

# Access to Well-Credentialed, Effective, and Diverse Teachers in North Carolina's Largest Districts

## Summary

In this factsheet, the Education Policy Initiative at Carolina (EPIC) examines the distribution of well-credentialed, effective, and diverse teachers in Charlotte-Mecklenburg Schools (CMS), Wake County Schools, and the 10 other members of the North Carolina Large District Consortium. These analyses focus on students and teachers in core content area classes in traditional (non-charter) public schools in the 2018-19 school year. In particular, we assess differences in access to teachers based on students' race/ethnicity, economically disadvantaged (ED) status, and prior-year achievement. Please see the appendix for further details on our data and analyses.

Overall, there are three main takeaways from this work:

- Across every teacher measure considered, we find that students from historically marginalized populations have less access to well-credentialed and effective teachers. These differences in access are meaningful in size and show that teachers are distributed in ways that compound inequalities.
- A large majority of the variation in access to effective teachers is between schools—i.e. certain schools in CMS and Wake County have teachers who are more effective than other schools in the districts. This is exemplified by the substantial gaps in access to effective teachers between students from advantaged populations in low-poverty schools and students from historically marginalized populations in high-poverty schools.
- There are large mismatches between the demographics of K-12 students and the teacher workforce. White students frequently have White teachers; it is much less likely for students of color to have a same-race teacher.

These findings suggest that CMS and Wake County should prioritize efforts to strengthen teacher recruitment, teacher retention, and school working conditions, especially in high-priority schools and for teachers of color. Examples of such policies and practices include the following:

- Targeted recruitment and retention bonuses to attract and keep teachers in high-priority schools.
- The promotion of teacher leadership roles that allow highly effective instructors to teach more students, encourage those highly effective teachers to remain in high-priority schools, and promote the development of other teachers in the school.
- Expanded partnerships between districts and teacher preparation programs—especially those at minority serving institutions—to strengthen student teaching experiences, improve hiring processes, provide beginning teacher supports, and encourage those with classroom experience (e.g. paraprofessionals) to pursue certification and enter teaching.
- Initiatives to improve and diversify school leadership—e.g. identifying promising candidates, partnerships with school leadership preparation programs, high-quality assistant principal experiences, mentoring and supports for school principals.
- School assignment practices that reduce the concentration of students from historically marginalized populations in schools.

**Table 1: Characteristics of Students and Teachers in Core Content Classes**

<b>Student Characteristics</b>	<b>CMS</b>	<b>Wake County</b>	<b>Other Members of the NC Large District Consortium</b>
% White/Non-ED Students	24.23	41.19	31.89
% White/ED Students	2.88	4.31	10.78
% Black/Non-ED Students	15.64	8.89	8.57
% Black/ED Students	21.76	13.76	20.24
% Hispanic/Non-ED Students	13.14	6.57	7.58
% Hispanic/ED Students	12.40	11.66	11.90
% Asian/Non-ED Students	5.32	8.44	2.39
% Asian/ED Students	1.68	1.10	1.04
% American Indian/Non-ED Students	0.13	0.16	0.18
% American Indian/ED Students	0.09	0.09	0.26
% Multiracial/Non-ED Students	1.75	2.69	2.46
% Multiracial/ED Students	0.98	1.14	2.71
% High-Performing Students	18.11	23.15	14.71
% Middle-Performing Students	66.11	64.86	68.15
% Low-Performing Students	15.78	11.99	17.14
<b>Teacher Characteristics</b>			
% Female	84.04	84.35	83.21
% White	66.67	82.74	77.27
% Black	26.88	12.62	17.82
% Hispanic	4.08	2.75	3.11
% Asian	1.76	1.32	1.04
% American Indian	0.35	0.29	0.39
% First-Year Teacher	9.61	5.67	8.33
% Nationally Board Certified	11.27	14.35	8.29
Avg. Prior-Year NCEES Rating	3.60	3.83	3.71
Avg. Prior-Year EVAAS Estimates (Std.)	0.022	0.063	0.041

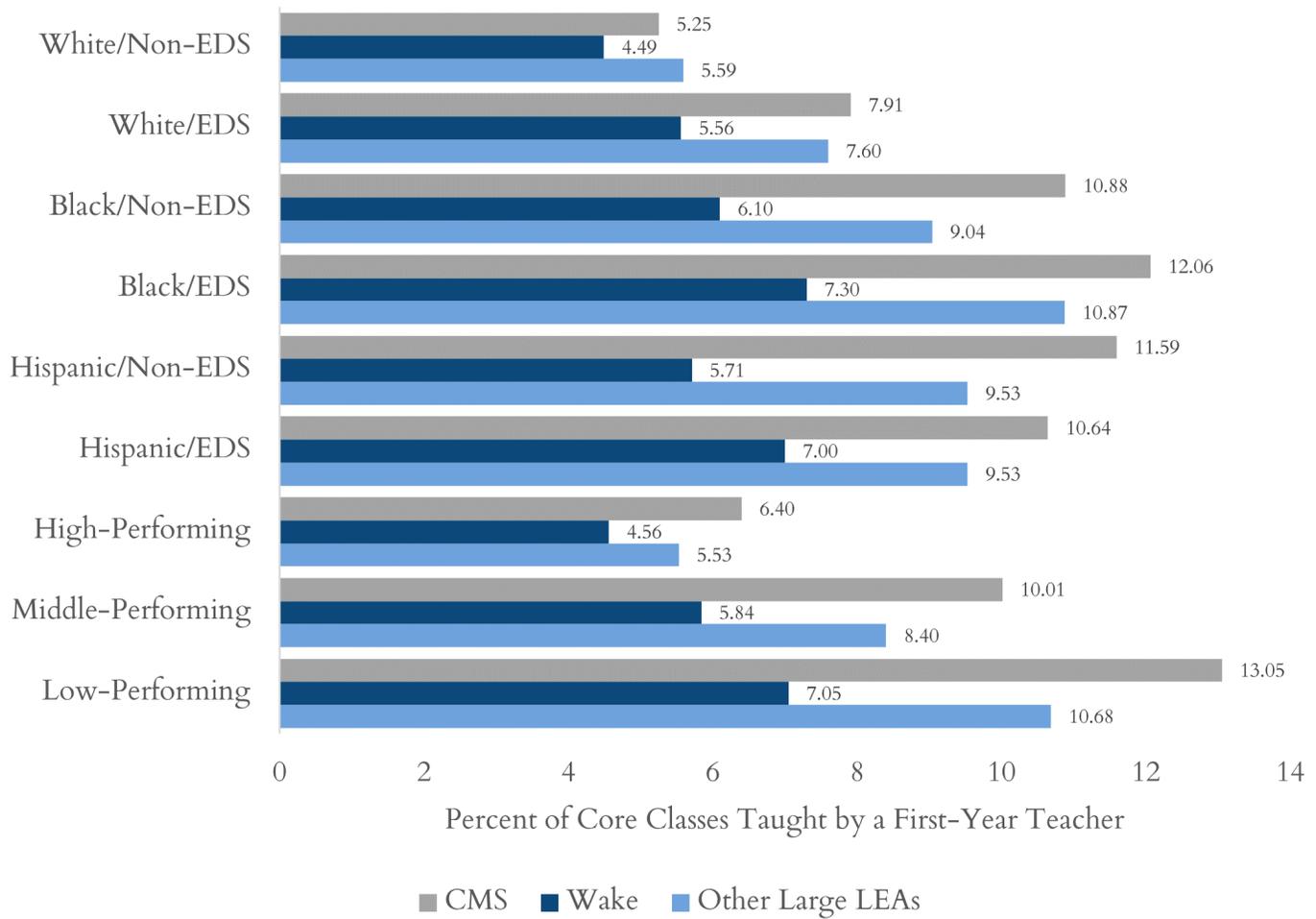
Note: This table displays characteristics of the students and teachers in CMS, Wake County, and the 10 other members of the NC Large District Consortium. These data are for students in core content classes and the teachers of those classes in 2018-19.

### **Charlotte-Mecklenburg Schools**

### **Wake County Schools**

- 24.23% of the students are White and non-ED. The next highest percentages are for Black ED students (21.76%), Black non-ED students (15.64%), and Hispanic non-ED students (13.14%).
- 18.11% of these students are high-performing; 15.78% are low-performing.
- 84.04% of the core content teachers are female, 66.67% are White, and 26.88% are Black. 9.61% are first-year teachers and 11.27% are NBC. Their average prior-year NCEES ratings are 3.60.
- 41.19% of the students are White and non-ED. The next highest percentages are for Black ED students (13.76%), Hispanic ED students (11.66%), and Asian non-ED students (8.44%).
- 23.15% of these students are high-performing; 11.99% are low-performing.
- 84.35% of the core content teachers are female, 82.74% are White, and 12.62% are Black. 5.67% are first-year teachers and 14.35% are NBC. Their average prior-year NCEES ratings are 3.83.

**Figure 1: Percentage of Core Content Classes Taught by a First-Year Teacher**



Note: This figure displays the percentage of students’ core content classes (in 2018-19) taught by a first-year teacher. Data are for CMS, Wake County, and the 10 other members of the NC Large District Consortium.

**Finding: Students from historically-marginalized populations have much higher rates of exposure to first-year teachers. This matters because, on average, first-year teachers are less effective, as measured by evaluation ratings and value-added, than their more experienced peers.**

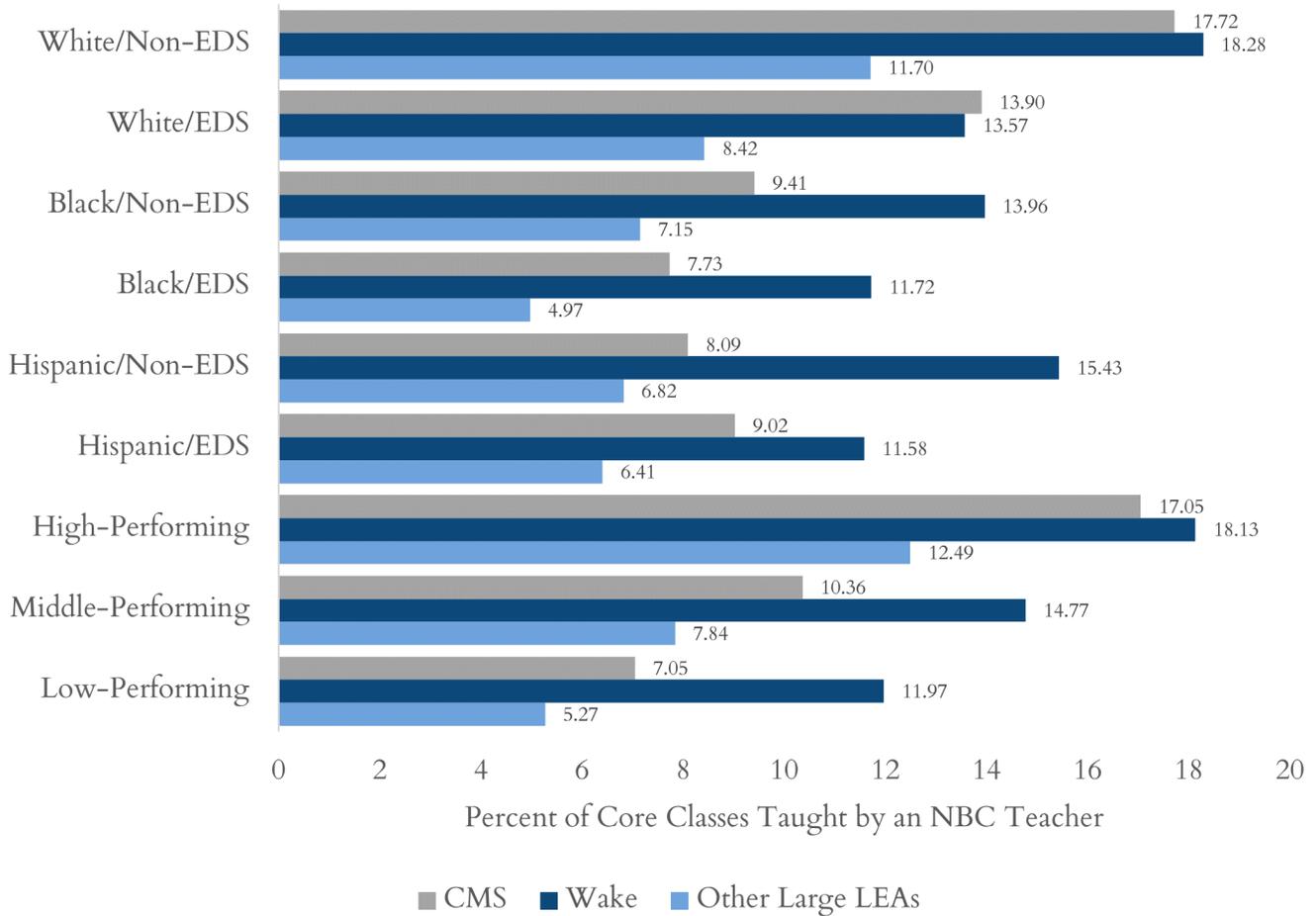
### Charlotte-Mecklenburg Schools

- 5.25% of the core classes for White non-ED students were taught by a first-year teacher. Rates of exposure were twice as high for Black ED students (12.06%) and Hispanic ED students (10.64%).
- 6.40% of the core classes for high-performing students were taught by a first-year teacher. Rates were twice as high for low-performing students (13.05%)

### Wake County Schools

- 4.49% of the core classes for White non-ED students were taught by a first-year teacher. Rates of exposure were 7.30% for Black ED students and 7.00% for Hispanic ED students.
- 4.56% of the core classes for high-performing students were taught by a first-year teacher. Rates of exposure were 7.05% for low-performing students.

**Figure 2: Percentage of Core Content Classes Taught by a Nationally Board-Certified Teacher**



Note: This figure displays the percentage of students' core content classes (in 2018-19) taught by an NBC teacher. Data are for CMS, Wake County, and the 10 other members of the NC Large District Consortium.

**Finding: Students from historically-marginalized populations have much lower rates of exposure to Nationally Board Certified teachers. This matters because, on average, NBC teachers are more effective, as measured by evaluation ratings and value-added, than peers without the credential.**

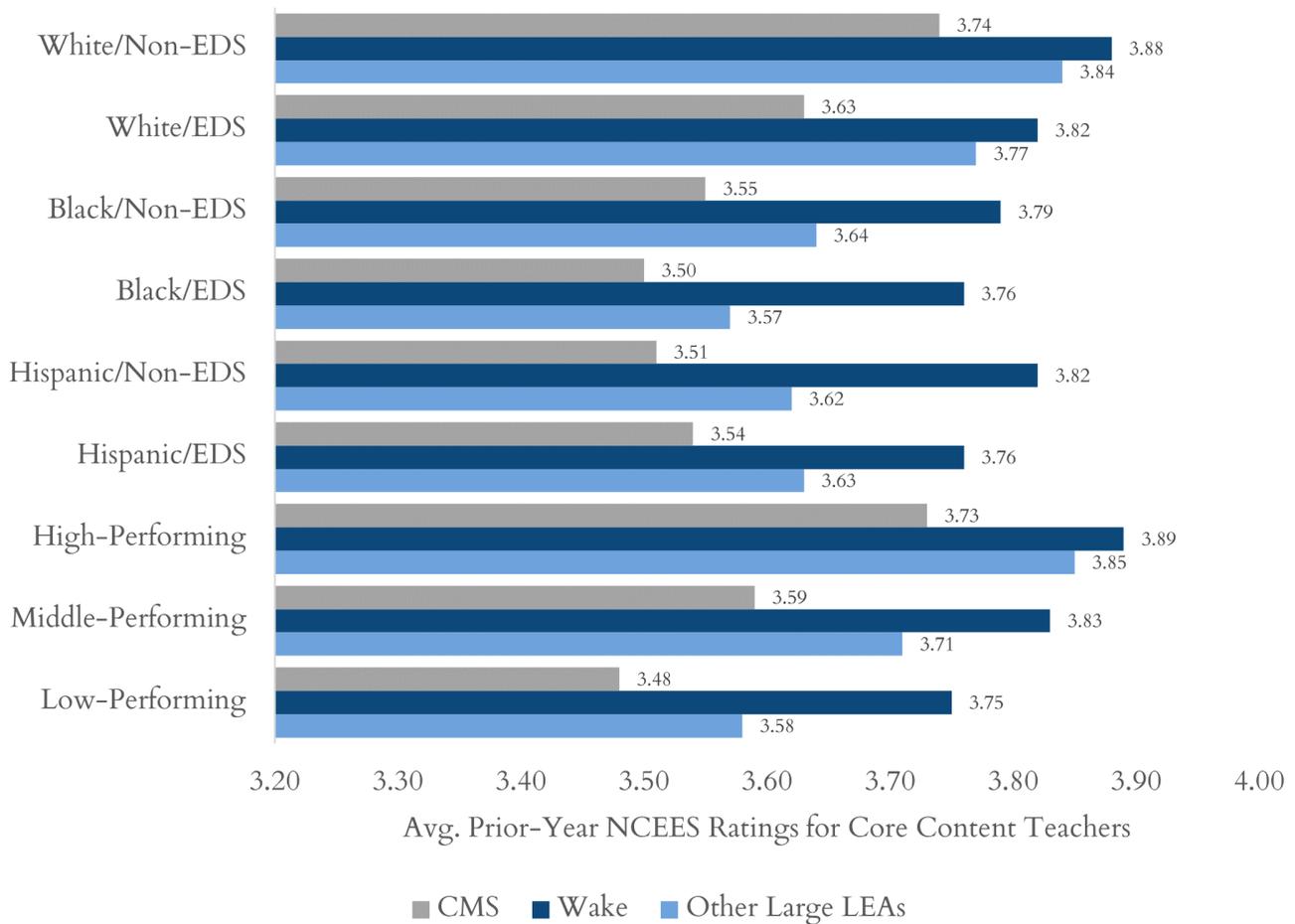
**Charlotte-Mecklenburg Schools**

**Wake County Schools**

- 17.72% of the core classes for White non-ED students were taught by an NBC teacher. Rates of exposure to NBC teachers were 7.73% for Black ED students and 9.02% for Hispanic ED students.
- 17.05% of the core classes for high-performing students were taught by an NBC teacher. Rates of exposure to NBC teachers were less than half for low-performing students (7.05%).

- 18.28% of the core classes for White non-ED students were taught by an NBC teacher. Rates of exposure to NBC teachers were 11.72% for Black ED students and 11.58% for Hispanic ED students.
- 18.13% of the core classes for high-performing students were taught by an NBC teacher. Rates of exposure were 11.97% for low-performing students.

**Figure 3: Average Prior-Year NCEES Ratings for Core Content Teachers**



Note: This figure displays the average prior-year NCEES ratings of students' core content teachers in 2018-19. Data are for CMS, Wake County, and the 10 other members of the NC Large District Consortium.

**Finding: Students from historically-marginalized populations have teachers with lower prior-year NCEES ratings. This matters because evaluation ratings measure teaching skill and are related to other outcomes, including teacher value-added.**

### Charlotte-Mecklenburg Schools

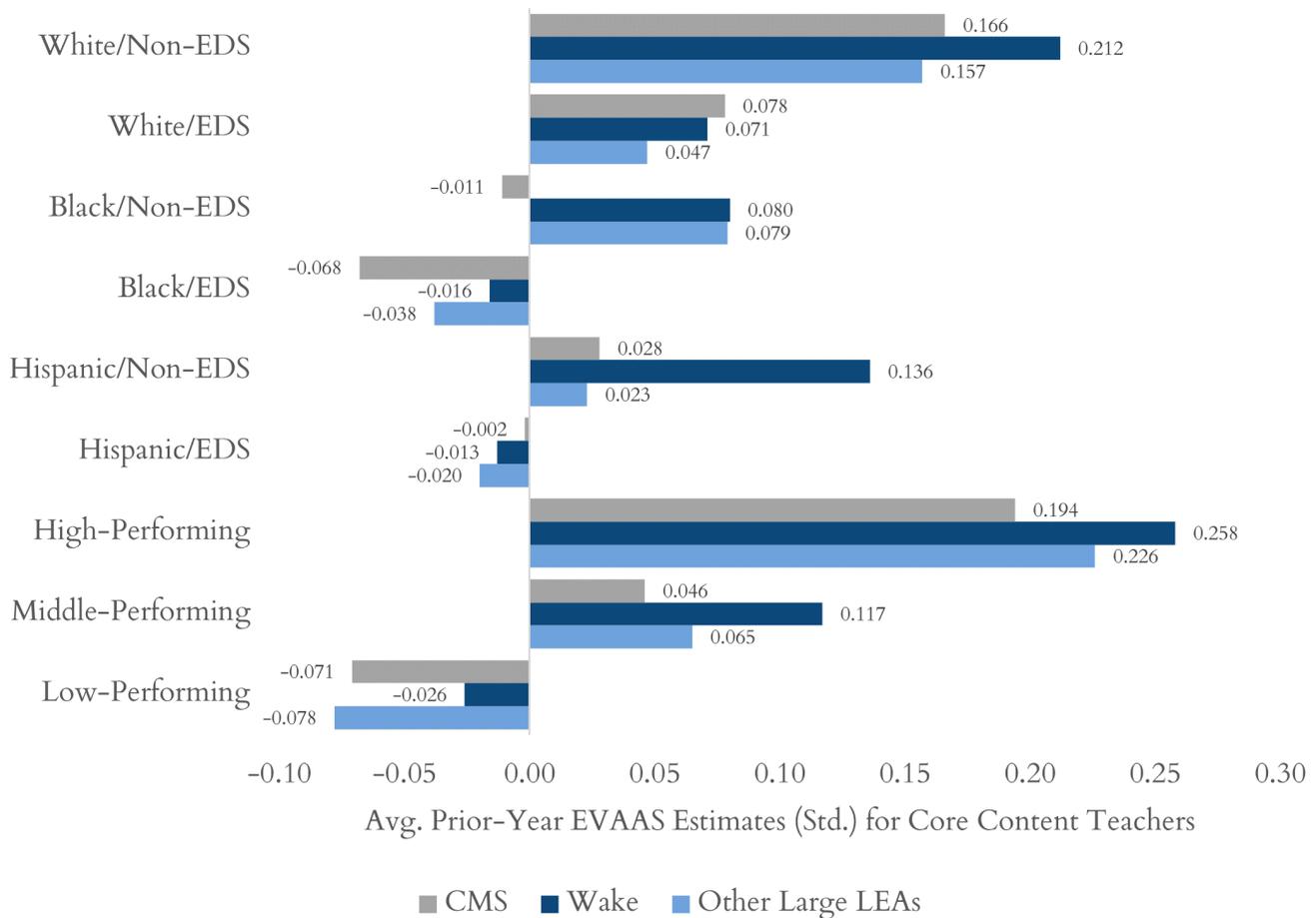
- There was a gap of 0.20-0.24 points in the average prior-year NCEES ratings of those teaching White non-ED students (3.74) versus those teaching Black ED students (3.50) and those teaching Hispanic ED students (3.54).
- There was a gap of 0.25 points in the average prior-year NCEES ratings of those teaching high-performing students (3.73) versus those teaching low-performing students (3.48).

### Wake County Schools

- There was a gap of 0.12 points in the average prior-year NCEES ratings of those teaching White non-ED students (3.88) versus those teaching Black ED students (3.76) and Hispanic ED students (3.76).
- There was a gap of 0.14 points in the average prior-year NCEES ratings of those teaching high-performing students (3.89) versus those teaching low-performing students (3.75).

To make these gaps more meaningful, we note that the average difference in NCEES ratings between first and second-year teachers is approximately 0.21 points.

**Figure 4: Average Prior-Year EVAAS Estimates (Standardized) for Core Content Teachers**



Note: This figure displays the average prior-year EVAAS estimates (standardized) of students' core content teachers in 2018-19. Data are for CMS, Wake County, and the 10 other members of the NC Large District Consortium.

**Finding: Students from historically-marginalized populations have teachers with lower prior-year EVAAS estimates. This matters because teachers' prior performance is a strong predictor of their current performance and because value-added predicts short and longer-term student outcomes.**

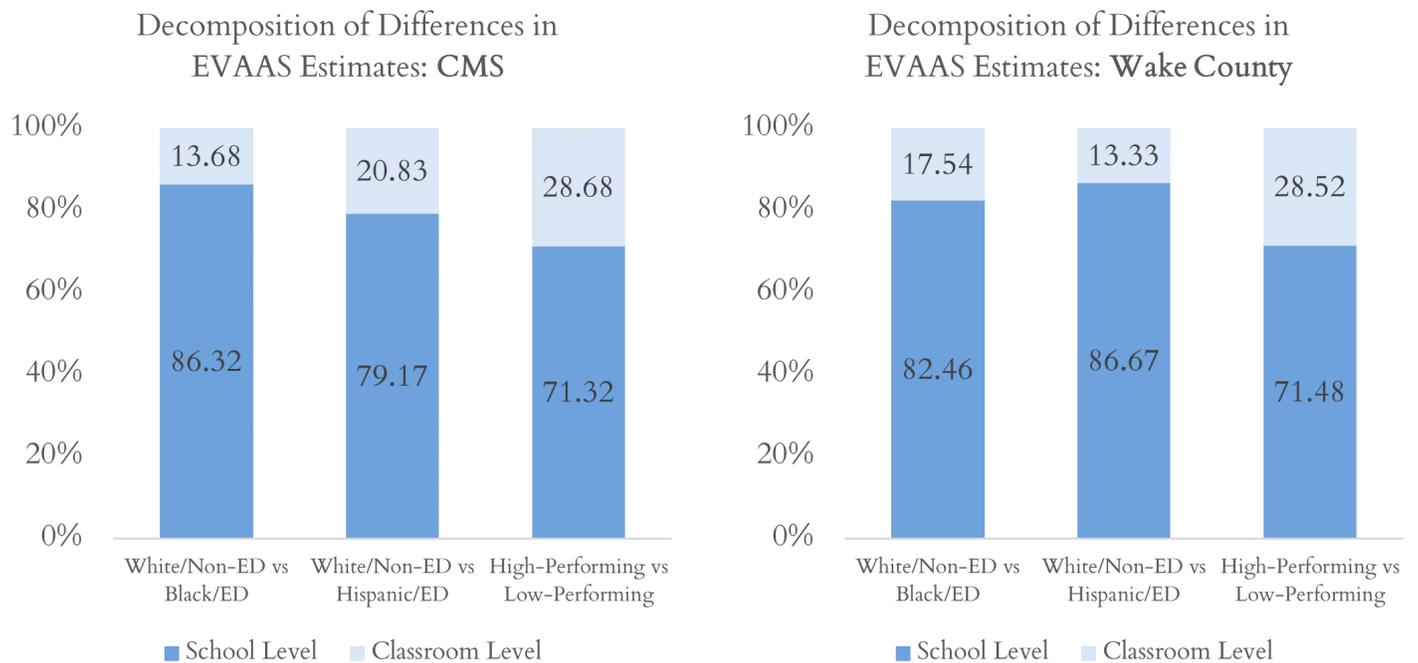
### Charlotte-Mecklenburg Schools

### Wake County Schools

- There was a gap of approximately 17% to 23% of a standard deviation in the average prior-year EVAAS estimates of those teaching White non-ED students (0.166) versus those teaching Black ED students (-0.068) and those teaching Hispanic ED students (-0.002).
- There was a gap of 27% of a standard deviation in the average prior-year EVAAS estimates of those teaching high-performing students (0.194) versus those teaching low-performing students (-0.071).
- There was a gap of approximately 23% of a standard deviation in the average prior-year EVAAS estimates of those teaching White non-ED students (0.212) versus those teaching Black ED students (-0.016) and those teaching Hispanic ED students (-0.013).
- There was a gap of 28% of a standard deviation in the average prior-year EVAAS estimates of those teaching high-performing students (0.258) and those teaching low-performing students (-0.026).

To make these gaps more meaningful, we note that the average difference in EVAAS estimates between first and second-year teachers is approximately 17 percent of a standard deviation.

**Figure 5: Decomposing Differences in Access to Effective Teachers in CMS and Wake County**



Note: Students in CMS and Wake County may have inequitable access to effective teachers due to variation in access across schools (School Level) and variation in access within schools (Classroom Level). This figure displays the decomposition of these school and classroom level effects for teachers’ prior-year EVAAS estimates. We decompose differences in access for (1) White/Non-ED students vs. Black/ED students; (2) White/Non-ED students vs. Hispanic/ED students; and (3) High-Performing students vs Low-Performing students.

**Finding: In CMS and Wake County a large majority of the variation in access to effective teachers is between schools—i.e. certain district schools have teachers who are more effective. This matters because it helps direct district officials towards policy and practice solutions.**

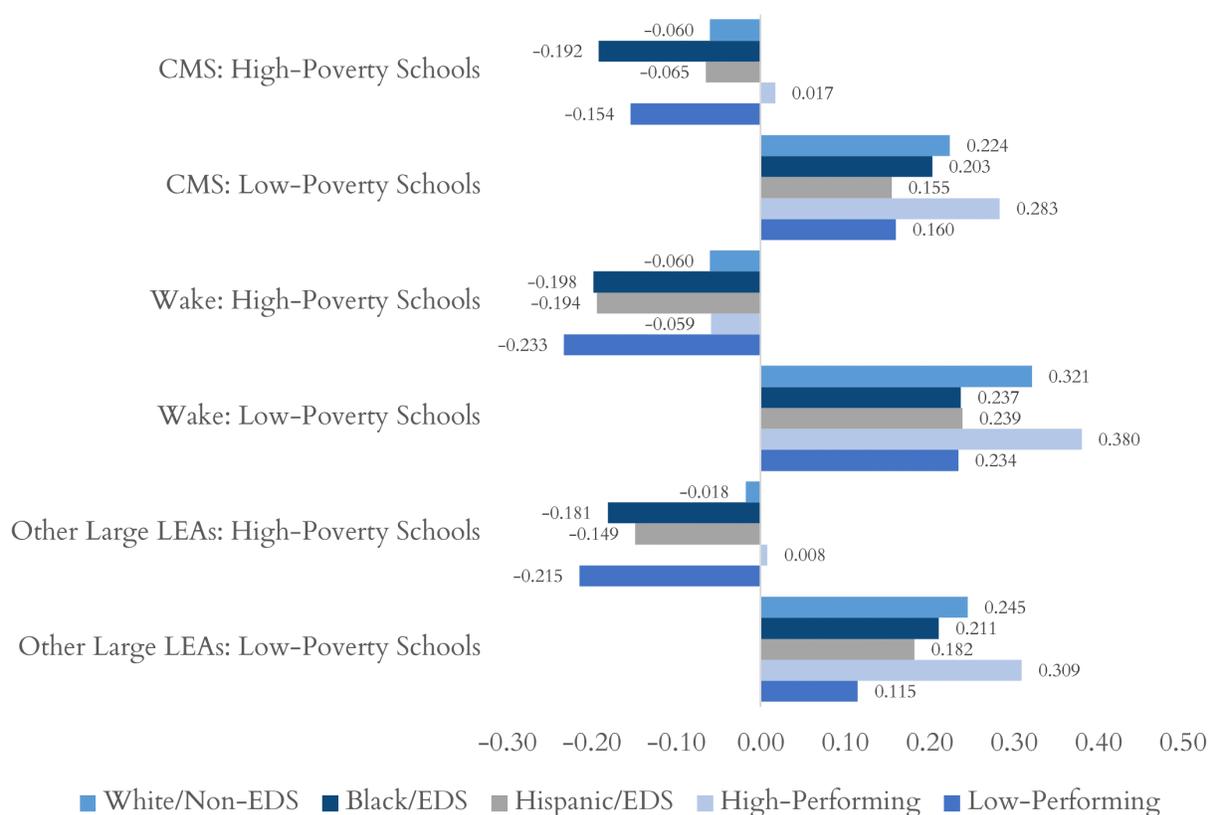
### Charlotte-Mecklenburg Schools

- Between school differences accounted for 86%, 79%, and 71%, respectively, of the gaps in the prior-year EVAAS estimates of those teaching (1) White/Non-ED students vs Black/ED students; (2) White/Non-ED students vs Hispanic/ED students; and (3) high-performing vs low-performing students.
- Within-school differences accounted for 14%, 21%, and 29%, respectively, of the gaps in prior-year EVAAS estimates for teachers of these same student groups.

### Wake County Schools

- Between school differences accounted for 82%, 87%, and 71%, respectively, of the gaps in the prior-year EVAAS estimates of those teaching (1) White/Non-ED students vs Black/ED students; (2) White/Non-ED students vs Hispanic/ED students; and (3) high-performing vs low-performing students.
- Within-school differences accounted for 18%, 13%, and 29%, respectively, of the gaps in prior-year EVAAS estimates for teachers of these same student groups.

**Figure 6: Differences in Access to Effective Teachers Between High and Low-Poverty Schools**



Note: This figure displays the average prior-year EVAAS estimates (Std.) for students’ core content teachers in high and low poverty schools. Data are for CMS, Wake County, and the 10 other members of the NC Large District Consortium.

**Finding: When comparing high versus low-poverty schools, there are large differences in access to effective teachers among comparable students (e.g. Black ED students). There are also large differences in access between students from advantaged populations in low-poverty schools and students from historically marginalized populations in high-poverty schools. This matters because it highlights the role of school characteristics in access to effective teachers.**

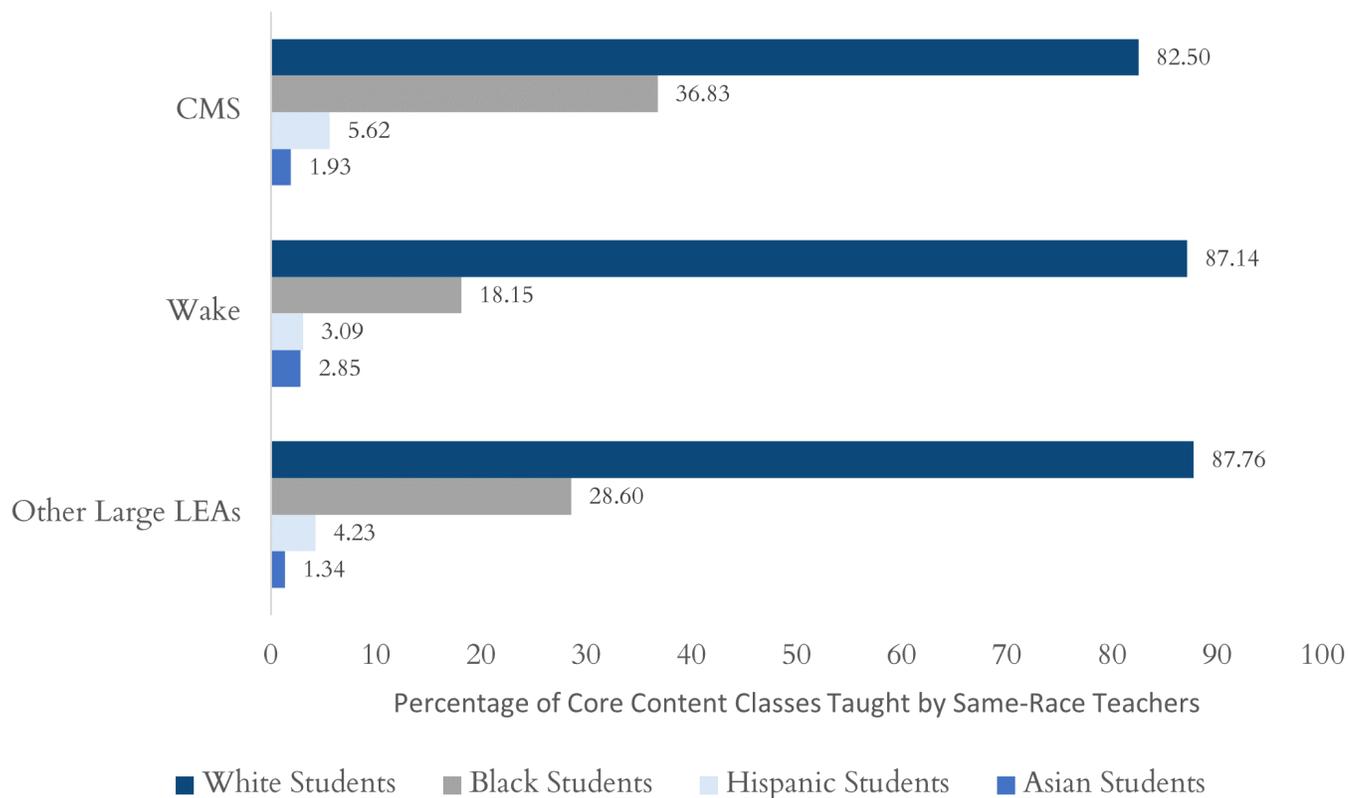
### Charlotte-Mecklenburg Schools

- Within-group difference: There was a gap of 40% of a standard deviation in the average prior-year EVAAS estimates of those teaching Black ED students in high-poverty schools (-0.192) versus those teaching Black ED students in low-poverty schools (0.203).
- Between-group difference: There was a gap of 44% of a standard deviation in the average prior-year EVAAS estimates of those teaching low-performing students in high-poverty schools (-0.154) versus those teaching high-performing students in low-poverty schools (0.283).

### Wake County Schools

- Within-group difference: There was a gap of 43% of a standard deviation in the average prior-year EVAAS estimates of those teaching Hispanic ED students in high-poverty schools (-0.194) versus those teaching Hispanic ED students in low-poverty schools (0.239).
- Between-group difference: There was a gap of 52% of a standard deviation in the average prior-year EVAAS estimates of those teaching Black ED students in high-poverty schools (-0.198) versus those teaching White non-ED students in low-poverty schools (0.321).

**Figure 7: Percentage of Core Content Classes Taught by a Same-Race Teacher**



Note: This figure displays the percentage of students’ core content classes taught by a same-race teacher. Data are for CMS, Wake County, and the 10 other members of the NC Large District Consortium.

**Finding:** There are large mismatches between the demographics of K-12 students and the teacher workforce. White students frequently have same race teachers; students of color are much less likely to have a same-race teacher. This matters because students of color benefit—i.e. fewer disciplinary incidents, improved academic perceptions, higher test scores—from having a same-race teacher.

### Charlotte-Mecklenburg Schools

- 82.50% of the core content classes for White students were taught by same-race teachers. Rates of exposure to same-race teachers were 36.83% for Black students and 5.62% for Hispanic students.

### Wake County Schools

- 87.14% of the core content classes for White students were taught by same-race teachers. Rates of exposure to same-race teachers were 18.15% for Black students and 3.09% for Hispanic students.

## Appendix

In this factsheet we examine the distribution of well-credentialed, effective, and diverse teachers in CMS, Wake County, and the 10 other members of the North Carolina Large District Consortium. Our work is unique in its comprehensiveness, as we examine students in all grade levels (K-12), consider multiple indicators of student marginalization, and assess a range of teacher credential, performance, and demographic measures.

We focus on students and their teachers in core content area classes—i.e., English/reading, math, science, and social studies—in traditional (non-charter) public schools in the 2018-19 school year. Using classroom roster data from the North Carolina Department of Public Instruction (NCDPI), we keep observations for all core content classes taken by a student and connect student and teacher characteristics to these course taking data.

We are interested in differences in access to teachers based on students' race/ethnicity and economic status. In particular, we present data on access to teachers for the following student groups: (1) White non-economically disadvantaged (ED) students; (2) White ED students; (3) Black non-ED students; (4) Black ED students; (5) Hispanic non-ED students; and (6) Hispanic ED students. We are also interested in access to teachers based on students' prior-year (2017-18) test performance. As such, we present data on access to teachers for high-performing, middle-performing, and low-performing students.<sup>1</sup>

In assessing the distribution of students to teachers, we focus on two teacher credential measures (being a first-year teacher and possessing National Board Certification (NBC)), two measures of prior teacher performance (average prior-year NCEES ratings and average prior-year EVAAS estimates), and matches between the race/ethnicity of students and teachers. We examine the distribution of first-year teachers and NBC teachers since prior work shows these credentials predict teacher effectiveness. We examine the distribution of teacher race/ethnicity since prior work shows that students rate teachers of color higher than White teachers and that students of color benefit from being taught by a same-race teacher.

Teachers in CMS and Wake County may be inequitably distributed because certain schools have better-credentialed or more effective teachers and because certain classes have better credentialed or more effective teachers. To better understand these mechanisms, we decomposed the total difference in access to effective teachers into two parts—the percent of the total difference due to within district variation and the percent of the total difference due to within school variation. We decompose the differences in access to effective teachers for White non-ED students versus Black ED students, White non-ED students versus Hispanic ED students, and high-performing versus low-performing students.

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<sup>1</sup>High-performing students have prior standardized test scores more than one standard deviation above the mean; low-performing students have prior standardized test scores more than one standard deviation below the mean.

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