

Past and projected trends in teacher demand and supply in Michigan

State and school district leaders in Michigan are concerned about the challenges some districts are facing in filling certain classroom teacher vacancies and about the harmful impact of teacher shortages on students, schools, and communities. They have asked for better and more comprehensive information on the existence and extent of teacher shortages in the state. Using data from the 2013/14–2017/18 school years, this study examined trends in teacher demand, supply, and shortages in Michigan and projects shortages and surpluses for 2018/19–2022/23. The study found that total enrollment in Michigan public schools declined by 3 percent between 2013/14 and 2017/18, while enrollment of English learner students increased by 27 percent. Over the same period the size of the teacher workforce, measured in full-time equivalent teachers, declined by 2 percent, and the number of newly certified active teachers declined by 23 percent. Some subject areas (particularly business education and career and technical education) and regions of the state (Upper Peninsula and Northwest) are projected to see teacher shortages between 2018/19 and 2022/23. However, the total active teacher supply in Michigan public schools is projected to meet demand during this period.

Why this study?

State and school district leaders in Michigan are concerned about the challenges some districts are facing in filling certain classroom teacher vacancies and about the harmful impact of teacher shortages on students, schools, and communities. They have asked for better and more comprehensive information on the existence and extent of teacher shortages in the state in recent years and on projections into the near future. This study provides a systematic analysis of trends in teacher demand, supply, and shortages in Michigan between 2013/14 and 2017/18 and projects shortages and surpluses for 2018/19–2022/23. State and district leaders may be able to use the findings to inform policy decisions and actions to address teacher shortages and ensure that all students have access to the teachers they need.

What was studied and how?

This study addressed two research questions:

1. What were the trends in teacher demand, supply, and shortages in Michigan public schools between 2013/14 and 2017/18 overall and by subject area, region of the state, district locale (urban, suburban, town, and rural), and district average teacher salary?
2. What will Michigan's public school teacher demand and supply picture look like between 2018/19 and 2022/23?

The study used data on personnel, certification, and substitute teacher permits from the Michigan Department of Education, along with publicly available data on district enrollment and characteristics, district average teacher

salary, population and birth rates for Michigan counties, and individuals who completed teacher preparation programs. The study team used descriptive statistics to analyze historical trends in teacher demand and supply. Student enrollment projections were calculated using grade progression and birth-to-kindergarten ratios. Other projections were conducted using regression analysis.

Findings

Total enrollment in Michigan public schools declined between 2013/14 and 2017/18, but enrollment trends varied among subgroups of disadvantaged students

- Total enrollment declined every year over the period, with year-to-year declines of 0.5–0.9 percent and a cumulative decline of 3 percent.
- Enrollment of English learner students increased every year over the period, with year-to-year growth of 3–10 percent and cumulative growth of 27 percent.
- Enrollment of students in special education remained fairly stable, declining by 1 percent over the period.
- Enrollment of students eligible for the national school lunch program declined every year between 2013/14 and 2016/17 but increased by 10 percent in 2017/18, when Michigan expanded the direct certification of national school lunch program eligibility to include Medicaid income data.

The total teacher count in Michigan public schools declined between 2013/14 and 2016/17 but rose slightly in 2017/18

- The total teacher count declined from 95,925 to 93,115, or by 3 percent over the period. Total full-time equivalent teachers declined from 93,699 to 91,777, or by 2 percent.
- Full-time equivalent teachers of English language arts declined by 1,214, or 4 percent, over the period, which accounted for 63 percent of the reduction in total full-time equivalent teachers.
- Full-time equivalent teachers increased over the period in three subject areas: bilingual education (by 16 percent), world languages (8 percent), and special education (3 percent).

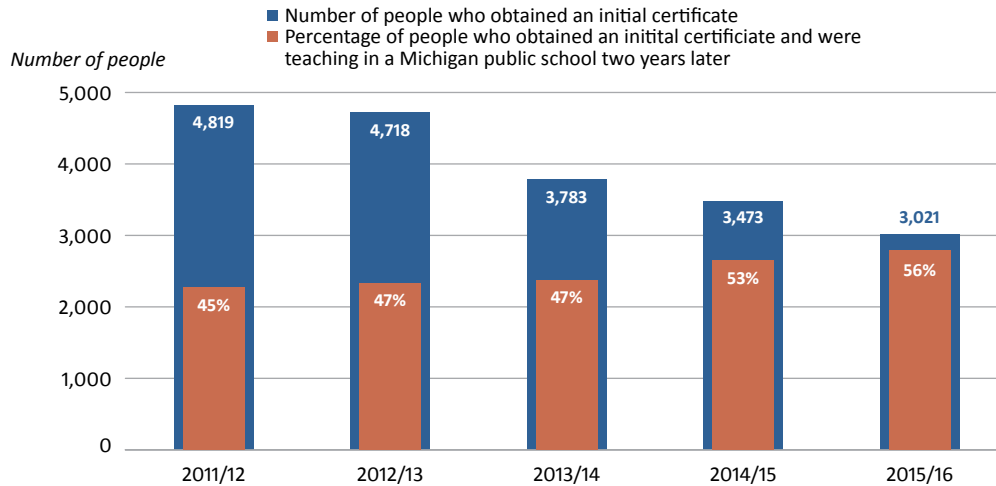
The number of newly certified active teachers, in particular those who completed in-state traditional teacher preparation programs, declined every year between 2013/14 and 2017/18

- The number of newly certified active teachers from in-state traditional teacher preparation programs fell by 15 percent between 2013/14 and 2014/15 and continued to decline through 2017/18, for a cumulative decline of 30 percent.
- The number of people who obtained an initial teaching certificate in Michigan between 2011/12 and 2015/16 declined from 4,819 to 3,021, or by 37 percent (figure 1). Among those who obtained an initial certificate, the percentage who were teaching in a Michigan public school two years after certification increased from 45 percent for those certified in 2011/12 to 56 percent for those certified in 2015/16.

The number of permits that allow someone without the necessary certification and endorsement to teach in a regular or long-term substitute assignment increased overall and as a share of total permits between 2013/14 and 2017/18

- The number of long-term substitute permits increased in all subject areas between 2013/14 and 2017/18, particularly between 2016/17 and 2017/18. Career and technical education, world languages, and special education were consistently among the five subject areas with the most long-term substitute permits.
- Career and technical education, world languages, bilingual education, technology, and health and physical education were consistently among the five subject areas with the highest percentage of long-term substitute permits as a share of total teacher count during the period. In 2017/18 long-term substitute permits accounted for 66 percent of the total career and technical education teacher count and more than 4 percent of the total teacher count in the other four subject areas.

Figure 1. The number of people who obtained an initial certificate in Michigan declined every year between 2011/12 and 2015/16, but the percentage who entered into teaching in a Michigan public school rose



Note: The percentages shown in the red bars indicate, for example, that of all the people who obtained an initial teaching certificate in 2015/16, 56 percent were teaching in a Michigan public school in 2017/18. Initial certificate refers to three types of certificates in Michigan’s teacher certification database: Standard Teaching Certificate, Standard Career and Technical Education Certificate, and Interim Teaching Certificate.

Source: Authors’ analysis of data from U.S. Department of Education, n.d., *2016 Title II reports: National teacher preparation data* (retrieved November 7, 2017, from <https://title2.ed.gov/Public/home.aspx>) and Registry of Educational Personnel data and teacher certification data provided by the Michigan Department of Education.

Some subject areas and regions of the state are projected to see teacher shortages between 2018/19 and 2022/23, but the total active teacher supply in Michigan public schools is projected to meet demand

- Total public school enrollment is projected to decline by 1 percent over the period.
- There is a positive difference of 825 teachers (1 percent) between projected total active supply and projected demand in 2018/19, but the surplus is projected to shrink over time. By 2022/23 demand is projected to exceed supply by 582 teachers (0.7 percent).
- Teacher shortages are projected over the entire period in business education, career and technical education, and English language arts, with the largest—and increasing—shortages projected for business education (3–19 percent) and career and technical education (7–13 percent) and smaller shortages for English language arts (1–5 percent). Shortages of 0.5–1.5 percent are also projected for special education, world languages, and general elementary education in one or more years over the period.
- The Upper Peninsula and Northwest regions of Michigan are projected to see teacher shortages greater than 5 percent over the period.
- Districts in rural and town locales are projected to see teacher shortages of 0.8–2 percent over the period, while suburban districts are projected to see surpluses of 0.9–1.3 percent. City districts are projected to see a surplus of 5 percent in 2018/19, but that is projected to shrink, and by 2022/23 city districts will have a shortage of 4 percent.

Limitations

This study has three main limitations. First, the analysis of teacher supply focuses on the active teacher supply (those who are currently working among those available) rather than the potential teacher supply (those who are available and willing to enter the teacher workforce). Second, 97 percent of substitute permits considered in the analysis of teacher shortages were Daily Substitute Permits, which are not associated with a subject area, so the counts by subject area undercount the true use of permits by subject area. Third, projections were made based on historical trends and thus inherently assume that those trends will persist. The projection methods cannot anticipate or reliably account for unexpected events or changes in policies in the future.

Implications

Enrollment trends, trends in teacher preparation, and data for specific subject areas suggest that, although enrollment in Michigan schools is declining overall, pockets of teacher shortages will emerge between 2018/19 and 2022/23. A particular concern is the availability of instructional personnel equipped to meet the needs of English learner students, students with disabilities, and lower income students. The anticipated shortfall of about 600 teachers in Michigan's total active teacher supply by 2022/23 implies that state leaders will need to carefully balance efforts to retain qualified teachers with efforts to improve the preparation and certification of new teachers. Because the findings suggest shortages in specific subject areas, regions, and locales, decisionmakers may wish to target their efforts accordingly. Teacher preparation programs will need to better align their preparation of teachers with district demand—for example, by building strong partnerships with districts to develop and implement programs that meet the workforce needs of their communities and regions.

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