysis, the U.S. Department of Education concluded that substantial changes must be made to the entire education pipeline.²

In this report we examine what it would take to achieve a national teacher workforce that is as diverse as the student body it serves, and how long it will take to reach that goal.³ We look at four key opportunities along the teacher pipeline: college attendance and completion, majoring in education or pursuing another teacher preparation pathway, hiring into a teaching position, and staying in teaching year after year. We discuss how current and potential minority teachers exit from the

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¹ Hall, M. (2016, March).

² U.S. Department of Education, Office of Planning, Evaluation and Policy Development, Policy and Program Studies Service. (2016).

³ This paper takes as given that building a teacher workforce as diverse as the students it serves is a common public goal for all schools. Yet, this common goal should not be interpreted to mean that the goal is for every student to be taught by a teacher of his same race, since doing so would effectively result in school segregation (either across or within schools) and would lose the many benefits of being in a diverse classroom. Rather, we assume the goal is to build a diverse teacher workforce so that all students interact regularly with teachers of their own and different races and ethnicities.

Making serious progress toward a teacher workforce which is as diverse as the students it serves will require exceptionally ambitious patches to fix the leaky pipeline into the teaching profession.

teaching pipeline at each point, contributing to what we call the “diversity gap” (the difference in the proportion of minority teachers and minority students in public schools). We then estimate the potential impact on the diversity gap of leveraging each opportunity to bring minority adults closer to the classroom.

Our analysis finds that the effort to draw more black and Hispanic adults into the classroom faces obstacles at every point necessary to become a teacher: while gaps

with white adults are minimal when it comes to who enrolls in college, the gaps loom large for each subsequent point described above. These compounding factors mean that the pool of available teachers of color barely supports the *current* level of diversity in the teacher workforce, much less keeps pace with a young population which is growing increasingly diverse and will continue to do so for decades to come. Making serious progress toward a teacher workforce which is as diverse as the students it serves will require exceptionally ambitious patches to fix the leaky pipeline into the teaching profession. As we will show, the path toward reaching a diverse teacher workforce is much steeper than anyone has acknowledged to date.

Given these bleak findings, the chances of success for districts’ laudable goals to build a teaching corps that mirrors their student populations crumble in the face of reality—even looking forward nearly fifty years. While that harsh truth certainly doesn’t excuse districts to give up and resign themselves to a mostly white teaching force, it does suggest that districts must embrace and promote a range of other, more immediately viable solutions. We recommend some short term strategies that may help to mitigate the consequences of a non-diverse teacher work force.

U.S. TEACHER DIVERSITY: PAST, PRESENT AND FUTURE

Research has long shown evidence of large achievement gaps between white and non-white students in the U.S. One factor that may exacerbate these gaps is the lack of diversity of the public teacher workforce. Educators and researchers have long suspected the importance for students to have teachers from similar backgrounds and demographics, and there is a body of empirical evidence that confirms its value (see textbox). Racial matching shows small-to-modest, but still educationally meaningful, effects on student achievement; consequently, a more diverse workforce could slightly narrow racial achievement gaps.⁴

In this report we examine what would be necessary to build a national teacher workforce that is as diverse as the students it serves, and how long it would take to achieve. Starting with the good news, the number of minority teachers in the nation has doubled over the past few decades from about 325,000 in the late 1980s⁵ to 660,000 in 2012, the latest figures available.⁶ However, those increases have not kept pace with a student population whose makeup has shifted far faster than the adult population. While minority children were truly a minority in the late 1980s at 30 percent of the population,⁷ they now represent *half* of the public school student population (see Figure 1). The discrepancy between the total population and public school student demographics are primarily due to two factors:

⁴ Goldhaber, D., Theobald, R., & Tien, C. (2015).

⁵ Ingersoll, R.M., & May, H. (2011, September).

⁶ Goldring, R., Gray, L., & Bitterman, A. (2013). Table 1.

⁷ Snyder, T.D., & Hoffman, C. (1995). Table 44.

WHY DOES A DIVERSE TEACHER WORKFORCE MATTER?

As best we can tell, all who enter teaching do so with the goal of being a great teacher and helping all of their students work toward a bright future. However, all teachers carry unconscious biases developed through their own experiences with same- and different-race individuals that may undermine that goal of reaching all students.

Three theoretical arguments have been made for increasing minority teacher representation among teachers, particularly among students sharing their background: more effective role modeling, higher expectations for learning and their future, and fewer cultural differences to effectively teach. Explorations into these theories date back to the 1970s; see Goldhaber, Theobald, & Tien (2015) for a concise overview. More recent rigorous empirical evidence has substantiated the theories that such biases may influence teachers and students in significant ways.

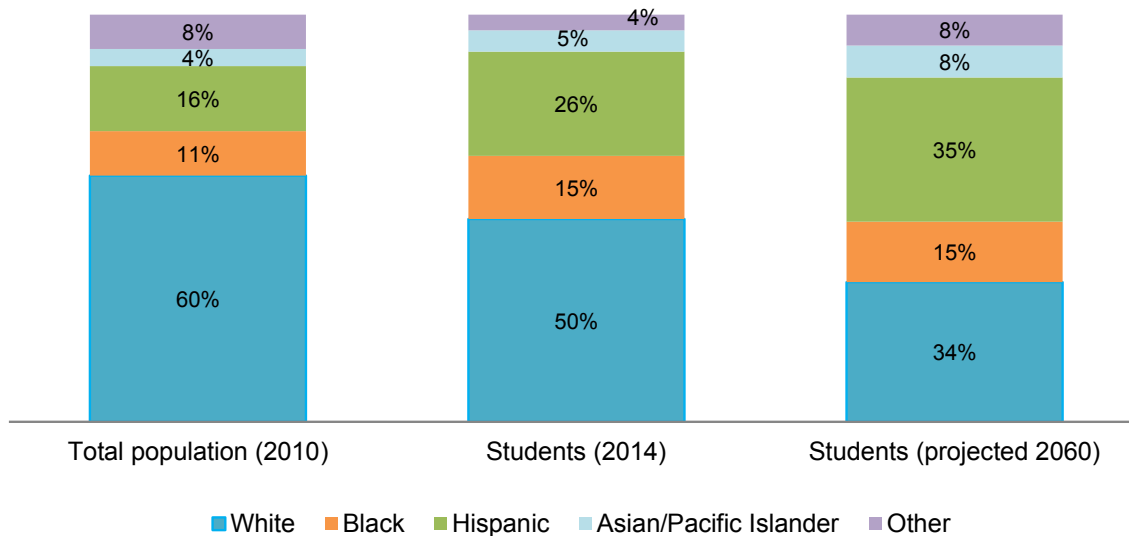
First, same-race matches between students and teachers are associated with greater student achievement. Studies of elementary students in Florida (Egalite, Kisida, & Winters, 2015), North Carolina (Goldhaber & Hansen, 2010) and Tennessee (Dee, 2004) find improvements in math and reading achievement from being taught by a same-race teacher. Effects are estimated to be stronger among low-performing black students (Egalite, Kisida, & Winters, 2015).

Next, same-race teachers are more likely to view students' behaviors and prospects in a positive light. Black teachers have higher expectations for black students' academic futures (e.g., perceived likelihood of graduating high school) than do white teachers (Fox, 2016); (Gershenson, Holt, & Papageorge, 2016). Dee (2005) and McGrady & Reynolds (2012) find that students who have a teacher from a different race/ethnicity have higher odds of being rated inattentive than students with same-race teachers, and white teachers rate black students as having lower scholastic aptitude. A nationally representative study found that black children are more likely to be rated worse in assessments of their externalized behaviors when they have a white teacher than when they have a black teacher (Bates & Glick, 2013). Relatedly, black students in classrooms with black teachers are three times more likely to be assigned to gifted services than those in classrooms with non-black teachers (Grissom & Redding, 2016).

Finally, student behaviors and attitudes are also associated with teacher race. Students assigned to a same-race teacher have significantly fewer absences and suspensions, and are less likely to be chronically absent than their counterparts who had an other-race teacher (Holt & Gershenson, 2015). Students who share racial/ethnic characteristics with their teachers tend to have a more favorable perception of their teachers (Egalite & Kisida, 2016).

1) the population of minorities in the U.S. trends younger than the white population, and 2) white students tend to enroll in private schools at higher rates than non-whites.⁸ The diversifying trend will continue at least through the year 2060 (the furthest year Census-projected data are available), at which time we estimate white students will account for only 34 percent of all public school students.⁹

Figure 1. Breakdown of the current and projected population by race and ethnicity



Source: United States Census Bureau, 2014 National Population projections and estimates based on authors calculations.

Attaching some numbers to the discrepancy between students and teachers may help to convey the scale of this problem. The student population is now roughly 50 percent minority/people of color, while the teacher population is now 18 percent people of color. Closing the diversity gap (we refer to this as racial parity)¹⁰ would require about a million white teachers to exit the profession, to be replaced by about 300,000 black teachers and over 600,000 Hispanic teachers.¹¹ And that’s just to reach parity for the current composition of the student population, *ignoring* projected changes in the demographic makeup of the student population in the years to come.

Today’s kids will grow up, so eventually the U.S. adult population will also become considerably more diverse, and consequently, so will teachers. But because the student population continues to change faster than adults, it will be almost impossible for the teacher workforce to catch up. As will be clear in the analysis that follows, the diversity gap cannot be closed simply by waiting for more minority children to grow up and enter the workforce.

⁸ As of the 2011-12 school year, 72 percent of private school students were white, compared with 54 percent of public school students. Bitterman, A., Gray, L., & Goldring, R. (2013). Table 3.

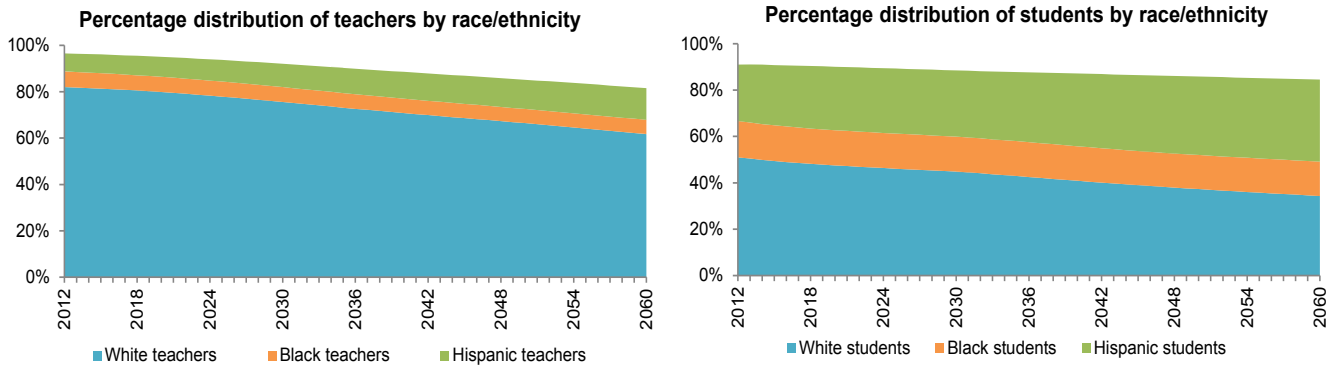
⁹ These calculations assume the same public-school enrollment rates currently observed by race persist into the future. Please see [Technical Appendix](#) for sources and details of the student and teacher workforce diversity projections we calculate and present throughout this report. Note that this analysis focuses on white, black, and Hispanic students and teachers since these groups make up the largest proportion of students; this is not meant to undermine the importance of having teachers of other races.

¹⁰ Note that having exact racial parity between teachers and students may not be the goal for all districts; we use this benchmark for illustrative purposes.

¹¹ Calculation is based on data from Goldring, R., Gray, L., & Bitterman, A. (2013). Table 1. In this analysis, “white” is defined as white, non-hispanic, “black” is defined as black, non-hispanic, and “Hispanic” is defined as Hispanic regardless of race.

Based on current workforce inflows (teachers who become certified and hired into teaching positions) and outflows (teachers who retire or leave the profession), we estimate the racial/ethnic breakdown of the teacher workforce between now and the year 2060. Using our workforce model (see [Technical Appendix](#)), we depict how the teaching workforce will evolve under current conditions (see Figure 2 panel A), compared against the expected evolution of public school students (panel B).

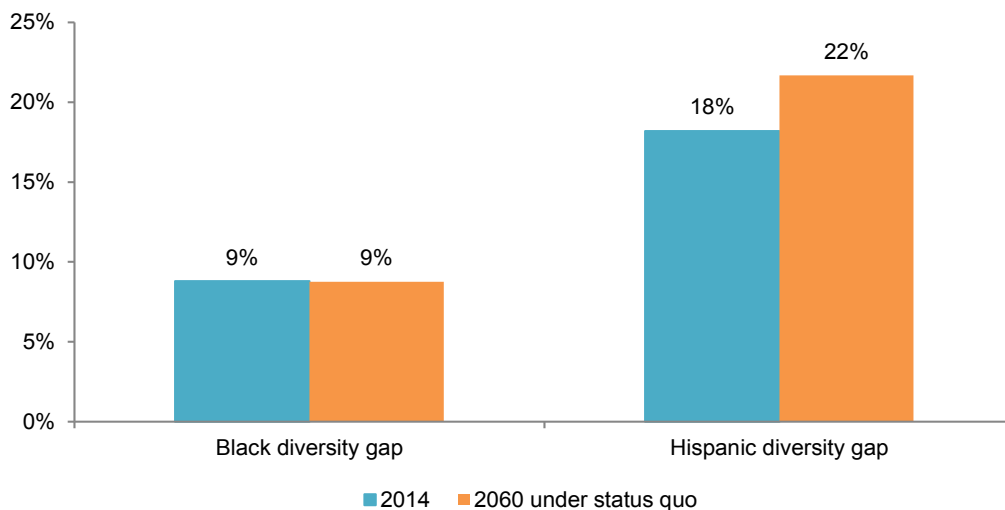
Figure 2. Diversity of the student and teacher populations over time



Source: United States Census Bureau, 2014 National Population projections and estimates based on authors calculations.

Assuming we are able to be no more successful in changing current conditions, we expect the diversity gap between black teachers and black students (which stands now at nine percentage points) will remain essentially the same at least through the year 2060, while the gap between Hispanic teachers and Hispanic students (currently 18 percentage points) will actually *increase* by four points.

Figure 3: Racial disparity gaps in 2014 and expected in 2060



Source: United States Census Bureau, 2014 National Population projections and estimates based on authors calculations.

EXAMINING THE LEAKS IN THE TEACHER PIPELINE

To better understand the source of the teacher diversity gap we need to look closely at the leaks springing along every stage of the teacher pipeline, where potential black and Hispanic teachers are lost while potential white teachers continue to move toward the classroom. The pipeline (for this analysis) starts with the students who are accepted into college and go on to complete a bachelor's degree. The main pathways into the classroom have traditionally been through an undergraduate or graduate teacher training program in an education school, though alternative pathways into the profession are also becoming increasingly popular. All of these routes, of course, require a college degree of some nature. After teachers are hired into classroom positions, how long they stay is another important determinant of workforce diversity. As we elaborate further below, in each place in the pipeline where we can find data by race, we find potential or actual minority teachers who have “leaked out” of the system.

PROBLEM 1: A SMALLER PROPORTION OF THE BLACK AND HISPANIC POPULATIONS EARN COLLEGE DEGREES

This is a crucial obstacle to closing the diversity gap.

Research has long documented the existing racial-ethnic gaps in access to and completion of college degrees. While college enrollment rates have improved, a wide gulf persists between minority and white students' college completion.¹²

The racial distribution of students who *enter* college looks pretty similar to their distribution in the U.S. population. As of 2012, black people constitute an estimated 14 percent of the American population and also constitute about 14 percent of students who start college. Hispanic populations are nearly equivalent, as they constitute 23 percent of the U.S. population and 19 percent of students who start college.

However, somewhere between the first day of college and commencement, minorities disproportionately fail to persist in college for a variety of reasons.¹³ In the end, nearly half of all white 22-year-olds (47 percent) have earned a bachelor's degree, compared with 28 percent of black 22-year-olds and 20 percent of Hispanic 22-year-olds.¹⁴

PROBLEM 2: INTEREST IN A TEACHING CAREER AMONG MINORITY COLLEGE STUDENTS AND GRADUATES IS LOWER THAN WHITES

Though college graduation rates drive a deep wedge between teacher and student diversity, it is not the only cause, as minorities demonstrate less interest in the teaching profession generally. For example, students' choice of college major contributes to the gap: a higher proportion of white college students major in education (seven percent) than do black or Hispanic students (approximately four percent each).¹⁵ Though not all teachers going through traditional teacher training programs as undergraduates major in education (e.g., secondary teacher candidates whose major

¹² Snyder, T.D., & Dillow, S.A. (2013). Table 235.

¹³ One of the reasons for low college-completion rates among Hispanic students is their lower academic preparation (Cardenas, V., & Kerby, S. 2012). Among black students, their family and work responsibilities, as well as their lower academic preparation and financial constraints impacts their college completion rate (Rawlston-Wilson, V., Saavedra, S., & Chauhan, S. 2014).

¹⁴ Snyder, T.D., & Dillow, S.A. (2013). Table 235.

¹⁵ Based on 2012-13 bachelor's degree recipients. Snyder, T.D., de Brey, C., & Dillow, S.A. (2016). Table 322.30.

is in their content area), many do, and this provides a good proxy of interest in teaching as a career. Another data point comes from surveys of recent bachelor's degree holders, where 95 percent of white graduates majoring in education express an interest in teaching (when surveyed four years after graduation), compared against 76 percent of black and 90 percent of Hispanic degree holders.¹⁶ Consequently, a disproportionately higher number of white college students and graduates head in the direction of a teaching career.

Other pathways into the classroom, including master's degrees in teaching, also display diversity gaps. We find a smaller share of minority teachers coming to the classroom through master's programs in education than white teachers, as a proportion of the young adult population (unsurprising, given the low bachelor's degree attainment by race).¹⁷ Yet, it's noteworthy that graduate training programs show smaller diversity gaps in comparison to undergraduate training programs.

To better understand the source of the teacher diversity gap, we need to look closely at the leaks springing along every stage of the teacher pipeline, where potential black and Hispanic teachers are lost.

Some alternative routes such as Teach For America (TFA) have made a concerted effort to increase the number of minorities entering teaching; TFA claims on its website that half of its corps members are people of color. A recent report finds that non-traditional providers recruit more minority teacher candidates (as a proportion of teacher candidates) than traditional providers, 35-41 percent compared to only 26 percent.¹⁸ However, without discounting the impressive success of these efforts, non-traditional providers constitute a small fraction of the new teacher pool, about 15 percent of all new teachers.¹⁹ Thus,

though alternative certification appears to be the most diverse source of teacher candidates into the workforce,²⁰ it is unclear if the recruiting successes among this small segment could be scaled up enough to significantly narrow national diversity gaps.²¹

PROBLEM 3: BLACK AND HISPANIC TEACHERS ARE HIRED FOR TEACHING JOBS AT LOWER RATES THAN WHITE TEACHERS

While we've identified some gaping holes earlier in the pipeline, the point at which districts tend to focus their efforts starts when they're hiring teachers. This focus is not unreasonable, given that it is within districts' sphere of influence.

¹⁶ U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

¹⁷ Based on data from Snyder, T.D., de Brey, C., & Dillow, S.A. (2016). Table 323.30, 2.3 percent of white adults age 25-32 choose to pursue a master's degree in education, two percent of black adults, and 0.8 percent of Hispanic adults. We do not know whether these people are pursuing a master's degree specifically as a pathway to enter the classroom or as an additional credential. However, based on the data among new teacher hires by race, we speculate that the diversity gap still exists for those who are entering the teaching profession through a master's degree. See [Technical Appendix](#) for calculations and assumptions regarding racial disparities by pathway into the profession.

¹⁸ Percentages vary depending on whether the alternative program is housed in a traditional institution of higher education or not. U.S. Department of Education, Office of Planning, Evaluation and Policy Development, Policy and Program Studies Service. (2016). Figure 14.

¹⁹ Due to confusion around certification routes, different sources report different proportions of teachers coming through non-traditional routes, but the number hovers between 15 to 20 percent. U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), 2011–12.

²⁰ Bireda, S., & Chait, R. (2011).

²¹ Another potential drawback of promoting teacher diversity through alternative certification is that alternatively certified teachers generally show higher levels of attrition from the workforce (e.g., Kane, T.J., Rockoff, J.E., & Staiger, D.O. 2008; Gray, L., & Taie, S. 2015).

Overall, we find white education majors are hired at higher rates than their minority peers; this is partially attributable to the lower rates of seeking teaching jobs discussed above, but not entirely.²² For example, a slightly higher proportion of black and Hispanic teachers prepare to teach but never get a teaching position.²³ This discrepancy could point to a number of potential problems ranging from poor recruitment among minority communities to aspiring minority teachers being lured into other professions. A more worrying systemic cause here could be due to lower passing rates on licensing tests for black and Hispanic aspiring teachers.²⁴ Importantly, low passing rates may not necessarily imply minorities are weaker teachers, but could point to cultural differences in the assessment or distribution of scores. For example, prior research evidence from North Carolina elementary teachers found Praxis licensure tests signal teacher quality differently by race, with black teachers having significantly lower scores even though there was no corresponding difference in value-added classroom performance by race.²⁵ Further examination of licensure scores and classroom performance by race is warranted.

95 percent of white graduates majoring in education express an interest in teaching, compared against 76 percent of black and 90 percent of Hispanic degree holders.

PROBLEM 4: BLACK AND HISPANIC TEACHERS ARE RETAINED IN TEACHING JOBS AT LOWER RATES THAN WHITE TEACHERS

Another factor within districts' purview is teacher retention. White teachers stay in the classroom at slightly higher rates (93 percent) than their minority colleagues (90 percent and 92 percent among black and Hispanic teachers, respectively); though not large, these gaps are statistically significant. And among those who have left teaching, black teachers are more likely to report exiting to retire (48 percent), compared to white teachers (39 percent),²⁶ possibly indicating a more mature black teacher workforce that could lose more numbers in the near future. Similar gaps between white and minority teachers are also seen in surveys measuring teacher satisfaction with salary and how their school is run,²⁷ which presumably influences minority teacher retention.

Some background information may shed light on the issue of teacher retention across different races. Minority teachers' retention is likely influenced by the fact that they tend to work in schools with higher rates of poverty, commonly in urban settings. The upside of this pattern is that these schools also tend to have higher proportions of minority students – so these students are more likely to have teachers who look like them.²⁸ In these schools,

²² Four years after graduating, while 19.3 percent of white college graduates are or have worked as teachers, only 16.8 percent of black college graduates and 17.6 percent of Hispanic college graduates can say the same. U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

²³ Four years after graduating, 5.8 percent of white college graduates identify as having prepared to teach but have never worked as a teacher, while that number rises to 6.7 percent for black college graduates and 7.4 percent for Hispanic college graduates. U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

²⁴ Tyler, L., et al. (2011) and Goldhaber, D., & Hansen, M. (2010).

²⁵ Goldhaber, D., & Hansen, M. (2010) investigated the signal value from the two components of the Praxis II test and find a small but statistically significant correlation between the Praxis's Curriculum, Instruction, and Assessment score and classroom value-added performance in both math and reading among white teachers; yet, these correlations were not significantly different from zero among black teachers. Conversely, black teachers did show a marginally significant and positive correlation between scores on the Praxis's Content Area Exercises and student performance in math, though white teachers' correlation on this dimension was not significantly different from zero.

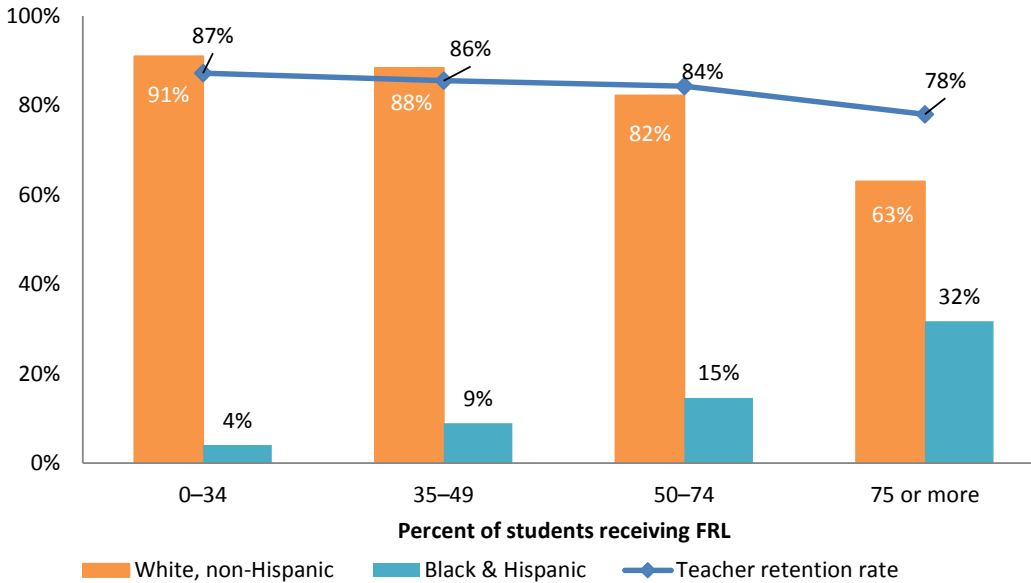
²⁶ U.S. Department of Education. National Center for Education Statistics. Teacher Follow-up Survey (TFS), Former Teacher Data File. 2004-2005 Table 13. Hispanic teachers report exiting to retire at slightly lower rates than white teachers (24 percent).

²⁷ Boser, L. (2011).

²⁸ Keigher, A. (2009). Table 3.

minority teachers generally stay longer than their white counterparts, as their mobility decisions are less sensitive to the racial and socioeconomic status of the students they serve.²⁹ Yet, these schools tend to be more challenging environments, and minority teachers still do exit these schools, contributing to their lower overall retention rates (see Figure 4).

Figure 4. Teacher race and ethnicity, teacher retention, and proportion of students receiving free and reduced lunch



Source: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey

CAN WE CLOSE THE DIVERSITY GAP?

If we could solve some or all of these problems, could we see a more diverse workforce for the next generation of kids? Are some leaks in the pipeline more urgent to fix than others? Using the teacher workforce model, we manipulate teacher inflow and outflow numbers to “solve” each of the four diversity problems in turn. This model allows us to estimate how the teacher workforce demographics would shift if some solution could overcome each of the obstacles to a more diverse workforce.

We start our analysis at the end of the pipeline with the factor that is conceivably most in the control of districts and school leaders: retaining minority teachers. From there, we will work our way back through the leaking teacher pipeline until we reach college graduation rates.

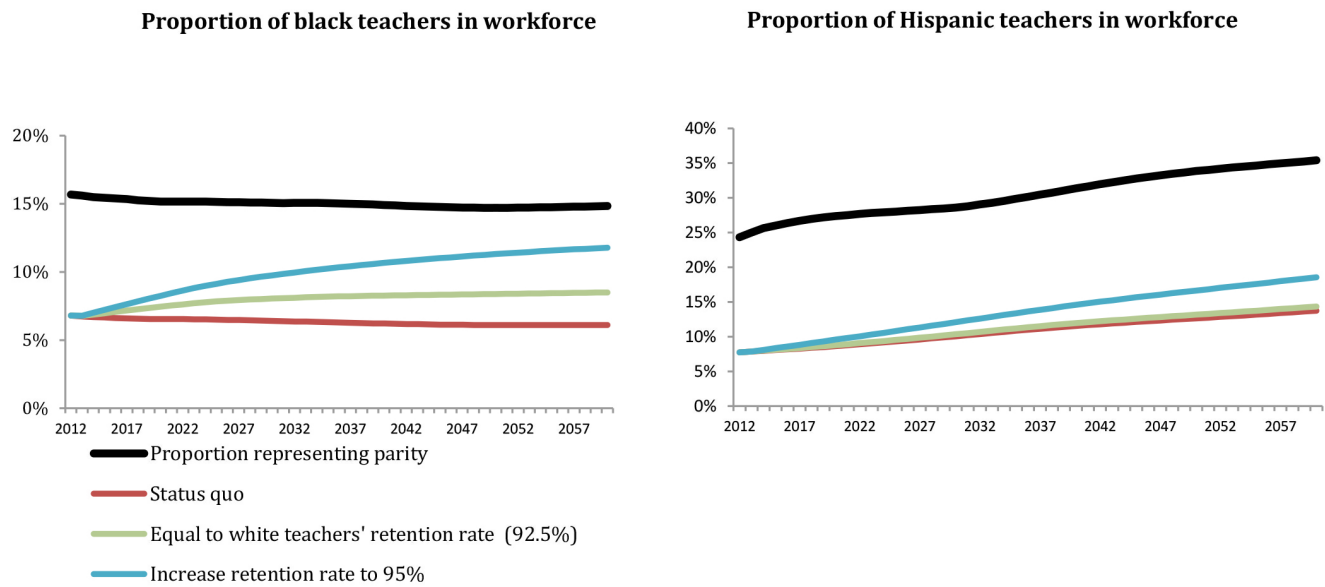
SCENARIO 1: RETAINING MORE BLACK AND HISPANIC TEACHERS

As described above, black and Hispanic teachers leave teaching at higher rates than white teachers. What would the workforce look like if we found a solution that could patch that leak? Figure 5 illustrates how workforce diversity responds under different hypothetical scenarios. The panels depict the proportion of black or Hispanic teachers under each model; any point where a colored line intersects with the thick black “Proportion representing parity”

²⁹ Achinstein, B., et al. (2010), Ingersoll, R.M., & May, H. (2011), and Simon, N.S., & Johnson, S.M. (2013).

line depicts where the proportion of black or Hispanic teachers in the workforce is equal to the proportion of black or Hispanic students.

Figure 5. Effect of improving black and Hispanic teachers' retention rate on diversity gap



Source: Estimates based on authors calculations.

These data suggest increasing minority teachers' retention rate does narrow the diversity gap for black teachers and students more quickly than for Hispanic teachers and students. If districts were to achieve the same retention rate for black teachers as they do for white teachers,³⁰ the black diversity gap in 2060 will shrink by two percentage points. On the other hand, increasing the retention rate for Hispanics to that of white teachers will barely nudge the Hispanic diversity gap – reducing it by only 0.6 percentage points. In the event that districts could increase their minority teacher retention rates to 95 percent (i.e., retaining slightly more minorities than white teachers), both the black and Hispanic diversity gaps will be narrowed by around five percentage points.

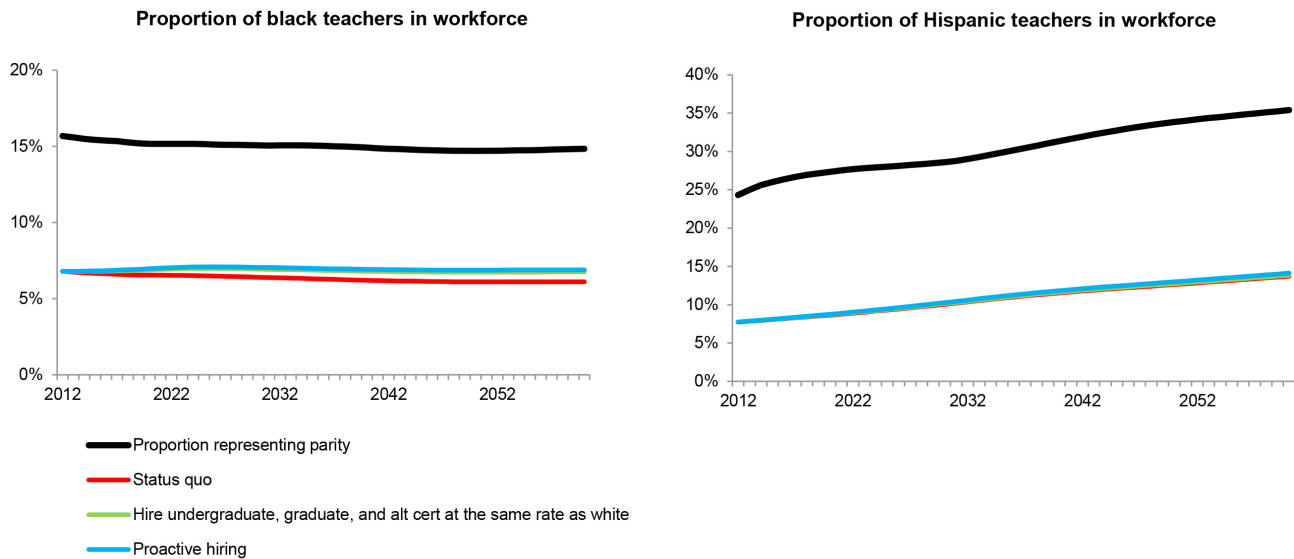
Certainly, this is an improvement (and goes a long way for the black diversity gap), but cannot be the sole remedy for the teacher diversity problem.

SCENARIO 2: HIRING MORE BLACK AND HISPANIC TEACHERS

Taking one step further back along the pipeline, we concentrate on recruiting and hiring a higher percentage of black and Hispanic candidates from the pool of qualified teachers, many of whom currently do not teach. This strategy has even less of an expected effect than increasing retention.

³⁰ In the workforce model, we equate retention rates by race. Among black teachers, we also equate those exiting to retirement with white teachers. As Hispanic teachers already report exiting to retire at lower rates than white teachers, we did not change these estimates in the model.

Figure 6. Effect of increasing hiring of black and Hispanic teachers on diversity gap



Source: Estimates based on authors calculations.

Unfortunately, increasing hiring from the pool of available minority teachers (all things equal) does almost nothing to achieve parity. Even projecting out to the year 2060, equating hire rates of minority teacher candidates to those of white candidates reduces the black and Hispanic diversity gaps each by less than one percentage point. An even more proactive hiring strategy would make almost no discernible difference (though hard to see, the lines representing equality with white hiring and proactive hiring are almost identical).³¹

SCENARIO 3: INCREASING THE PROPORTION OF BLACK AND HISPANIC COLLEGE STUDENTS INTERESTED IN TEACHING

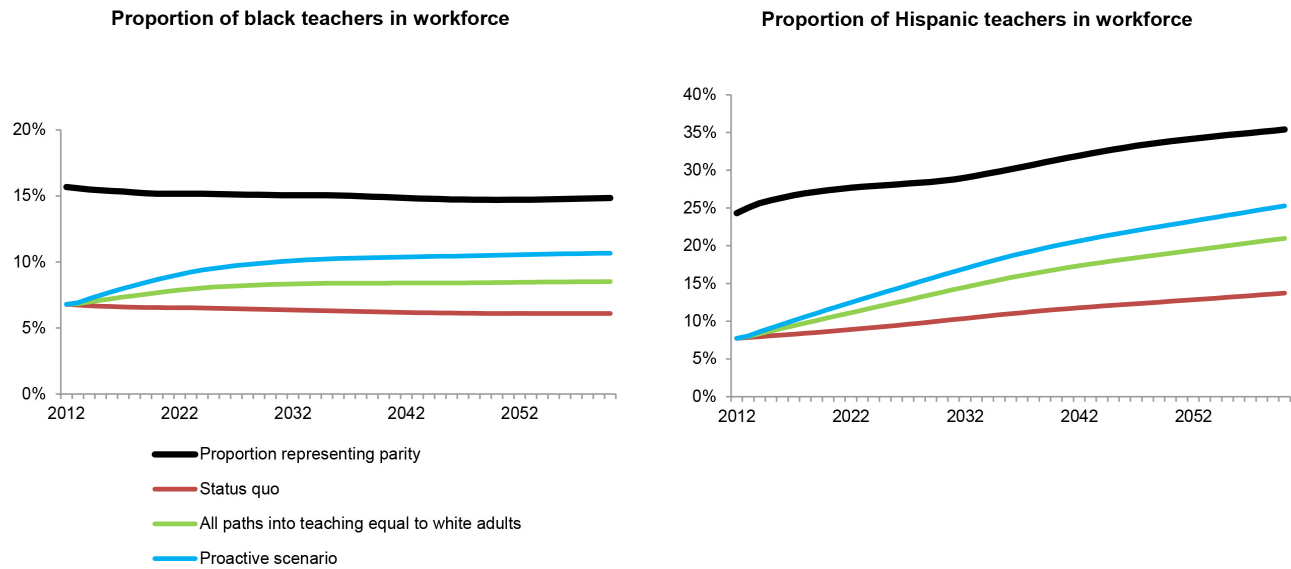
Given that strategies targeting only the existing pool of certified teachers will be inadequate, the next step back along the teacher pipeline is to increase the pool of potential teachers by enticing more black and Hispanic students to pursue a career in teaching through one of the three pathways into the profession (bachelor’s, master’s, or alternate route). We use our workforce model to test a few scenarios.

Reasonable changes to who pursues teaching as a career could make a substantial reduction in both the black and Hispanic diversity gaps. If as high a proportion of black and Hispanic students and adults would choose teaching as white students and adults do currently, the black diversity gap would be reduced by two percentage points and the Hispanic diversity gap by seven percentage points. This seven-point reduction of the Hispanic diversity gap is particularly compelling in comparison to strategies in hiring and retention, which we calculate would make only small changes (less than two percentage points) in the Hispanic diversity gap. A more proactive scenario—in which some

³¹ In the proactive recruitment scenario, minority undergraduate teacher candidates are hired at 63 percent, graduate teacher candidates are hired at 89 percent, and alternatively certified candidates are hired at 54 percent. The corresponding baseline numbers for white teacher candidate hiring are 59 percent, 85 percent, and 50 percent.

unspecified strategy succeeds in bringing in a higher proportion of minority candidates to consider teaching than white candidates—reduces the black and Hispanic diversity gaps by five and 12 points, respectively.³²

Figure 7. Effect of increasing number of black and Hispanic education majors on the diversity gap



Source: Estimates based on authors calculations.

Despite some potentially promising effects that may result from diverting college students and graduates toward teaching, we must note this strategy is hindered by competing forces. For example, the share of high school students taking the ACT—before starting college—who express interest in education majors have decreased from six percent in 2011 to five percent in 2015 (and white students are disproportionately overrepresented among those expressing interest in an education major).³³ In addition, other professional industries are also attempting to build diverse workforces, hence minority college students may find an education major less attractive than other available opportunities that also place a high value on diversity. Although some minority students may be interested in teaching careers, they could be more attracted to degrees that can lead them to more lucrative jobs in the future including business management, science, medicine, and engineering.³⁴ Alternatively, minority students may gravitate to other sectors of public service where wages are not high but they may feel they can make an impact.³⁵ In sum, vying for college students is likely not enough.

³² In the proactive scenario, nine percent of minority undergraduate students choose to become education majors, 12 percent of adults age 25-32 choose to pursue a master's degree in education as a pathway into teaching, and 0.23 percent of adults age 25-32 choose to pursue an alternative teaching certificate. The corresponding baseline numbers for white potential teachers are seven percent, nine percent, and 0.21 percent.

³³ ACT. (2015).

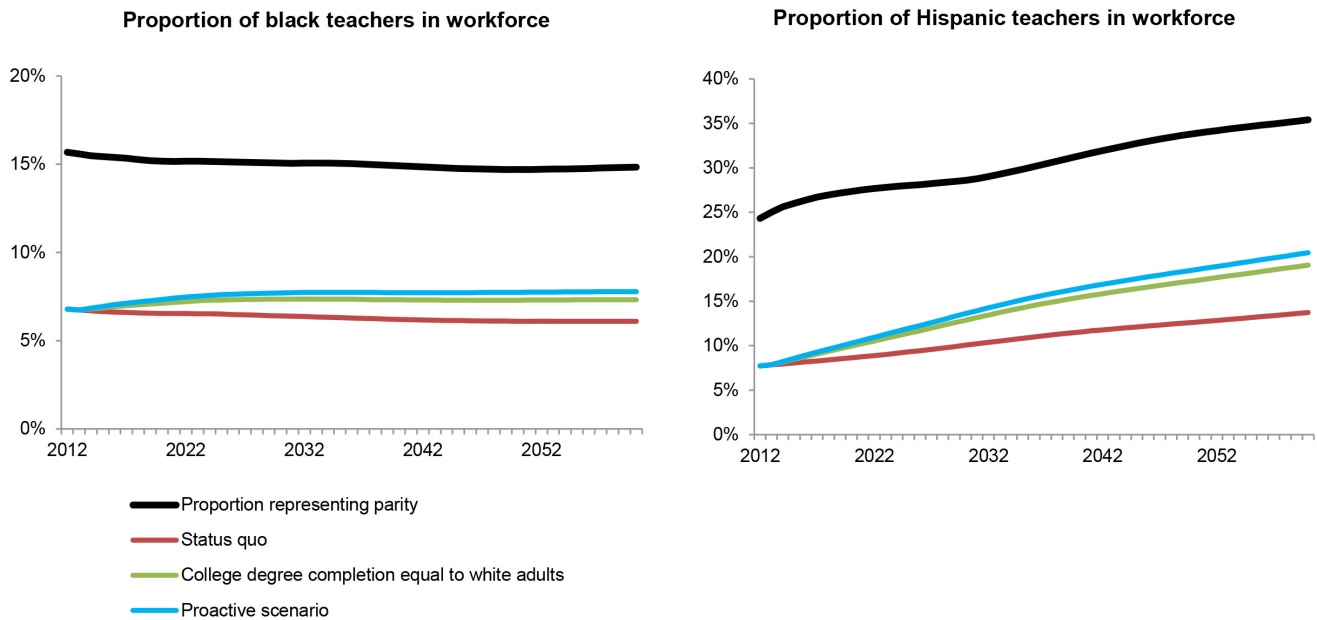
³⁴ Torres, J., Santos, J., Peck, N., & Cortes, L. (2004).

³⁵ Prior reports have identified a general tendency for minority college students to be overrepresented in majors that lead to lower-paying careers including public administration, social services, or law enforcement (e.g., Allison, T., Mugglestone, K., & Foster, K. 2015); while education is considered a lower-paying field, it is one where minority students are actually underrepresented.

SCENARIO 4: INCREASING COLLEGE GRADUATION RATES FOR BLACK AND HISPANIC COLLEGE STUDENTS

Let's consider the problem that should be at the crux of any discussion of teacher diversity, but rarely surfaces in these conversations because it is also the furthest removed from the teaching pool: the proportion of people who earn college or graduate degrees.

Figure 8. Effect of increasing black and Hispanic students' degree completion on diversity gap



Source: Estimates based on the author's calculations.

If black and Hispanic students graduate from college at the same rate as white students, workforce diversity gaps will drop by over one percentage point and by five percentage points, respectively, by the year 2060. As noted previously, black and Hispanic students enter college at rates roughly similar to white students; therefore, ensuring these students persist and complete college could make a difference in reducing the diversity gaps in teaching. A proactive scenario in which minority candidates are even more likely than white candidates to graduate from college reduces the black and Hispanic diversity gaps by two and seven points, respectively in 2060.³⁶

In sum, this scenario is far more effective at closing the diversity gap than a focus on hiring, and is more effective for Hispanic teachers (but less effective for black teachers) than a focus on retention.

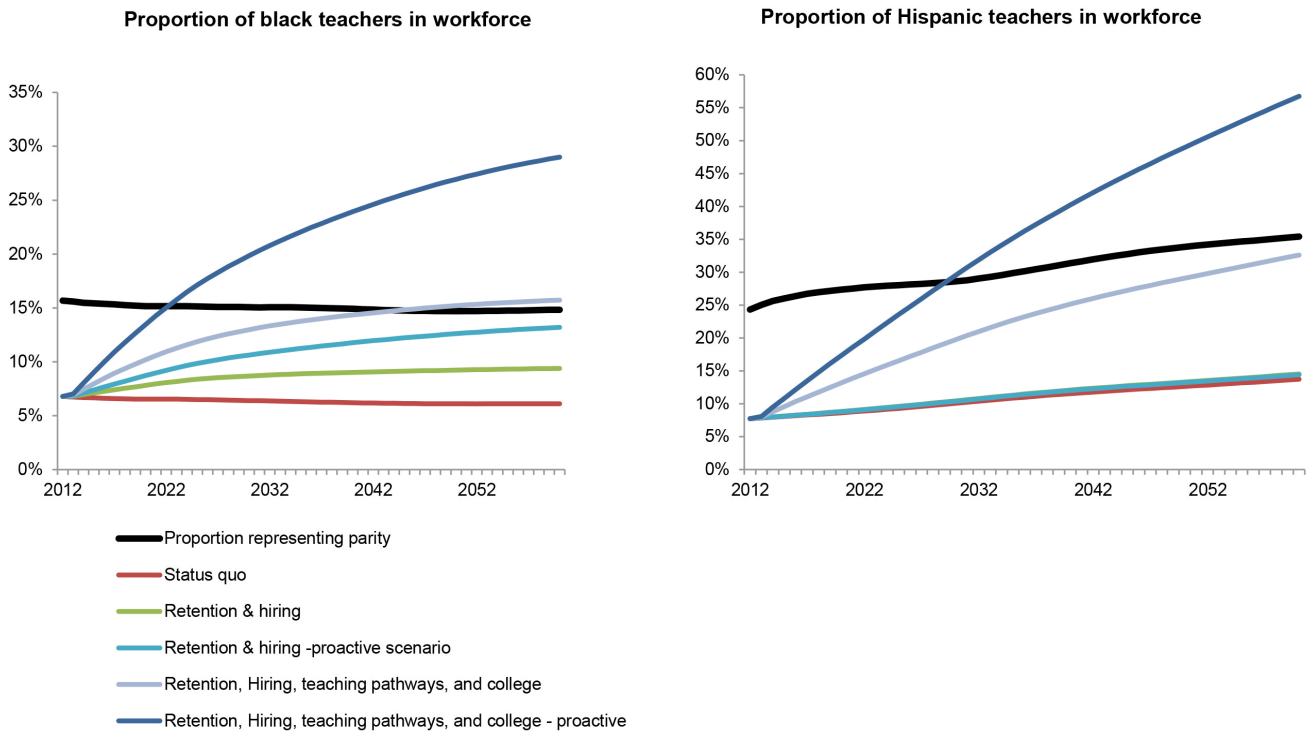
SCENARIO 5: COMBINATION APPROACH

No single scenario above achieves workforce parity within the coming decades, but of course pursuing multiple solutions in tandem is likely to achieve greater results faster (setting aside the practical considerations about resource allocations and limitations). The figures below examine different combinations of scenarios under relatively realistic

³⁶ In the proactive minority graduation scenario, 54 percent of minority students graduate from college. The baseline number for white college graduates is 47 percent.

targets. In two of the series, we combine retention and hiring scenarios (at the level equal to white teachers, and a highly proactive level), as both of these are the issues that are most directly under the control of districts. The other two series combine all scenarios simultaneously to demonstrate what might happen to workforce diversity with concerted efforts at all stages of the teacher pipeline.

Figure 9. Effect of combining approaches on black and Hispanic teacher and student diversity gap



Source: Estimates based on the author's calculations.

These figures show that hiring and retention strategies—those under the purview of districts—could make almost imperceptible reductions in the Hispanic diversity gap, and could modestly reduce the black diversity gap. Moreover, undefined proactive strategies in hiring and retention might go a long way in closing the black diversity gap, but they would make little difference for the Hispanic workforce. In neither case will these district-level strategies alone successfully close the diversity gap. Hence, achieving a truly diverse workforce must include a broader set of actors than just districts.

The scenario in which all strategies are combined and minorities' inflow and outflow patterns along the teacher pipeline are equal to the white adults' inflow and outflow patterns along the pipeline reveals a brighter picture. That scenario achieves parity between black teachers and black students by the year 2044; however, Hispanic parity cannot be achieved by 2060, but comes close, closing the gap by 19 points. Proactive strategies that intend to promote minorities at every point in the teacher pipeline would accelerate the timetable to reach parity, which is calculated to occur in 2022 and 2026 for black and Hispanic teachers, respectively.

RACING TO CLOSE THE GAPS

In any endeavor, setting goals is crucial to motivate change. Yet, setting goals absent a strong understanding of what is practical or achievable is less helpful. In this case, the failure to understand both the primary reasons for the scant supply of black and Hispanic teachers and the enormity and persistence of the shortfall have resulted in a proliferation of (presumably costly) initiatives launched by districts, states, and even the federal government. These interventions, while well intended, are all largely blind to the limitations of the available teaching pool and seek to address a leak far too late in the pipeline. Even masters-level initial certification teacher programs and alternative certification programs can have a limited effect, given that they can draw only from the pool of minorities who have successfully completed a college degree. In our view, the fundamental bottleneck here is not so much the failure of efforts by districts' human resources offices to hire and retain trained minority teachers (in truth, changing hiring practices can barely nudge the needle on teacher diversity); rather, the problem comes both from the low rate of college completion by black and Hispanic students and then the inability to persuade them to consider a career in the teaching profession.

The latter problem of making the teaching profession attractive is a familiar one to those of us in the education community. As has been argued many times before, improving public school teachers' working conditions, school leadership, and salaries could go a long way to making the profession attractive to potential teacher candidates.

The former problem of getting more minorities graduating from college will likewise require familiar solutions, and must start long before minority children enter a college lecture hall. And we must continue to support those students for years, until they are holding their college degree.

We must also issue a word of caution about teacher quality. In our analysis presented here, we ignored the issue of teacher quality to look at quantities alone. Yet, we caution against hastily lowering standards in an effort to diversify the teacher workforce sooner, as such a strategy could potentially undermine the benefits of diversity policies.³⁷ After all, although racial matching with a diverse workforce does show evidence of modestly improving minority students' test scores, teacher quality itself has a much greater effect across all students. A brief on teacher diversity from the Center for Education Data & Research at the University of Washington presents a useful comparison of estimated effect sizes of race-matching versus estimated differences in teacher value-added performance, which shows race-matching estimates to be between 10 and 75 percent of the magnitude of improving teacher quality from the median to the 83rd percentile.³⁸ In light of these comparisons, we encourage states and districts not to allow diversity objectives to divert focus away from other, higher-leverage efforts to improve student learning, including improvements in teacher quality or improving curriculum.³⁹

In summary, achieving a diverse teacher workforce must be a long-term policy goal with a suite of long-term strategies put in place to help minorities succeed in college and to encourage them to return to the classroom to help the next generation of students. Our failure to do so will keep us stubbornly in the same vicious cycle in which low teacher diversity contributes in a myriad of ways to low minority student success in K-12 and college, which results once again in low teacher diversity.

³⁷ This is not intended to imply that all entrance standards are equally effective at identifying teacher quality across all teachers. As described earlier, Goldhaber, D., & Hansen, M. (2010) find evidence of differential signals of quality based on teacher licensure scores, though no difference based on teachers' classroom performance.

³⁸ The numbers vary based on the grade and subject, and varies across studies. See Goldhaber, D., Theobald, R., & Tien, C. (2015).

³⁹ Curriculum differences appear to have an even greater potential difference than these common measures focused on teachers alone; see Whitehurst, G. (2009).

The time horizon of these findings demands that even while pursuing efforts to transform the composition of the teacher workforce, policy makers must also consider other remedies that may do much to alleviate some of the well-chronicled problems resulting from an overly white profession. Though fully developing the short- and medium-term solutions to mitigate the effects of the current diversity gap is beyond the scope of this report, a few come immediately to mind.

First, schools can consider leveraging other staff positions in the school to provide students exposure to diverse groups of adults interested in their academic success. For example, staff positions such as paraprofessionals and administrators, who may come from more diverse backgrounds than the pool of trained teachers, can develop and maintain relationships with students and their parents.⁴⁰ Though we do not know of any empirical evidence that suggests a link between non-teacher minority adults and minority students promoting greater achievement, we

District and school leaders should put strategies into place (whether formal or informal) designed to mitigate the possibility of teachers' biases influencing important student outcomes.

suppose the presence of invested adults that share backgrounds that match the diversity of the students can only help them stay engaged in school.⁴¹

Second, district and school leaders should put strategies into place (whether formal or informal) designed to mitigate the possibility of teachers' biases influencing important student outcomes. For example, data from the Department of Education's Office of Civil Rights shows black students (particularly males) are suspended

at significantly higher rates than white students.⁴² Perhaps a reasonable strategy to avoid suspensions based on biases is to have a diverse group of teachers and administrators be involved in the decision (or perhaps hold veto authority) of whether to suspend a student. Similar review strategies could be implemented when disciplining students for excessive tardiness or absenteeism, selecting children for gifted and talented programs, determining access to honors and AP-level classes, or myriad other decision points. Though this may impose a small amount of administrative oversight and review, the benefits to minority students should presumably outweigh those costs.

Third, we should educate teachers about the effects of diversity gaps. Districts and teacher preparation programs can and should provide training about subtle cultural biases and how they may shape teachers' interactions with students. Although removing all explicit and implicit biases is likely out of reach, educating teachers about them and building their awareness of these biases could theoretically do a great deal to help mitigate them. Existing diversity training, when offered, is often too rhetorical, reflective, and impractical in its failure to grapple with teachers' many decisions that become unconsciously influenced by race. Why don't more teachers and schools systematically examine and react to data regarding the decisions they make, not only the big ones but also the little ones such as who is chosen to be the line leader, or to answer the challenging math problem? With effective training for both active and prospective teachers and a hard look at these types of questions, schools may be better able to provide an equitable education to all students – regardless of the color of their or their teachers' skin.

⁴⁰ Williams, C.P., et al. (2015).

⁴¹ It is worth mentioning that as these adults should, in part, serve as role models for the students, schools should avoid situations in which the only minority adults in the school are those in low-skill or low-wage positions.

⁴² U.S Department of Education, Office for Civil Rights. (2016).

Increasing the diversity of the teacher workforce is indisputably an important policy goal. Working to close the wide gulf between the proportion of minority students and minority teachers through addressing the underlying issues of teacher recruitment and retention certainly merits the energy of school and district leaders, leaders of teacher training programs, and policymakers at all levels. Some places and initiatives are even seeing small successes in these areas. However, given the magnitude and national scope of this issue, it simply cannot be fully solved through efforts focused on the current teacher workforce – however worthy those efforts may be. The only possible approach to build a teacher workforce that resembles the students of our country is a long-term, whole-system approach that ensures minorities are not leaking out at any point in the pipeline. And truly, the pipeline should start not at college, but well before it. We should ensure all minority students have access to a high-quality education that sets them on a path for success in college and offers them the chance to one day become a teacher.

REFERENCES

Achinstein, B., Ogawa, R.T., Sexton, D., & Freitas, C. (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.

ACT. (2015). *The Condition of Future Educators 2015*. Retrieved from <http://www.act.org/content/dam/act/unsecured/documents/Future-Educators-2015.pdf>

Allison, T., Mugglestone, K., & Foster, K. (2015). Major Malfunction: Racial & Ethnic Disparities in What Students Study. *Young Invincibles*. Retrieved from http://younginvincibles.org/wp-content/uploads/2015/09/Major-Malfunction_FINAL.pdf

Bates, L., & Glick, J. (2013). Does it Matter if Teachers and Schools Match the Student? Racial and Ethnic Disparities in Problems Behaviors. *Social Science Research*, 42, 1180-1190.

Bireda, S., & Chait, R. (2011). *Increasing Teacher Diversity. Strategies to Improve the Teacher Workforce*. Center for American Progress. Retrieved from https://cdn.americanprogress.org/wp-content/uploads/issues/2011/11/pdf/chait_diversity.pdf

Bitterman, A., Gray, L., & Goldring, R. (2013). *Characteristics of Public and Private Elementary and Secondary Schools in the United States: Results From the 2011–12 Schools and Staffing Survey (NCES 2013–312)*. U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubs2013/2013312.pdf>

Boser, L. (2011). *Teacher Diversity Matters: A State-by-state Analysis of Teachers of Color*. Center for American Progress. Retrieved from https://cdn.americanprogress.org/wp-content/uploads/issues/2011/11/pdf/teacher_diversity.pdf

Cardenas, V., & Kerby, S. (2012). *The State of Latinos in the United States*. Center for American Progress. Retrieved from <https://cdn.americanprogress.org/wp-content/uploads/issues/2012/08/pdf/stateoflatinos.pdf>

Cataldi, E.F., Green, C., Henke, R., Lew, T., Woo, J., Shepherd, B., & Siegel, P. (2011). *2008–09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09): First Look (NCES 2011-236)*. U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubs2011/2011236.pdf>

Dee, T.S. (2004). Teachers, Race, and Student Achievement in a Randomized Experiment. *The Review of Economics and Statistics*, 86(1), 195-210.

Dee, T.S. (2005). A Teacher Like Me: Does Race, Ethnicity, or Gender Matter? *American Economic Review*, 95(2), 158-65.

Egalite, A., & Kisida, B. (2016). *The Effects of Teacher Match on Academic Perceptions and Attitudes*. Working paper. Retrieved from <https://ced.ncsu.edu/wp-content/uploads/2015/07/Egalite-Kisida-Teacher-Match-Working-Paper-June-2016.pdf>

Egalite, A., Kisida, B., & Winters, M. (2015). Representation in the Classroom: The Effect of Own-Race Teachers on Student Achievement. *Economics on Education Review*, 45, 44-52.

Feistritz, C. E. (2011). Profile of Teachers in the U.S. 2011. National Center for Education Information. Washington, DC. Retrieved from http://www.coweninstitute.com/wp-content/uploads/2011/08/Profile_Teachers_US_2011.pdf

Fox, L. (2016). Seeing Potential: The Effects of Student-Teacher Demographic Congruence on Teacher Expectations and Recommendations. *AERA open*, 2(1), 1-17.

Gershenson, S., Holt, S., & Papageorge, N. (2016). Who Believes in Me? The Effect of Student-Teacher Demographic Match on Teacher Expectations. *Economics of Education Review*, 52, 209-224.

Goldhaber, D., & Hansen, M. (2010). Race, Gender and Teacher Testing: How Informative a Tool is Teacher Licensure Testing and How does it Impact Student Achievement? *American Educational Research Journal*, 47(1), 218-51.

Goldhaber, D., Theobald, R., & Tien, C. (2015). The Theoretical and Empirical Arguments for Diversifying the Teacher Workforce: A Review of Evidence. Center for Education Data & Research. Policy Brief WP # 2015-9. Retrieved from <http://m.cedr.us/papers/working/CEDR%20WP%202015-9.pdf>

Goldring, R., Gray, L., & Bitterman, A. (2013). Characteristics of Public and Private Elementary and Secondary School Teachers in the United States: Results From the 2011–12 Schools and Staffing Survey (NCES 2013-314). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubs2013/2013314.pdf>

Goldring, R., Taie, S., & Riddles, M. (2014). Teacher Attrition and Mobility: Results From the 2012–13 Teacher Follow-up Survey (NCES 2014-077). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubs2014/2014077.pdf>

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 (NCES 2015-337). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubs2015/2015337.pdf>

Grissom, J.A., & Redding, C. (2016). Discretion and Disproportionality: Explaining the Underrepresentation of High-Achieving Students of Color in Gifted Programs. *AERA Open*, 2(1), 1-25.

Hall, M. (2016, March). There's One Cause in Education that Everyone Supports: America's Teachers Need to be More Diverse. *School ed.* Retrieved from http://www.slate.com/blogs/schooled/2016/03/08/teacher_diversity_is_a_big_problem_in_education_and_the_one_cause_everyone.html

Holt, S., & Gershenson, S. (2015). The Impact of Teacher Demographic Representation on Student Attendance and Suspensions. IZA Discussion Paper, No 9554.

Ingersoll, R.M., & May, H. (2011). Recruitment, Retention, and the Minority Teacher Shortage. Consortium for Policy Research in Education, University of Pennsylvania, and the Center for Educational Research in the Interest of Underserved Students, University of California, Santa Cruz.

Ingersoll, R.M., & May, H. (2011, September). Recruitment, Retention, and the Minority Teacher Shortage: Fact or Fable? *Kappan*, 93(1), 62-65. Retrieved from http://www.gse.upenn.edu/pdf/rmi/Fact_or_Fable.pdf

Kane, T.J., Rockoff, J.E., & Staiger, D. O. (2008). What Does Certification Tell us about Teacher Effectiveness? Evidence from New York City. *Economics of Education Review*, 27(6), 615–631.

Keigher, A. (2009). Characteristics of Public, Private, and Bureau of Indian Education Elementary and Secondary Schools in the United States: Results from the 2007-08 Schools and Staffing Survey (NCES 2009-321). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC. Retrieved from <http://nces.ed.gov/pubs2009/2009321.pdf>

McGrady, P.B., & Reynolds, J.R. (2012). Racial Mismatch in the Classroom: Beyond Black-white Differences. *Sociology of Education*, 86(1), 3-17.

National Center for Education. (2010). *Alternative Teacher Certification: A State-by-State Analysis 2010*. Washington, D.C.

Rawlston-Wilson, V., Saavedra, S., & Chauhan, S. (2014). *From Access to Completion: A Seamless Path to College Graduation for African American Students*. National Urban League, Washington Bureau.

Simon, N. S., & Johnson, S. M. (2013). *Teacher Turnover in High-Poverty Schools: What We Know and Can Do*. (Working Paper: Project on the Next Generation of Teachers). Cambridge, MA: Harvard Graduate School of Education.

Snyder, T.D., & Hoffman, C. (1995). *Digest of Education Statistics 1995* (NCES 95-029). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC. Retrieved from <http://nces.ed.gov/pubs95/95029.pdf>

Snyder, T.D., & Dillow, S.A. (2013). *Digest of Education Statistics 2012* (NCES 2014-015). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC. Retrieved from <http://nces.ed.gov/pubs2014/2014015.pdf>

Snyder, T.D., de Brey, C., & Dillow, S.A. (2016). *Digest of Education Statistics 2014* (NCES 2016-006). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC. Retrieved from <http://nces.ed.gov/pubs2016/2016006.pdf>

Torres, J., Santos, J., Peck, N.L., & Cortes., L. (2004). *Minority Teacher Recruitment, Development, and Retention*. The Education Alliance at Brown University. Retrieved from <http://files.eric.ed.gov/fulltext/ED484676.pdf>

Tyler, L., Whiting, B., Ferguson, S., Eubanks, S., Steinberg, J., Scarron, L., & Basset, K. (2011). *Toward Increasing Teacher Diversity: Targeting Support and Intervention for Teacher Licensure Candidates*. Educational Testing

Service. Retrieved from http://www.nea.org/assets/docs/ETS_NEAteacherdiversity11.pdf

U.S. Census Bureau. (2014). National Population Projections. Retrieved from <http://www.census.gov/population/projections/data/national/2014.html>

U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12). Computation by NCES QuickStats.

U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), Public School Teacher Data File. 2011–12. Retrieved from https://nces.ed.gov/surveys/sass/tables/sass1112_2014_01_t1n.asp

U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), Public School Teacher Data File. 2011–12. Retrieved from https://nces.ed.gov/surveys/sass/tables/SASS1112_2014_03_t1n.asp

U.S. Department of Education, National Center for Education Statistics. Teacher Follow-up Survey (TFS), Former Teacher Data File. 2004-2005. Retrieved from https://nces.ed.gov/surveys/sass/tables/tfs_2005_13.asp

U.S. Department of Education, Office of Civil Rights. (2016). 2013-2014 Civil Rights Data Collection. A First Look. Retrieved from <http://www2.ed.gov/about/offices/list/ocr/docs/2013-14-first-look.pdf>

U.S. Department of Education, Office of Planning, Evaluation and Policy Development, Policy and Program Studies Service. (2016). The State of Racial Diversity in the Educator Workforce, Washington, D.C. Retrieved from <https://www2.ed.gov/rschstat/eval/highered/racial-diversity/state-racial-diversity-workforce.pdf>

Whitehurst, G. (2009). Don't Forget Curriculum. Brown Center Letters on Education. Brookings Institution. Retrieved from http://www.brookings.edu/~media/research/files/papers/2009/10/14-curriculum-whitehurst/1014_curriculum_whitehurst.pdf

Williams, C.P., Garcia, A., Connally, K., Cook, S., & Dancy, K. (2015). Multilingual Paraprofessionals: An Untapped Resource for Supporting American Pluralism. Washington, DC: New America Foundation. Retrieved from https://na-production.s3.amazonaws.com/documents/DLLWH_ParasBrief6.1.pdf

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