



POLICY BRIEF

Trends in Michigan's K-12 Public School Teaching Workforce

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OVERVIEW

Over the past decade, the number of prospective candidates entering into the teaching profession has decreased substantially. These declines are particularly pronounced in Michigan, where enrollment in postsecondary teacher preparation programs in 2018-19 was 56% lower than in 2008-09, compared to a 22% nationwide decrease over the same time period.¹

There are concerns that the supply of teachers may not only be becoming smaller, but also changing qualitatively. Disproportionate losses of teachers specializing in hard-to-staff subjects, teachers of color, and teachers working in disadvantaged areas could exacerbate existing shortages and have broad implications for student well-being. In addition to concerns about diversity and representation in the profession, less exposure to teachers of color may negatively affect student achievement, especially for students of color.²

This policy brief examines changes in Michigan's K-12 public school teaching workforce, particularly for teachers and students of color and in traditionally hard-to-staff areas. Using data on the composition of the teacher workforce in Michigan over the past decade, we assess overall changes in the quantity of teachers actively employed in the state relative to enrollment declines in the state's K-12 student population and trends in teacher mobility and attrition. We then look deeper into issues of representation in the teacher labor force, focusing on differences in the populations of teachers employed in districts with varying proportions of Black, Latinx, and economically disadvantaged students, as well as in urban, relative to suburban, and rural areas.

We find that:

- The number of Michigan K-12 teachers is diminishing, but at slower rates than enrollment declines.
- Teacher attrition is increasing over time and is substantially higher in districts with the greatest proportions of economically disadvantaged and Black students.
- Urban districts and districts with the greatest proportions of economically disadvantaged and Black students have more novice teachers.
- Although the overall teacher labor force in Michigan is growing more diverse, these changes are occurring mostly in districts with the greatest shares of Black students.

DATA AND METHODS

Our analysis relies primarily on administrative records about Michigan educators from two state databases, the Registry of Educational Personnel (REP) and the Michigan Online Educator Certification System (MOECS), from the 2010-11 through 2020-21 school years. Employment and assignment data from the REP allow us to identify all individuals who were actively employed in teaching positions each year, early career teachers, and teachers who transferred to a new school or district or left the profession. Licensure data from MOECS allow us to identify teachers with elementary certificates and those with endorsements in traditionally hard-to-staff subject areas. We combine this information with publicly available district-level characteristics from [MISchoolData.org](https://mischooldata.org) to examine differences in trends across teachers from different types of districts.

There are several limitations to the data we are able to bring to bear on this question that constrain our ability to completely assess concerns about teacher labor shortages in Michigan. First, limited data are available in the state about the preponderance of short- or long-term substitutes, or about the number of vacancies schools and districts are trying to fill. This means that we cannot adequately assess Michigan school districts' demand for teachers overall, and in particular the demand for teachers of specific types that are more likely to be in short supply (e.g., secondary math and science teachers, special education teachers, and teachers willing to teach in rural or urban centers). Rather, we can paint a picture of teacher supply in Michigan. We know how many teachers are actively employed in the state and across different kinds of districts, and certain characteristics about these teachers such as their race and ethnicity and endorsement type.

We note at the outset that some of the descriptive statistics we present in this brief differ slightly from those in publicly available reports from state agencies due to slight differences in the definitions and business rules used in our calculations. For instance, we only include classroom teachers in our analysis and use a combination of teachers' self-reported demographics from MOECS and district-reported demographics from the REP, while the staffing headcount report from MISchoolData includes a broader range of personnel in the "teachers" summary group and uses district-reported race/ethnicity data from the REP.

FINDINGS

1. The Number of Michigan K-12 Teachers is Diminishing, but at Slower Rates Than Enrollment Declines

Figure 1 shows the total number of teachers who were actively employed in Michigan K-12 traditional public or charter schools each year between 2010-11 and 2020-21. We measure the size of the teacher labor force in the fall at the beginning of each academic year. At the start of the decade, nearly 82,500 teachers were employed by the Michigan education system. After a 4.4% increase in total employment for the 2011-12 academic year, the Michigan teacher workforce contracted between 0.8% and 1.9% in each of the next five years (from 86,086 to 80,910 teachers). The total number of teachers increased slightly — by less than 0.3% — in both 2017-18 and 2018-19. This was followed by a small decline of 0.1% in 2019-20. **Overall, the total number of Michigan teachers has decreased by 1.5% between 2010-11 and 2019-20.**

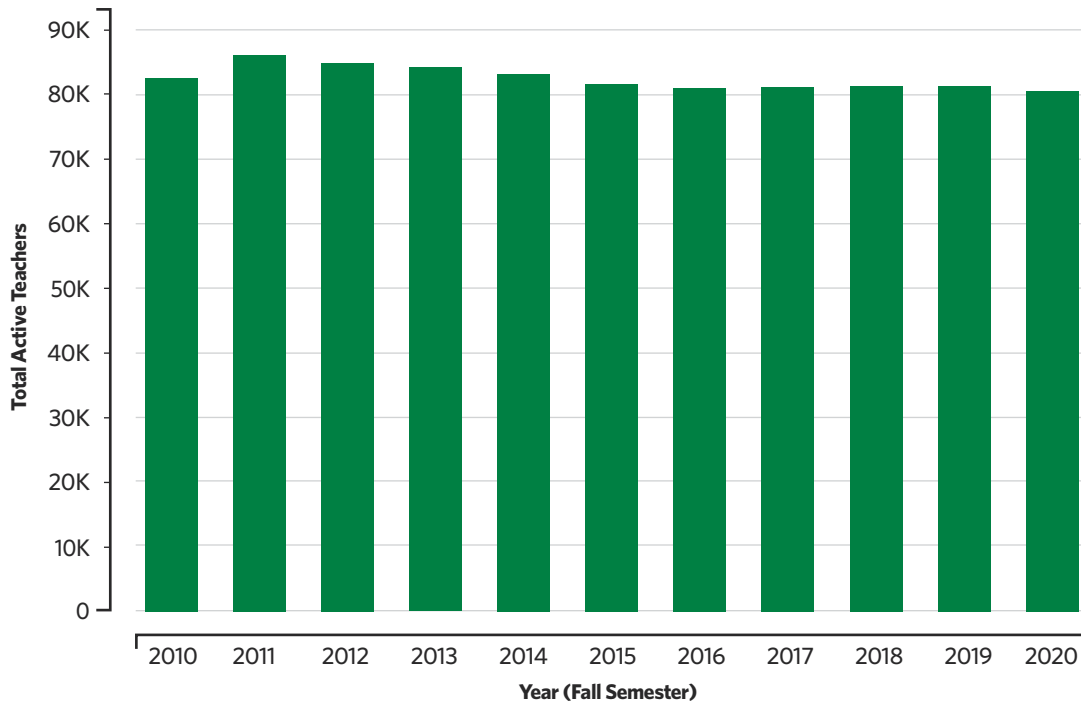
After the pandemic took hold at the end of the 2019-20 school year, 721 fewer teachers were working in Michigan classrooms in fall 2020, **a 0.9% drop in the total number of active teachers and the third largest decrease to the teacher workforce over the past decade.** As of fall 2020, the state employs slightly more than 80,500 active teachers.

Although not shown here, over the past decade, elementary, science/math, and special education teachers³ in Michigan have all experienced greater decreases in representation compared to the overall trend in total employment. However, the decrease in special education teachers was far more drastic compared to the other two types. Between 2010-11 and 2020-21, the total number of actively employed elementary teachers and teachers with science or math endorsements have diminished by 6.7% and 5.7%, respectively (a decrease of 3,366 and 1,493 teachers for each group). The decrease in special education teachers was nearly twice as great over the same period; **the number of teachers with endorsements in special education has diminished by 12.4%** (from 13,693 to 11,997 total teachers).

It is important to understand the decrease in the size of the teacher workforce in the context of declining student enrollments across the state. In the fall of 2010, nearly 1.57 million K-12 students were enrolled in the Michigan public education system. **Between 2010-11 and 2019-20, student enrollment decreased by 0.3% to 1.7% each year, for an overall decrease of 7.7% over the decade.** By the fall of 2019, Michigan enrolled approximately 1.45 million K-12 students.

Between 2019-20 and 2020-21, student enrollment decreased an additional 3.3%, the largest decline seen in over a decade. This past year of enrollment decline is likely due to the COVID-19 pandemic.

FIGURE 1. Actively Employed K-12 Teachers by Year, Fall 2010 to Fall 2020



Notes: Employment status and assignment types are from the Registry of Educational Personnel (REP) fall collection.

2. Teacher Attrition is Increasing Over Time and is Substantially Higher in Districts With the Greatest Proportions of Economically Disadvantaged and Black Students

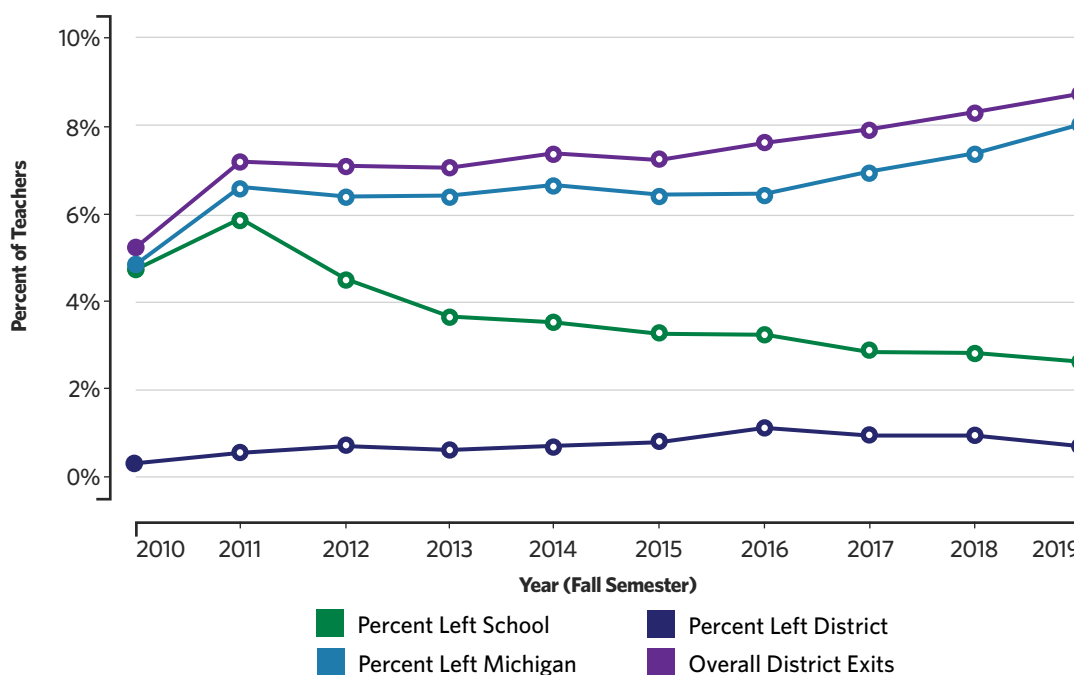
Figure 2 depicts the percentage of K-12 teachers that switched schools within their districts, exited their districts for another Michigan school district, and left the Michigan teaching profession entirely at the end of each school year between 2010-11 and 2019-20.⁴ **Over the past decade, the proportion of teachers leaving their districts — either for another Michigan school district or from public school teaching in the state — increased by approximately four percentage points, from 5.2% in 2010-11 to 8.7% in 2019-20.**

The proportion of teachers leaving their districts increased from 5.2% in 2010-11 to 8.7% in 2019-20.

After the 2010-11 academic year, 4.7% of teachers switched schools (3,914 teachers), fewer than 1% switched districts within Michigan (284 teachers), and 4.9% left the public school system entirely (4,018 teachers). Our measure of overall district exits captures the combined proportions of teachers that switched districts or exited the public school

teacher workforce in Michigan entirely; just over 5.2% of teachers did so at the end of the 2010-11 school year.

FIGURE 2. Teacher Mobility and Attrition by Year, Fall 2010 to Fall 2019

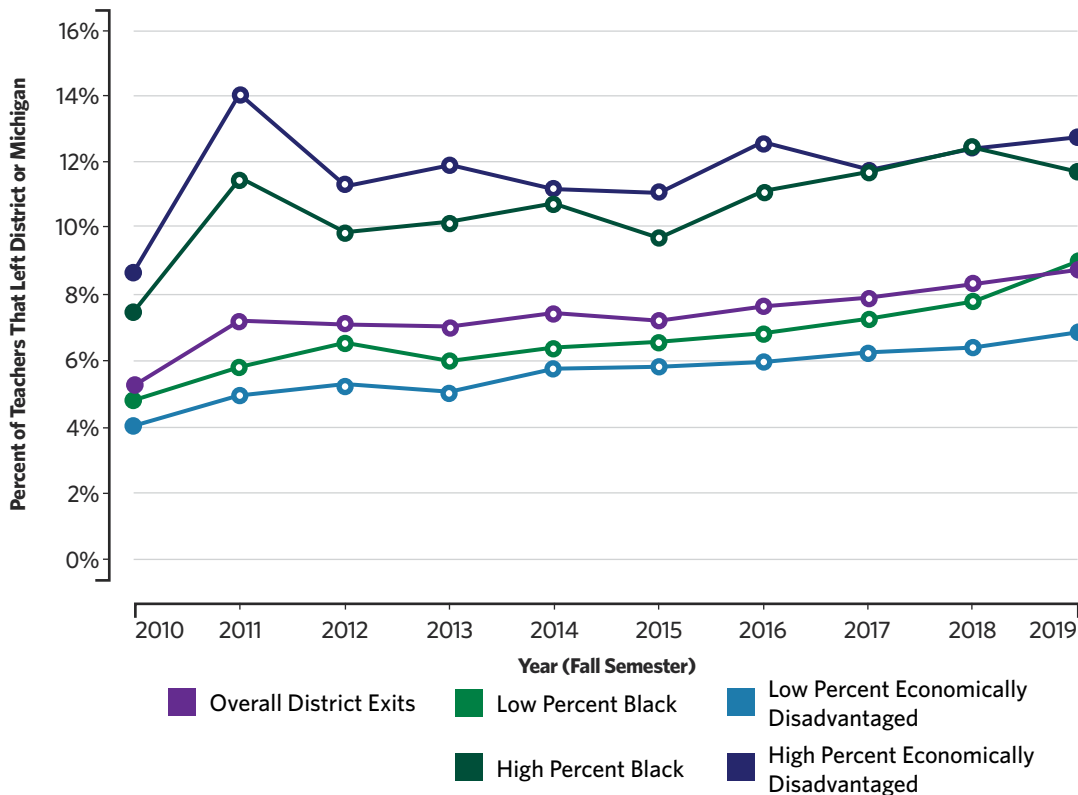


Notes: Employment status and assignment types come from the Registry of Educational Personnel (REP) fall collection.

The proportion of teachers that left the profession increased to 6.6% in 2011-12, likely due to a 2010 change to the Public School Employees Retirement Act that incentivized early retirement. Approximately 5.9% of teachers switched schools in that same year, likely to replace those who retired. Between 2011-12 and 2019-20, the percentage of teachers switching schools each year decreased from 5.9% to 2.6% (decreasing from 5,096 to 2,128 teachers), whereas the proportion of teachers that switched districts held steady over this time period at around 0.6% to 1.1% (increasing from 507 to 554 teachers) a year. The proportion of teachers that left the profession increased from 6.6% to 8.1% (5,685 to 6,547 teachers) between 2011-10 and 2019-20.

Figure 3 shows how the percentage of teachers that switched districts or left the Michigan teaching profession between 2010-11 and 2019-20 varies across districts with different student populations. More teachers working in districts with the greatest proportions of economically disadvantaged or Black students either switched districts or left the Michigan school system each year between 2010-11 and 2019-20. Further, the effects of the 2010 change to the Public School Employees Retirement Act are only visible for teachers working in districts with the highest proportions of economically disadvantaged and Black students; in these districts in 2011-12, the percentage of teachers switching districts or leaving the profession increased from 8.7% to 14.1% (high economically disadvantaged districts) and from 7.5% to 11.5% (high Black districts). By 2019-20, overall exit rates reached 12.7% in districts with the greatest proportion of economically disadvantaged students and 11.7% in districts with the greatest proportion of Black students. This represents a 47.0% and 56.4% increase in teacher attrition for teachers in districts with the greatest proportions of economically disadvantaged and Black students across this period, respectively.

FIGURE 3. Teacher Exits (District and State) by Black and Economically Disadvantaged Student Populations and Year, Fall 2010 to Fall 2019

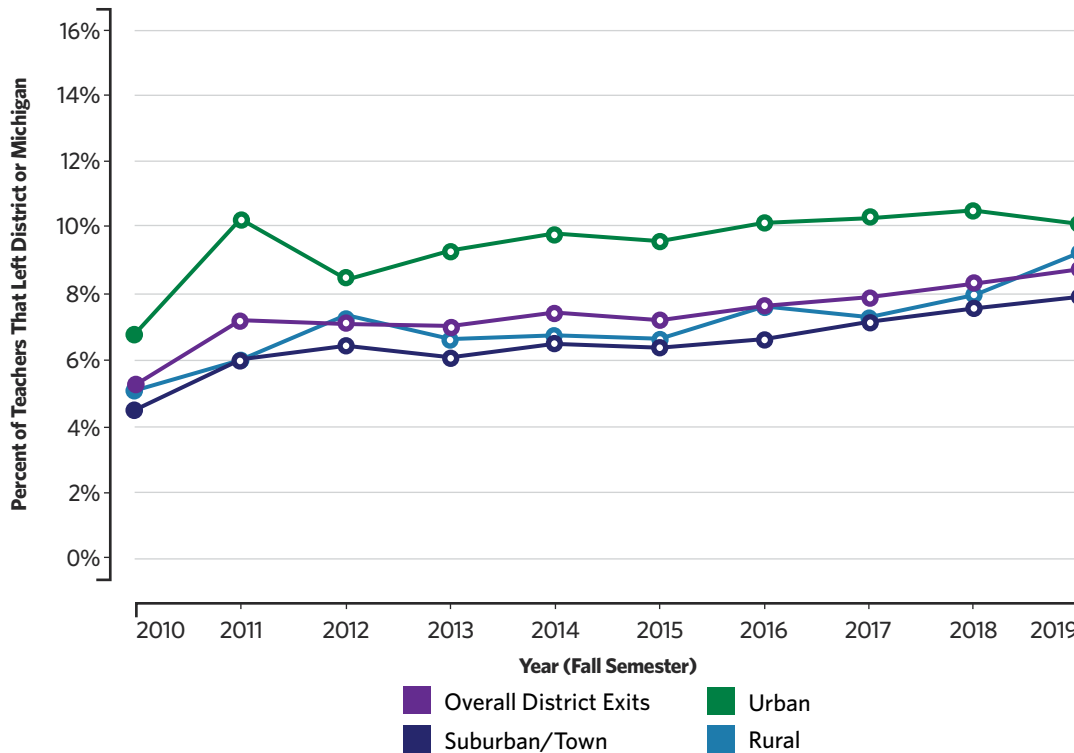


Source: Employment status and assignment types come from the Registry of Educational Personnel (REP) fall collection. Student enrollment data come from the Center for Educational Performance and Information (CEPI), Student Enrollment Count Report (2020-21, Statewide, accessed April 1, 2021).

Conversely, in almost every year over the past decade, a smaller percentage of teachers working in districts with the lowest proportions of economically disadvantaged or Black students either switched districts or left the Michigan school system entirely compared to the state average. During this period, attrition rates for teachers in districts with the lowest proportions of economically disadvantaged students increased from 4.0% to 6.9% (a 72.5% increase), while attrition rates for teachers in districts with the lowest proportions of Black students increased from 4.8% to 9.0% (an 87.5% increase). **Thus, while attrition increased at a higher rate in districts with the lowest proportions of economically disadvantaged and Black students, overall attrition remained substantially higher in districts with the greatest proportions of these students.**

Figure 4 presents a similar analysis, this time looking at differential attrition across districts in urban, rural, or suburban/town locations. The trends in attrition generally parallel the patterns discussed above, with **urban districts experiencing greater turnover than suburban or rural districts.**

FIGURE 4. Teacher Exits (District and State) by Urbanicity and Year, Fall 2010 to Fall 2019



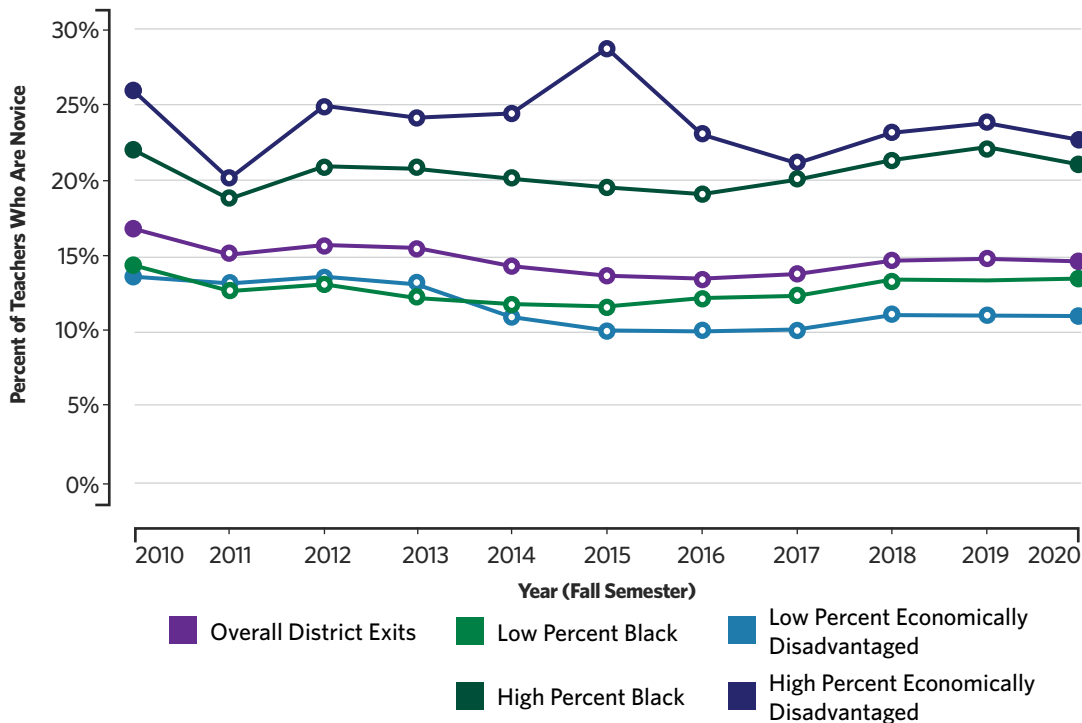
Source: Employment status and assignment types come from the Registry of Educational Personnel (REP) fall collection. Student enrollment data come from the Center for Educational Performance and Information (CEPI), Student Enrollment Count Report (2020-21, Statewide, accessed April 1, 2021).

However, disparities between districts are not as great as when considering differences in student demographic characteristics. Again, the effects of the 2010 change to the Public School Employees Retirement Act are only visible for a subset of teachers — mainly those assigned to urban districts. The percentage of urban teachers exiting their districts each year increased from 6.8% to 10.1% across this period (a 48.5% increase), while the percentage of suburban and rural teachers exiting during this time span increased from 4.5% to 7.9% (a 55.6% increase) and from 5.2% to 9.2% (a 76.9% increase), respectively.

3. Urban Districts and Districts With the Greatest Proportions of Economically Disadvantaged and Black Students Have More Novice Teachers

Figure 5 shows how the proportion of the Michigan teacher workforce with less than three years of experience (i.e., novice teachers) has changed over the past 10 years, along with differences among teachers assigned to districts with high and low proportions of economically disadvantaged and Black students.⁵

FIGURE 5. Novice (First Three Years) Share of Teacher Workforce by Black and Economically Disadvantaged Student Populations and Year, Fall 2010 to Fall 2020

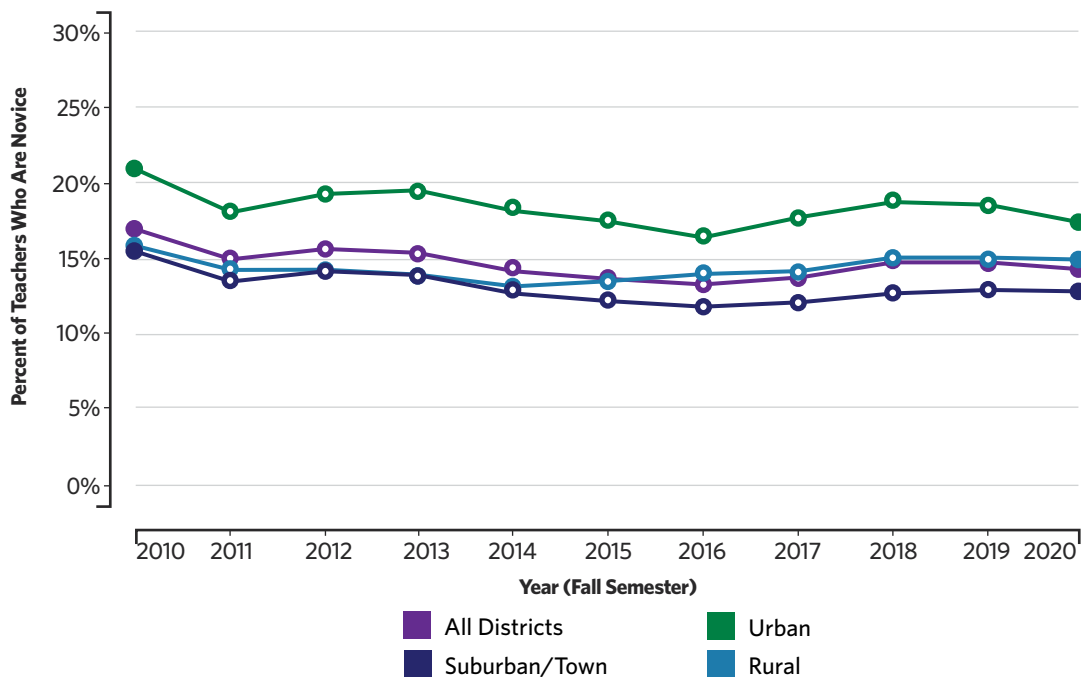


Notes: The 2015 increase in the proportion of novice teachers working in districts with high proportions of economically disadvantaged students is due to a data anomaly that caused some districts to move between the “High” and “Medium” categories. Employment status and assignment types come from the Registry of Educational Personnel (REP) fall collection. Student enrollment data come from the Student enrollment data come from the Center for Educational Performance and Information (CEPI), Student Enrollment Count Report (2020-21, Statewide, accessed April 1, 2021).

Overall, the novice share of the teacher workforce remained relatively consistent over the past decade, ranging from 13.4% to 16.9% of total Michigan teachers. **Districts with high proportions of economically disadvantaged and Black students consistently had substantially greater shares of novice teachers than did districts with the fewest economically disadvantaged or Black students.** In fall 2020, 22.7% of teachers in districts with the greatest shares of economically disadvantaged students were in their first three years of teaching, relative to 11.0% of teachers in districts with the least economically disadvantaged students. The novice teacher gap in districts with the highest and lowest proportions of Black students was slightly smaller, with 21.1% and 13.5% of novice teachers in districts with the greatest and lowest proportions of Black students, respectively.

Figure 6 shows the same trends as depicted in Figure 5, this time comparing the share of novice teachers in urban, suburban/town, and rural districts. Again, the proportions of novice teachers generally parallel the patterns discussed above, with **a larger proportion of novice teachers assigned to urban districts compared to suburban or rural districts.**

FIGURE 6. Novice Share of Teacher Workforce by Urbanicity and Year, Fall 2010 to Fall 2020



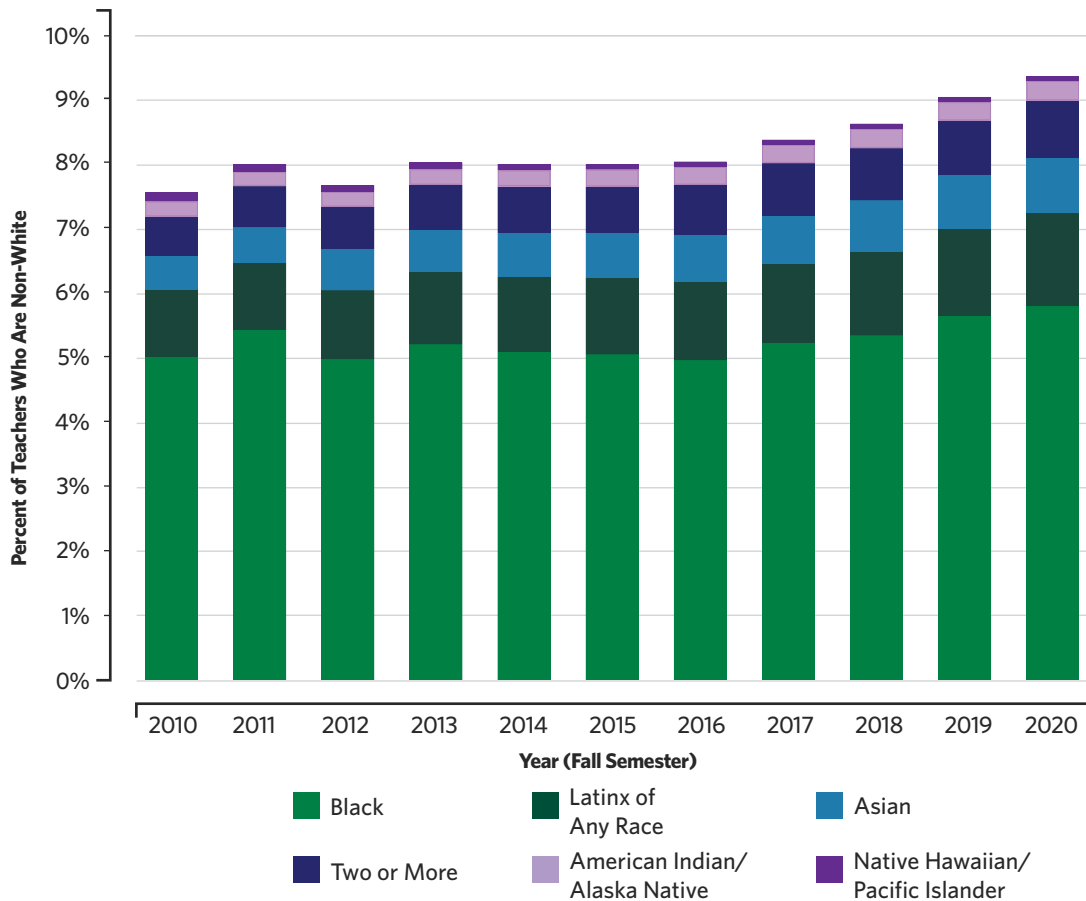
Notes: Employment status and assignment types come from the Registry of Educational Personnel (REP) fall collection.

4. Although the Overall Teacher Labor Force in Michigan is Growing More Diverse, These Changes are Occurring Mostly in Districts With the Greatest Shares of Black Students

Figure 7 presents trends in the distribution of teacher race/ethnicity between the 2010-11 and 2020-21 school years. **Although the teacher labor force in Michigan is becoming slightly more diverse over time, the far majority consists of White teachers.** The proportion of Black teachers in the workforce — the largest group of non-White teachers in Michigan — increased from approximately 5.0% to 5.8% over the past decade — an addition of 469 Black teachers. The proportion of Latinx⁶ teachers in Michigan increased from 1.0% to 1.4% (a net increase of 295 teachers).

Each of the four remaining racial/ethnic minority groups represent less than 1% of all teachers in Michigan, with the proportion of Asian teachers increasing from 0.5% to 0.9% (an increase of 247 teachers), teachers with two or more races increasing from 0.6% to 0.9% (an increase of 198 teachers), and American Indian or Alaska Native teachers increasing from 0.2% to 0.3% (an increase of 47 teachers). The only racial/ethnic minority group of Michigan teachers that did not experience an overall increase in representation between 2010-11 and 2020-21 was Native Hawaiian or Pacific Islander teachers. This group decreased from 109 to 52 total teachers across this period (a decrease of 57 teachers), which represents less than 0.1% of the entire Michigan teacher workforce. **Together, the overall share of non-White teachers increased almost two percentage points over the past decade, from 7.6% to 9.4%.**

FIGURE 7. Teacher Workforce by Race/Ethnicity and Year, Fall 2010 to Fall 2020

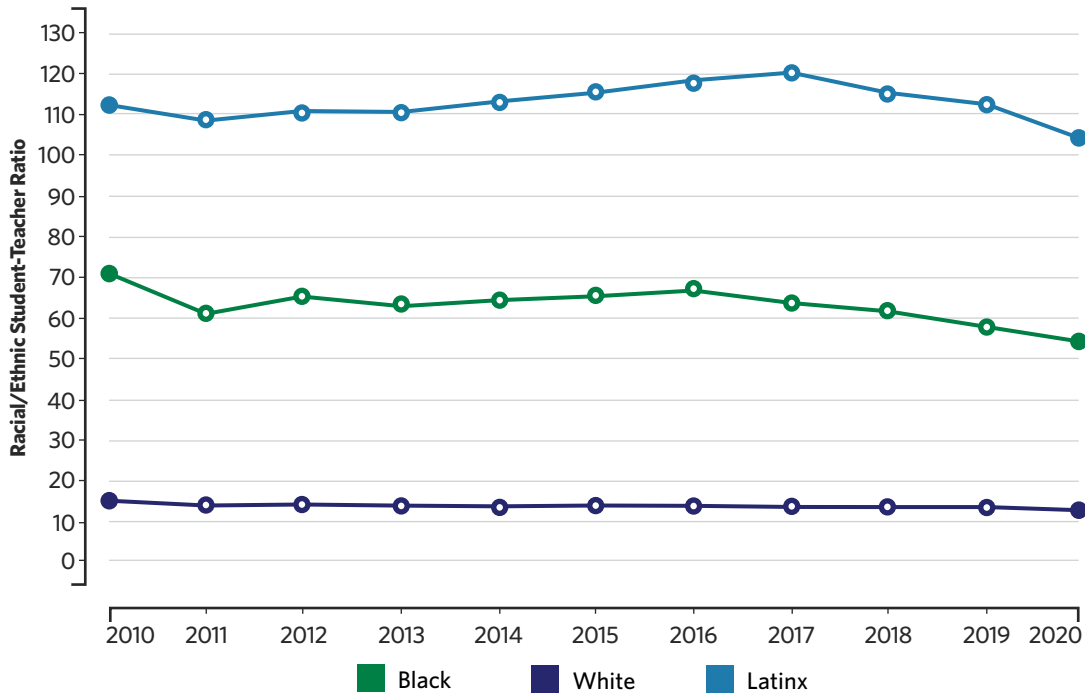


Notes: Employment status and assignment types come from the Registry of Educational Personnel (REP) fall collection. Teacher race/ethnicity data come from a combination of self-reported demographics in the Michigan Online Educator Certification System (MOECS) and district-reported demographics in the REP.

Another way to understand the diversity of the teacher workforce relative to student enrollment in Michigan is to assess the same-race/ethnicity student-teacher ratios across the state. Figure 8 shows the Black, Latinx, and White same-race student-teacher ratios in each year between 2010-11 and 2020-21. These ratios compare the total number of Michigan students of each race/ethnicity to the total number of teachers of the same race/ethnicity. A higher ratio means that there are more students of a given race/ethnicity for each teacher of that same race/ethnicity. Thus, a lower ratio indicates greater access for students to teachers whose race/ethnicity is the same as their own.

As seen in Figure 8, **the Black and Latinx student-teacher ratios are far higher than the White ratio.** At the beginning of the decade, there was one Black teacher for every 71 Black students and one Latinx teacher for every 111 Latinx students across the state. By contrast, there were only 15 White students for every White teacher in Michigan in 2010-11.

FIGURE 8. Racial/Ethnic Student-Teacher Ratio by Year, Fall 2010 to Fall 2020



Notes: Employment status and assignment types come from the Registry of Educational Personnel (REP) fall collection. Teacher race/ethnicity data come from a combination of self-reported demographics in the Michigan Online Educator Certification System (MOECS) and district-reported demographics in the REP. Student enrollment data come from the Center for Educational Performance and Information (CEPI), Student Enrollment Count Report (2020-21, Statewide, accessed April 1, 2021).

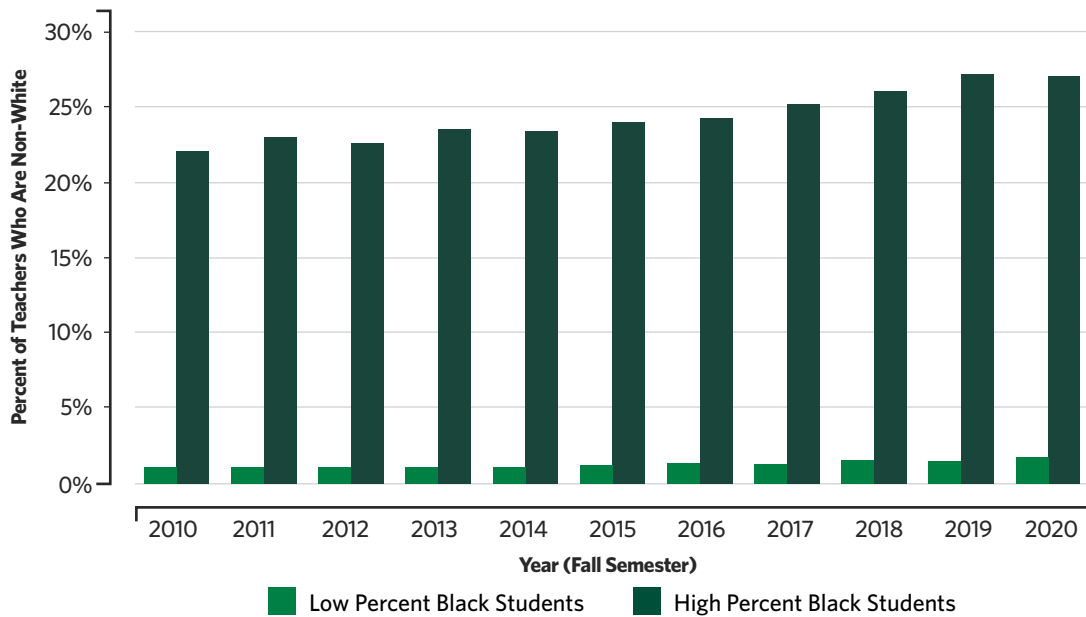
The White student-teacher ratio remained between 13 and 15 students per teacher for the entirety of the past decade. By contrast, the Black student-teacher ratio decreased to 54 Black students for each Black teacher by 2020-21 and the Latinx student-teacher ratio dropped from a 2017-18 high of 120 to a new low of 105 Latinx students per Latinx teacher in 2020-21. Thus, **while there is still low representation among Black and Latinx teachers in the Michigan workforce relative to the total number of Black and Latinx students across the state, there have been improvements over the past decade.**

Although the teacher workforce is growing more diverse, Figures 9a and 9b show that this diversity is being experienced mostly in districts with high proportions of non-White students. Figure 9a shows that, in 2010-11, 22.1% of teachers in districts with the largest share

Michigan's teaching workforce is growing more diverse, particularly in districts with high proportions of non-White students.

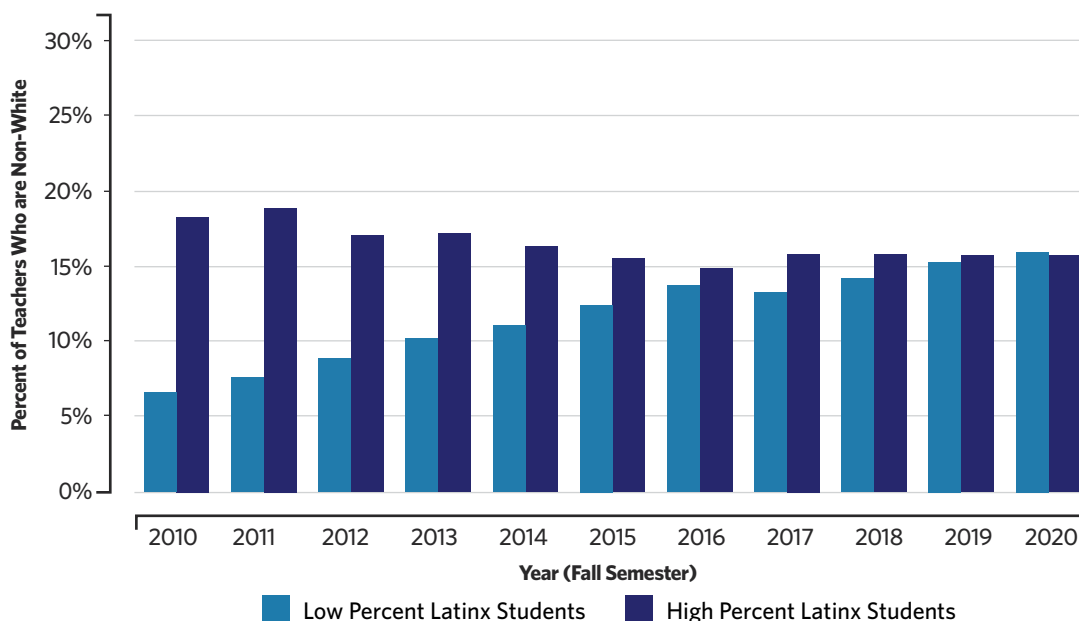
of Black students were non-White compared to only 1.4% of teachers in districts with the lowest proportions of Black students. The proportion of non-White teachers in districts with the greatest proportion of Black students increased by approximately 5 percentage points, to 27.0% of the teacher workforce by 2020-21. Non-White teacher gains in districts with the lowest proportion of Black students were far more muted; the non-White teacher workforce in these districts increased only 0.6 percentage points, to 2.0%.

FIGURE 9a. Non-White Teacher Workforce by Low/High Black Student Populations



Notes: Employment status and assignment types come from the Registry of Educational Personnel (REP) fall collection. Teacher race/ethnicity data come from a combination of self-reported demographics in the Michigan Online Educator Certification System (MOECS) and district-reported demographics in the REP. Student enrollment data come from the Center for Educational Performance and Information (CEPI), Student Enrollment Count Report (2020-21, Statewide, accessed April 1, 2021).

Similarly, as is shown in Figure 9b, non-White teachers are generally more represented in districts with higher shares of Latinx students. However, the relative proportion of teachers across these districts has changed dramatically over time. In 2010-11, non-White teachers represented 18.3% and 6.8% of the teacher workforce in districts with the greatest and lowest proportions of Latinx students, respectively. The non-White teacher share of teachers in districts with the greatest proportion of Latinx students decreased over the next decade, leveling out at approximately 15.8% of the teacher workforce by 2020-21. Conversely, the proportion of non-White teachers in districts with the lowest proportions of Latinx students increased by approximately one percentage point year-over-year for the entire decade, eventually representing approximately 16.0% of the workforce and just surpassing the proportion of non-White teachers in districts with a high proportion of Latinx students.

FIGURE 9b. Non-White Teacher Workforce by Low/High Latinx Student Populations

Notes: Employment status and assignment types come from the Registry of Educational Personnel (REP) fall collection. Teacher race/ethnicity data come from a combination of self-reported demographics in the Michigan Online Educator Certification System (MOECS) and district-reported demographics in the REP. Student enrollment data come from the Center for Educational Performance and Information (CEPI), Student Enrollment Count Report (2020-21, Statewide, accessed April 1, 2021).

IMPLICATIONS

This brief makes clear that teacher attrition is a growing concern in Michigan, particularly in the state's most traditionally underserved districts. Not only do these districts have higher rates of novice teachers, but they also lose greater proportions of teachers each year. This kind of teacher churn can have substantial deleterious effects on students, and on schools' and districts' abilities to operate effectively and efficiently.

Moreover, special education teachers are exiting Michigan districts at far higher rates than their peers. Together, these data suggest that there are areas that have the greatest need for policy intervention: special education teachers and teachers in urban districts and districts that serve more low-income students and students of color.

Last, given the increasing evidence about the importance of a diverse teacher workforce — both for students of color and their White peers — there is a need for increased efforts to attract and retain more teachers of color, both to work in districts with high concentrations of non-White students and in districts with the greatest shares of students of color.

ENDNOTES

- 1 U.S. Department of Education (2019). Higher Education Act Title II State Report Card System. Retrieved from <https://title2.ed.gov/Public/DataTools/NewExcels/EnrollmentProgramType.aspx>
- 2 Egalite, A. J., Kisida, B., & Winters, M. A. (2015). Representation in the classroom: The effect of own-race teachers on student achievement. *Economics of Education Review, 45*, 44-52; Egalite, A. J. & Kisida, B. (2018). The effects of teacher match on students' academic perceptions and attitudes. *Educational Evaluation and Policy Analysis, 40*(1), 59-81; Gershenson, S., Holt, S. B., & Papageorge, N. W. (2016). Who believes in me? The effect of student-teacher demographic match on teacher expectations. *Economics of Education Review, 52*, 209-224; Lindsay, C. A. & Hart, C. M. (2017). Exposure to same-race teachers and student disciplinary outcomes for Black students in North Carolina. *Educational Evaluation and Policy Analysis, 39*(3), 485-510.
- 3 Elementary teachers include any individual licensed/certified to teach elementary grade levels. Science and math teachers had at least one of the following Michigan Department of Education (MDE) historical teacher endorsements added to their license/certification: integrated science (DI), science (DX), biology (DA), chemistry (DC), physics (DE), earth/space science (DH), astronomy (DO), physical science (DP), or mathematics (EX). Special education teachers had at least one of the following MDE historical teacher endorsements added to their license/certification: cognitive impairment (SA), speech and language impairment (SB), physical or other health impairment (SC), emotional impairment (SE), teacher of the homebound (SH), visual impairment (SK), deaf and hard of hearing (SL), learning disabilities (SM), physical education for students with disabilities (SP), or autism spectrum disorder (SV).
- 4 Teachers that experienced each of the four types of mobility were identified using school and district assignment codes in the state employment database between 2010-11 and 2019-20. Teachers that switched schools within their districts had two unique school codes and one unique district code in consecutive academic years (excluding teachers who worked in multiple schools simultaneously). Teachers that exited their districts for another Michigan school district had two unique district codes in consecutive years (excluding teachers who worked in multiple districts simultaneously). Teachers that left the teaching profession in Michigan entirely at the end of each school year had a unique district and school code in the year prior to their departure, then were no longer observed in the data with a teaching assignment in any future academic year.
- 5 Novice teachers were identified based on how many semesters they were observed in the data since fall 2003 with an actively employed status and a teaching assignment with non-zero FTE. Those with six or fewer semesters of total teaching experience in any year in our sample period were considered novice teachers.
- 6 This category is inclusive of all individuals identified as Hispanic or Latinx, regardless of race.



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