

Pathways to Teaching: Teacher Diversity, Testing, Certification, and Employment in Washington State

REL 2021-094
U.S. DEPARTMENT OF EDUCATION

A Publication of the National Center for Education Evaluation and Regional Assistance at IES



Pathways to Teaching: Teacher Diversity, Testing, Certification, and Employment in Washington State

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June 2021

The number and percentage of students of color are growing in Washington state, yet the teacher workforce remains largely White (non-Hispanic). This means that few students of color have teachers who share their race or ethnicity, which could have consequences for student achievement and well-being. To better understand the state's shortage of teachers of color, this study investigated six steps in the teacher preparation and career pathway at which teacher candidates and teachers are likely to drop out or leave the profession: three teacher preparation tests, certification, employment, and retention. Among all teacher candidates who took at least one of these steps during 2010–19, Hispanic candidates and non-Hispanic candidates of color were less likely than White candidates to complete each step, took longer to complete each step, and were less likely to become a certificated educator in a Washington K–12 public school. The descriptive findings suggest that education policymakers consider revising policies and programs to increase the number of teachers of color. The state has already made changes, such as revising testing requirements for teacher candidates.

Why this study?

Washington state, like many states, faces a shortage of teachers of color in its K–12 public schools, including teachers identifying as American Indian/Alaska Native, Asian, Black, Hispanic, and Pacific Islander (Johnson et al., 2019). The number and percentage of students of color are growing in Washington, yet the teacher workforce remains largely White (non-Hispanic). This means that fewer students of color than White students have teachers who share their race or ethnicity. For example, in Washington K–12 public schools in 2016/17, there were 125 Hispanic students for every certificated (certified) Hispanic teacher compared with 10 White students for every certificated White teacher (Hanson & Bisht, 2017; see box 1 for definitions of key terms).

The shortage of teachers of color in Washington could continue in the near future. Although the population of teacher candidates is more diverse than that of employed teachers in Washington, it remains largely White and less diverse than the student body (figure 1; Plecki et al., 2017).

Racial/ethnic disparities in the teacher workforce have consequences for all students. Students of color who are taught by a teacher of the same race/ethnicity are more likely than students who are taught by a teacher of a different race/ethnicity to have higher test scores and fewer disciplinary issues (Dee, 2004; Gershenson et al., 2017; Goldhaber et al., 2015). For White students, being taught by a teacher of color can expose them to different perspectives and can improve their ability to solve problems, think critically, and develop creativity (Page, 2007; Phillips, 2014).

To better understand the state's shortage of teachers of color, a group of Washington educators and policymakers from the Washington Professional Educator Standards Board, teacher preparation programs, school districts, and the Washington Education Association requested that the Regional Educational Laboratory (REL) Northwest investigate the junctures at which teacher candidates, especially candidates of color, are likely to leave the teacher preparation and career pathway. The group also wanted to understand how long it takes candidates to become certificated. These stakeholders have identified a critical lack of evidence about when candidates of color leave the teacher preparation and career pathway.

For additional information, including technical methods and supporting analyses, access the report appendixes at <https://go.usa.gov/x6T5K>.

Box 1. Key terms

Basic skills test. During the study period (2010–19) teacher candidates in Washington were required to take the Washington Educator Skills Test–Basic (WEST–B) or an equivalent, such as the SAT or ACT, for admission to a teacher preparation program. One limitation to this study is that only a small number of people who submitted scores for an equivalent test instead of the WEST–B are observed in the data (see table B2 in appendix B). This means that there might be candidates who appear not to have taken the basic skills test even though they did take it. During the period covered by the study all candidates were required to pass the math, reading, and writing subtests of the basic skills test before earning certification. Since April 2019 candidates have been required to take the basic skills test or its equivalent but are not required to pass it (Washington Professional Educator Standards Board, 2019).

Certification. During the study period (2010–19) teacher candidates were certificated (also called certified) to teach in Washington state only after they passed the basic skills and content knowledge tests, completed student teaching, completed a Washington-accredited teacher preparation program, and were recommended for certification by their preparation program. Candidates who did not complete all these pathway steps could have received a limited teaching certification, which is a temporary license to teach for two years granted by the state in response to a school district’s request. One limitation to the dataset used in this study is that only a small number of limited certificated educators are observed in the data (see table B15 in appendix B). There are candidates who have not completed all pathway steps and thus are not certificated teachers but who are teaching in Washington (Johnson et al., 2019).

Content knowledge test. During the study period (2010–19) teacher candidates were required to pass one or more content knowledge tests to demonstrate competency in a subject (such as elementary education, special education, or English language arts) before earning certification. Tests include the Washington Educator Skills Tests–Endorsements and the National Evaluation Series. Candidates could take content knowledge tests in multiple subjects for which they were eligible because of their coursework or because of endorsements that they were seeking. The study team considered the first test that each candidate passed as primary. For candidates who never passed a content knowledge test, the study team examined the test that they took most often. In December 2020, after the study period, Washington established a case-by-case exception process for candidates who fail to pass a content knowledge test (Washington Professional Educator Standards Board, 2020).

Employment. Holding a certificated educator position in any Washington public K–12 school or district for at least one year.

Performance assessment. Teacher candidates’ teaching performance is assessed through the edTPA, a portfolio-based assessment. Candidates typically take the edTPA during student teaching. From 2014 to 2021 Washington required candidates enrolled in an in-state teacher preparation program to pass the edTPA. The edTPA was not required before 2014 for any candidate, and it is not required for candidates from out-of-state teacher preparation programs, including national online programs. As of April 2021, candidates are no longer required to take or pass the Washington performance assessment (2.S.H.B. 1028, Wash. 2021).

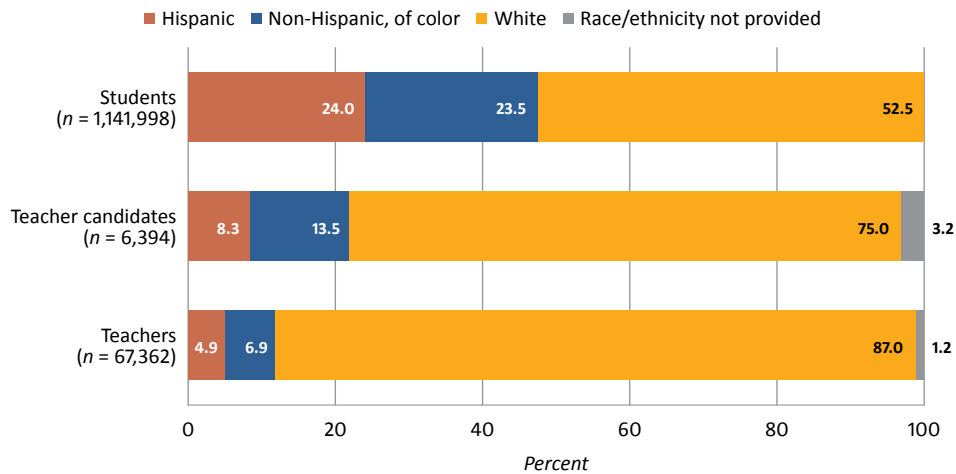
Retention. Being employed in a certificated position in any Washington public K–12 school or district in the school year following the school year in which a teacher was first employed.

Teacher candidates. Defined in this study as individuals who took at least one teacher preparation test, regardless of whether they passed, and who were not previously certificated teachers. Candidates include some people who have not yet enrolled in a teacher preparation program.

Teacher preparation and career pathway. This study identified and investigated six steps in the Washington teacher preparation and career pathway at which candidates and teachers are likely to drop out or leave the profession. These steps were divided into two parts. The first part is the teacher preparation pathway, which includes the basic skills test, a content knowledge test, a performance assessment, and certification. The second part is the teacher career pathway, which begins with employment as a certificated educator and continues with retention after at least one year in a certificated position in Washington state. Other steps in the pathway, such as student teaching, are not discussed.

Teacher preparation tests. Washington state teacher preparation tests comprise the basic skills test, content knowledge test, and performance assessment. These tests are specific to Washington state. Candidates can repeat tests until they pass. The state has changed teacher testing requirements since this study was conducted.

Figure 1. In Washington state, teacher candidates are more diverse than employed teachers but not as diverse as students, 2018 and 2019/20



Note: See table A2 in appendix A for details on teacher candidates. Percentages might not sum to 100 because of rounding. Data on students and teachers are for 2019/20, and data on teacher candidates are for 2018.

Source: Authors' analysis based on Pearson Education, Washington E-Certification, and Washington S-275 personnel data from 2018 and Washington Office of Superintendent of Public Instruction (2020).

The findings from this study can help education policymakers create and revise policies and programs that increase the number of teachers of color in Washington state. This study explores Washington's teacher preparation and career pathway and identifies the points at which teacher candidates of color leave the pathway instead of entering the state's teacher workforce, while accounting for other important differences among candidates such as gender and age.

Teacher candidates enrolled in a Washington teacher preparation program during 2014–19 were required to take and pass a basic skills test, a content knowledge test, and a performance assessment; complete their teacher preparation program coursework and requirements; complete student teaching; and be recommended for certification by their preparation program to become a first-time teacher, regardless of the sequence of steps to certification that they followed. These candidates could be observed in statewide data at six points during their preparation and early career: when taking the basic skills test, taking a content knowledge test, taking the performance assessment, obtaining a teaching certification in Washington, becoming a certificated employee in a Washington K–12 public school, and being retained in subsequent years as a certificated employee (Washington Professional Educator Standards Board, n.d.; see figure A1 in appendix A).

Research questions

This study addressed three research questions:

1. What sequences of teacher preparation and career pathway steps did Washington teacher candidates follow during 2010–19, what percentage of candidates followed each sequence, and how did this vary by race/ethnicity?
2. How many and what percentages of teacher candidates took and passed each of Washington's teacher preparation tests and became certificated during 2010–19? How long did it take candidates from first taking a test to earn certification, and how did results vary by race/ethnicity?
3. How many and what percentages of teachers were employed and retained during 2010–19, and how did this vary by race/ethnicity?

The study team examined results by three categories of race/ethnicity: Hispanic candidates (of any race), non-Hispanic candidates of color (including American Indian/Alaska Native, Asian, Black, Hawaiian and Pacific Islander, and multiracial candidates), and White (non-Hispanic) candidates. The study team combined into one group all non-Hispanic candidates of color to maintain candidate anonymity, since some groups had outcomes with fewer than 10 individuals. In addition, for research questions 2 and 3 the study team analyzed the association of race/ethnicity with taking and with passing each observed step to certification after adjusting for gender, age, and the first year the candidate attempted one of the steps. Box 2 summarizes the data sources, population, samples, and methods, and appendix A provides additional details.

Box 2. Data sources, population, samples, and methods

Data sources. This study used three data sources:

- Pearson Education data on results for all Washington teacher preparation tests from all teacher candidates who took the tests in the state, regardless of whether they were certificated, from January 1, 2010, to March 16, 2019.
- Washington E-Certification data, which include teacher certification number and self-reported demographic and personal characteristics for all Washington K–12 teachers who were certificated between January 1, 2010, and April 6, 2019. The data also include indicators for teacher candidates who passed an alternative test for the basic skills test and submitted results to E-Certification but do not include the scores. The data do not include test outcomes for candidates who were not certificated.
- Washington’s S-275 personnel database, which provides comprehensive individual-level data on all Washington K–12 public school teachers from 2009/10 to 2019/20, including name, certification number, and employment data.

Teacher candidates were linked across the E-Certification and S-275 data sources using certification numbers. The Pearson Education data did not include a common identifier that could be used to link candidates to the other datasets, so fuzzy matching procedures using candidate name, gender, and date of birth were used (see appendix A).

Study population. The study population includes all 63,497 individuals not previously certificated in Washington who took any Washington teacher preparation test between January 1, 2010, and April 6, 2019, or who submitted a score for an alternative test for the basic skills test during that time. Previously certificated teachers were excluded from the study. The percentage of teacher candidates who were missing demographic data varied by teacher preparation and career pathway step. Overall, 4.0 percent of candidates were missing self-reported race/ethnicity data, and 0.8 percent were missing gender data (see table A1 in appendix A). Full disaggregated results are in appendix B, including results for candidates with missing data. The full study population was used for research question 1 on the sequence of preparation and career pathway steps followed by Washington teacher candidates and for the part of research question 2 that asked about the number and percentage of candidates who took and passed each of Washington’s teacher preparation tests and became certificated.

Study samples. The study also used two subsets of the full study population. The first subset consisted of all teacher candidates in the population who had any pathway record during 2010–16. This sample accounts for candidates who might not have had enough time to become certificated and employed by 2019/20. It was used to determine how long it took candidates to become certificated (part of research question 2) and what percentages of teachers were employed and retained (part of research question 3). The second subset consisted of teacher candidates who took the basic skills test and were certificated by 2019. This sample was used to calculate how long it took candidates to become certificated (part of research question 2). The sample sizes varied according to how many candidates attempted each step in the process.

Methodology. For the first research question the study team identified the most common sequences of teacher preparation and career pathway steps using the administration dates of teacher preparation tests, certification, and employment.

For research questions 2 and 3 the study team calculated the percentages and numbers of teacher candidates who:

- Completed each step and were seen to continue along the pathway (were observed in the data at any subsequent step).
- Completed each step and were not seen to continue along the pathway (were not observed in the data at any subsequent step).
- Did not complete each step and did not continue along the pathway.

Each percentage was calculated using the number of teacher candidates who attempted the step during 2010–19 as the denominator. Linear probability regression analysis was used to examine the extent to which candidates' race/ethnicity is related to each of the steps through certification, taking into account each candidate's age, race/ethnicity, gender, and beginning year on the pathway (Judkins & Porter, 2016). Finally, candidates' average time to certification was calculated using the date of their first pathway record and the date of their certification.

To assess whether differences by race/ethnicity in the percentage of candidates who attempted and completed each pathway step were meaningful, the study team defined a 5–9 percentage point difference between racial/ethnic groups as meaningful and a 10 percentage point or larger difference as large, based on stakeholder feedback. Differences of less than 5 percentage points were not considered meaningful.

Findings

This section presents the findings on the teacher preparation and career pathway outcomes of teacher candidates and the points at which candidates, especially candidates of color, are likely to leave the pathway.

Teacher candidates followed four common sequences of steps to certification, regardless of their race/ethnicity

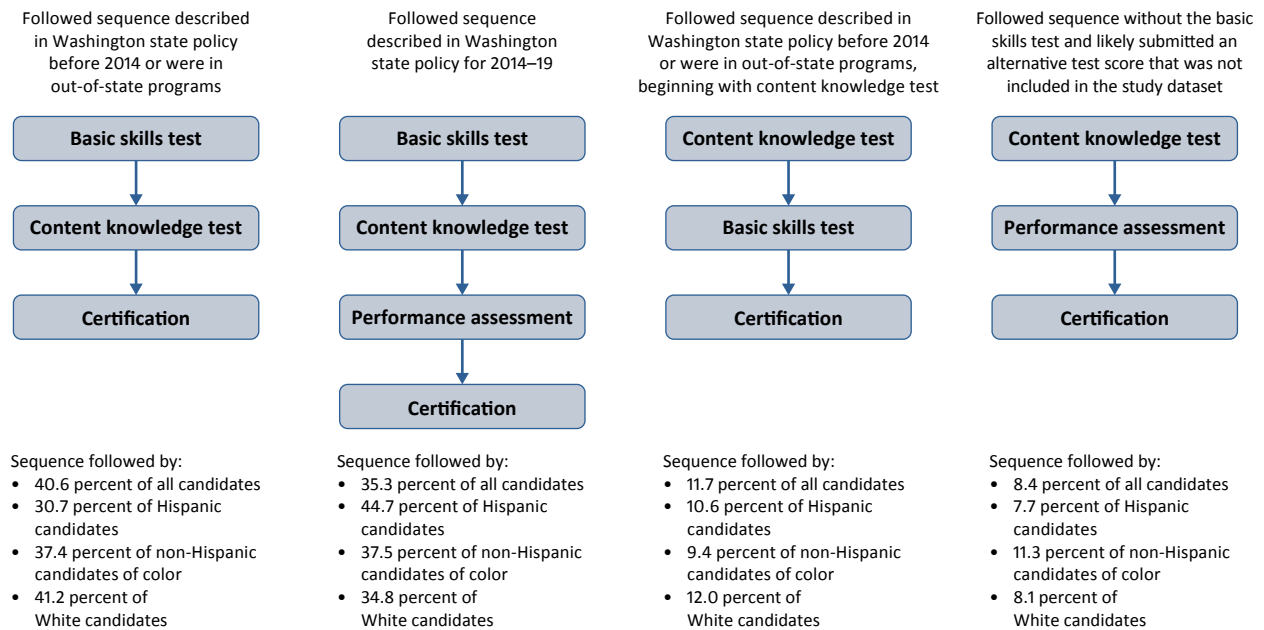
For the first research question the study team examined the sequences of teacher preparation and career pathway steps that Washington teacher candidates followed during 2010–19, the percentage of candidates who followed each sequence, and how this varied by race/ethnicity.

Washington policy during 2014–19 required all teacher candidates enrolled in in-state teacher preparation programs to take and pass the basic skills test, a content knowledge test, and a performance assessment before certification.¹ Among the 22,113 candidates who earned certification in Washington during 2010–19, 35 percent completed the tests in that order. The other candidates took the tests in 1 of 11 other sequences (see table B1 in appendix B) or submitted an alternative test for the basic skills test. Overall, 96 percent of candidates who earned certification in Washington during 2010–19 followed one of the four most common sequences, a percentage that did not vary by race/ethnicity (figure 2).

Hispanic teacher candidates were more likely than White candidates and non-Hispanic candidates of color to take the sequence of steps to certification described in Washington state policy during 2014–19. Overall, a higher proportion of Hispanic candidates (45 percent) than of non-Hispanic candidates of color (38 percent) or of White candidates (35 percent; see figure 2 and table B1 in appendix B) followed the sequence of steps described in state policy for 2014–19 (see figure A1 in appendix A). This means that Hispanic candidates were less likely than other candidates to submit an alternative test score (see table B2 in appendix B) and that Hispanic candidates were more likely to attend teacher preparation programs that required the performance assessment. This suggests that fewer Hispanic candidates were enrolled in out-of-state or online programs compared with other candidates.

1. The state has since changed the testing requirements. Since July 2019 teacher candidates have been required only to attempt the basic skills test, not to pass it (Washington Professional Educator Standards Board, 2019). Beginning in December 2020 the state established a case-by-case exception process for candidates who do fail to pass the content knowledge assessment (Washington Professional Educator Standards Board, 2020). Finally, as of April 2021, candidates are no longer required to take or pass the state performance assessment (2.S.H.B. 1028, Wash. 2021).

Figure 2. During 2010–19 a higher percentage of certificated Hispanic teacher candidates than of White candidates or non-Hispanic candidates of color followed the sequence of steps described in Washington state policy for 2014–19



Note: This figure summarizes data from table B1 in appendix B ($n = 22,113$) on the first time that teacher candidates took each test; it does not account for repeat test-taking. Nearly 96 percent of certificated candidates in Washington followed one of these four sequences.

Source: Authors' analysis based on Pearson Education, Washington E-Certification, and Washington S-275 personnel data for 2010–19.

Within each racial/ethnic group, teacher candidates were more likely to leave the teacher preparation and career pathway after passing a content knowledge test or performance assessment than after failing to pass it

To address the second research question, the study team examined the percentages of teacher candidates who took and passed each of Washington’s teacher preparation tests and became certificated during 2010–19, how long the process took, and how results varied by race/ethnicity.

Along the teacher preparation and career pathway, two conditions were associated with leaving the pathway: failing to pass any of the required tests or passing a required test but nonetheless leaving the pathway. Teacher candidates who failed to pass any of the required tests were no longer eligible to continue. For example, nearly 5 percent of candidates who took a content knowledge test failed to pass it, regardless of the number of times they took the test, and so could not be certificated (see figure B1 in appendix B). In addition, a large percentage of candidates left the pathway despite passing a required test. For example, 37 percent of candidates who took a content knowledge test passed it but did not continue on to the other pathway steps. For the content knowledge test and the performance assessment, the percentage of candidates who passed but did not continue along the pathway was equal to or higher than the percentage who failed, regardless of their race/ethnicity (see tables B3–B5).

Hispanic teacher candidates were less likely than White candidates to pass the basic skills test and content knowledge tests and took longer than White candidates did to pass each of the teacher preparation tests

A lower percentage of Hispanic teacher candidates and of non-Hispanic candidates of color than of White candidates passed the basic skills test and continued on the teacher pathway. Among the 38,638 candidates who took

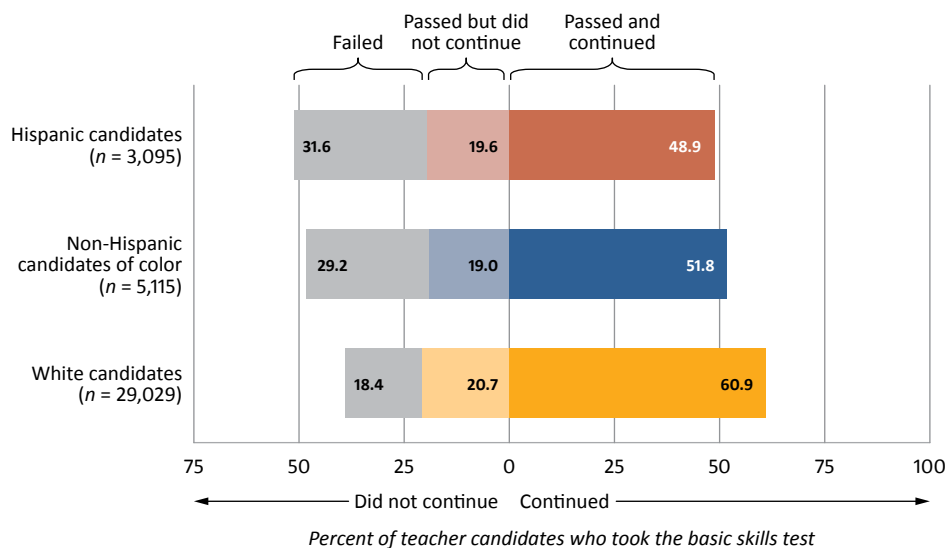
the basic skills test during 2010–19, 49 percent of Hispanic candidates and 52 percent of non-Hispanic candidates of color passed and continued on the teacher pathway toward one of the remaining steps, such as a content knowledge test or the performance assessment, compared with 61 percent of White candidates (figure 3).

Differences by race/ethnicity in the percentage of teacher candidates who continued on the pathway are related to differences by race/ethnicity in the percentage of candidates who failed to pass the basic skills test. There were no meaningful differences by race/ethnicity in the percentage of candidates who passed the basic skills test but then left the teacher preparation and career pathway (19–21 percent; see figure 3). However, a larger percentage of Hispanic candidates (32 percent) and of non-Hispanic candidates of color (29 percent) than of White candidates (18 percent) failed the basic skills test.

There were meaningful differences by race/ethnicity after gender, age, and year a candidate first took a test (year of first record) were controlled for. Hispanic teacher candidates were 9.8 percentage points less likely and non-Hispanic candidates of color were 9.5 percentage points less likely than White candidates to pass the basic skills test (see table B6 in appendix B). Results were similar, with slightly smaller magnitudes, for the outcome of passing and continuing on the pathway.

A lower percentage of Hispanic teacher candidates and of non-Hispanic candidates of color than of White candidates passed each basic skills subtest, with large differences in first-attempt passing rates. Hispanic candidates and non-Hispanic candidates of color passed the basic skills math, reading, and writing subtests at lower rates than White candidates did (figure 4). The difference in ever passing rates was largest for the writing subtest: 75 percent of Hispanic candidates and 82 percent of non-Hispanic candidates of color ever passed compared with 96 percent of White candidates. There were also large differences in first-attempt passing rates: 36 percent of Hispanic candidates and 56 percent of non-Hispanic candidates of color passed the writing subtest on the first attempt compared with 81 percent of White candidates. These results indicate that candidates of color retook the basic skills subtests more often than White candidates did, incurring additional financial costs and taking longer to pass (see table B7 in appendix B).

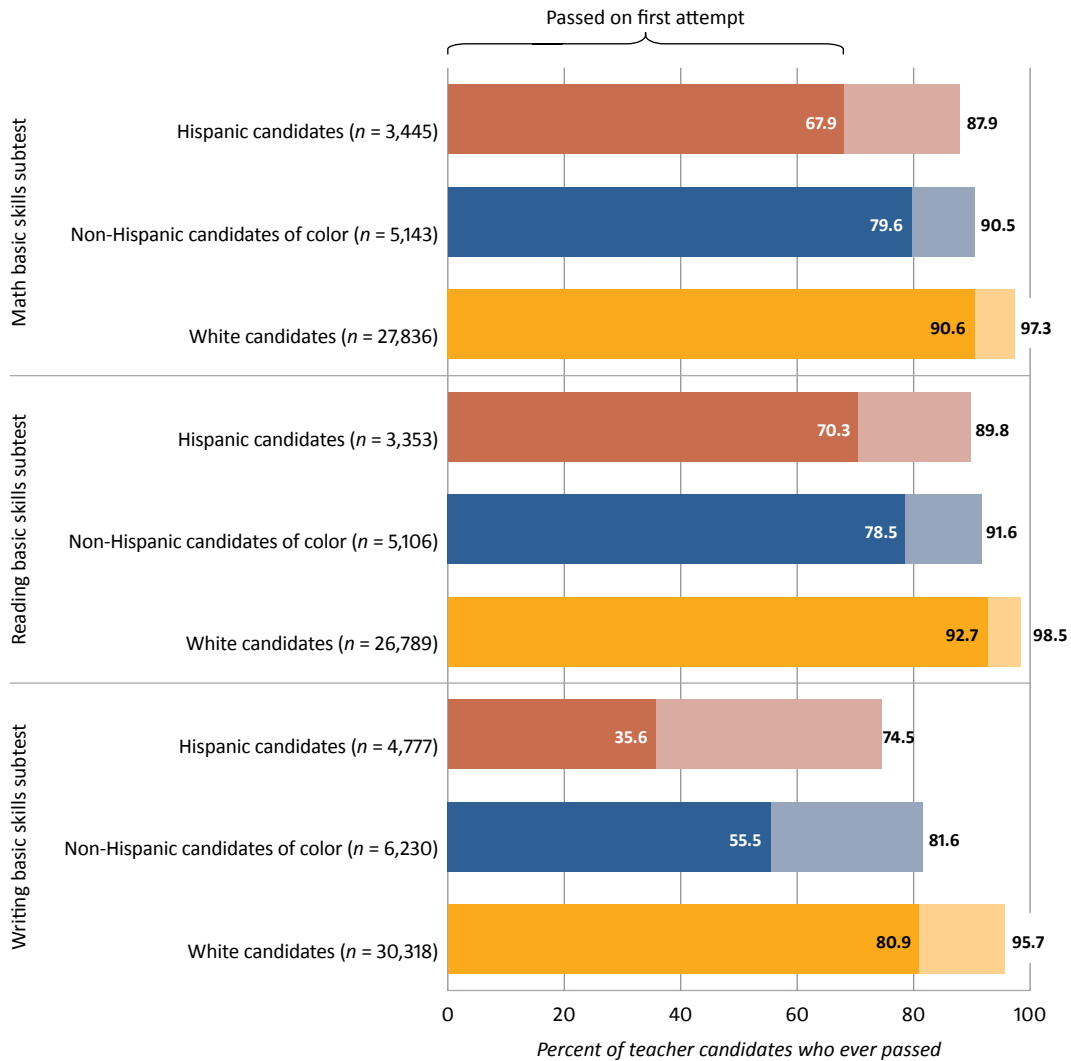
Figure 3. A lower percentage of Hispanic teacher candidates and of non-Hispanic candidates of color than of White candidates passed the basic skills test and continued on the teacher preparation and career pathway, 2010–19



Note: This figure summarizes data from table B3 in appendix B. Percentages might not sum to 100 because of rounding. Data from 1,399 candidates for whom race/ethnicity information were missing are not included in the figure.

Source: Authors' analysis based on Pearson Education, Washington E-Certification, and Washington S-275 personnel data for 2010–19.

Figure 4. A lower percentage of Hispanic teacher candidates and of non-Hispanic candidates of color than of White candidates passed all the basic skills subtests, regardless of the number of times they took the tests, 2010–19



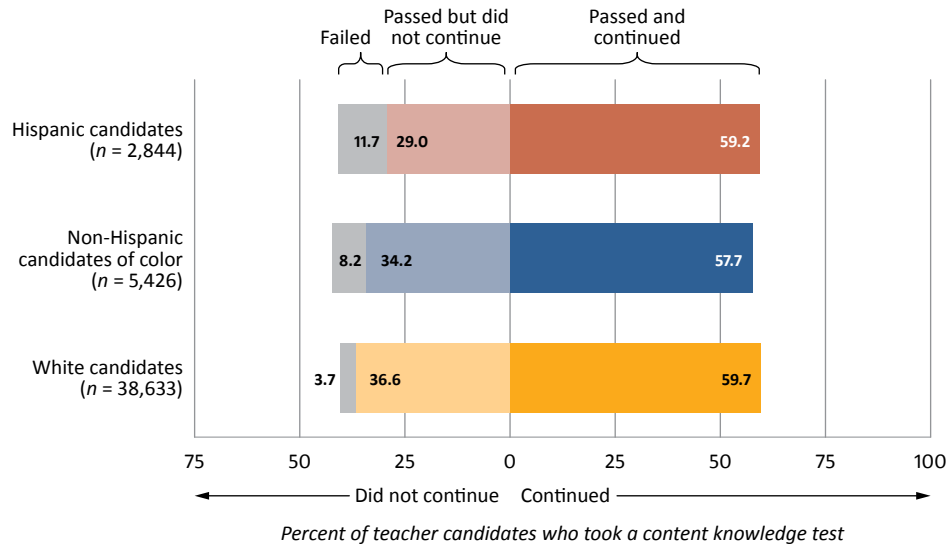
Note: This figure summarizes data from tables B8–B10 in appendix B.

Source: Authors’ analysis based on Pearson Education, Washington E-Certification, and Washington S-275 personnel data for 2010–19.

A higher percentage of Hispanic teacher candidates than of White candidates failed to pass a content knowledge test. Among the 48,598 candidates who took a content knowledge test during 2010–19, 12 percent of Hispanic candidates failed to pass and were unable to continue on the teacher pathway compared with 4 percent of White candidates and 8 percent of non-Hispanic candidates of color (figure 5). There were no meaningful differences by race/ethnicity in the percentage of candidates who passed a content knowledge test and continued on the pathway. However, a higher percentage of non-Hispanic candidates of color (34 percent) and of White candidates (37 percent) than of Hispanic candidates (29 percent) passed a content knowledge test but did not continue on the pathway.

Hispanic teacher candidates were 8 percentage points less likely than White candidates to pass a content knowledge test, after gender, age, and year of first record were controlled for (see table B11 in appendix B). Among candidates who passed a content knowledge test, differences in pathway continuation rates between groups were not meaningful.

Figure 5. A higher percentage of Hispanic teacher candidates than of White candidates failed to pass a content knowledge test, 2010–19



Note: This figure summarizes data from table B4 in appendix B. Percentages might not sum to 100 because of rounding. Data from 1,695 candidates for whom race/ethnicity information were missing are not included in the figure.

Source: Authors’ analysis based on Pearson Education, Washington E-Certification, and Washington S-275 personnel data for 2010–19.

Teacher candidates took one or more content knowledge tests in 42 content areas (see table B12 in appendix B).² At least 2,828 candidates each took the six most commonly taken content knowledge tests during 2010–19.³ A lower percentage of Hispanic candidates and of non-Hispanic candidates of color than of White candidates passed the elementary education and special education tests. In addition, a lower percentage of Hispanic candidates than of White candidates passed the math and English as a second language tests (see figure B2).

Fewer than 6 percent of all teacher candidates who took the performance assessment failed to pass it, and of those who took it and passed, non-Hispanic candidates of color were more likely than White candidates to continue on the teacher pathway. Among the 13,304 candidates who took the performance assessment during 2014–19, just 3–6 percent failed and left the pathway, but a larger percentage (12–21 percent) left the pathway after passing (figure 6). Those who passed and continued on the pathway included 85 percent of non-Hispanic candidates of color who took the assessment compared with 73 percent of Hispanic candidates and 80 percent of White candidates.

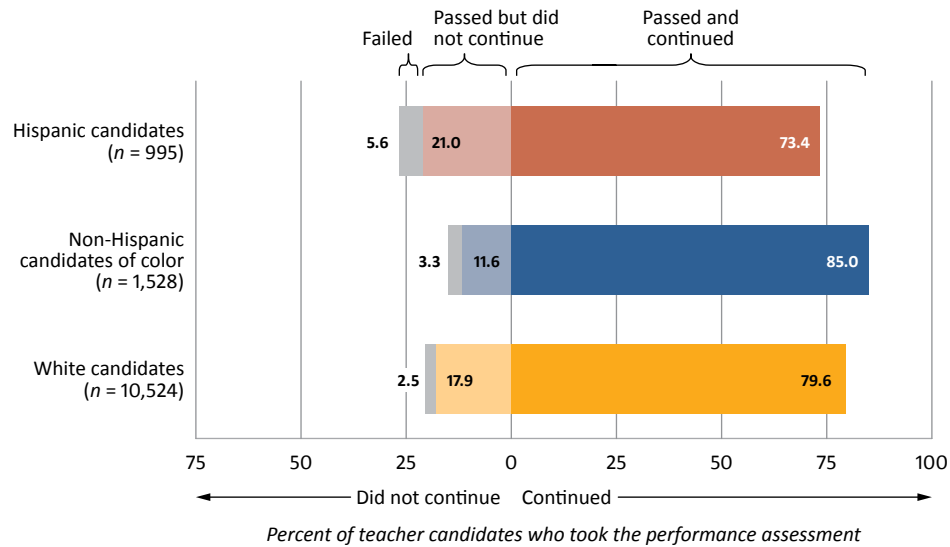
Non-Hispanic teacher candidates of color were 6 percentage points more likely to pass the performance assessment and continue on the teacher pathway than were White candidates after gender, age, and year of first record were controlled for, though the differences in passing rates were not meaningful (see table B13 in appendix B).

Hispanic teacher candidates were less likely than White candidates to be certificated and took longer to earn certification

A lower percentage of Hispanic candidates than of White candidates were certificated. The analysis of certification rates focused on a sample of candidates whose first record along the teacher preparation and career pathway

2. The elementary test is divided into two subtests but counts as only one content area.
 3. The most common content knowledge tests were elementary education (both subtest 1 and 2), special education, English language arts, English as a second language, social studies, and math.

Figure 6. A higher percentage of non-Hispanic teacher candidates of color than of White candidates or of Hispanic candidates passed the performance assessment and continued on the teacher preparation and career pathway, 2014–19



Note: This figure summarizes data from table B5 in appendix B. Percentages might not sum to 100 because of rounding. Data from 257 candidates for whom race/ethnicity information were missing are not included in the figure.

Source: Authors’ analysis based on Pearson Education, Washington E-Certification, and Washington S-275 personnel data for 2014–19.

was during 2010–16. This range of time allows candidates at least four years, to 2019/20, to become certificated and employed—a year and a half longer than the state average (see table B14 in appendix B).

Among the 45,619 teacher candidates who took one or more of Washington’s three teacher preparation tests during 2010–16, 65 percent were certificated in Washington as of 2019 (see table B15 in appendix B). This is an attrition rate of almost 35 percent along the teacher preparation and career pathway before certification. In other words, 15,784 candidates who took one or more of Washington’s three teacher preparation tests during 2010–16 left the pathway before earning certification. A small portion of candidates (189 candidates, or less than 0.1 percent) were not certificated but were employed in a certificated position. These candidates might have received a limited teaching certificate, but the dataset used for this analysis did not include an indicator for that license.

A lower percentage of Hispanic teacher candidates than of White candidates were certificated. Among candidates who took a teacher preparation test in Washington during 2010–16, the certification rate by 2019 was 61 percent among Hispanic candidates, 63 percent among non-Hispanic candidates of color, and 66 percent among White candidates (see table B15 in appendix B).

Hispanic teacher candidates were 6 percentage points less likely than White candidates to earn certification after gender, age, and year of first record were controlled for (see table B16 in appendix B). The difference between non-Hispanic candidates of color and White candidates was not meaningful. Differences by race/ethnicity for employment and retention outcomes were also not meaningful.

Hispanic teacher candidates took longer than other candidates to earn certification. Among candidates who took the basic skills test and earned certification in Washington, Hispanic candidates took 118 days longer on average to complete their certification than White candidates did. It took Hispanic candidates 1,018 days from the date of

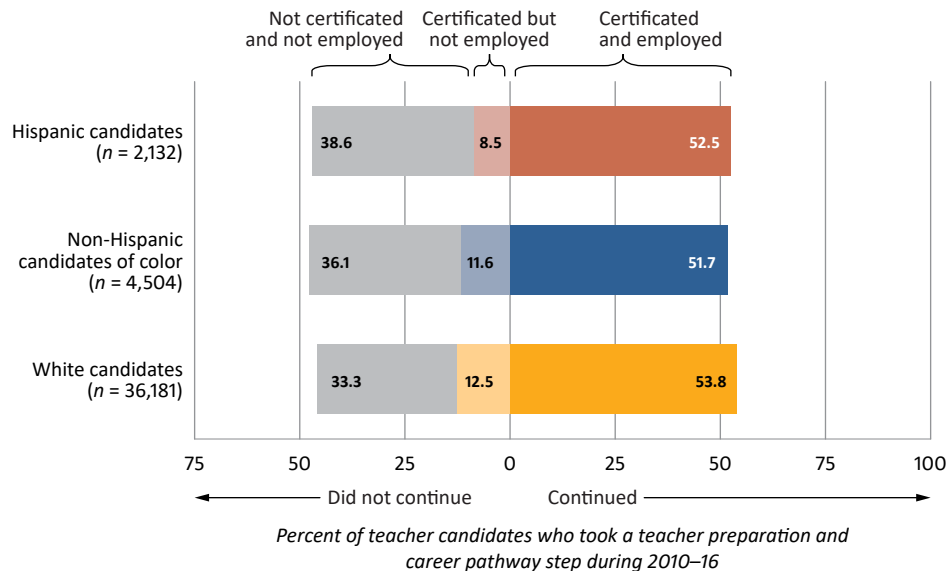
their first teacher preparation test to earn certification compared with 945 days for non-Hispanic candidates of color and 900 days for White candidates (see table B14 in appendix B).

Some of this difference can be attributed to dissimilar testing outcomes. Hispanic teacher candidates failed and retook the basic skills and content knowledge tests more frequently than other candidates did. This means that it took them longer to pass each test. On average, Hispanic candidates took 139 days from the date of their first attempt to pass the basic skills test compared with 75 days for non-Hispanic candidates of color and 30 days for White candidates (see table B7 in appendix B). Similarly, Hispanic candidates took more than twice as long as other candidates to pass a content knowledge test. On average, Hispanic candidates took 43 days to pass a content knowledge test, non-Hispanic candidates of color took 20 days, and White candidates took 9 days (see table B17).

Regardless of race/ethnicity, more than half of teacher candidates who took a teacher preparation and career pathway step during 2010–16 were ever employed as a certificated educator in a Washington K–12 public school by 2019/20

Among the 45,619 teacher candidates who took a teacher preparation and career pathway step during 2010–16, 65 percent earned certification in Washington (see table B15 in appendix B). Among certificated teachers 77 percent (50 percent of the population of teacher candidates attempting a pathway step) were ever employed in a certificated position in a Washington K–12 public school as of 2019/20. Overall, the attrition rate after certification was 23 percent; 6,917 certificated teachers were not employed as a certificated educator in a Washington K–12 public school. The differences between racial/ethnic groups in the percentage of candidates certificated and employed and in the percentage of candidates certificated but not employed were not meaningful (figure 7).

Figure 7. More than half of teacher candidates during 2010–16 were employed as a certificated educator in a Washington K–12 public school as of 2019/20



Note: This figure summarizes data from table B15 in appendix B. Percentages do not sum to 100 because of rounding and because candidates who were employed but not certificated (less than 1 percent of the sample) are not included in the figure. Data from 2,802 candidates for whom race/ethnicity information were missing are not included in the figure.

Source: Authors’ analysis based on Pearson Education, Washington E-Certification, and Washington S-275 personnel data for 2010–19.

More than 80 percent of teachers were retained as a certificated educator, and differences by race/ethnicity were not meaningful

To answer the third research question, the study team examined how many teachers were employed or employed and retained between 2010 and 2019 and how this varied by race/ethnicity.

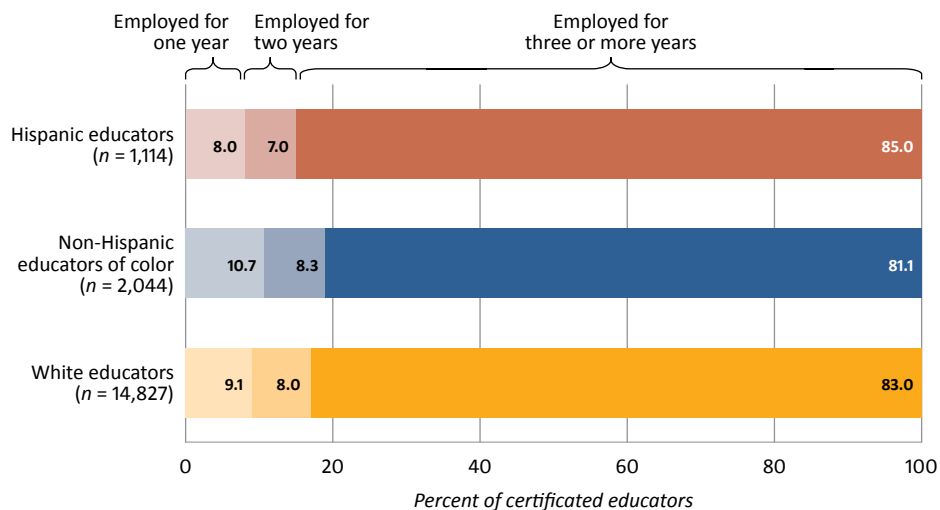
Among teacher candidates who had any pathway record in 2010–16 and were employed as a certificated educator in a Washington K–12 public school, the differences in retention rates (employment in a Washington public school for at least a second year) by race/ethnicity were less than 5 percentage points and thus not meaningful (figure 8; see also table B19 in appendix B). About 81–85 percent of all teachers were retained as a certificated educator for three or more years.

Teacher candidates who followed the sequence of preparation steps described in state policy might be less likely to become certificated and employed than those who did not

To examine the teacher pathway from preparation (research question 2) to career (research question 3), the study team identified a subsample of 26,163 teacher candidates who followed the sequence of teacher preparation and career pathway steps described in state policy (see figure A1 in appendix A) and whose first record along the pathway was during 2010–16. The performance assessment was excluded from the analysis because it was not required before 2014 and because candidates from out-of-state teacher preparation programs were not required to take it, and therefore many candidates did not take it.

Among the 26,163 teacher candidates in this sample, there were meaningful differences between non-Hispanic candidates of color and White candidates in certification, employment, and retention rates. Specifically, a lower percentage of non-Hispanic candidates of color (36 percent) than of White candidates (42 percent) were certified and employed (figure 9). The basic skills test appears to be the biggest barrier for candidates of color, with a higher percentage of Hispanic candidates and of non-Hispanic candidates of color than of White candidates failing to pass the test.

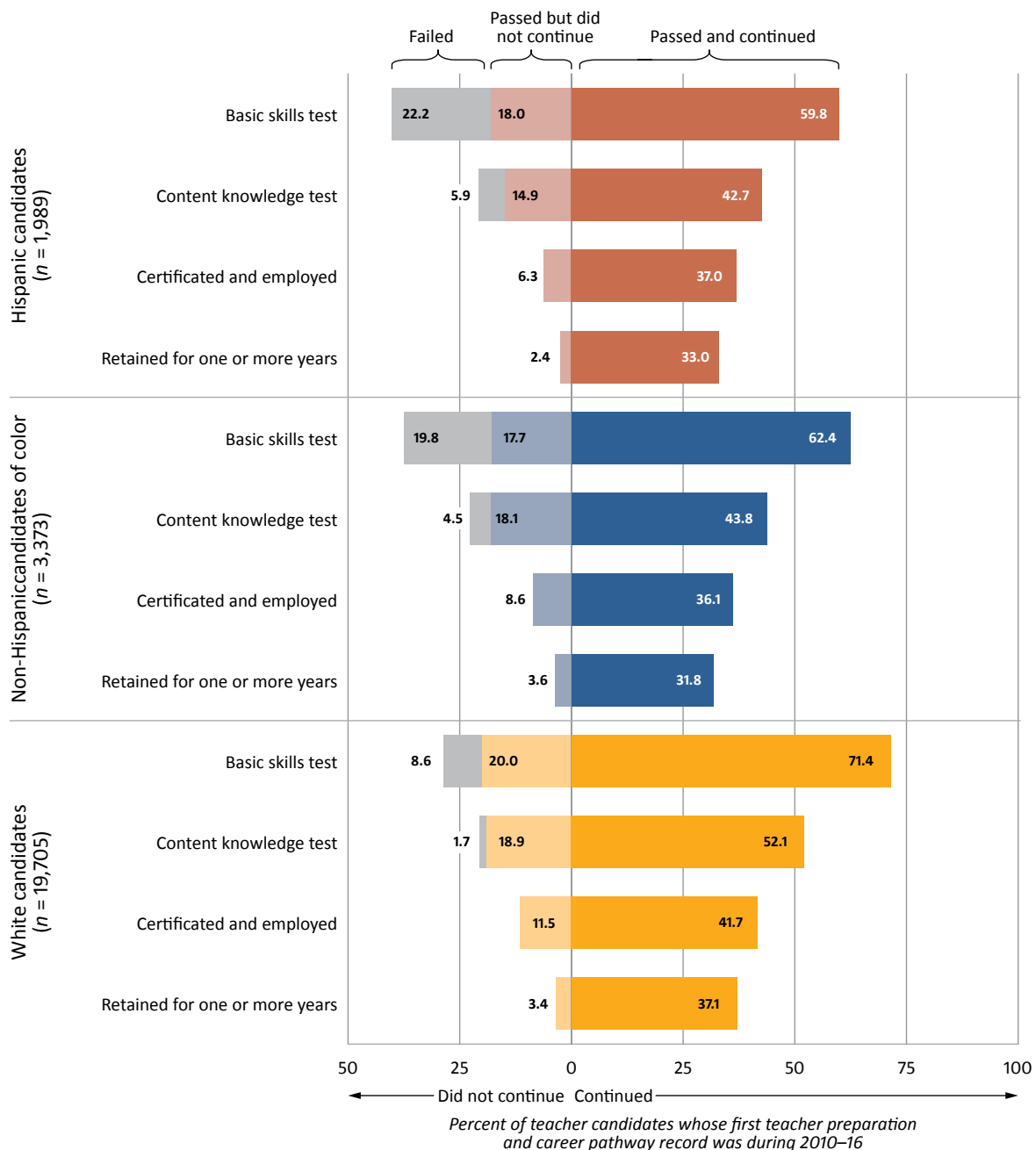
Figure 8. Among certificated educators who had any pathway record in 2010–16, differences by race/ethnicity in retention for two or more years were not meaningful, 2010–19



Note: This figure summarizes data from table B19 in appendix B.

Source: Authors’ analysis based on Pearson Education, Washington E-Certification, and Washington S-275 personnel data for 2010–19.

Figure 9. Regardless of race/ethnicity, about a third of teacher candidates who followed the teacher preparation and career pathway described in Washington state policy continued on the pathway to employment and retention, 2010–19



Note: This figure summarizes data from table B20 in appendix B. It includes teacher candidates whose first teacher preparation and career pathway record was during 2010–16 and followed either the pre-2014 or the 2014–19 Washington teacher preparation and career pathway described in state policy. Data from 1,906 candidates for whom race/ethnicity information were missing are not included in the figure.

Source: Authors’ analysis based on Pearson Education, Washington E-Certification, and Washington S-275 personnel data for 2010–19.

There was a large difference by race/ethnicity in the percentage of candidates who followed the sequence of teacher preparation and career pathway steps described in state policy and were certificated and employed and those who followed 1 of the 11 other sequences to become certificated and employed (see table B1 in appendix B). For example, 53 percent of all Hispanic candidates whose first record was during 2010–16 were certificated and employed as an educator in a Washington K–12 public school (see figure 7). In contrast, 37 percent of Hispanic candidates who followed the teacher preparation and career pathway described in state policy were certificated and employed (see figure 9).

There are many possible interpretations of this finding. For example, it could mean that the sequence of teacher preparation and career steps described in state policy is more difficult to follow than other sequences. Or it could indicate that there is something different about the characteristics of teacher candidates who follow the sequence described in state policy that makes them less likely to succeed than candidates who follow other sequences.

Implications

Washington state’s teaching workforce does not mirror the diversity of the students it serves. The study findings suggest four ways to increase the number of teachers of color in Washington state.

Policymakers could consider changing teacher preparation test requirements to reduce their disproportionate effect on teacher candidates of color, while monitoring and evaluating the impact of these changes

Having fewer teachers of color could affect the success of students of color in the state (Dee, 2004; Gershenson et al., 2017; Goldhaber et al., 2015; Villegas & Irvine, 2010), and the study findings suggest that two of Washington’s teacher preparation tests—the basic skills and content area tests—are barriers for teacher candidates of color. This finding is not unique to Washington: in 28 states Black and Hispanic candidates passed the Praxis I basic skills test at lower rates than White candidates did, even after undergraduate grade point average, institution selectivity, and parents’ education level were controlled for (Nettles et al., 2011).

Washington has changed testing requirements in response to the disparate passing rates. As of April 2019, teacher candidates are required to take the basic skills test but are not required to pass it (Washington Professional Educator Standards Board, 2019). Beginning in December 2020, the state established a case-by-case exception process for candidates who fail to pass the content knowledge test (Washington Professional Educator Standards Board, 2020). The state also no longer requires teacher candidates to take or pass the Washington performance assessment (2.S.H.B. 1028, Wash. 2021).

Evaluating the implications of these changes for teacher candidates, especially candidates of color, will be an important step for identifying other barriers. For example, evaluation might show whether changes to test requirements increase or decrease the percentage of candidates who leave the pathway. It would also be important to examine whether changing teacher preparation requirements has any effect on student success.

Teacher preparation programs could provide support to teacher candidates of color to pass teacher preparation tests

Teacher preparation programs could help teacher candidates of color pass teacher preparation tests by, for example, providing test preparation classes to build candidates’ knowledge and strengthen their beliefs about their capabilities (Petchauer, 2012, 2016). Teacher preparation programs could also use test results to identify and support candidates who might have gaps in their academic skills and provide a general education program to address areas of weakness (Bennett et al., 2006; Gitomer et al., 2011). The current study found larger differences in pass rates on the

basic skills writing subtest for Hispanic candidates and non-Hispanic candidates of color than for White candidates. Knowing this, teacher preparation programs might want to help candidates improve their writing skills.

Policymakers and teacher preparation program stakeholders might want to provide support to teacher candidates of color to remain on the teacher preparation and career pathway

Among all teacher candidates who took a teacher preparation and career pathway step during 2010–16, candidates of color entered the teaching profession at similar rates to White candidates (see figure 7). But teachers of color constitute a much lower proportion of the teaching profession than students of color constitute of the student body. Since a substantial proportion of candidates, regardless of race/ethnicity, leave the teacher preparation and career pathway after passing one of the tests, policymakers and teacher preparation programs might consider providing additional supports to candidates of color to continue on the pathway. Supports could include financial support and mentoring, as well as programs that encourage retention, such as grow-your-own teacher programs or teacher residency programs (Gist et al., 2019; Henry et al., 2012; Silva et al., 2014).

Policymakers and teacher preparation program stakeholders might want to partner with researchers to explore why teacher candidates of color do not continue on the teacher preparation and career pathway

To ease the teacher shortage crisis and retain more teacher candidates of color, it is important to understand why candidates of color leave the teacher preparation and career pathway. Very little of the substantial research on in-service teacher attrition in Washington and in the United States (for example, Plecki et al., 2017) explores why preservice teachers drop out of their programs. More research is needed to understand why teachers decide to leave the pathway, both before and after certification.

Why some teacher candidates leave the pathway after completing a step is unknown. They might have decided that they were no longer interested in a teaching career, perhaps finding a teaching position too difficult to secure or not rewarding enough. They might also have found another career, encountered financial challenges with certification, moved to another state to teach, or decided to teach in a private school. Overall, the study findings suggest that attrition prevents a large proportion of candidates, especially candidates of color, from reaching Washington classrooms.

Attrition needs to be examined, whether it occurs during the preparation pathway (as discussed here) or after hiring (Achinstein et al., 2010; Carver-Thomas, 2018; Ingersoll et al., 2017). One way to begin this research is to use university records and employment data to identify the other career pathways that teacher candidates follow after leaving the teacher preparation and career pathway. As states continue to develop longitudinal datasets, these questions will become more amenable to study. Surveys of current and former candidates conducted by teacher preparation programs might also provide useful information. Finally, states might consider identifying, through current teacher data systems, the state in which teachers were prepared or previously certificated to help track teachers from one state to another.

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REL 2021–094

June 2021

This report was prepared for the Institute of Education Sciences (IES) under Contract ED-IES-17-C-0009 by the Regional Educational Laboratory Northwest administered by Education Northwest. The content of the publication does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

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Greenberg Motamedi, J., Yoon, S. Y., & Hanson, H. (2021). *Pathways to teaching: Teacher diversity, testing, certification, and employment in Washington state* (REL 2021–094). U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northwest. <http://ies.ed.gov/ncee/edlabs>.

This report is available on the Regional Educational Laboratory website at <http://ies.ed.gov/ncee/edlabs>.