

Supports Associated with Teacher Retention in Michigan

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Statewide teacher shortages are hindering Michigan's efforts to ensure that all students have equitable access to qualified teachers. Implementing teacher supports—which may be policies, practices, or programs—to increase teacher retention offers a way to alleviate shortages. This study identified supports implemented by local education agencies (traditional school districts and charter schools) that are associated with teacher retention. The study examined local teacher retention rates from 2013/14 to 2018/19 and teachers' responses to a survey about teacher supports in their local agencies and their perceptions of those supports.

Average annual teacher retention rates among Michigan's local education agencies ranged from 33 percent to 100 percent in the six-year period. The likelihood that teachers would remain teaching in their local education agency was higher in local education agencies that served lower percentages of students who were economically disadvantaged, higher percentages of students who were White, and higher percentages of students proficient in English language arts. And the likelihood was higher in agencies that had regular supportive communication between new teachers and school leaders, implemented mentoring programs, provided new teachers with an orientation to their school, allowed teachers to set goals in their evaluations, and provided teachers with sufficient instructional resources. The study also found that supports associated with teacher retention varied by the type of local education agency and the percentage of students who were economically disadvantaged. Findings from this study can help education agencies in Michigan prioritize which of 30 teacher supports examined merit more rigorous investigation.

Why this study?

In 2016 the Michigan Department of Education unveiled its Top 10 Strategic Education Plan, establishing Michigan's education priorities and goals. A focus of the plan was ensuring that all students have equitable access to quality teachers. The Michigan Department of Education is working toward this objective using a multipronged strategy that includes improving the retention of effective teachers, especially those who are teaching in high-poverty, low-performing local education agencies (both traditional school districts and charter schools, called public school academies in Michigan), where retention is a persistent challenge (Cowen et al., 2018; Wan et al., 2019).¹ (See box 1 for definitions of key terms used in the report.)

Effects of low teacher retention

In some circumstances teacher attrition can be beneficial, such as when less effective teachers leave their positions and the replacement teachers are more effective than those who left (Goldhaber et al., 2011; Hanushek & Rivkin, 2010; Sass et al., 2012). But research suggests that replacement teachers typically are less experienced and less effective than those who leave (Harris & Sass, 2011; Papay & Kraft, 2015; Ronfeldt et al., 2013).

For additional information, including technical methods, detailed findings, and the Michigan Department of Education's Teacher Survey on District Supports, access the report appendixes at <https://go.usa.gov/xMxVU>.

1. The other prongs of the strategy involve working with teacher preparation institutions to ensure that newly trained teachers have competencies aligned with local education agencies' requirements and working with current teachers to improve their instruction by having them participate in professional development.

Box 1. Key terms

Economic prosperity regions. Ten regions created in Michigan in 2014 through the Regional Prosperity Initiative to encourage regional private, public, and nonprofit partners to develop vibrant regional economies. See figure B2 in appendix B.

Economically disadvantaged students. Students whose families participate in the Supplemental Nutrition Assistance Program, who are eligible for the National School Lunch Program, who are homeless, or who are migrants.

Local education agency. A state-authorized and publicly-funded organization that performs administrative and policymaking functions for one or more public schools serving students in grades prekindergarten–grade 12. Michigan distinguishes between two types of local education agencies: traditional school districts and charter schools, called public school academies.

Proficient in English language arts. Students who score proficient or advanced on the English language arts portion of the Michigan Student Test of Educational Progress (M-STEP).

Public school academy. The name given to charter schools in Michigan. Public school academies are state funded and operate independently from the school district that serves the local area. Public school academies have their own governance structure or are part of a larger network of schools managed by a private charter management organization.

Teacher retention. Retention of teachers in their teaching position in the same local education agency across two consecutive school years.

Teacher supports. Policies, practices, or programs enacted by a local education agency that aim to improve teachers' instruction and foster a positive environment for teaching and learning. This study assessed the availability of teacher supports within a local education agency using responses to a survey of teachers in their third through fifth years of teaching.

Teachers. Educators who hold an up-to-date Michigan teaching certificate and are employed by a local education agency to lead the instruction of students in grades K–12. Individuals currently certified by Michigan as a teacher but holding only an administrative role are not considered teachers in this study.

Teachers' perceptions of their local education agency's support of teachers. Teachers' level of agreement with survey items about the quality, comprehensiveness, and sufficiency of their agency's support of teachers. The items deal with supports for new teachers, compensation and benefits, teacher evaluation, and the quality of professional development.

Traditional school district. One or more public schools that serve students in a geographic area, have a shared administrative office, and in most cases have a local school board. In Michigan the number of schools administered by traditional school districts range from 1 (the case for 13.2 percent of traditional school districts) to 100 (0.2 percent of school districts); the median number of schools administered by traditional school districts is 4.

Improving teacher retention can have benefits for districts and schools in addition to greater instructional effectiveness. It can reduce costs. The financial costs of hiring vary but are considerable, with estimates ranging from \$10,000 to \$20,000 per teacher (Barnes et al., 2007). Those costs drain resources that might otherwise be spent to improve programs and working conditions (Hughes, 2012; Papay & Kraft, 2015; Sorenson & Ladd, 2018). And improving teacher retention can reduce burdens on school staff and administrators. Teacher attrition has a negative association with staff interactions and school climate (Guin, 2004) and disrupts such social resources as staff collegiality, community, and trust (Hanselman et al., 2016). As teachers leave, so does institutional knowledge of instructional curricula and programs (Abelson & Baysinger, 1984; Guin, 2004). The teachers who stay also can be affected by the turnover, because they often bear much of the responsibility for mentoring new teachers (Guin, 2004) and thus assume a greater instructional burden. And since professional development resources are used for new hires, fewer such resources are available for teachers who stay (Shields et al., 1999).

High turnover is also associated with declining student achievement (Hanushek et al., 2016; Ronfeldt et al., 2013; Sorenson & Ladd, 2018). Turnover exacerbates inequities because schools and districts with historically underserved student populations have persistently low teacher retention. Schools and districts serving those student

populations also tend to have lower student achievement (Hanushek et al., 2004). The loss of experienced teachers makes it yet more challenging for those schools and districts to improve their students' academic performance (Darling-Hammond & Sykes, 2003; Ronfeldt et al., 2013).

Local education agency supports and teacher retention

The research on policies, practices, and programs to improve teacher retention is still developing, with agreement among policymakers and researchers that improving retention is key to reducing teacher shortages. Factors in teachers' decisions to take a teaching position and stay in it include salaries and compensation, the costs of obtaining teaching credentials, hiring and personnel management practices, induction and support for new teachers, and school and district working conditions (Boyd et al., 2011; Johnson et al., 2005; Ladd, 2011; Marinell & Coca, 2013; Podolsky et al., 2016). Working conditions include school leadership, professional collaboration, shared decisionmaking, accountability systems, and professional development resources (Podolsky et al., 2016).

Surveys of teachers who are not teaching provide further insights into teachers' decisions to leave. In the National Center for Education Statistics Schools and Staffing Survey, the most frequently cited reasons for leaving teaching were job dissatisfaction, pursuit of another job, family or personal reasons, and school staffing actions such as layoffs (Ingersoll et al., 2014). In a Michigan Department of Education survey of nonteaching teachers, those who left the profession most frequently cited low salaries and lack of advancement opportunities (Lindsay et al., 2021).

Teacher retention in Michigan

No previous studies have examined teacher supports and their associations with teacher retention in Michigan. The Michigan Department of Education published two reports in recent years that explored teacher retention and mobility in the state during 2016/17 in relation to teacher gender and race/ethnicity, type of local education agency (traditional school district or public school academy), and economic prosperity region and locale (urban, suburban, town, or rural; Robinson & Lloyd, 2017; Stackhouse & Lloyd, 2018). Another study examined the association between characteristics of the student populations served by local education agencies and teacher retention through the 2013/14 school year (Cowen et al., 2018). That study found that retention rates were lowest in local education agencies that served higher percentages of economically disadvantaged students and higher percentages of students with lower academic performance. Although those studies provided insight into the landscape of teacher retention in Michigan, they did not provide information about teacher supports provided by Michigan's local education agencies that might be associated with teacher retention.

Members of the Regional Educational Laboratory Midwest Alliance to Improve Teacher Preparation, which includes staff from the Michigan Department of Education, teachers, district administrators, and representatives of teacher preparation institutions and a teachers union in Michigan, requested this study to better understand factors associated with teacher retention at the local education agency level. The study examined the association between teacher retention and teacher characteristics, the characteristics of local education agencies, and the characteristics of the student populations those agencies served. Unlike previous studies, this study also examined associations between teacher retention and the teacher supports provided by local education agencies.

The study used data on teacher certification and school staffing collected by the Michigan Department of Education and data from a fall 2020 survey of Michigan public school teachers who had taught in the same local education agency for three to five years. Since the survey had a low response rate—12 percent—findings from the study's analyses of survey data should not be viewed as representative of all local education agencies in Michigan or all teachers with three to five years of experience in the same local education agency. Notably, local education agencies with the lowest retention rates, male teachers, and teachers younger than 35 were underrepresented in the data. Even with these limitations, however, the study's findings can help the Michigan Department of

Education prioritize supports as it develops a suite of tools, resources, and technical assistance services for local education agencies to improve teacher retention. The efficacy of that suite of services can be studied later using a more rigorous research design.

Research questions

This study addressed four research questions:

1. What was the average annual retention rate for teachers who taught in Michigan public schools between 2013/14 and 2018/19? Did the rate vary by teacher or local education agency characteristics?
2. What teacher supports did Michigan public school teachers report were available from their local education agency? Was the availability of supports associated with local education agency characteristics?
3. Were teachers' perceptions of the quality of their local education agency's teacher supports associated with the characteristics of those agencies?
4. What teacher supports were associated with teacher retention in local education agencies? Were the supports associated with retention the same for public school academies as for traditional school districts? What teacher supports were associated with teacher retention in local education agencies that served higher percentages of economically disadvantaged students?

The data sources, sample, and methods used to answer the research questions are summarized in box 2 and described in detail in appendix A.

Box 2. Data sources, sample, and methods

Data sources. The study used a combination of the following data supplied by the Michigan Department of Education (see table A1 in appendix A).

- Teacher certification and demographic data from the Michigan Online Educator Certification System, including records of all certificates, except revoked certificates, issued between 1960 and 2019 (<https://mdoe.state.mi.us/MOECS/Login.aspx>).
- Public school employment records between 2013/14 and 2018/19 received from the Michigan Registry of Educational Personnel, including teachers' school and local education agency assignment.
- Data from a survey administered by the Michigan Department of Education between September 18 and October 12, 2020 to a sample of certified teachers who had been teaching for three to five years in their local education agency (that is, had first been hired by their agency between 2014/15 and 2016/17).¹ The survey responses indicated teachers' awareness of supports provided by their local education agency and perceptions of the quality of the supports.
- Publicly available enrollment data for Michigan's local education agencies from 2013/14 through 2018/19, available from the Michigan Center for Educational Performance and Information website (<https://www.michigan.gov/cepi/>).

Sample. The analyses for research questions 1 and 4 (about teacher retention rates and the degree to which they varied by teacher or local education agency characteristics) focused on the population of 114,283 teachers who were employed by a Michigan local education agency that was operating during all school years between 2013/14 and 2018/19 (see figure A1 in appendix A). The analyses for research questions 2 and 3 were based on teachers' survey responses indicating the presence or absence of supports in their local education agency and their perceptions of the quality of those supports. The survey was administered to teachers who were in their third through fifth years of teaching in the same local education agency (and thus likely to be familiar with the agency's supports for new teachers). The final sample included 539 teacher respondents from 305 of the 788 local education agencies who completed the survey (458 teachers) or partially completed it (81), for a response rate of 12.2 percent of

teachers who were estimated to be eligible (for more details on the survey response rate, see table A2 in appendix A). Most of the 305 local education agencies (70 percent) were represented by a single survey respondent.

The survey response rate is considered unacceptably low by most standards (Mangione & Van Ness, 2009). The timing of the survey administration could be partly to blame. The survey was launched during the COVID-19 pandemic, when many teachers were still learning to provide online instruction. The analytic samples for research questions 2–4 are not representative of Michigan public school teachers on several dimensions. Local education agencies with very low teacher retention rates were underrepresented because those agencies had fewer teachers who were eligible for the survey. Teachers who completed the survey tended to be older than the average age for the population of teachers in their third through fifth years of teaching in the same local education agency. Male teachers also were underrepresented in the sample. Nonresponse-adjusted weights based on analyses of nonresponse patterns were incorporated into the analyses. (For more details on nonresponse analyses and the nonresponse-adjusted weights, see appendix A.)

Methodology. For research question 1 the study team calculated the percentage of teachers who taught in each local education agency each year and who returned to their positions in the same local education agency the following year. The percentages across consecutive years (for example, 2014/15 and 2015/16) were the annual retention rate for those years. The annual retention rates for local education agencies were averaged across the five school years of the study. Retention rates also were calculated for teachers by age, gender, and race/ethnicity and for each of the following characteristics of local education agencies: agency type (traditional school district or public school academy); locale (urban, suburban, town, or rural); economic prosperity region within Michigan; average student enrollment; and average percentages of students who were economically disadvantaged, racial/ethnic minority students, English learner students, required special education services, and were proficient in English language arts. For these population data the study team and partners at the Michigan Department of Education considered a 5 percentage point threshold as a meaningful difference in retention rates between groups of teachers with different characteristics and between groups of schools with different characteristics.

For research question 2 the study team coded survey responses as 1 if a support was present in the local education agency and as 0 otherwise. Each response was multiplied by the corresponding nonresponse weight (see appendix A). The team then averaged the responses for each local education agency. For research question 3 the study team coded teachers' perception responses as 1 (strongly disagree), 2 (disagree), 3 (agree), or 4 (strongly agree). These codes were multiplied by the nonresponse weights and converted into Rasch scores. The team then aggregated the Rasch scores within local education agencies for each of 10 types of supports: professional development, teacher collaboration, supportive school leadership, teacher involvement in school governance, quality of mentor program, quality and sufficiency of time and material resources, leadership and advancement opportunities, new teacher socialization, satisfaction with salary and compensation, and evaluation system (see table A4 in appendix A for the Rasch reliability estimates for each type of support).

For research question 4 the study team developed statistical models that estimated the association between teachers' awareness of each support in their local education agency and the probability of remaining in their position, while controlling for the characteristics of teachers and of their local education agencies. Similar models estimated the associations between teachers' perceptions of the quality of each support and the probability of teachers remaining in their position. The study team also conducted these analyses separately for traditional school districts and public school academies (see appendix A for details regarding statistical models).

Note

1. Project partners at the Michigan Department of Education focused this survey on teachers in their third through fifth years of teaching within a local education agency. The department reasoned that teachers at these experience levels would likely have sufficient experience to know about their local education agency's supports for new teachers and would not feel overburdened by responding to a 15-minute survey.

Findings

This section presents the main findings. Detailed findings are in appendix B.

Local education agencies in Michigan had a median annual teacher retention rate of 88.6 percent

Between 2013/14 and 2018/19 most of Michigan's local education agencies (75 percent of 788 agencies) had average retention rates that were higher than 80 percent (the median average retention rate was 88.6 percent; see table B1 in appendix B). However, average annual retention rates among Michigan local education agencies ranged widely, from 33.3 to 100.0 percent.

Teachers younger than 60 and teachers who were White had higher retention rates than their counterparts

Between 2013/14 and 2018/19 the average annual retention rate for teachers younger than 60 was 82.0 percent or higher, compared with 73.8 percent for teachers older than 60 (see table B1 in appendix B). This finding may reflect higher retirement rates among teachers older than 60.² Retention rates also varied by teachers' race/ethnicity. White teachers were the most likely to return the following year (85.0 percent), followed by American Indian/Alaska Native teachers (79.0 percent), Hispanic/Latino teachers (78.0 percent), Asian teachers (73.9 percent), and Black teachers (73.8 percent; table 1).

Table 1. Teacher retention in Michigan was related to the characteristics of teachers, their local education agencies, and student populations served by the local education agencies, 2013/14–2018/19 (meaningful differences in teacher retention rates)

Characteristic	Groups/categories with lower retention	Groups/categories with higher retention
Teacher characteristic		
Gender	—	—
Race/ethnicity	Asian, American Indian/Alaska Native, Hispanic/Latino, Hawaiian/Pacific Islander	White
Local education agency characteristic		
Type of agency	Public school academies	Traditional school districts
Locale	Urban	Suburban, town, rural
Region	Detroit metro	All other regions
Total student enrollment	Lowest two quartiles	Highest two quartiles
Student population characteristic		
Percentage economically disadvantaged	Highest quartile	Lowest three quartiles
Percentage racial/ethnic minority	Highest quartile	Lowest three quartiles
Percentage English learner	—	—
Percentage requiring special education services	—	—
Percentage proficient in English language arts	Lowest quartile	Highest three quartiles

— Differences in teacher retention between groups/categories for this characteristic were not 5 percentage points or higher.

Note: The sample included 114,283 teachers in 788 local education agencies. The table shows groups/categories for each characteristic with differences in teacher retention rates of 5 percentage points or higher, except those indicated by —.

Source: Authors' analysis of data provided by the Michigan Department of Education and public use data on local education agency enrollment from Michigan's Center for Educational Performance Information.

2. Teachers who are members of the Michigan Public School Employees Retirement System qualify for retirement with at least 30 years of service or at age 60 with at least 5 years of service.

Traditional school districts; local education agencies in suburbs, towns, and rural areas and outside the Detroit metro area; and larger local education agencies had higher teacher retention rates

Between 2013/14 and 2018/19 Michigan's traditional school districts had an average retention rate of 89.5 percent, whereas public school academies had an average retention rate of 74.2 percent.³ Local education agencies in urban areas had an average retention rate of 75.9 percent, whereas those in suburbs, towns, and rural areas had an average retention rate of 85.7 percent or higher. Teacher retention was lower in the Detroit metro economic prosperity region (78.4 percent) than in other regions of the state (85.1 percent–87.7 percent; see figure B2 in appendix B). Local education agencies with total student enrollment in the top two quartiles had average retention rates of 86.4 percent or higher, whereas local education agencies in the bottom two quartiles had average retention rates of 80.2 percent or lower (see table B1).⁴ Caution is warranted when interpreting differences in retention rates because some characteristics tend to coincide. For example, public school academies are often located in urban locales.

Local education agencies that served lower percentages of students who were economically disadvantaged, higher percentages of students who were White, or higher percentages of students who were proficient in English language arts had higher teacher retention rates

The likelihood that teachers remained teaching in their local education agency was higher in local education agencies that served lower percentages of economically disadvantaged students, higher percentages of White students, or higher percentages of students proficient in English language arts (see table 1). Between 2013/14 and 2018/19 local education agencies in the lowest three quartiles for the percentage of economically disadvantaged students had retention rates that were 11–16 percentage points higher than those of agencies in the highest quartile (see table B1 in appendix B). Local education agencies in the lowest three quartiles for the percentage of racial/ethnic minority students had higher average retention rates (85.6 percent or higher) than agencies in the highest quartile (74.0 percent). Local education agencies in the top three quartiles for students proficient in English language arts had an average annual retention rate of 85.6 percent or higher, whereas agencies in the lowest quartile had an average retention rate of 74.1 percent.

Michigan teachers who responded to the survey on teacher supports were most likely to report the presence of supports related to teacher evaluation

The survey asked teachers about the presence of 30 supports representing four broad categories: supports for new teachers, compensation and benefits, evaluation, and professional development (table 2). More than 90 percent of teachers reported the presence of six specific supports in their local education agency, all related to their agency's evaluation system. Teachers were most likely to report that their evaluations included formal observations (97.8 percent), opportunities to set goals (96.5 percent), student growth data (96.5 percent), opportunities to receive feedback (94.7 percent), informal walk-throughs (91.2 percent), and clearly defined performance standards (90.9 percent).

3. The association between three local education agency characteristics (enrollment, locale, and type) and retention is partly attributable to scale. That is, local education agencies with smaller enrollments, those in rural areas and towns, and public school academies employ fewer teachers to begin with. The smaller denominator in the retention calculations produces lower retention rates when equal numbers of teachers leave the local education agency. For example, the loss of three teachers in a given year in a local education agency that employs 20 teachers yields a retention rate of 85 percent, whereas the loss of three teachers in a local education agency that employs 100 teachers yields a 97 percent retention rate.

4. The association between student enrollment and retention remains even after the number of schools administered by the local education agency is controlled for.

Table 2. Percentage of teachers who reported the availability of teacher supports at their local education agency, fall 2020

Support type	Percentage of teachers
Supports for new teachers	
A mentoring program for teachers new to the local education agency	85.6
Regular supportive communication with principal and other school leaders	81.7
Seminars, classes, or professional development for beginning teachers	76.7
An orientation to the school	68.6
Common planning time with teachers in same subject or grade	64.0
Professional learning community teams with added supports	51.6
Instructional rounds with peers	41.4
Extra classroom assistance (such as teacher aides)	39.3
Reduced teaching schedule/more release time for preparation	17.1
Compensation and benefits	
Annual salary increases	82.2
Financial assistance for professional learning	41.7
Performance-based compensation such as bonuses	31.2
Childcare benefits such as subsidies or on-site childcare	8.1
Financial incentives for teachers in high-need subjects/schools	6.2
Teacher housing or mortgage assistance programs	2.2
Evaluation	
Evaluation based in part on formal observations	97.8
Evaluation includes opportunities for teachers to set goals	96.5
Evaluation based in part on student growth data	96.5
Evaluation provides opportunities to receive feedback	94.7
Evaluation based in part on informal classroom walk-throughs	91.2
Evaluation based on clearly defined performance standards	90.9
Evaluation system requires collaboration with supervisor on goals	87.4
Evaluation based on multiple data sources	81.5
Professional development	
Local education agency—organized workshops, conferences, or training sessions	89.2
Release time from teaching to attend professional development	74.7
Online courses, resources, or platforms for knowledge sharing	71.5
Reimbursement for conferences, workshops, or courses	68.8
Time for observational visits to other classrooms in school	64.0
Stipends for professional development that takes place outside regular work hours	44.4
Observational visits to other schools or local education agencies	38.1

Note: Percentages are based on survey responses from 539 Michigan teachers, representing 305 local education agencies. Teachers' responses of "Don't know" and "Not aware" were classified as "Support not present." Teacher responses were adjusted using nonresponse weights. Similar analysis using raw data produced different percentages for awareness but similar ordering of items. These results might not reflect supports available in all local education agencies in Michigan.

Source: Authors' analysis of data from the Michigan Department of Education's survey of teacher supports administered in September and October 2020.

Michigan teachers who responded to the survey were least likely to report three supports related to compensation and benefits

Survey respondents were least likely to report the presence of three specific supports within their local education agency, all related to compensation and benefits. Fewer than 10 percent of teachers who responded to the survey reported that their local education agency offered housing or mortgage assistance programs (2.2 percent of respondents), incentives for teachers to teach high-need subjects or in high-need schools (6.2 percent), or childcare benefits (8.1 percent; see table 2 and table B2 in appendix B).

The availability of supports in local education agencies was associated with the characteristics of the local education agency

Teachers' reports of the availability of supports varied according to the local education agency type, locale, and economic prosperity region of the state. Teachers' indication of the presence of supports in their local education agency also varied by student enrollment, percentage of economically disadvantaged students, percentage of racial/ethnic minority students, percentage of English learner students, percentage of students requiring special education services, and percentage of students proficient in English language arts.

Survey respondents in local education agencies that served fewer students reported fewer supports for new teachers than respondents in local education agencies that served more students. Teachers in the smallest local education agencies were significantly less likely than teachers in the largest local education agencies to report that their local education agency had a mentor program; held seminars, classes, or professional development for beginning teachers; offered orientation or common planning time for beginning teachers; offered professional learning community teams for beginning teachers; or offered beginning teachers the opportunity to engage in instructional rounds with their peers (table 3; see table B6 in appendix B). Local education agencies with the smallest student enrollments were also significantly less likely than those with the largest enrollments to provide annual salary increases, include opportunities for teachers to set goals in their evaluations, include student growth data in evaluations, and share knowledge through online courses, resources, or platforms.

Table 3. Percentage of teachers who reported the availability of teacher supports at their local education agency, by student enrollment size of the local education agency, fall 2020

Teacher support	Student enrollment quartile in local education agency		Percentage point difference
	Lowest quartile	Highest quartile	
Mentoring program for new teachers	18.2	90.3	-72.1
Seminars, classes, or professional development for beginning teachers	36.4	84.5	-48.1
An orientation to the school	27.3	76.1	-48.8
Common planning time	9.1	72.3	-63.2
Professional learning community teams for new teachers	18.2	60.0	-41.8
Instructional rounds with peers	9.1	50.6	-41.5
Annual salary increases	54.5	88.4	-33.9
Evaluation includes opportunities for teachers to set goals	81.8	98.1	-16.3
Evaluation partially based on student growth data	81.8	98.7	-16.9
Evaluation based on multiple data sources	54.5	86.5	-32.0
Online courses, resources, or platforms for knowledge sharing	50.5	75.5	-25.0

Note: This table presents only supports with statistically significant associations. Percentages are based on survey responses from 539 Michigan teachers, representing 305 local education agencies. Teachers' responses of "Don't know" and "Not aware" were classified as "Support not present." Teacher responses were adjusted using nonresponse weights. Similar analysis using raw data produced different percentages but similar ordering of items. These results may not reflect supports available in all local education agencies in Michigan.

Source: Authors' analysis of data from the Michigan Department of Education's survey of teacher supports administered in September and October 2020.

Survey respondents in local education agencies that served lower percentages of economically disadvantaged students reported more supports for new teachers than respondents in local education agencies that served higher percentages of economically disadvantaged students. Respondents in the local education agencies with the lowest percentages of economically disadvantaged students were more likely than respondents in local education agencies with the highest percentages to report the presence of supports for new teachers, such as mentoring programs; orientation to the school; supportive communication with school leaders; and professional development for new teachers (table 4; see table B7 in appendix B). Respondents in local education agencies with the lowest percentages of economically disadvantaged students were also more likely than those in local education agencies with the highest percentages to report the presence of childcare benefits, such as subsidies or childcare assistance, and opportunities to observe teachers in other schools or local education agencies.

Survey respondents in local education agencies that served lower percentages of English learner students were less likely to report the presence of mentoring and professional learning communities for new teachers than respondents in local education agencies that served higher percentages of English learner students. Survey respondents in agencies with the lowest percentages of English learner students were less likely to report the presence of a mentoring program for new teachers (60.5 percent) and organized professional learning community teams for new teachers (24.3 percent) than respondents teaching in local education agencies with the highest percentages of English learner students (85.3 percent for mentoring programs and 56.4 percent for professional learning community teams; see table B9 in appendix B).

Survey respondents in local education agencies that served lower percentages of students requiring special education services were more likely to report the presence of performance-based compensation for teachers than respondents in local education agencies that served higher percentages of students requiring special education services. Survey respondents in agencies with the lowest percentages of students requiring special education services were more likely to indicate that their agency offered performance-based compensation for teachers with effective evaluation ratings (49.2 percent) than agencies with the highest percentages of students requiring special education services (22.4 percent; see table B11 in appendix B).

Table 4. Percentage of teachers who reported the availability of teacher supports at their local education agency, by student economic status, fall 2020

Teacher support	Quartile for percentage of economically disadvantaged students		Percentage point difference
	Lowest quartile	Highest quartile	
Mentoring program for new teachers	91.4	71.7	+19.7
Regular supportive communication with principal and other school leaders	91.4	64.8	+26.6
Seminars, classes, or professional development sessions for beginning teachers	83.9	61.1	+22.8
An orientation to the school	80.6	55.6	+25.0
Common planning time	80.6	61.1	+19.5
Childcare benefits such as subsidies or childcare assistance	15.1	3.7	+11.4
Observational visits to other schools or local education agencies	41.3	19.6	+19.7

Note: This table presents only supports with statistically significant associations. Positive differences indicate that the supports were more prevalent in local education agencies that served lower percentages of economically disadvantaged students. Percentages are based on survey responses from 539 Michigan teachers, representing 305 local education agencies. Teachers' responses of "Don't know" and "Not aware" were classified as "Support not present." Teacher responses were adjusted using nonresponse weights. Similar analysis using raw data produced different percentages for awareness but similar ordering of items. These results may not reflect supports available in all local education agencies in Michigan.

Source: Authors' analysis of data from the Michigan Department of Education's survey of teacher supports administered in September and October 2020.

Respondents’ perceptions of the quality of local education agency supports were associated with the characteristics of their local education agency

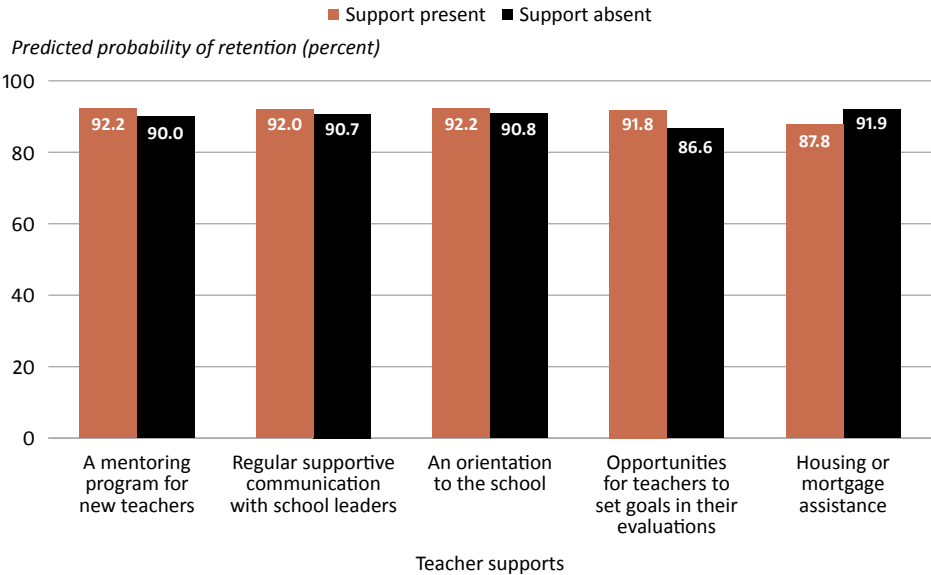
Teachers who responded to the survey provided their perceptions of the quality of supports offered by their local education agency (see table B12 in appendix B). Teachers in the local education agencies with the lowest enrollments perceived fewer opportunities to collaborate with other teachers, perceived the presence of fewer instructional resources, and were less satisfied with their salary than teachers in the agencies with the highest enrollments (see table B13). Teachers in public school academies were less satisfied with their salaries than teachers in traditional school districts (see table B15).

Overall teacher retention was positively associated with four specific supports for new teachers

Across both types of local education agencies, the results show small but statistically significant positive associations between four supports and the probability that teachers continued teaching in their local education agency. The study team also found that one support had a significant negative association with teacher retention.

Teachers in local education agencies that assigned mentors to new teachers were more likely to continue teaching in their local education agency than teachers in local education agencies that did not provide this support. Teachers’ survey responses indicate that 85.6 percent of local education agencies had a mentoring program for new teachers (see table 2). Teachers teaching in those local education agencies had a 2.2 percentage point higher probability of staying in their position than teachers in local education agencies that did not have a mentoring program (figure 1 and see regression results in table B17 in appendix B).

Figure 1. Teacher retention was higher when local education agencies had supports for new teachers and included opportunities for teachers to set goals in their evaluations, 2013/14–2018/19



Note: Presence and absence of supports were based on survey responses from 539 teachers representing 305 local education agencies in Michigan. These results may not represent associations in all local education agencies in Michigan. Numbers above bars represent predicted probabilities. Estimates of predicted probabilities are based on multilevel logistic regression models that controlled for other characteristics of teachers and local education agencies. All differences between groups are statistically significant at $p < .05$.

Source: Authors’ analysis of school staffing data from the Michigan Department of Education and the Michigan Department of Education’s survey of teacher supports administered in September and October 2020.

Teachers in local education agencies in which teachers had regular supportive communication with principals and other school leaders were more likely to continue teaching in their local education agency than teachers in local education agencies that lacked such communication. Teachers' survey responses indicate that 81.7 percent of local education agencies provided regular supportive communication with principals and other school leaders (see table 2). Teachers in those local education agencies had a 1.3 percentage point higher probability of staying in their position than teachers in local education agencies that did not have such communication (see figure 1 and regression results in table B17 in appendix B).

Teachers in local education agencies that provided new teachers with an orientation to their school were more likely to continue teaching in their local education agency than teachers in local education agencies that did not provide this support. Teachers' survey responses indicated that 68.6 percent of local education agencies offered new teachers orientation to their schools (see table 2). Teachers in local education agencies that provided this support had a 1.4 percentage point higher probability of staying in their position than teachers in local education agencies that did not provide new teacher orientation (see figure 1 and regression results in table B17 in appendix B).

Teachers in local education agencies that included opportunities for teachers to set goals in their evaluations were more likely to continue teaching in their local education agency than teachers in local education agencies that did not include such opportunities. Local education agencies in Michigan must evaluate teachers annually, and evaluation systems must be based on multiple measures, including student academic growth. However, agencies have flexibility in selecting those other measures and the amount of weight assigned to those measures in teachers' final evaluation rating. Teachers' survey responses indicated that 96.5 percent of local education agencies included opportunities for teachers to set goals in their evaluations (see table 2). Teachers in those local education agencies had a probability of staying in their position that was 5.2 percentage points higher than teachers in agencies that did not include opportunities for teachers to set goals in their evaluations (see figure 1 and regression results in table B19 in appendix B).

Teachers in local education agencies that offered teachers housing or mortgage assistance were less likely to continue teaching in their local education agency than teachers in local education agencies that did not provide this support. The survey results indicated that housing or mortgage assistance was the support least frequently adopted by local education agencies (2.2 percent of teachers reported having this support in their agency; see table 2). When agencies offered this support, the probability that teachers continued to teach in their agencies was 4.1 percentage points lower than when agencies did not offer housing or mortgage assistance (see figure 1 and regression results in table B18 in appendix B).

The supports associated with teacher retention differed between public school academies and traditional school districts

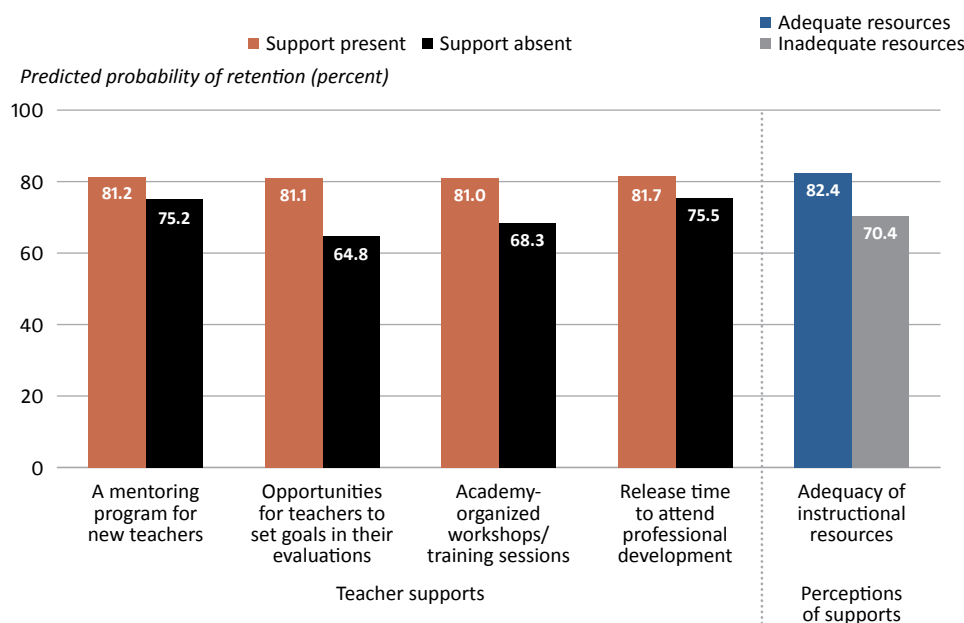
The associations between supports and teacher retention described above were based on data for public school academies and traditional school districts combined. Those analyses adjusted statistically for type of local education agency. However, the two types of agencies can differ in many ways, including total student enrollment, numbers of teachers employed, education philosophy, governance structures, and resources. Given those differences, the study team repeated its examination of supports associated with retention, this time analyzing the data for each type of agency separately. The results showed that except for mentoring programs, the supports associated with retention for public school academies differed from those for traditional school districts and that the associations were stronger for public school academies.

Teachers in public school academies that provided mentoring and professional development supports, included opportunities for teachers to set goals in their evaluations, and provided sufficient instructional resources were more likely to continue teaching in their academy than teachers in academies that did not offer these supports.

Teachers in public school academies that assigned mentors to new teachers had a 6.0 percentage point higher probability of continuing to teach in their academy than teachers whose academies did not assign mentors (figure 2 and see regression results in table B21 in appendix B). When public school academies included opportunities for teachers to set goals in their evaluations, teachers had a 16.3 percentage point higher probability of continuing to teach in their academy than when academies did not include opportunities for teachers to set goals in their evaluations (see figure 2 and regression results in table B23). Likewise, teachers in public school academies that organized professional development opportunities for teachers had a 12.7 percentage point higher probability of staying in their position than teachers whose academy did not organize professional development (see figure 2 and regression results in table B24). The probability of teachers continuing to teach in their academy was also associated with whether the academy provided release time for teachers to attend professional development. Teachers offered release time had a 6.2 percentage point higher probability of continuing to teach in their academy than teachers whose academy did not offer release time. Teachers in public school academies in which survey respondents perceived that their academy provided sufficient instructional resources had a 12.0 percentage points higher probability of staying in their academy than teachers in academies in which instructional resources were perceived as inadequate (see figure 2 and regression results in tables B24 and B30).

Michigan teachers in traditional school districts that provided mentors, regular supportive communication between new teachers and school leaders, an orientation to the school for new teachers, and annual salary increases were more likely to continue teaching in the district than teachers in districts that did not offer these supports. For traditional school districts as for public school academies, mentoring programs for new teachers were positively associated with teacher retention. Teachers in traditional school districts that provided mentoring programs had a 1.5 percentage point higher probability of continuing to teach in their district than teachers in districts that did not provide mentoring (figure 3; see regression results in table B25 in appendix B). Other supports that were

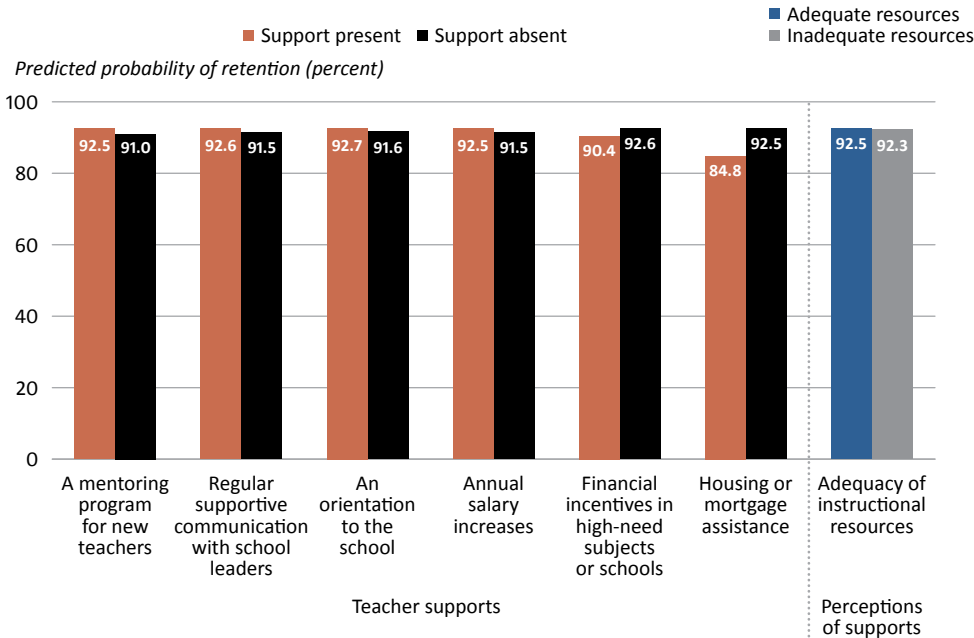
Figure 2. Among public school academies the presence of mentoring, professional development, and opportunities for teachers to set goals in their evaluations and teachers’ perceptions of adequate instructional supports were associated with higher teacher retention, 2013/14–2018/19



Note: Presence and absence of supports were based on survey responses from 103 teachers representing 72 public school academies in Michigan. These results might not represent associations for all public school academies in Michigan. Numbers above bars represent predicted probabilities. Estimates of predicted probabilities were based on multilevel logistic regression models that controlled for other characteristics of teachers and local education agencies. All differences between groups are statistically significant at $p < .05$.

Source: Authors’ analysis of school staffing data from the Michigan Department of Education and the Michigan Department of Education’s survey of teacher supports administered in September and October 2020.

Figure 3. Teacher retention in traditional school districts in Michigan was associated with supports for new teachers and supports involving compensation and benefits, 2013/14–2018/19



Note: Presence and absence of supports were based on survey responses from 436 teachers representing 233 traditional school districts in Michigan. These results may not represent associations for all traditional school districts in Michigan. Numbers above bars represent predicted probabilities. Estimates of predicted probabilities were based on multilevel logistic regression models that controlled for other characteristics of teachers and districts. All differences between groups are statistically significant at $p < .05$.

Source: Authors' analysis of school staffing data from the Michigan Department of Education and the Michigan Department of Education's survey of teacher supports administered in September and October 2020.

positively associated with teacher retention in traditional school districts included regular supportive communication between new teachers and the principal and other school leaders, an orientation to the school for new teachers, and annual salary increases. Each of those supports was associated with an increase of 1 percentage point in the probability that teachers continued to teach in their district (see figure 3 and regression results in tables B25 and B26).

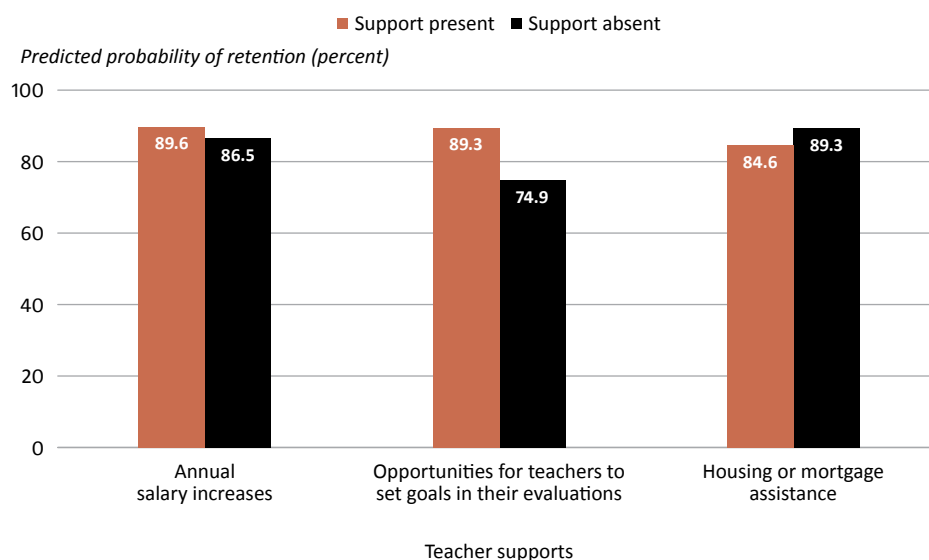
Although annual salary increases were positively associated with teacher retention for traditional school districts, two other types of compensation had negative associations with retention. First, teachers in traditional school districts that offered financial incentives to teach high-need subjects or in high-need schools were 2.2 percentage points less likely to continue teaching in their district than those in districts that offered no such incentives (see figure 3 and regression results in table B26). Second, teachers in traditional school districts that offered housing allowances or mortgage assistance supports to teachers were 7.7 percentage points less likely to continue teaching in their district than those in districts that did not offer that support.

For Michigan local education agencies serving large percentages of economically disadvantaged students, annual salary increases and opportunities for teachers to set goals in their evaluations were positively associated with teacher retention

Local education agencies with the highest percentages of economically disadvantaged students had significantly lower retention rates than local education agencies with lower percentages of economically disadvantaged students (see table B1 in appendix B). To better understand this relationship, the study team performed separate analyses focusing on supports and retention in local education agencies serving the highest proportions of economically disadvantaged students (those in the two highest quartiles).

For teachers in local education agencies in the top two quartiles for the percentage of economically disadvantaged students, the probability that they continued teaching in their local education agency was associated with three supports. Teachers in this group of local education agencies whose agencies offered annual salary increases had a 3.1 percentage point higher probability of continuing to teach in their local education agency than teachers in local education agencies in this group that did not provide annual salary increases (figure 4; see regression results in tables B33 and B34).⁵ Teachers in local education agencies in the top two quartiles for the percentage of economically disadvantaged students whose local education agencies included opportunities for teachers to set goals in their evaluations had a 14.4 percentage point higher probability of continuing to teach in their local education agency than teachers whose local education agencies did not provide this support. But teachers in local education agencies that served high percentages of economically disadvantaged students that provided teachers with housing or mortgage assistance had a 4.7 percentage point lower probability of staying in their position than teachers in similar local education agencies that did not offer that support.

Figure 4. Annual salary increases and opportunities for teachers to set goals in their evaluations were associated with higher teacher retention in local education agencies that served high percentages of economically disadvantaged students, 2013/14–2018/19



Note: For this analysis teachers' awareness of supports was based on survey responses from the sample of 238 Michigan teachers employed by 136 local education agencies that were in the top two quartiles for the percentage of economically disadvantaged students. These results may not represent associations for all local education agencies in Michigan that serve large percentages of economically disadvantaged students. The numbers above the bars represent predicted probabilities. Predicted probabilities come from multilevel logistic regression models that controlled for other characteristics of teachers and their local education agencies. All differences between groups are statistically significant at $p < .05$.

Source: Authors' analysis of school staffing data from the Michigan Department of Education and the Michigan Department of Education's survey of teacher supports administered in September and October 2020.

5. In Michigan, salary schedules, steps, and cost of living adjustments are typically included in collective bargaining agreements between teachers and local education agencies. However, local education agencies sometimes must freeze salaries (hold salaries steady from one year to the next) because of budgetary shortfalls. The study team confirmed that the 18 percent of survey respondents who indicated that their local education agency does not provide annual salary increases were employed by a financially challenged local education agency.

Limitations

This study has three limitations. First, the 12.2 percent response rate for the teacher survey on local education agency teacher supports is substantially lower than the rate that is considered acceptable for understanding a population of interest. Because the survey was conducted during the COVID-19 pandemic, the response rate might have been affected by the additional burdens on teachers' time as teachers prioritized preparing for interactive online instruction over responding to a survey. The study team created and applied weights to adjust the findings for nonresponse bias, but the findings should nonetheless be considered as applying only to the survey respondents and their local education agencies, not to the full population of Michigan teachers with three to five years of experience in their education agency or to all education agencies.

Second, the study's analysis of the presence or absence of supports is based on teacher reports, not definitive statements from local education agencies about the supports they offered. Thus, the results should be taken as representing which supports teachers believed were available, not necessarily which were actually available. For 183 local education agencies represented in the sample, there was only a single respondent. For the 118 local education agencies that were represented by more than one respondent, teachers agreed about the presence or absence of supports just 71 percent of the time.

Finally, the research questions about the relationship between teacher supports and teacher retention were answered using correlational methods. Thus, the study cannot determine whether the specific supports or perceptions of supports caused teachers to stay in (or leave) their positions, and findings should be viewed as only suggestive. A randomized controlled trial or other rigorous study of specific supports would be needed to determine their true impact and would help isolate the effects of teacher supports from other factors affecting teacher retention, such as the characteristics of local education agencies themselves.

Implications

The survey asked teachers about the presence of 30 teacher supports that local education agencies might consider adopting to improve teacher retention. The findings from this study could be used to prioritize the development of three types of supports. First, local education agencies might want to give higher priority to supports for new teachers—such as assigning mentors, providing an orientation to the school, and offering opportunities for regular and supportive communication with school leaders—than to financial supports such as housing or mortgage assistance.⁶ Supports for new teachers (commonly referred to as induction supports) might help new teachers get acquainted with their building, meet other faculty members and administrators, and feel welcomed and valued.

Second, local education agencies might also want to prioritize adjustments to their teacher evaluation systems to provide opportunities for teachers to set goals in their evaluations. Michigan law already requires that teachers develop personalized goals based on their annual performance evaluation, but survey results indicate that some local education agencies also included opportunities for teachers to set goals in their evaluations. This study found that teachers whose local education agency provided this evaluation-related support were more likely to continue teaching in their local education agency.

6. Local education agencies in Michigan are required to implement some of these supports to comply with Michigan law. For example, local education agencies are required to pair teachers with less than three years of teaching experience with a mentor (Michigan Public Act 451 of 1976, 1995), school administrators are required to consult with new teachers while developing the teacher's performance goals (Michigan Public Act 173 of 2015, 2015), and new teachers must receive at least 15 days of professional development during their first three years of teaching (Michigan Public Act 451 of 1976, 1995). Survey responses from teachers suggest that local education agencies might not be fully implementing these legal provisions.

Third, public school academies might consider giving higher priority to professional development and instructional resources for teachers. Michigan law requires that teachers receive a minimum of 15 days of professional development during their first three years, and all teachers are required to attain 150 hours of professional development to renew their teacher certificate (Michigan Administrative Code, 2021; Michigan Public Act 451 of 1976, 1995). But the laws are vague about local education agencies' role in providing professional development opportunities. This study found that teachers who worked in public school academies that arranged workshops and training sessions and provided teachers with release time to attend professional development had a 6–12 percentage point higher probability of continuing to teach at their academy than teachers in academies that did not provide such supports. Public school academies in which teachers perceived instructional resources as adequate also had higher retention rates.

In addition, state and local education agencies that are considering developing and implementing teacher supports based on these findings should consider testing the efficacy of the supports, not only to inform the education community but also to improve the usefulness of supports for their teachers. This study attempted to identify supports that might help teachers find more personal satisfaction with their work and employer. But only well-designed impact studies can establish with certainty that such supports improve teacher retention rates.

References

- Abelson, M., & Baysinger, B. (1984). Optimal and dysfunctional turnover: Toward an organizational level model. *Academy of Management Review*, 9(2), 331–342. <https://doi.org/10.2307/258446>.
- Barnes, G., Crowe, E., & Schaefer, B. (2007). *The cost of teacher turnover in five school districts: A pilot study*. National Commission on Teaching and America's Future. <https://eric.ed.gov/?id=ED497176>.
- Boyd, D., Grossman, P., Ing, M., Lankford, H., Loeb, S., & Wyckoff, J. (2011). The influence of school administrators on teacher retention decisions. *American Educational Research Journal*, 48(2), 303–333. <https://eric.ed.gov/?id=EJ921700>.
- Carver-Thomas, D., & Darling-Hammond, L. (2019). The trouble with teacher turnover: How teacher attrition affects students and schools. *Education Policy Analysis Archives*, 27(36). <https://eric.ed.gov/?id=EJ1213629>.
- Cowen, J., Brunner, E., Strunk, K., Drake, S., & Robinson, J. (2018). *Teacher reforms and teacher attrition in Michigan*. Michigan State University, Education Policy Innovation Collaborative. <https://epicedpolicy.org/wp-content/uploads/2019/02/EPIC-Policy-Brief-Teacher-Reforms-and-Teacher-Attrition-in-Michigan-WEBVERSION.pdf>.
- Darling-Hammond, L., & Sykes, G. (2003). Wanted: A national teacher supply policy for education: The right way to meet the “Highly Qualified Teacher” challenge. *Education Policy Analysis Archives*, 11(33), 1–55. <https://eric.ed.gov/?id=EJ680103>.
- Goldhaber, D., Gross, B., & Player, D. (2011). Teacher career paths, teacher quality, and persistence in the classroom: Are public schools keeping their best? *Journal of Policy Analysis and Management*, 30(1), 57–87. <https://eric.ed.gov/?id=EJ910058>.
- Guin, K. (2004). Chronic teacher turnover in urban elementary schools. *Education Policy Analysis Archives*, 12(42), 1–25. <https://eric.ed.gov/?id=EJ853508>.
- Hanselman, P., Grigg, J., Bruch, S. K., & Gamoran, A. (2016). The consequences of principal and teacher turnover for school social resources. In G. Kao & H. Park (Eds.), *Research in the sociology of education: Vol. 19. Family environments, school resources, and educational outcomes* (pp. 49–89). Emerald Group Publishing Limited. <https://eric.ed.gov/?id=ED587112>.

- Hanushek, E. A., Kain, J. F., & Rivkin, S. G. (2004). Why public schools lose teachers. *Journal of Human Resources*, 39(2), 326–354. <https://eric.ed.gov/?id=EJ746489>.
- Hanushek, E. A., & Rivkin, S. G. (2010). The quality and distribution of teachers under the No Child Left Behind Act. *Journal of Economic Perspectives*, 24(3), 133–150.
- Hanushek, E. A., Rivkin, S. G., & Schiman, J. (2016). Dynamic effects of teacher turnover on the quality of instruction. *Economics of Education Review*, 55(1), 132–148.
- Harris, D. N., & Sass, T. R. (2011). Teacher training, teacher quality, and student achievement. *Journal of Public Economics*, 95(7–8), 798–812.
- Hughes, G. D. (2012). Teacher retention: Teacher characteristics, school characteristics, organizational characteristics, and teacher efficacy. *Journal of Educational Research*, 105(4), 245–255. <https://eric.ed.gov/?id=EJ968206>.
- Ingersoll, R. M. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal*, 38(3), 499–534.
- Ingersoll, R. M., Merrill, L., & Stuckey, D. (2014). *Seven trends: The transformation of the teaching force* (CPRE Research Report No. RR-80). University of Pennsylvania, Consortium for Policy Research in Education. <https://eric.ed.gov/?id=ED566879>.
- Johnson, S. M., Berg, J. H., & Donaldson, M. L. (2005). *Who stays in teaching and why: A review of the literature on teacher retention*. Harvard Graduate School of Education. https://projectngt.gse.harvard.edu/files/gse-projectngt/files/harvard_report.pdf.
- Ladd, H. F. (2011). Teachers’ perceptions of their working conditions: How predictive of planned and actual teacher movement? *Educational Evaluation and Policy Analysis*, 33(2), 235–261. <https://eric.ed.gov/?id=EJ927621>.
- Lindsay, J., Gnedko-Berry, N., & Wan, C. (2021). *Michigan teachers who are not teaching: Who are they and what would motivate them to teach?* (REL 2021–076). U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest. <https://eric.ed.gov/?id=ED611790>.
- Mangione, T. W., & Van Ness, J. H. (2009). Mail surveys. In L. Bickman & D. Rog (Eds.), *The SAGE handbook of applied social research methods* (pp. 475–508). SAGE.
- Marinell, W. H., & Coca, V. M. (2013). *Who stays and who leaves? Findings from a three-part study of teacher turnover in NYC middle schools*. Research Alliance for New York City Schools. <https://eric.ed.gov/?id=ED540818>.
- Michigan Administrative Code r. 390.1101 et seq. (2021). Teacher Certification Code. https://www.michigan.gov/documents/mde/teacher_cert_code_683765_7.pdf.
- Michigan Public Act 451 of 1976. (1995). M.C.L. § 380.1526. <http://www.legislature.mi.gov/documents/1995–1996/billenrolled/Senate/pdf/1995-SNB-0679.pdf>.
- Michigan Public Act 173 of 2015. (2015). M.C.L. § 380.1249. <https://www.legislature.mi.gov/documents/2015–2016/publicact/pdf/2015-PA-0173.pdf>.

- Papay J. P., & Kraft, M. A. (2015). Productivity returns to experience in the teacher labor market: Methodological challenges and new evidence on long-term career improvement. *Journal of Public Economics*, 130(1), 105–119.
- Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Learning Policy Institute. Retrieved April 20, 2021, from <https://learningpolicyinstitute.org/product/solving-teacher-shortage>.
- Robinson, J., & Lloyd, B. (2017). *Teacher turnover in Michigan*. Michigan Department of Education. https://www.michigan.gov/documents/mde/Teacher_Mobility_Brief_Final_2017.09.18_v2_ada_601772_7.pdf.
- Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Educational Research Journal*, 50(1), 4–36. <https://eric.ed.gov/?id=EJ995828>.
- Sass, T. R., Hannaway, J., Xu, Z., Figlio, D., & Feng, L. (2012). Value added of teachers in high-poverty schools and lower poverty schools. *Journal of Urban Economics*, 72(2), 104–122.
- Shields, P. M., Esch, C., Humphrey, D. C., Young, V. M., Gaston, M., & Hunt, H. (1999). *The status of the teaching profession: Research findings and policy recommendations*. The Center for the Future of Teaching and Learning. <https://eric.ed.gov/?id=ED440051>.
- Sorensen, L. C., & Ladd, H. F. (2018). *The hidden costs of teacher turnover* (Working Paper no. 203–0918–1). National Center for Analysis of Longitudinal Data in Education Research. <https://eric.ed.gov/?id=ED591843>.
- Stackhouse, S., & Lloyd, B. (2018). *Michigan teacher mobility by geographic location and locale*. Michigan Department of Education. https://www.michigan.gov/documents/mde/Michigan_Teacher_Mobility_White_Paper_639846_7.pdf.
- Wan, Y., Pardo, M., & Asson, S. (2019). *Past and projected trends in teacher demand and supply in Michigan* (REL 2019–009). U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest. <https://eric.ed.gov/?id=ED597828>.

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