

Chris Steller

From: Carmody, Casey (PELSB) <Casey.Carmody@state.mn.us>
Sent: Wednesday, January 30, 2019 9:56 AM
To: Chris Steller
Subject: Supply and Demand Report: Minn. Stat. 122A.09, Subd. 5
Attachments: 2019 Supply and Demand Report.pdf

Dear Chris,

Attached is the “2019 Biennial Minnesota Teacher Supply and Demand” report, submitted to the Legislative Reference Library in accordance with Minn. Stat. § 122A.09, Subd. 5.

I’m also writing to inform you that PELSB will mail two hard copies of the report to the Legislative Reference Library. The envelope containing the reports is addressed to you.

Thanks, and please let me know if you have any questions!

Casey Carmody

Communications Specialist

651-539-4181 | casey.carmody@state.mn.us

Professional Educator Licensing and Standards Board

1500 Highway 36 West, Suite 300

Roseville, MN 55113

651-539-4200 | mn.gov/pelsb





PROFESSIONAL EDUCATOR
LICENSING AND STANDARDS BOARD

2019 Biennial Minnesota Teacher Supply and Demand

*Prepared for the Minnesota Professional
Educator Licensing Standards Board (PELSB)*

Authors: Wilder Research in collaboration with PELSB

JANUARY 2019

451 Lexington Parkway North | Saint Paul, Minnesota 55104
651-280-2700 | www.wilderresearch.org

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Key findings

The Teacher Supply and Demand Report is created biennially to inform policy-makers and education stakeholders regarding the current landscape of teachers in Minnesota. The Professional Educator Licensing and Standards Board (PELSB) worked with Wilder Research in fall 2018 to analyze teaching licensure, assignment, and employment data for the 2017-18 school year from the Minnesota Staff Automated Reporting System (STAR).

Due to regular transitions in teacher licensure, including licensure type and licensure areas, evaluating the direct supply and demand of teachers by licensure area and economic development region is inexact. Additionally, PELSB, a new agency with new methodology for collecting and analyzing the data, now manages this report.

With those concerns, there are still some findings that can be pulled from the data in this report:

- The total percentage of individuals teaching on a special permission out of their licensure area or without a standard teaching license is 3.8 percent
- Slightly more than half (52.5%) of teachers holding an active teaching license are not currently working as a teacher in a Minnesota public school. More data on why these individuals left and remain out of the classroom would provide better understanding about the current supply of teachers
- Licensure areas with a high percentage of teachers on special permission include career and technical education fields, world languages, special education, and STEM
- Districts continue to report a perception of “difficult” and “very difficult” to fill teaching positions
- The percentage of teachers of color remain stagnant while the percentage of students of color continues to grow in Minnesota

A new licensure system that collects data more accurately and efficiently, including districts using a statewide job board that can better track application data, should help future reports with data clarity and the development of trend lines.

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Introduction

Every two years, the Professional Educator Licensing and Standards Board (PELSB) provides information to the Minnesota Legislature about the supply and demand of licensed teachers in Minnesota public schools. The PELSB worked with Wilder Research in fall 2018 to gather and analyze data to address the following key research questions:

- What is the current supply and demand of teachers by licensure area and economic region?
- What are the shortage content areas for which districts place standard-licensed teachers to teach outside of their licensure areas or hire teachers with special permissions or out of compliance?
- What are the racial and ethnic compositions of teachers compared to those of students?
- What are the reasons for teacher attrition?
- What are the efforts to recruit and retain standard-licensed teachers and teachers of color?

The research findings will be used to meet the statutory requirements of Minn. Stat. § 122A.091, Subd. 5 and to advise the Legislature, educational institutions, and the public about loan forgiveness grants and career opportunities in education.

Methods

With collaborative input from PELSB, Wilder Research analyzed teaching licensure, assignment, and employment data from the Minnesota Staff Automated Reporting System (STAR), collected during the 2017-18 school year. Wilder Research also analyzed the student enrollment data for the 2017-18 school year, obtained from the Minnesota Department of Education's Data Center.

In addition, Wilder Research conducted web surveys of school districts and teacher preparation programs. The survey of school districts asked about the number of standard-licensed and special permission teachers in the district by licensure area in 2018-19; ethnic and racial compositions of teachers; overall perceptions on teacher shortages, including for standard-licensed teachers and substitute teachers; and district efforts to recruit and retain standard-licensed teachers and teachers of color. The survey was completed by 315 out of 538 school district representatives or hiring administrators, for a response rate of 58.6 percent.

The survey of teacher preparation programs asked about the number of students enrolled in the state-identified shortage areas in 2017-18; ethnic and racial compositions of the students; and the program efforts to recruit teaching candidates and support them to complete the program, including candidates of color. The survey was completed by 10 out of 29 program representatives or admission officers, for a response rate of 34.5 percent.

Definitions and limitations

This section offers ways in which teacher licensure data are addressed. Figure 1 summarizes the number of licenses and teachers in four main categories: licensed, active licensed, assignments, and special permissions. It shows the total numbers of individual licenses or assignments (as applicable), as well as the total number of unduplicated individuals. For this report, when possible, unduplicated counts of individuals are used to better describe the supply of teachers.

- “Licensed” means a full professional or standard license in a particular field that is not expired. For this report, all administrators and short-call substitute licenses are removed. However, other non-instructional licensure fields, including related-service licenses, are included.
- Of persons licensed, less than half (63,629 out of 133,945 or 47.5%) are actively using one or more of their licenses. The remaining teachers (70,316 or 52.5%) are inactive, meaning they are currently holding a license but are not working.¹ There are many potential reasons for this large number, including individuals who retired before their license expired, individuals working in non-instructional roles in education, and individuals taking temporary leave for personal issues.
- “Assignments” are the actual classroom assignments reported by districts. An individual teacher may have multiple part-time assignments, teaching in multiple license areas. Teachers with related-service licenses are allowed to teach in some assignment areas.
- “Special Permissions” include all people with permission to teach in a licensure areas without full qualifications to teach in the particular field. Many of these permissions include individuals with no standard license. Other permissions allow licensed individuals to teach out of their licensure area. Demand of teachers is often reflected in the percentage of assignments filled by special permissions. In total, 3.8 percent (2,458 of 64,487) of unduplicated assignment-holders in Minnesota were individuals not licensed to teach the field of the assignment.

¹ Figure A11 in the Appendix shows the license areas held by most of the inactive teachers.

1. Total number of licenses and assignments and unduplicated number of teachers

	Licensed	Active licensed	Assignments	Special permissions
Total number of licenses or assignments	217,946 ^a	106,879 ^c	138,757 ^e	4,834 ^g
Unduplicated number of teachers	133,945 ^b	63,629 ^d	64,487 ^f	2,458 ^h

^a "Total Licensed" is the total number of current (not expired) standard teaching and other applicable licenses after removing all licenses held by administrators and all short-call substitute licenses. If a teacher has multiple licenses, each license is counted.

^b "Unduplicated Licensed" is the total number of teachers and other applicable licensed staff who hold a current (not expired) standard teaching license after having removed all licenses held by administrators and all short-call substitute licenses. If a teacher has multiple licenses, they are counted only once here.

^c "Total Active Licensed" is the total number of current (not expired) standard teaching and other applicable licenses held by teachers actively teaching after removing all licenses held by administrators and all short-call substitute licenses. If a teacher has multiple licenses, each license is counted.

^d "Unduplicated Active Licensed" is the total number of teachers and other applicable licensed staff who are actively teaching who hold a current (not expired) standard teaching license after having removed all licenses held by administrators and all short-call substitute licenses. If a teacher has multiple licenses, they are counted only once here.

^e "Total Assignments" is the total number of instructional and other applicable assignments after removing all administrative and other assignments not applicable to our analysis. If a teacher has multiple assignments, each assignment is counted. This includes all such applicable assignments regardless of whether the instructor was licensed, under a special permission, or out of compliance.

^f "Unduplicated Assignments" is the total number of teachers, non-licensed instructors, and other applicable staff who appeared in the assignments data as holding an instructional or other applicable assignment after having removed all administrative and other assignments not applicable to our analysis. If a teacher has multiple assignments, they are counted only once here.

^g "Total Special Permissions" is the total number of instructional and other applicable assignments held by a person under a special permission. If a teacher has multiple assignments, each assignment is counted.

^h "Unduplicated Special Permissions" is the total number of teachers, non-licensed instructors, and other applicable staff who held any assignment under a special permission. If a teacher holds multiple assignments under special permission, they are counted only once.

This report disaggregates this data to show how some licensure areas have a higher percentage of individuals teaching with special permissions; how some Economic Development Regions (EDRs) have a high percentage of individuals teaching on special assignments; and how districts' perceptions of the shortage remains high.

Overall, it remains difficult to find direct answers for supply of teachers in Minnesota, and how well this meets the demand. Future data collection should explore why a large number of teachers currently holding standard licenses are not working. Also providing guidance to the districts on what license and assignment data are to be entered into the STAR system could be helpful in making sure that appropriate data for the analyses can be pulled out.

Findings

Supply of teachers

This section describes active standard-licensed teachers in Minnesota public schools in 2017-18. The active licensed teachers is the closest measure currently available for the supply of teachers in Minnesota.

Figure 2 shows the total number of such teachers in 2017-18 is 63,629.² Most teachers (91.0%) were returning teachers from the previous school year. Newly licensed teachers from in and outside of Minnesota made up 3.8 percent of the teaching workforce in 2017-18. Most of the teachers identified as white (95.7%), followed by Asian (1.5%), black (1.4%), Hispanic (1.0%), and American Indian (0.4%). Three-quarters of the teachers were female.

2. Minnesota teacher profile in 2017-18 (N=63,436)^a

Employment status	N	Percent
Returning staff	57,706	91%
Returning after break	2,523	4%
Transfer from non-Minnesota or non-public schools	775	1.2%
Newly licensed – Minnesota graduates	2,136	3.4%
Newly licensed – graduates from outside of Minnesota	256	0.4%
Total	63,396	100%
Gender		
Female	48,053	75.8%
Male	15,383	24.2%
Total	63,436	100%
Race		
American Indian	285	0.4%
Asian	951	1.5%
Hispanic	634	1%
Black	875	1.4%
White	60,691	95.7%
Total	63,436	100%

Source. Minnesota Staff Automated Reporting System –STAR

^a The teacher demographic data came from Employment data set, which has a different total number of teachers than in License data set.

² The number of teachers in Minnesota has increased every year since 2011. A total of 60,090 teachers in 2015-16 was reported in the 2017 Report of Teacher Supply and Demand (Minnesota Department of Education, n.d.). However, the exact changes in number of active standard-licensed teachers from 2015-16 to 2017-18 could not be determined because the calculation for this report might be different from the previous report. The proportion of teachers of color remained the same (4.2 percent in 2015-16).

Figure 3 shows that slightly more than half of the Minnesota teachers (34,062 of 63,436 or 53.7%) worked in the seven-county Twin Cities Economic Development Region (EDR11). Figure 3 shows the proportions of teachers of color in each of the 11 Economic Development Regions (EDR) in Minnesota. The Twin Cities EDR had the highest percentage of teachers of color in the state. As a comparison, Figure 3 also shows the proportions of students of color in each of EDR in Minnesota, which are much larger than those of teachers.

3. Proportion of teachers of color and students of color by Economic Development Region (EDR)

Economic Development Region (EDR)		Percentage of teachers of color	Number of teachers	Percentage of students of color	Number of students
EDR 1	Northwest	0.4%	1,115	16.8%	14,082
EDR 2	Headwaters	3.6%	1,113	39.6%	14,333
EDR 3	Arrowhead	2.1%	3,237	16.7%	44,510
EDR 4	West Central	1.1%	2,613	15.9%	34,711
EDR 5	North Central	1%	1,992	14.1%	26,069
EDR 6E	Southwest Central	0.4%	1,192	26.2%	16,424
EDR 6W	Upper Minnesota Valley	0.7%	608	18.3%	7,574
EDR 7E	East Central	0.5%	1,816	10.5%	25,886
EDR 7W	Central	1.2%	5,410	17.0%	79,961
EDR 8	Southwest	0.9%	1,742	30.1%	20,632
EDR 9	South Central	0.7%	2,670	20.9%	34,790
EDR 10	Southeast	1.3%	5,890	25.5%	78,728
EDR 11	7-County Twin Cities	7%	34,062	44.4%	487,152
	Minnesota	4.3%	63,436	33.5%	884,852

Source. Minnesota Staff Automated Reporting System -STAR.

Figure 4 shows that among the active standard-licensed teachers, there were teachers who worked in their license or endorsement areas and teachers who did not. Figure 4 shows the areas in which the highest proportion of the teachers with appropriate licenses worked. (Minn. Stat. § 122A.16 defines a “qualified teacher” as an individual holding a valid license for their assignment. For this report, that is considered a “standard” full professional license.) Related-service licensure areas have high proportions because each area has additional requirements, licensure, and oversight from boards within their professional field. Some endorsement areas appear to have low numbers of teaching with this license (Appendix Figure A1) because their assignment falls under their initial license. For example, an elementary-licensed teacher with a middle-level endorsement is identified as using their elementary license, although they may be using their middle-level endorsement in their assignment.

4. License areas of most qualified teachers

License or endorsement	Number of active teachers working in their license area	Total number of active teachers holding the license	Percentage of active teachers using their license
Public school nurse	615	616	99.8%
School psychologist (general)*	795	809	98.3%
Speech-language pathologist	1,846	1,890	97.7%
School social worker (general)*	1,249	1,284	97.3%
Music/band - vocal, instrumental, and classroom (general)*	2,254	2,405	93.7%
Agriculture education (general)*	151	163	92.6%
Community education director	111	120	92.5%
Latin	32	35	91.4%
Visual arts	1,382	1,518	91.0%
American Sign Language	20	22	90.9%
Academic and behavioral strategist	1,015	1,122	90.5%
School counseling (general)*	1,316	1,455	90.4%
Industrial arts/technology (general)*	517	575	89.9%

Source. Minnesota Staff Automated Reporting System –STAR.

Note. Includes the licenses in which the total number of active teachers holding the license >10 and the percentages of qualified teachers working in the license areas are 89.51 percent or more.

* This is a group of similar licenses.

Appendix Figures A1 and A2 show the results for all the license areas and all licenses by grade level, respectively. These figures show that the results vary by grade levels. For example, there are four grade-level licenses for mathematics: 5-12, 5-8, 7-12, and 9-12. Out of the number of teachers holding relevant grade-level licenses, almost all teachers with a middle-through-high school math license (mathematics 7-12) taught in the appropriate subject area and grade levels (91.6%). However, 37.1 percent of teachers with a middle school math license (mathematics 5-8) taught in that area. Appendix Figure A3 shows the top five areas with the most qualified teachers in each EDR.

Almost all standard-licensed teachers worked in at least one of their licensure or endorsement areas (98.1%). Results are similar for White and teachers of color (98.4% and 97.2%, respectively; Appendix Figure A4) and across the EDRs.

Demand

This section presents information on the various factors of demand, including student enrollment patterns. Student count in comparison to the supply of teacher is only one measure of demand.

Figure 5 shows that the total number of students enrolled in Minnesota schools in 2017-18 is 884,852, an increase of over 20,000 students from 2015-16. The increase in student enrollment ranged from 0.5 percent to 5.1 percent in each region, with the South Central, Upper Minnesota Valley, and Southwest EDRs experiencing the highest increase in their total student enrollment since 2015-16.

5. Student enrollment in 2017-18 and 2015-16 by Economic Development Region (EDR)

Economic Development Region (EDR)		2017-18 enrollment	2015-16 enrollment	Growth from 2015-16	Percentage of growth
EDR 1	Northwest	14,082	14,006	+76	+0.5%
EDR 2	Headwaters	14,333	13,897	+436	+3.1%
EDR 3	Arrowhead	44,510	43,848	+662	+1.5%
EDR 4	West Central	34,711	33,721	+990	+2.9%
EDR 5	North Central	26,069	25,579	+490	+1.9%
EDR 6E	Southwest Central	16,424	16,129	+295	+1.8%
EDR 6W	Upper Minnesota Valley	7,574	7,221	+353	+4.9%
EDR 7E	East Central	25,886	25,765	+121	+0.5%
EDR 7W	Central	79,961	78,330	+1,631	+2.1%
EDR 8	Southwest	20,632	19,857	+775	+3.9%
EDR 9	South Central	34,790	33,111	+1,679	+5.1%
EDR 10	Southeast	78,728	77,629	+1,099	+1.4%
EDR 11	7 County Twin Cities	487,152	475,092	+12,060	+2.5%
	Minnesota	884,852	864,185	+20,667	+2.4%

Source. Minnesota Department of Education's Data Center.

Note. Includes PreK-grade12.

Figure 6 shows that one in three students in Minnesota (33.5%) in 2017-18 were students of color. The share of students of color statewide has increased 2.1 percentage points from 2015-16 to 2017-18. Each EDR experienced an increase, ranging from 0.9 to 2.8 percentage points.

6. Proportion of students of color in 2017-18 and 2015-16 by Economic Development Region (EDR)

Economic Development Region (EDR)		Students of color in 2017-18	Students of color in 2015-16	Change from 2015-16
EDR 1	Northwest	16.8%	15.4%	+1.4%
EDR 2	Headwaters	39.6%	38.4%	+1.2%
EDR 3	Arrowhead	16.7%	15.5%	+1.2%
EDR 4	West Central	15.9%	14.3%	+1.6%
EDR 5	North Central	14.1%	13.2%	+0.9%
EDR 6E	Southwest Central	26.2%	24.0%	+2.2%
EDR 6W	Upper Minnesota Valley	18.3%	15.5%	+2.8%
EDR 7E	East Central	10.5%	9.5%	+1.0%
EDR 7W	Central	17.0%	14.9%	+2.1%
EDR 8	Southwest	30.1%	27.9%	+2.2%
EDR 9	South Central	20.9%	18.7%	+2.2%
EDR 10	Southeast	25.5%	23.3%	+2.2%
EDR 11	7 County Twin Cities	44.4%	42.1%	+2.3%
Minnesota		33.5%	31.4%	+2.1%

Source. Minnesota Department of Education's Data Center.

Note. Includes PreK-grade12.

Enrollment of special student populations remained stable overall. There was a slight increase in the proportion of special education students and a slight decrease in the proportion of free and reduced-price lunch students since 2015-16. The share of English Language Learners remained the same (Appendix Figure A6).

Another factor impacting demand is the shortage areas needing qualified teachers, which is described in the next section.

Shortage areas

This section presents information on the shortage areas in Minnesota public schools. We examined the areas where teachers worked under special permissions or out of compliance, and where there were unfilled teaching positions. We summarized the findings of the school district survey about district perceptions of teacher shortages, teacher preparedness to teach special student populations, the racial and ethnic compositions of teachers relative to those of students, and challenges to recruit racially diverse teachers and standard-licensed teachers.

Teaching under special permissions and out of compliance

Statewide, 3.8 percent of all teachers worked under special permissions and 0.3 percent worked out of compliance (Figure 7). In each EDR, the proportion of teachers working under special permissions or out of compliance ranged from 2.9 percent in the Central EDR to 7.5 percent in the Northwest EDR. Teachers of color were more likely to work under special permissions or out of compliance than white teachers were (14.1% vs. 3.5%). The proportion of male teachers who worked under special permissions or out of compliance was also slightly higher than the proportion of female teachers (5.2% vs. 3.7%).

7. Teaching licensure status by Economic Development Region (EDR) and teacher demographic characteristics

Economic Development Region (EDR)		Licensed for Assignment	Special permission	Out of compliance	Total N
EDR 1	Northwest	94.8%	7.0%	0.5%	1,139
EDR 2	Headwaters	95.9%	4.9%	0.4%	1,130
EDR 3	Arrowhead	96.0%	5.3%	0.9%	3,287
EDR 4	West Central	97.2%	3.3%	0.2%	2,640
EDR 5	North Central	97.1%	3.9%	0.2%	2,024
EDR 6E	Southwest Central	97.1%	3.9%	0.3%	1,210
EDR 6W	Upper Minnesota Valley	96.9%	3.9%	0.6%	617
EDR 7E	East Central	96.3%	4.5%	0.3%	1,847
EDR 7W	Central	97.7%	2.8%	0.1%	5,458
EDR 8	Southwest	94.9%	6.7%	0.2%	1,787
EDR 9	South Central	96.6%	4.4%	0.3%	2,705
EDR 10	Southeast	97.2%	3.5%	0.2%	5,965
EDR 11	7 County Twin Cities	96.7%	3.5%	0.2%	34,498
	Minnesota	96.7%	3.8%	0.3%	64,242

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note. Includes all teaching assignments (licensed and non-licensed). A few teachers held more than one assignment; they were licensed for one assignment and taught under special permissions or out of compliance for another (i.e., total percentage is slightly higher than 100 percent in each EDR). All administrators who also held instructional assignments were removed from the analysis.

7. Teaching licensure status by Economic Development Region (EDR) and teacher demographic characteristics (continued)

Economic Development Region (EDR)	Licensed for Assignment	Special permission	Out of compliance	Total N
Teacher race				
Of color	86.7%	13.3%	0.8%	2,949
White	97.2%	3.3%	0.2%	61,333
Teacher gender				
Female	96.9%	3.5%	0.2%	48,582
Male	96.1%	4.9%	0.3%	15,700

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note. Includes all teaching assignments (licensed and non-licensed). A few teachers held more than one assignment; they were licensed for one assignment and taught under special permissions or out of compliance for another (i.e., total percentage is slightly higher than 100 percent in each EDR). All administrators who also held instructional assignments were removed from the analysis.

In almost all license areas, there were teachers who worked under special permissions or out of compliance (129 of 136 licenses or 94.8%; Appendix Figure A7). However, the number of such teachers varied across the license areas. Figure 8 shows the areas with the highest share of teachers teaching with special permissions or out of compliance. It should be noted that districts might have preference for teaching candidates in certain fields who do not have standard licenses, such as experts in career and technical fields or native language speakers. The definitions of special permission can be found in the Appendix.

8. License areas of most teachers with special permissions or out of compliance

License or endorsement	Number of teachers with special permission or out of compliance	Total number of teachers with assignments	Percent
Hospitality service careers	7	12	58.3%
Bilingual/bicultural education	7	17	41.2%
Transportation careers	21	57	36.8%
American Sign Language	30	94	31.9%
Arabic	25	82	30.4%
World languages (Norwegian, Polish, Finnish, Czech, Swahili, Vietnamese, or Hmong)*	14	64	21.9%

Source. Minnesota Staff Automated Reporting System –STAR.

Note. Includes the licenses in which the total number of teachers with assignment >10 and the percentages of teachers with special permissions or out of compliance of 9.51 percent or more.

* This is a group of similar licenses.

8. License areas of most teachers with special permissions or out of compliance (continued)

License or endorsement	Number of teachers with special permission or out of compliance	Total number of teachers with assignments	Percent
Medical careers	38	253	15.0%
Chinese	16	108	14.8%
Construction careers	47	373	12.6%
Computer Science/Keyboarding*	77	639	12.1%
Latin	10	83	12.0%
Manufacturing careers	36	331	10.9%
Autism spectrum disorders	236	2,264	10.4%
Dance and theatre arts*	59	587	10.0%
Librarian	7	71	9.9%
Early childhood special education	284	2,946	9.6%

Source. Minnesota Staff Automated Reporting System –STAR.

Note. Includes the licenses in which the total number of teachers with assignment >10 and the percentages of teachers with special permissions or out of compliance of 9.51 percent or more.

* This is a group of similar licenses.

In addition, there are particular areas in which large numbers of teachers are working under special permissions or out of compliance in Minnesota schools, even though the proportions for each area are fewer than 10 percent. Figure 9 shows the areas with 100 or more teachers working under special permissions or out of compliance statewide.

9. License areas with a high number of teachers working under special permissions or out of compliance

Areas	Number of teachers working under special permissions or out of compliance
Academic and behavioral strategist	780
Mildly handicapped	526
Elementary education	477
Emotional and behavioral disorders	324
Early childhood education	318
Early childhood special education	284
Learning disabilities	255
Autism spectrum disorders	236

Source. Minnesota Staff Automated Reporting System –STAR.

9. License areas with a high number of teachers working under special permissions or out of compliance (continued)

Areas	Number of teachers working under special permissions or out of compliance
Junior High School*	174
Sciences*	170
Developmental disabilities	135
Health and physical education*	112
Mild to moderate mentally handicap	112
English as a Second Language	106
Mathematics	100

Source. Minnesota Staff Automated Reporting System –STAR.

* This is a group of similar licenses.

Appendix Figures A8 and A9 show that teachers of color working under special permissions or out of compliance worked in more license areas than their white counterparts did. Teachers of color were more likely to work in early childhood special education, special education areas (e.g., mild or moderate to severe mental handicap, blind or visually impaired, oral or aural deaf education, autism spectrum disorders, academic and behavioral strategist, and emotional and behavioral disorders), and world languages (e.g., Spanish). Appendix Figure A10 shows the top five areas with the highest share of teachers working under special permissions or out of compliance in each EDR.

Perceptions of school districts

As a statutory requirement, the Teacher Supply and Demand Report must include a survey of districts when considering the breadth of the teacher shortage. This survey can help identify a drop in licensed applications for job postings and show when positions simply went unfilled. These data points are not available in the special permissions or assignment data, collected through the STAR database.

However, most districts are not well equipped to answer data-specific questions about number of applicants for all positions posted in the last academic year. Until data systems can more accurately and efficiently collect this data, the district survey relies prominently on perception of shortages.

Standard-licensed teacher shortages

In the survey, school districts reported that teacher shortages are a problem; 41.9 percent of districts reported that it is a major problem and 51.8 percent reported that it is a minor problem. Only a few districts (6.4%) indicated that it is not a problem for them (Figure 10).

Compared to five years ago, more than half of the districts reported that there are significantly fewer applicants (57.6%) and one-third of the district reported that there are somewhat fewer applicants. (32.3%).

10. School district perceptions of teacher shortages

Problems with teacher shortages	Percent
A serious problem	41.9%
A minor problem	51.8%
No problem	6.4%
Total number	313
Availability of teachers, compared to five years ago	
Significantly fewer	57.6%
Somewhat fewer	32.3%
About the same	8.1%
Somewhat more	1.0%
Significantly more	1.0%
Total number	297

Over 1 in 10 school districts (12.7%) reported that they had to cancel classes or programs due to a shortage of teachers. School districts reported that they needed between one and four full-time equivalent (FTE) teachers for those classes, with most of them (68.6%) mentioning that they needed one FTE teacher.

More often school districts converted classes to a different format, such as offering online instruction or combining classrooms due to a shortage of teachers. One in four school districts (24.2%) reported so. They reported that between one and eight teachers were needed to provide those classes in their preferred format, and most school districts (92.4%) reported needing one or two FTE teachers.

Substitute teacher shortages

In addition to shortages of regular teachers, school districts reported shortages of substitute teachers, including shortages for 5-year short-call and 2-year limited short-call licenses.

Most districts viewed these shortages as a serious problem (46.7-47.7% of districts reporting so for the 5-year short-call and 2-year limited short-call; Figure 11) or minor problem (45.7-46.1%). Only a few districts reported that they have no problem with substitute teacher shortages (6.2-7.6% for each short-call license). Four in ten school districts felt that they experienced significantly fewer substitute teachers with both the 5-year and 2-year limited short-call licenses, compared to five years ago (43.6-44.0%).

11. School district perceptions of substitute teacher shortages

Problems with substitute teacher shortages	Percent
5-year short-call license	
A serious problem	47.7%
A minor problem	46.1%
No problem	6.2%
Number of school district respondents	308
2-year limited short-call license	
A serious problem	46.7%
A minor problem	45.7%
No problem	7.6%
Number of school district respondents	289
Availability of substitute teachers now, compared to five years ago	
5-year short-call license	
Significantly fewer	44.0%
Somewhat fewer	34.3%
About the same	16.2%
Somewhat more	4.7%
Significantly more	0.7%
Number of school district respondents	277
2-year limited short-call license	
Significantly fewer	43.6%
Somewhat fewer	34.2%
About the same	16.9%
Somewhat more	5.3%
Significantly more	0.0%
Number of school district respondents	266

Unfilled teaching positions

School districts were asked about positions that were budgeted for 2018-19, but were not filled because of a lack of qualified applicants. The areas with the most unfilled teaching positions were:

- Deaf or hard of hearing
- Blind or visually impaired
- Family education/early childhood education
- Parent and family education
- American Sign Language
- Hmong, Ojibwe, and German languages
- Agricultural education
- Driver education

These are teaching areas where it may be more difficult to find someone that would fit a special permission for the position. In order to address these unfilled positions, districts can choose not to offer the content or to increase the workload of other licensed staff.

In addition, the new tiered licensure system provides a Tier 2 license that is similar to previous permissions (limited license, provisional license, nonrenewable license), but can hold higher expectations than previous licensure types. Districts indicated that there were a number of teachers holding Tier 2 licenses working in the following areas:

- Theatre arts
- Dance
- Hmong and Ojibwe languages
- American Sign Language
- Business
- Teachers of computer, keyboarding, and related technology applications
- Teacher/coordinator: work-based learning
- Family education/early childhood education
- Parent and family education
- Emotional and behavioral disorders
- Developmental/adapted physical education

- Autism spectrum disorders
- Developmental disabilities
- Early childhood special education
- Blind or visually impaired
- Academic and behavioral strategist
- Construction careers

The areas with unfilled teaching positions and Tier 2 licensed teachers above are calculated based on the number of posted positions in that area, according to the district survey respondents. However, individual school districts appeared to have varying interpretations of posted positions (some included all teachers and some only included new teachers); therefore, the results should be interpreted with caution.

Recruiting diverse teachers

School districts in the survey were asked about the racial and ethnic compositions of their teachers and students in fall of 2018. Similar to the STAR data from 2017-18 school year, the responses of the school districts indicated that the demographics of their teachers did not reflect those of their students. Most school districts had either zero (38.4%) or a few teachers of color (35.8% reporting fewer than 6% of their teachers are people of color; Figure 12). In contrast, 26.5 percent of school districts reported having between 11 and 25 percent students of color and 19.4 percent reported that more than half of the students in the district were students of color.

12. School district report of proportion of teachers and students of color

Percent persons of color	Teachers (N=302)	Students (N=294)
None (0%)	38.4%	2.7%
1%-5%	35.8%	15.6%
6-10%	8.9%	17.3%
11-25%	10.6%	26.5%
26-50%	2.0%	18.4%
51-75%	0.7%	4.1%
76-100%	3.6%	15.3%

Source. School district survey

N= number of district respondents

Most of the school districts reported that it was difficult to recruit teachers of color from the different racial and ethnic backgrounds (Figure 13).

13. School district perception of difficulty recruiting racially diverse teachers

Race or ethnicity of teachers	N	Percentage of school districts reporting difficulty
Native American/American Indian	305	92.1%
Asian	306	90.5%
Native Hawaiian or Pacific Islander	306	94.1%
Hispanic	306	91.8%
Black, not of Hispanic origin	306	90.2%
White, not of Hispanic origin	304	13.8%
Two or more races	298	75.5%

Source. School district survey.

Note. Survey respondents were asked, "How easy or difficult is it for your district to recruit racially diverse teachers? Please answer for each racial group." Response options are: easy, somewhat easy/somewhat difficulty, and difficult.

N= number of district respondents

Teaching special student populations

In the survey, school districts were asked how prepared their teachers are to teach special student populations. Almost 60 percent of the school districts reported that their teachers are well prepared or mostly prepared to teach low-income students (Figure 14). However, the majority of school districts reported that their teachers were not well prepared to teach other students, including those living or who used to live in foster care (35.9% reporting well or mostly prepared), who are homeless (25.3%), and who are identified as English Language Learners (24.9%), immigrants (14.2%), or refugees (9.3%).

14. School district perceptions of teacher preparedness to teach special student populations

	N	Percentage of school districts reporting "well or mostly prepared"
Low-income students (those eligible for free or reduced-price lunch)	299	58.5%
Students currently or previously in foster care	290	35.9%
Homeless students	285	25.3%
English Language Learners	285	24.9%
Immigrant students	274	14.2%
Refugee students	269	9.3%

Source. School district survey.

Note. Survey respondents were asked "How prepared are teachers in your school district to teach these specific types of students?" Response options are: not prepared, somewhat prepared, and well or mostly prepared.

N= number of district respondents

Teacher attrition

Slightly more than 7,000 teachers from the 2016-17 school year did not return to teach in the same school district in the 2017-18 school year. The most common reasons for leaving were personal reasons, retirement, and leaving the district to teach somewhere else (Figure 15). These data are reported by the districts through STAR reporting. Future data collection should explore the reasons for teacher attrition, especially due to personal and unknown reasons.

15. Reasons for licensed teachers leaving at the end of 2016-17 school year

Termination status of licensed teachers at the end of 2016-17	N	Percent
Personal reasons	1,729	24.7%
Retirement	1,437	20.5%
Leaving the district to teach in another district, state, or country	1,367	19.5%
Not offered re-employment for reasons other than staff reduction	792	11.3%
Staff reduction	304	4.3%
Getting other educational job (substituting, etc.)	226	3.2%
Death	26	0.4%
Unknown	1,172	16.7%
Total	7,010	100.0%

Source. Minnesota Staff Automated Reporting System –STAR.

Strategies to recruit and retain teachers

School districts reported that they have used several strategies to recruit and retain standard-licensed teachers and teachers of color.

Standard-licensed teachers

To recruit standard-licensed teachers, most of the school districts in the survey reported that they provide a competitive salary and post positions beyond where districts usually do. Fewer, but still a large number of school districts, reported that they created a pipeline program, such as residency models or Grow Your Own, and provide hiring incentives. Among the recruitment strategies, a larger share of districts reported that providing a competitive salary and creating a pipeline program made a very big difference (Figure 16). A few school districts also mentioned other strategies that have made some or a very big difference for them, including: posting the jobs earlier, providing competitive benefits, communicating or working directly with colleges and universities, creating a positive working climate with school staff, recruiting from Wisconsin and Iowa, providing

moving expenses, offering a recruiting bonus to existing staff, and contacting other schools who recently posted positions.

16. School district efforts to recruit standard-licensed teachers

	N	Made no difference	Made slight difference	Made some difference	Made a very big difference
Provide hiring incentives	56	30.4%	30.4%	33.9%	5.4%
Provide a competitive salary	252	25.0%	25.4%	38.1%	11.5%
Create a pipeline program (e.g., residency models, Grow Your Own)	103	11.7%	43.7%	27.2%	17.5%
Offer position postings beyond where districts usually post	233	27.9%	35.6%	31.3%	5.2%

Source. School district survey

N= number of district respondents

Most districts reported that they provide mentorship programs and provide professional development opportunities as a strategy to retain standard-licensed teachers, which have made some or a very big difference to schools (69.1-72.9%; Figure 17). Schools also offer promotions and special assignment opportunities. Offering Teacher on Special Assignment (TOSA) opportunities have made the least impact in retaining standard-licensed teachers. A few districts also mentioned other strategies that have made some or a very big difference. These included creating positive working environment at school; promoting work-life balance; having a strong coaching program; creating leadership teams, Professional Learning Communities (PLCs), and professional network groups; participating in a Quality Composition (Q Comp) program, and offering graduate tuition remission.

17. School district efforts to retain standard-licensed teachers

	N	Made no difference	Made slight difference	Made some difference	Made a very big difference
Provide mentorship programs	275	11.3%	19.6%	46.9%	22.2%
Provide professional development opportunities	295	11.2%	15.9%	50.5%	22.4%
Offer promotions or increase salaries	177	9.6%	24.3%	46.9%	19.2%
Offer Teacher on Special Assignment (TOSA) opportunities	148	31.1%	27.0%	33.8%	8.1%

Source. School district survey.

N= number of district respondents

Teacher preparation programs also used different strategies to recruit candidates to teach in the shortage areas and to support those candidates. Among the strategies, programs reported that providing access to state and federal grants, other than loan forgiveness programs, was the most effective strategy (i.e., a higher share of teacher preparation programs reporting making some or a very big difference with this strategy than others). Teacher preparation programs reported that providing advising and other personalized supports and working with partner schools to support early placement in the teaching field (e.g., through residency programs and co-teaching) were the most effective strategies to support the teaching candidates. However, due to the small number of respondents in the teacher preparation program survey, the results should be interpreted with caution.

Teachers of color

Similarly, to recruit racially diverse teachers, most school districts in the survey reported that they provide a competitive salary and post positions beyond where districts usually do. School districts reported that they created a pipeline program, such as residency models or Grow Your Own, and provide hiring incentives. A larger share of school districts reported that creating a pipeline program made a very big difference in recruiting teachers of color. However, compared to standard-licensed teachers, these recruitment strategies have not made a difference in recruiting teachers of color (50.0-69.0% vs. 11.7-30.4%; Figures 18 and 16, respectively). A few districts mentioned other strategies making some or a very big difference, including making intentional recruitment, having diversity goals and communicating a racial equity commitment to staff, and partnering with a local program that serves Native American communities.

18. School district efforts to recruit teachers of color

	N	Made no difference	Made slight difference	Made some difference	Made a very big difference
Provide hiring incentives	58	69.0%	12.1%	15.5%	3.4%
Provide a competitive salary	236	59.3%	14.4%	22.9%	3.4%
Create a pipeline program (e.g., residency models, Grow Your Own)	110	50.0%	22.7%	18.2%	9.1%
Offer position postings beyond where districts usually post	210	58.6%	20.0%	18.6%	2.9%

Source. School district survey.

In terms of efforts to retain racially diverse teachers, a larger proportion of school districts reported that providing mentoring programs (35.7% reporting some or a very big difference) and a professional development program (37.8%) made a bigger difference than offering promotions or increasing salaries (30.2%), or offering special assignment opportunities (20.1%; Figure 19). School districts mentioned that offering leadership opportunities, having an inclusive culture and positive school climate, and providing tuition remission were additional strategies that made some or a big difference in retaining teachers of color.

19. School district efforts to retain teachers of color

	N	Made no difference	Made slight difference	Made some difference	Made a very big difference
Provide mentorship programs	238	48.3%	16.0%	26.5%	9.2%
Provide professional development opportunities	262	46.2%	16.0%	29.8%	8.0%
Offer promotions or increase salaries	172	51.7%	18.0%	23.8%	6.4%
Offer Teacher on Special Assignment (TOSA) opportunities	154	68.8%	11.0%	18.2%	1.9%

Source. School district survey

Teacher preparation programs also used different strategies to recruit candidates of color and to support those candidates. Among the strategies, programs reported providing online or flexible classroom options as the most effective strategy (i.e., a higher share of teacher preparation programs reporting making some or a very big difference with this strategy than other strategies). The most effective strategies to support teaching candidates of color to complete the program were providing advising and other personalized supports, providing online and flexible classroom options, and working with partner schools to support early placement in the teaching field (e.g., through residency programs and co-teaching). However, due to the small number of respondents in the teacher preparation program survey, the results should be interpreted with caution.

Limitations

Results from the teacher preparation program survey are based on responses from 34.5 percent of the programs. Due to the small number of respondents, the number and racial/ethnic compositions of teaching candidates being prepared in each of the licensure areas cannot be reported. In addition, because school districts had varying interpretations for the number of posted positions for each licensure area in 2018-19, results for the number of standard-licensed teachers (those holding a five-year standard, one-year standard, Tier 3 or Tier 4 license), Tier 2 teachers, teachers with special permissions (those with a personnel variance; appeal variance; discretionary variance; temporary limited; waiver; three-year, non-renewable; or Tier 1 license or non-licensed community expert), and unfilled positions cannot be determined. Finally, because the definitions of data analysis are not included in the previous report (i.e., the variable names and values), Wilder Research was unable to make comparisons to the findings from the previous report.

STAR data sources

The STAR data used in this report were provided by multiple sources.

- The number of licensed teachers comes directly from a PELSB database. Based on decades of different license types, licensure areas, and data collection, filtering the data to remove non-instructional licenses and non-standard licenses is difficult.
- The number of active licensed teachers comes from school district reports of employment data. These data are filtered to remove non-licensed employment data. In aggregate, the data can be filtered to include unduplicated records and records where a licensed teacher is active in more than one district. However, when looking at specific districts or regions, a single teacher may be counted more than once.
- Assignment data, or the positions licensed teachers are teaching, come from school district reports. In aggregate, the data can be filtered to include unduplicated records. However, when looking at specific assignments and licensure areas, a single teacher may be counted more than once. Additionally, a licensed teacher may have assignments under different license types and/or assignment categories. These assignments are also listed with FTE status and thus can be measured as individuals in assignment categories or FTE in assignment categories.
- Special permissions data, or the number of teachers in a licensure area where the individual does not hold a standard license, come from multiple sources. Permissions are reported in the assignment table, and many permissions are granted to actively licensed teachers teaching outside of their licensure field. However, PELSB also tracks individuals with special permissions alongside the licensed teacher data.

To answer questions about supply and demand, data from multiple sources need to be merged. Many factors complicated these analyses. For example, a single licensure field may allow an individual to teach multiple assignments. A single assignment may be taught by multiple licensure areas. The “English/Language Arts” license changed to a “Communication Arts and Literature” license in Minnesota, with slightly different allowable assignments, yet we have individuals with both the old and new licensure fields. An individual with a reading license, an endorsement added to their elementary license, may never appear to be teaching under the reading license, yet they may have reading assignments in an elementary classroom.

Merging data sources with different inputs, lack of a one-to-one alignment between license types and assignments, and the nature of districts and individuals entering tens of thousands of data points, all lead to an inability to establish clean and clear results through this analysis. These points are addressed as they appear throughout the report, including why certain data may not appear in a summary table.

Finally, the Minnesota Department of Education produced the Teacher Supply and Demand Report until 2017. In the transition to PELSB producing the report, the methods for counting teachers and assignments may have changed; therefore, we are unable to draw conclusions about trends over time.

Conclusions

The Teacher Supply and Demand Report is designed to give policy-makers and education stakeholders a biennial report of the landscape of teachers in Minnesota. Ideally, these data are presented as trends. However, with the transition of reporting to a new agency, the ability to use previous reports to align data and describe trends is limited, given that there is little confidence that data were gathered similarly over time. Additionally, with the changing landscape of teacher licensure, licensure fields, and assignment-to-licensure alignment, it is difficult to accurately measure supply or demand. Finally, the percentage of special permissions are often considered a sign of a field being in short supply of fully licensed teachers. However, the reasons a district might request a special permission may be more nuanced than simply having no licensed applicants.

In looking back at the research questions for the report, conclusions are as follows:

- What is the current supply and demand of teachers by licensure area and economic region?

The data are too inconsistent to make specific statements about supply and demand of teachers. Speaking broadly, there are specific licensure areas and EDRs that use more special permissions, and special permissions are used to fill assignments in almost all licensure areas and all EDRs. Additionally, over 70,000 licensed teachers are not currently teaching. Understanding the reasons why these teachers are not working would help answer some key questions that arise through this report.

- What are the shortage content areas for which districts place standard-licensed teachers to teach outside of their licensure areas or hire teachers with special permissions or out of compliance?

There is no established definition of a “shortage area.” The U.S. Department of Education allows states to use their own formula to determine shortage areas, but limits the number of areas to no more than five percent of the FTE assignments in the state. Most often, a set percentage or higher of special permissions being used in a licensure area would be considered a “shortage.”

- What are the racial and ethnic compositions of teachers compared to those of students?

The number of students of color continues to grow in Minnesota, while the number of teachers of color remains stagnant. This gap will continue to grow without direct intervention to increase recruitment and retention of teachers of color.

- What are the reasons for teacher attrition?

Of the 7,010 teachers who did not return to teach in the same school districts in 2017-18, 41.4 percent left for “personal reasons” or “unknown” reasons as reported by districts in the survey. This lack of specific data to understand teacher attrition leaves this question unanswerable by this report.

- What are the efforts to recruit and retain standard-licensed teachers and teachers of color?

As reported by districts and teacher preparation providers, the perception that some strategies are making a difference in recruiting and retaining teachers of color is a positive sign. Further data gathering about implementation and outcomes of these strategies can help policy-makers direct resources more effectively and efficiently in the future.

Appendix

A1. Licenses that were used and not used by teachers, 2017-18

License or endorsement	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
Academic and behavioral strategist	1,015	90.5%	107	9.5%	1,122	100.0%
Adult basic education	70	71.4%	28	28.6%	98	100.0%
Agriculture education (general)*	151	92.6%	12	7.4%	163	100.0%
American Indian language and culture	32	88.9%	4	11.1%	36	100.0%
American sign language	20	90.9%	2	9.1%	22	100.0%
Arabic	8	88.9%	1	11.1%	9	100.0%
Autism spectrum disorders	976	53.9%	834	46.1%	1,810	100.0%
Bilingual/bicultural education	10	12.3%	71	87.7%	81	100.0%
Blind or visually impaired	91	79.1%	24	20.9%	115	100.0%
Business education (general)*	446	81.2%	103	18.8%	549	100.0%
Career accommodation specialist	2	9.5%	19	90.5%	21	100.0%
Chemistry	616	81.7%	138	18.3%	754	100.0%
Chinese	50	68.5%	23	31.5%	73	100.0%
Communications technology careers	42	45.2%	51	54.8%	93	100.0%
Community education director	111	92.5%	9	7.5%	120	100.0%
Computer science/keyboarding (general)*	172	59.1%	119	40.9%	291	100.0%
Construction careers	59	56.7%	45	43.3%	104	100.0%
Creative design careers	2	50.0%	2	50.0%	4	100.0%
Dance and theater arts (general)*	119	54.3%	100	45.7%	219	100.0%
Deaf or hard of hearing	207	79.6%	53	20.4%	260	100.0%
Developmental disabilities	884	53.4%	771	46.6%	1,655	100.0%
Developmental/adapted physical education	602	45.8%	711	54.2%	1,313	100.0%
Driver education	38	8.0%	438	92.0%	476	100.0%
Early childhood careers	2	66.7%	1	33.3%	3	100.0%
Early childhood education	1,516	75.7%	486	24.3%	2,002	100.0%
Early childhood special education	1,327	80.3%	326	19.7%	1,653	100.0%
Earth and space science/earth science	233	56.0%	183	44.0%	416	100.0%
Elementary education	20,723	77.7%	5,964	22.3%	26,687	100.0%
Emotional behavior disorders	2,900	62.2%	1,761	37.8%	4,661	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note. Each person is counted once for each license area even if they hold that license for multiple grade levels (e.g., teacher who hold both Visual arts 1-6 and Visual arts 7-12 is counted once in the Visual arts area). All administrators and license holders not actively teaching were removed from the analysis.

* Some of the licenses are combined [e.g., Agriculture education (general) includes Agriculture non-vocational and Agriculture education].

A1. Licenses that were used and not used by teachers, 2017-18 (continued)

License or endorsement	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
English as a second language	1,687	73.8%	598	26.2%	2,285	100.0%
English/literature/communication arts (general)*	3,621	60.9%	2,327	39.1%	5,948	100.0%
Family and consumer sciences/home economics (general)*	316	81.2%	73	18.8%	389	100.0%
Family education/early childhood educator	113	58.2%	81	41.8%	194	100.0%
French	186	50.7%	181	49.3%	367	100.0%
German	114	48.9%	119	51.1%	233	100.0%
Greek	1	50.0%	1	50.0%	2	100.0%
Health & physical education	6	60.0%	4	40.0%	10	100.0%
Health education	727	39.1%	1,130	60.9%	1,857	100.0%
Hebrew	1	100.0%	0	0.0%	1	100.0%
Hospitality service careers	4	50.0%	4	50.0%	8	100.0%
Industrial arts/technology (general)*	517	89.9%	58	10.1%	575	100.0%
Japanese	12	63.2%	7	36.8%	19	100.0%
Junior high sciences (general)*	1,980	75.4%	647	24.6%	2,627	100.0%
Latin	32	91.4%	3	8.6%	35	100.0%
Learning disabilities	3,360	58.0%	2,429	42.0%	5,789	100.0%
Librarian	13	21.0%	49	79.0%	62	100.0%
Library media specialist	538	81.8%	120	18.2%	658	100.0%
Life sciences	1,490	68.0%	700	32.0%	2,190	100.0%
Manufacturing careers	30	45.5%	36	54.5%	66	100.0%
Mathematics	3,590	72.6%	1,354	27.4%	4,944	100.0%
Medical careers	27	75.0%	9	25.0%	36	100.0%
Mild to moderate mentally handicap	693	36.8%	1,188	63.2%	1,881	100.0%
Mildly handicapped	9	60.0%	6	40.0%	15	100.0%
Moderate to severe mentally handicap	275	33.5%	545	66.5%	820	100.0%
Music/band - vocal, instrumental, and classroom (general)*	2,254	93.7%	151	6.3%	2,405	100.0%
Ojibwe	1	20.0%	4	80.0%	5	100.0%
Oral/aural deaf education	27	39.1%	42	60.9%	69	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note. Each person is counted once for each license area even if they hold that license for multiple grade levels (e.g., teacher who hold both Visual arts 1-6 and Visual arts 7-12 is counted once in the Visual arts area). All administrators and license holders not actively teaching were removed from the analysis.

* Some of the licenses are combined [e.g., Agriculture education (general) includes Agriculture non-vocational and Agriculture education].

A1. Licenses that were used and not used by teachers, 2017-18 (continued)

License or endorsement	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
Other world languages (Norwegian, Polish, Finnish, Czech, Swahili, Vietnamese, Hmong)*	0	0.0%	1	100.0%	1	100.0%
Parent and family education	289	49.4%	296	50.6%	585	100.0%
Physical education	2,638	73.9%	934	26.1%	3,572	100.0%
Physical sciences (physics & chemistry)	310	83.6%	61	16.4%	371	100.0%
Physical/health disabilities*	88	50.0%	88	50.0%	176	100.0%
Physics	294	83.8%	57	16.2%	351	100.0%
Pre-k/kindergarten/pre-primary*	936	26.4%	2,614	73.6%	3,550	100.0%
Public school nurse	615	99.8%	1	.2%	616	100.0%
Reading (general)*	580	25.7%	1,676	74.3%	2,256	100.0%
Russian	4	18.2%	18	81.8%	22	100.0%
School counseling (general)*	1,316	90.4%	139	9.6%	1,455	100.0%
School psychologist (general)*	795	98.3%	14	1.7%	809	100.0%
School social worker (general)*	1,249	97.3%	35	2.7%	1,284	100.0%
Sciences - all	3	50.0%	3	50.0%	6	100.0%
Social studies (general)*	3,245	56.9%	2,459	43.1%	5,704	100.0%
Spanish	975	65.4%	516	34.6%	1,491	100.0%
Speech-language pathologist	1,846	97.7%	44	2.3%	1,890	100.0%
Swedish	0	0.0%	2	100.0%	2	100.0%
Teacher/coordinator work based learning	224	39.9%	338	60.1%	562	100.0%
Transportation careers	30	50.0%	30	50.0%	60	100.0%
Visual arts	1,382	91.0%	136	9.0%	1,518	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note. Each person is counted once for each license area even if they hold that license for multiple grade levels (e.g., teacher who hold both Visual arts 1-6 and Visual arts 7-12 is counted once in the Visual arts area). All administrators and license holders not actively teaching were removed from the analysis.

* Some of the licenses are combined [e.g., Agriculture education (general) includes Agriculture non-vocational and Agriculture education].

A2. Licenses by grade level that were used and not used by teachers, 2017-18

License or endorsement	Grade	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
Agriculture (non vocational)	7-12	2	66.7%	1	33.3%	3	100.0%
Agricultural education	5-12	149	93.1%	11	6.9%	160	100.0%
Visual arts	1-6	0	0.0%	1	100.0%	1	100.0%
	5-8	1	50.0%	1	50.0%	2	100.0%
	7-12	7	63.6%	4	36.4%	11	100.0%
	K-12	1,358	90.5%	142	9.5%	1,500	100.0%
	PreK-12	1	100.0%	0	0.0%	1	100.0%
	PreK-6	4	66.7%	2	33.3%	6	100.0%
English/language arts	5-8	130	35.5%	236	64.5%	366	100.0%
	7-12	1,292	76.0%	407	24.0%	1,699	100.0%
Communication arts/literature	5-12	1,896	89.4%	224	10.6%	2120	100.0%
	5-8	363	18.8%	1,565	81.2%	1,928	100.0%
	7-12	1	50.0%	1	50.0%	2	100.0%
	9-12	3	37.5%	5	62.5%	8	100.0%
Reading leader	K-12	1	100.0%	0	0.0%	1	100.0%
Reading	5-12	0	0.0%	1	100.0%	1	100.0%
	K-12	529	26.4%	1,475	73.6%	2,004	100.0%
	K-6	0	0.0%	1	100.0%	1	100.0%
	K-8	0	0.0%	9	100.0%	9	100.0%
Elementary remedial reading	1-6	27	17.5%	127	82.5%	154	100.0%
Secondary remedial reading	1-6	0	0.0%	1	100.0%	1	100.0%
	5-8	0	0.0%	3	100.0%	3	100.0%
	7-12	8	8.1%	91	91.9%	99	100.0%
Secondary developmental reading	5-8	2	9.1%	20	90.9%	22	100.0%
	7-12	12	9.0%	122	91.0%	134	100.0%
English-humanities	7-12	1	100.0%	0	0.0%	1	100.0%
Journalism	7-12	2	66.7%	1	33.3%	3	100.0%
Speech	5-8	2	11.8%	15	88.2%	17	100.0%
	7-12	21	23.3%	69	76.7%	90	100.0%
Speech & theatre arts	5-8	1	10.0%	9	90.0%	10	100.0%
	7-12	30	44.8%	37	55.2%	67	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

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A2. Licenses by grade level that were used and not used by teachers, 2017-18 (continued)

License or endorsement	Grade	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
Theatre arts	5-8	0	0.0%	4	100.0%	4	100.0%
	7-12	10	23.8%	32	76.2%	42	100.0%
	K-12	28	70.0%	12	30.0%	40	100.0%
Dance and theatre	K-12	30	75.0%	10	25.0%	40	100.0%
Dance	K-12	22	84.6%	4	15.4%	26	100.0%
Latin	5-12	2	100.0%	0	0.0%	2	100.0%
	7-12	5	71.4%	2	28.6%	7	100.0%
	K-12	27	96.4%	1	3.6%	28	100.0%
Greek	K-12	1	50.0%	1	50.0%	2	100.0%
American sign language	K-12	20	90.9%	2	9.1%	22	100.0%
Arabic	K-12	8	88.9%	1	11.1%	9	100.0%
Chinese	5-12	1	100.0%	0	0.0%	1	100.0%
	7-12	2	100.0%	0	0.0%	2	100.0%
	K-12	47	67.1%	23	32.9%	70	100.0%
	K-8	1	100.0%	0	0.0%	1	100.0%
English as a second language	5-12	4	100.0%	0	0.0%	4	100.0%
	7-12	0	0.0%	1	100.0%	1	100.0%
	K-12	1,666	73.2%	611	26.8%	2,277	100.0%
	K-6	1	100.0%	0	0.0%	1	100.0%
	K-8	0	0.0%	3	100.0%	3	100.0%
French	1-6	1	7.1%	13	92.9%	14	100.0%
	5-8	2	9.5%	19	90.5%	21	100.0%
	7-12	82	50.9%	79	49.1%	161	100.0%
	K-12	100	56.8%	76	43.2%	176	100.0%
	K-8	0	0.0%	22	100.0%	22	100.0%
German	1-6	0	0.0%	5	100.0%	5	100.0%
	5-12	1	100.0%	0	0.0%	1	100.0%
	5-8	2	18.2%	9	81.8%	11	100.0%
	7-12	56	40.6%	82	59.4%	138	100.0%
	K-12	57	64.0%	32	36.0%	89	100.0%
	K-8	0	0.0%	2	100.0%	2	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

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A2. Licenses by grade level that were used and not used by teachers, 2017-18 (continued)

License or endorsement	Grade	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
Hebrew	K-12	1	100.0%	0	0.0%	1	100.0%
Japanese	5-8	0	0.0%	1	100.0%	1	100.0%
	7-12	7	77.8%	2	22.2%	9	100.0%
	K-12	5	50.0%	5	50.0%	10	100.0%
	K-8	0	0.0%	1	100.0%	1	100.0%
Norwegian	1-6	0	0.0%	1	100.0%	1	100.0%
Russian	7-12	1	6.7%	14	93.3%	15	100.0%
	K-12	3	42.9%	4	57.1%	7	100.0%
Spanish	1-6	4	8.5%	43	91.5%	47	100.0%
	1-9	0	0.0%	1	100.0%	1	100.0%
	5-12	2	66.7%	1	33.3%	3	100.0%
	5-8	8	13.3%	52	86.7%	60	100.0%
	7-12	339	75.8%	108	24.2%	447	100.0%
	K-12	591	69.2%	263	30.8%	854	100.0%
	K-8	35	24.0%	111	76.0%	146	100.0%
Swedish	7-12	0	0.0%	1	100.0%	1	100.0%
	K-12	0	0.0%	1	100.0%	1	100.0%
Ojibwe	K-12	0	0.0%	1	100.0%	1	100.0%
	K-8	1	25.0%	3	75.0%	4	100.0%
Bilingual/bicultural education	1-6	0	0.0%	1	100.0%	1	100.0%
	5-12	0	0.0%	6	100.0%	6	100.0%
	K-12	2	6.3%	30	93.8%	32	100.0%
	K-6	8	19.0%	34	81.0%	42	100.0%
	K-8	0	0.0%	1	100.0%	1	100.0%
Health & physical education	K-12	6	60.0%	4	40.0%	10	100.0%
Health education	5-12	481	40.7%	700	59.3%	1,181	100.0%
	5-8	2	5.4%	35	94.6%	37	100.0%
	7-12	17	26.2%	48	73.8%	65	100.0%
	K-12	218	37.8%	358	62.2%	576	100.0%
	PreK-12	1	100.0%	0	0.0%	1	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

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A2. Licenses by grade level that were used and not used by teachers, 2017-18 (continued)

License or endorsement	Grade	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
Physical education	1-6	0	0.0%	3	100.0%	3	100.0%
	5-12	1	100.0%	0	0.0%	1	100.0%
	7-12	0	0.0%	13	100.0%	13	100.0%
	K-12	2,614	73.5%	941	26.5%	3,555	100.0%
Home economics	5-8	7	46.7%	8	53.3%	15	100.0%
	7-12	96	67.6%	46	32.4%	142	100.0%
	K-12	4	36.4%	7	63.6%	11	100.0%
Family and consumer sciences	5-12	231	91.7%	21	8.3%	252	100.0%
	7-12	1	100.0%	0	0.0%	1	100.0%
Family life education	7-12	0	0.0%	1	100.0%	1	100.0%
Family life	7-12	0	0.0%	4	100.0%	4	100.0%
	K-12	0	0.0%	1	100.0%	1	100.0%
Industrial arts	5-12	243	87.7%	34	12.3%	277	100.0%
	5-8	2	28.6%	5	71.4%	7	100.0%
	7-12	14	87.5%	2	12.5%	16	100.0%
	K-12	22	84.6%	4	15.4%	26	100.0%
	PreK-12	2	100.0%	0	0.0%	2	100.0%
Technology	5-12	233	91.4%	22	8.6%	255	100.0%
Mathematics	5-12	1,589	96.5%	57	3.5%	1,646	100.0%
	5-8	775	37.1%	1,315	62.9%	2,090	100.0%
	7-12	1,225	91.6%	112	8.4%	1,337	100.0%
	9-12	3	100.0%	0	0.0%	3	100.0%
Music	1-6	0	0.0%	1	100.0%	1	100.0%
	5-8	0	0.0%	1	100.0%	1	100.0%
	7-12	0	0.0%	4	100.0%	4	100.0%
	K-12	167	83.1%	34	16.9%	201	100.0%
Classroom music	5-12	55	28.6%	137	71.4%	192	100.0%
	K-12	155	52.4%	141	47.6%	296	100.0%
	K-9	5	38.5%	8	61.5%	13	100.0%
Vocal and classroom music	K-12	815	88.2%	109	11.8%	924	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

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A2. Licenses by grade level that were used and not used by teachers, 2017-18 (continued)

License or endorsement	Grade	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
Vocal music	5-12	11	68.8%	5	31.3%	16	100.0%
	K-12	130	51.6%	122	48.4%	252	100.0%
	K-9	11	57.9%	8	42.1%	19	100.0%
Instrumental (band/orchestra) and classroom music	7-12	1	50.0%	1	50.0%	2	100.0%
	K-12	967	91.4%	91	8.6%	1058	100.0%
Band	5-12	2	50.0%	2	50.0%	4	100.0%
	K-12	172	63.7%	98	36.3%	270	100.0%
Orchestra	5-12	0	0.0%	3	100.0%	3	100.0%
	K-12	28	30.4%	64	69.6%	92	100.0%
Sciences - all	5-8	0	0.0%	2	100.0%	2	100.0%
	7-12	3	75.0%	1	25.0%	4	100.0%
Jr. high science	7-9	5	62.5%	3	37.5%	8	100.0%
General science (see Jr. high science)	5-8	0	0.0%	2	100.0%	2	100.0%
	5-9	1	100.0%	0	0.0%	1	100.0%
	7-12	1	100.0%	0	0.0%	1	100.0%
Life sciences	5-8	39	21.4%	143	78.6%	182	100.0%
	7-12	674	68.6%	308	31.4%	982	100.0%
	9-12	562	52.0%	518	48.0%	1,080	100.0%
Physical sciences (physics & chemistry)	5-8	3	6.8%	41	93.2%	44	100.0%
	7-12	304	91.8%	27	8.2%	331	100.0%
	7-9	1	100.0%	0	0.0%	1	100.0%
Chemistry	5-8	0	0.0%	2	100.0%	2	100.0%
	7-12	7	77.8%	2	22.2%	9	100.0%
	9-12	594	79.9%	149	20.1%	743	100.0%
Physics	7-12	1	20.0%	4	80.0%	5	100.0%
	9-12	290	83.8%	56	16.2%	346	100.0%
Earth and space science/earth science	5-8	17	34.7%	32	65.3%	49	100.0%
	7-12	81	59.1%	56	40.9%	137	100.0%
	9-12	79	33.8%	155	66.2%	234	100.0%
Science 5-9	5-9	300	68.3%	139	31.7%	439	100.0%
	7-12	2	66.7%	1	33.3%	3	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

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A2. Licenses by grade level that were used and not used by teachers, 2017-18 (continued)

License or endorsement	Grade	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
Science 5-8	5-8	896	45.6%	1,070	54.4%	1,966	100.0%
Science 5-8	5-8	114	53.8%	98	46.2%	212	100.0%
Business education – all	5-12	1	100.0%	0	0.0%	1	100.0%
	5-8	4	66.7%	2	33.3%	6	100.0%
	7-12	176	78.6%	48	21.4%	224	100.0%
	K-12	7	87.5%	1	12.5%	8	100.0%
Business	5-12	291	88.4%	38	11.6%	329	100.0%
Accounting & data processing	7-12	6	42.9%	8	57.1%	14	100.0%
Business education - clerical	7-12	6	40.0%	9	60.0%	15	100.0%
Business education - secretarial	7-12	3	75.0%	1	25.0%	4	100.0%
Business education - basic & econ.	5-8	0	0.0%	1	100.0%	1	100.0%
	7-12	2	18.2%	9	81.8%	11	100.0%
Business education (except shorthand)	7-12	26	70.3%	11	29.7%	37	100.0%
	K-12	1	100.0%	0	0.0%	1	100.0%
Computer science	7-12	0	0.0%	4	100.0%	4	100.0%
Keyboarding for computer application	K-8	102	47.7%	112	52.3%	214	100.0%
Teachers of computer, keyboarding, and related technology applications	1-6	2	66.7%	1	33.3%	3	100.0%
	5-12	5	50.0%	5	50.0%	10	100.0%
	7-12	5	83.3%	1	16.7%	6	100.0%
	K-12	15	48.4%	16	51.6%	31	100.0%
	K-6	9	64.3%	5	35.7%	14	100.0%
	K-8	8	72.7%	3	27.3%	11	100.0%
Social studies - all	5-12	1,663	79.4%	431	20.6%	2,094	100.0%
	5-8	256	13.3%	1,671	86.7%	1,927	100.0%
	7-12	1,332	73.8%	473	26.2%	1,805	100.0%
	9-12	5	41.7%	7	58.3%	12	100.0%
	K-12	0	0.0%	1	100.0%	1	100.0%
American Indian language and culture	K-12	32	88.9%	4	11.1%	36	100.0%
Economics	7-12	1	50.0%	1	50.0%	2	100.0%
Geography	7-12	1	16.7%	5	83.3%	6	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

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A2. Licenses by grade level that were used and not used by teachers, 2017-18 (continued)

License or endorsement	Grade	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
History	5-8	0	0.0%	1	100.0%	1	100.0%
	7-12	9	27.3%	24	72.7%	33	100.0%
	9-12	0	0.0%	1	100.0%	1	100.0%
Political science	7-12	1	33.3%	2	66.7%	3	100.0%
Psychology	7-12	0	0.0%	5	100.0%	5	100.0%
Sociology	7-12	0	0.0%	1	100.0%	1	100.0%
Teacher/coordinator work-based learning	5-12	1	25.0%	3	75.0%	4	100.0%
	9-12	223	40.0%	335	60.0%	558	100.0%
Elementary education	1-6	6,401	68.2%	2,979	31.8%	9,380	100.0%
	K-3	0	0.0%	2	100.0%	2	100.0%
	K-6	13,804	79.8%	3,504	20.2%	17,308	100.0%
Pre-kindergarten	PreK	369	19.9%	1,481	80.1%	1,850	100.0%
Pre kindergarten & kindergarten	PreK&KG	1	16.7%	5	83.3%	6	100.0%
Pre-primary	Age3-K	550	33.4%	1,096	66.6%	1,646	100.0%
	PreK	4	7.7%	48	92.3%	52	100.0%
Early childhood education	B-Gr3	1,367	71.4%	547	28.6%	1,914	100.0%
	K-3	0	0.0%	1	100.0%	1	100.0%
	PreK-3	70	80.5%	17	19.5%	87	100.0%
Adult basic education	Adult	70	71.4%	28	28.6%	98	100.0%
Parent and family education	Adult	289	49.4%	296	50.6%	585	100.0%
Family education/early childhood educator	PreK	83	42.8%	111	57.2%	194	100.0%
Speech-language pathologist	K-12	15	100.0%	0	0.0%	15	100.0%
	PreK-12	1831	97.7%	44	2.3%	1,875	100.0%
Emotional behavior disorders	7-12	1	50.0%	1	50.0%	2	100.0%
	K-12	2,867	61.7%	1,783	38.3%	4,650	100.0%
	K-6	4	66.7%	2	33.3%	6	100.0%
	K-8	1	33.3%	2	66.7%	3	100.0%

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A2. Licenses by grade level that were used and not used by teachers, 2017-18 (continued)

License or endorsement	Grade	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
Learning disabilities	5-12	1	100.0%	0	0.0%	1	100.0%
	7-12	2	40.0%	3	60.0%	5	100.0%
	K-12	3,329	57.7%	2,441	42.3%	5,770	100.0%
	K-6	3	50.0%	3	50.0%	6	100.0%
	K-8	3	60.0%	2	40.0%	5	100.0%
	K-9	2	66.7%	1	33.3%	3	100.0%
	PreK-12	1	100.0%	0	0.0%	1	100.0%
Autism spectrum disorders	B-12	422	56.2%	329	43.8%	751	100.0%
	B-age6	6	7.4%	75	92.6%	81	100.0%
	K-12	539	55.1%	439	44.9%	978	100.0%
	PreK-12	2	66.7%	1	33.3%	3	100.0%
Physically handicapped	K-12	22	45.8%	26	54.2%	48	100.0%
	PreK-12	2	66.7%	1	33.3%	3	100.0%
Developmental/adapted physical education	K-12	2	50.0%	2	50.0%	4	100.0%
	PreK-12	597	45.6%	712	54.4%	1,309	100.0%
Physical and health disabilities	B-12	12	50.0%	12	50.0%	24	100.0%
	PreK-12	61	54.0%	52	46.0%	113	100.0%
Oral/aural deaf education	B-12	27	40.3%	40	59.7%	67	100.0%
	K-12	0	0.0%	1	100.0%	1	100.0%
	K-6	0	0.0%	1	100.0%	1	100.0%
Deaf or hard of hearing	7-12	1	100.0%	0	0.0%	1	100.0%
	B-12	183	80.6%	44	19.4%	227	100.0%
	B-age 6	1	100.0%	0	0.0%	1	100.0%
	K-12	4	80.0%	1	20.0%	5	100.0%
	PreK-12	18	69.2%	8	30.8%	26	100.0%
Blind or visually impaired	B-12	89	78.8%	24	21.2%	113	100.0%
	K-12	1	100.0%	0	0.0%	1	100.0%
	PreK-12	1	100.0%	0	0.0%	1	100.0%
Early childhood special education	B-age6	1,321	79.9%	332	20.1%	1,653	100.0%

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A2. Licenses by grade level that were used and not used by teachers, 2017-18 (continued)

License or endorsement	Grade	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
Developmental disabilities	5-12	1	100.0%	0	0.0%	1	100.0%
	7-12	1	50.0%	1	50.0%	2	100.0%
	K-12	869	52.9%	773	47.1%	1,642	100.0%
	K-6	2	25.0%	6	75.0%	8	100.0%
	K-8	1	50.0%	1	50.0%	2	100.0%
	K-9	0	0.0%	1	100.0%	1	100.0%
Mild to moderate mentally handicap	7-12	0	0.0%	1	100.0%	1	100.0%
	K-12	686	36.5%	1,194	63.5%	1,880	100.0%
Moderate to severe mentally handicap	K-12	273	33.3%	546	66.7%	819	100.0%
	K-6	0	0.0%	1	100.0%	1	100.0%
Mildly handicap	K-12	9	60.0%	6	40.0%	15	100.0%
Academic and behavioral strategist	5-12	1	100.0%	0	0.0%	1	100.0%
	7-12	2	50.0%	2	50.0%	4	100.0%
	K-12	993	90.0%	110	10.0%	1,103	100.0%
	K-6	1	25.0%	3	75.0%	4	100.0%
	K-8	8	72.7%	3	27.3%	11	100.0%
Career accommodation specialist	5-12	2	9.5%	19	90.5%	21	100.0%
Driver education	7-12	15	7.2%	192	92.8%	207	100.0%
	9-12	23	8.6%	245	91.4%	268	100.0%
	K-12	0	0.0%	1	100.0%	1	100.0%
Communications technology careers	7-12	42	45.2%	51	54.8%	93	100.0%
Construction careers	7-12	58	56.3%	45	43.7%	103	100.0%
	9-12	1	100.0%	0	0.0%	1	100.0%
Manufacturing careers	7-12	30	45.5%	36	54.5%	66	100.0%
Medical careers	7-12	27	75.0%	9	25.0%	36	100.0%
Creative design careers	7-12	2	50.0%	2	50.0%	4	100.0%
Early childhood careers	7-12	2	66.7%	1	33.3%	3	100.0%
Hospitality service careers	7-12	4	50.0%	4	50.0%	8	100.0%
Transportation careers	7-12	30	50.0%	30	50.0%	60	100.0%
Secondary guidance and counseling	5-8	1	100.0%	0	0.0%	1	100.0%
	7-12	211	76.2%	66	23.8%	277	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note. A person may hold the same license for multiple grade levels. In this case, the person will appear in each row for which they hold (e.g., Visual arts 1-6 and Visual arts 7-12). All administrators and license holders not actively teaching were removed from the analysis.

A2. Licenses by grade level that were used and not used by teachers, 2017-18 (continued)

License or endorsement	Grade	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
Middle school guidance & counseling	5-8	31	32.3%	65	67.7%	96	100.0%
	7-12	0	0.0%	1	100.0%	1	100.0%
Elementary guidance & counseling	1-6	48	39.0%	75	61.0%	123	100.0%
	K-6	0	0.0%	1	100.0%	1	100.0%
School counselor	7-12	2	66.7%	1	33.3%	3	100.0%
	K-12	1,051	90.9%	105	9.1%	1,156	100.0%
Librarian	K-12	13	21.3%	48	78.7%	61	100.0%
	PreK-12	0	0.0%	1	100.0%	1	100.0%
School psychologist I	B-12	1	100.0%	0	0.0%	1	100.0%
	PreK-12	5	100.0%	0	0.0%	5	100.0%
School psychologist	K-12	1	100.0%	0	0.0%	1	100.0%
	PreK-12	788	98.3%	14	1.7%	802	100.0%
School social worker I	PreK-12	14	73.7%	5	26.3%	19	100.0%
School social worker II	PreK-12	11	100.0%	0	0.0%	11	100.0%
School social worker	PreK-12	1,224	97.6%	30	2.4%	1,254	100.0%
Public school nurse	K-12	6	100.0%	0	0.0%	6	100.0%
	PreK-12	609	99.8%	1	.2%	610	100.0%
Library media specialist	K-12	538	81.9%	119	18.1%	657	100.0%
	K-8	0	0.0%	1	100.0%	1	100.0%
Community education director	PreK-Adult	111	92.5%	9	7.5%	120	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note. A person may hold the same license for multiple grade levels. In this case, the person will appear in each row for which they hold (e.g., Visual arts 1-6 and Visual arts 7-12). All administrators and license holders not actively teaching were removed from the analysis.

A3. Top five licensed areas for most qualified teachers by Economic Development Region (EDR)

EDR and License area	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
EDR1 - Northwest						
Industrial arts/technology (general)	20	95.2%	1	4.8%	21	100.0%
Music/band - vocal, instrumental, and classroom (general)	56	91.8%	5	8.2%	61	100.0%
School counseling (general)	18	85.7%	3	14.3%	21	100.0%
Junior high sciences (general)	34	79.1%	9	20.9%	43	100.0%
Computer science/keyboarding (general)	10	76.9%	3	23.1%	13	100.0%
EDR2 - Headwaters						
School counseling (general)	11	91.7%	1	8.3%	12	100.0%
Music/band - vocal, instrumental, and classroom (general)	40	88.9%	5	11.1%	45	100.0%
Business education (general)	8	80.0%	2	20.0%	10	100.0%
Industrial arts/technology (general)	19	73.1%	7	26.9%	26	100.0%
Junior high sciences (general)	39	72.2%	15	27.8%	54	100.0%
EDR3 - Arrowhead						
Industrial arts/technology (general)	46	93.9%	3	6.1%	49	100.0%
School counseling (general)	78	91.8%	7	8.2%	85	100.0%
Music/band - vocal, instrumental, and classroom (general)	122	91.7%	11	8.3%	133	100.0%
Business education (general)	23	79.3%	6	20.7%	29	100.0%
Family and consumer sciences/home economics (general)	11	68.8%	5	31.3%	16	100.0%
EDR4 – West central						
Agriculture (general)	20	100.0%	0	0.0%	20	100.0%
Industrial arts/technology (general)	33	97.1%	1	2.9%	34	100.0%
Music/band - vocal, instrumental, and classroom (general)	124	96.9%	4	3.1%	128	100.0%
Family and consumer sciences/home economics (general)	18	90.0%	2	10.0%	20	100.0%
Junior high sciences (general)	79	86.8%	12	13.2%	91	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note. Includes only the grouped licenses with the total number of all teachers holding the license is 10 or more.

**A3. Top five licensed areas for most qualified teachers by Economic Development Region (EDR)
(continued)**

EDR and License area	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
EDR5 – North central						
School counseling (general)	29	96.7%	1	3.3%	30	100.0%
Music/band - vocal, instrumental, and classroom (general)	78	96.3%	3	3.7%	81	100.0%
Industrial arts/technology (general)	31	88.6%	4	11.4%	35	100.0%
Business education (general)	19	82.6%	4	17.4%	23	100.0%
Junior high sciences (general)	68	79.1%	18	20.9%	86	100.0%
EDR6E – Southwest central						
Music/band - vocal, instrumental, and classroom (general)	48	98.0%	1	2.0%	49	100.0%
School counseling (general)	25	96.2%	1	3.8%	26	100.0%
Business education (general)	14	93.3%	1	6.7%	15	100.0%
Agriculture (general)	9	90.0%	1	10.0%	10	100.0%
Family and consumer sciences/home economics (general)	7	87.5%	1	12.5%	8	100.0%
EDR6W – Upper Minnesota Valley						
Music/band - vocal, instrumental, and classroom (general)	29	96.7%	1	3.3%	30	100.0%
Business education (general)	12	92.3%	1	7.7%	13	100.0%
Junior high sciences (general)	18	85.7%	3	14.3%	21	100.0%
English/literature/communication arts (general)	33	75.0%	11	25.0%	44	100.0%
Industrial arts/technology (general)	9	75.0%	3	25.0%	12	100.0%
EDR7E– East central						
Music/band - vocal, instrumental, and classroom (general)	66	91.7%	6	8.3%	72	100.0%
School counseling (general)	33	89.2%	4	10.8%	37	100.0%
Industrial arts/technology (general)	24	88.9%	3	11.1%	27	100.0%
Family and consumer sciences/home economics (general)	13	86.7%	2	13.3%	15	100.0%
Business education (general)	16	72.7%	6	27.3%	22	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note. Includes only the grouped licenses with the total number of all teachers holding the license is 10 or more.

**A3. Top five licensed areas for most qualified teachers by Economic Development Region (EDR)
(continued)**

EDR and License area	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
EDR7W – Central						
Music/band - vocal, instrumental, and classroom (general)	200	96.2%	8	3.8%	208	100.0%
School counseling (general)	117	93.6%	8	6.4%	125	100.0%
Agriculture (general)	11	91.7%	1	8.3%	12	100.0%
Family and consumer sciences/home economics (general)	32	91.4%	3	8.6%	35	100.0%
Industrial arts/technology (general)	62	91.2%	6	8.8%	68	100.0%
EDR8 – Southwest						
Agriculture (general)	23	100.0%	0	0.0%	23	100.0%
Music/band - vocal, instrumental, and classroom (general)	77	93.9%	5	6.1%	82	100.0%
Industrial arts/technology (general)	15	93.8%	1	6.3%	16	100.0%
School counseling (general)	47	92.2%	4	7.8%	51	100.0%
Business education (general)	23	82.1%	5	17.9%	28	100.0%
EDR9 – South central						
Agriculture (general)	22	100.0%	0	0.0%	22	100.0%
Music/band - vocal, instrumental, and classroom (general)	101	95.3%	5	4.7%	106	100.0%
Industrial arts/technology (general)	20	95.2%	1	4.8%	21	100.0%
School counseling (general)	59	95.2%	3	4.8%	62	100.0%
Business education (general)	29	82.9%	6	17.1%	35	100.0%
EDR10 – Southeast						
Industrial arts/technology (general)	44	97.8%	1	2.2%	45	100.0%
Agriculture (general)	26	96.3%	1	3.7%	27	100.0%
Music/band - vocal, instrumental, and classroom (general)	221	95.3%	11	4.7%	232	100.0%
Business education (general)	55	90.2%	6	9.8%	61	100.0%
School counseling (general)	124	88.6%	16	11.4%	140	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note. Includes only the grouped licenses with the total number of all teachers holding the license is 10 or more.

A3. Top five licensed areas for most qualified teachers by Economic Development Region (EDR) (continued)

EDR and License area	Teachers working in their license area		Teachers holding the license but not teaching in it		All teachers holding the license area	
EDR11 – 7 county Twin Cities						
Music/band - vocal, instrumental, and classroom (general)	1093	92.7%	86	7.3%	1179	100.0%
School counseling (general)	706	90.1%	78	9.9%	784	100.0%
Industrial arts/technology (general)	185	88.5%	24	11.5%	209	100.0%
Family and consumer sciences/home economics (general)	156	81.7%	35	18.3%	191	100.0%
Business education (general)	161	79.3%	42	20.7%	203	100.0%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note. Includes only the grouped licenses with the total number of all teachers holding the license is 10 or more.

A4. Proportion of teachers working in their license area by Economic Development Region (EDR) and demographic characteristics

Economic Development Region (EDR)		Active teachers working in their licensure area	Total active teachers
EDR 1	Northwest	98.1%	1,115
EDR 2	Headwaters	98.3%	1,113
EDR 3	Arrowhead	97.9%	3,237
EDR 4	West Central	98.2%	2,613
EDR 5	North Central	97.6%	1,992
EDR 6E	Southwest Central	98.2%	1,192
EDR 6W	Upper Minnesota Valley	98.5%	608
EDR 7E	East Central	98.0%	1,816
EDR 7W	Central	98.6%	5,410
EDR 8	Southwest	97.9%	1,742
EDR 9	South Central	98.4%	2,670
EDR 10	Southeast	98.4%	5,890
EDR 11	7 County Twin Cities	98.4%	34,062
	Minnesota	98.1%	63,436
Race			
	White	98.4%	60,691
	Of color	97.2%	2,745
Gender			
	Female	98.3%	48,053
	Male	98.4%	15,383

Source. Minnesota Staff Automated Reporting System –STAR.

A5. Student enrollment in 2017-18 by race/ethnicity and Economic Development Region (EDR)

Economic Development Region (EDR)	N	American Indian	Asian	Black	Hispanic	Hawaiian/ Pacific Islander	Multiracial	White
EDR 1 Northwest	14,082	2.1%	1.0%	2.4%	7.4%	0.0%	4.0%	83.2%
EDR 2 Headwaters	14,333	27.2%	0.5%	0.9%	2.2%	0.0%	8.9%	60.4%
EDR 3 Arrowhead	44,510	4.8%	0.7%	2.1%	2.1%	0.1%	6.9%	83.3%
EDR 4 West Central	34,711	2.4%	0.7%	3.0%	5.4%	0.0%	4.4%	84.1%
EDR 5 North Central	26,069	5.7%	0.5%	1.1%	3.5%	0.1%	3.3%	85.9%
EDR 6E Southwest Central	16,424	0.3%	0.9%	5.8%	17.2%	0.1%	1.8%	73.8%
EDR 6W Upper Minnesota Valley	7,574	2.3%	0.6%	1.2%	10.4%	1.2%	2.5%	81.7%
EDR 7E East Central	25,886	2.6%	1.0%	1.0%	2.6%	0.0%	3.4%	89.5%
EDR 7W Central	79,961	0.3%	1.5%	6.9%	4.6%	0.0%	3.6%	83.0%
EDR 8 Southwest	20,632	1.5%	4.8%	3.2%	17.2%	0.1%	3.2%	69.9%
EDR 9 South Central	34,790	0.3%	1.1%	4.5%	12.2%	0.0%	2.8%	79.1%
EDR 10 Southeast	78,728	0.4%	3.8%	7.2%	10.5%	0.1%	3.5%	74.5%
EDR 11 7 County Twin Cities	487,152	0.8%	10.9%	16.5%	10.9%	0.1%	5.3%	55.6%
Minnesota	884,852	1.6%	6.8%	11.0%	9.3%	0.1%	4.7%	66.5%

Source: Minnesota Department of Education's Data Center.

Note: Includes PreK-grade12.

A6. Special student populations in 2017-18 and 2015-16 by Economic Development Region (EDR)

Economic Development Region (EDR)	2017-18				2015-16			
	Free lunch	Reduced-price lunch	ELL	Special education	Free lunch	Reduced-price lunch	ELL	Special education
EDR 1 Northwest	27.4%	11.5%	2.1%	16.4%	27.6%	11.4%	1.7%	15.6%
EDR 2 Headwaters	45.3%	11.0%	0.3%	19.5%	48.4%	10.5%	0.2%	19.3%
EDR 3 Arrowhead	30.9%	8.8%	0.2%	18.1%	32.7%	8.6%	0.1%	17.0%
EDR 4 West Central	26.2%	8.6%	2.8%	17.5%	27.2%	8.9%	2.4%	17.1%
EDR 5 North Central	32.6%	12.8%	1.0%	19.7%	34.9%	12.2%	0.8%	18.6%
EDR 6E Southwest Central	31.8%	10.0%	8.6%	14.7%	32.8%	9.6%	7.9%	14.0%
EDR 6W Upper Minnesota Valley	29.3%	11.7%	3.5%	19.3%	29.4%	12.9%	2.9%	17.2%
EDR 7E East Central	24.9%	10.1%	0.6%	16.2%	27.5%	8.9%	0.5%	14.8%
EDR 7W Central	20.6%	6.9%	4.9%	16.0%	21.1%	7.3%	4.5%	15.2%
EDR 8 Southwest	33.2%	12.9%	9.5%	16.2%	33.8%	12.3%	9.2%	16.0%
EDR 9 South Central	28.0%	9.8%	4.7%	16.9%	29.3%	9.0%	3.9%	16.0%
EDR 10 Southeast	27.7%	8.0%	6.5%	16.2%	29.0%	7.5%	6.8%	15.0%
EDR 11 7 County Twin Cities	30.3%	7.1%	11.1%	14.7%	31.9%	6.3%	11.3%	14.4%
Minnesota	29.2%	8.0%	8.0%	15.7%	30.6%	7.5%	8.0%	15.1%

Source: Minnesota Department of Education's Data Center.

Note: Includes PreK-grade12.

A7. Assignment status by license area, 2017-18

License or endorsement	Total N	Licensed for assignment	Special permissions	Out of compliance
Agriculture (non vocational)	674	651	96.6%	22 3.3% 2 .3%
Agricultural education	674	651	96.6%	22 3.3% 2 .3%
Visual arts	1,536	1455	94.7%	69 4.5% 15 1.0%
English/language arts	3,934	3,868	98.3%	65 1.7% 10 .3%
Communication arts/ literature	4,041	3,965	98.1%	75 1.9% 10 .2%
Reading leader	1,767	1,731	98.0%	36 2.0% 3 .2%
Reading	1,767	1,731	98.0%	36 2.0% 3 .2%
Elementary remedial reading	1527	1,506	98.6%	22 1.4% --- ---
Secondary remedial reading	277	259	93.5%	15 5.4% 3 1.1%
Secondary developmental reading	277	259	93.5%	15 5.4% 3 1.1%
English-humanities	3,915	3,850	98.3%	67 1.7% 7 .2%
Journalism	769	756	98.3%	11 1.4% 2 .3%
Speech	344	335	97.4%	5 1.5% 4 1.2%
Speech & theatre arts	535	500	93.5%	30 5.6% 5 .9%
Theatre arts	321	291	90.7%	26 8.1% 4 1.2%
Dance and theatre	373	319	85.5%	50 13.4% 4 1.1%
Dance	55	31	56.4%	24 43.6% --- ---
Latin	83	73	88.0%	10 12.0% --- ---
Greek	52	50	96.2%	2 3.8% --- ---
American sign language	94	64	68.1%	26 27.7% 4 4.3%

Source: Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note: Many assignments qualify under multiple licensure areas. When determining the status that fits under any given licensure area, such assignments are counted for every license for which they could apply. For example, the Elementary Math assignment is an assignment that teachers can teach by holding any of the following three licenses: Mathematics, Elementary Education, or Early Childhood Education. If a teacher is noted as "Licensed for Assignment" for that assignment, they will be counted as such in the rows for all 3 license areas. This means that a person does not have to hold the license indicated in order to appear in that row, even if their status is Licensed for Assignment. Therefore, this table is best used as a way to get a sense of which licensure areas contains assignments taught by special permissions or out of compliance teachers.

A7. Assignment status by license area, 2017-18 (continued)

License or endorsement	Total N	Licensed for assignment	Special permissions	Out of compliance
Arabic	82	57	23	2
Chinese	108	93	16	---
Czech	64	50	13	1
English as a second language	1,760	1,654	101	5
Finnish	64	50	13	1
French	234	227	7	---
German	161	154	7	---
Hebrew	54	51	3	---
Italian	51	50	1	---
Japanese	64	62	2	---
Norwegian	64	50	13	1
Polish	64	50	13	1
Russian	55	53	2	---
Spanish	1,035	975	62	---
Swedish	51	50	1	---
Ojibwe	73	66	6	1
Swahili	64	50	13	1
Vietnamese	64	50	13	1
Bilingual/bicultural education	17	10	7	---
Hmong	64	50	13	1

Source: Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note: Many assignments qualify under multiple licensure areas. When determining the status that fits under any given licensure area, such assignments are counted for every license for which they could apply. For example, the Elementary Math assignment is an assignment that teachers can teach by holding any of the following three licenses: Mathematics, Elementary Education, or Early Childhood Education. If a teacher is noted as "Licensed for Assignment" for that assignment, they will be counted as such in the rows for all 3 license areas. This means that a person does not have to hold the license indicated in order to appear in that row, even if their status is Licensed for Assignment. Therefore, this table is best used as a way to get a sense of which licensure areas contains assignments taught by special permissions or out of compliance teachers.

A7. Assignment status by license area, 2017-18 (continued)

License or endorsement	Total N	Licensed for assignment		Special permissions		Out of compliance	
Health & physical education	2,994	2,907	97.1%	102	3.4%	10	.3%
Health education	768	729	94.9%	38	4.9%	3	.4%
Physical education	2,746	2,674	97.4%	67	2.4%	7	.3%
Home economics	454	406	89.4%	48	10.6%	1	.2%
Family and consumer sciences	881	831	94.3%	51	5.8%	1	.1%
Family life education	15	14	93.3%	1	6.7%	---	---
Family life	54	53	98.1%	1	1.9%	---	---
Industrial arts	1,070	1,000	93.5%	73	6.8%	2	.2%
Technology	1,070	1,000	93.5%	73	6.8%	2	.2%
Mathematics	4,712	4,626	98.2%	92	2.0%	8	.2%
Music	2,294	2,263	98.6%	36	1.6%	4	.2%
Classroom music	1,170	1,148	98.1%	21	1.8%	1	.1%
Vocal and classroom music	1,631	1,604	98.3%	27	1.7%	4	.2%
Vocal music	698	687	98.4%	8	1.1%	3	.4%
Instrumental (band/orchestra) and classroom music	1,855	1,826	98.4%	31	1.7%	1	.1%
Band	806	800	99.3%	6	.7%	---	---
Orchestra	226	219	96.9%	7	3.1%	---	---
Sciences -all	3,223	3,129	97.1%	155	4.8%	15	.5%
Jr. High science	2,236	2,152	96.2%	98	4.4%	5	.2%
General science *see Jr Hi science	2,726	2,630	96.5%	136	5.0%	10	.4%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note. Many assignments qualify under multiple licensure areas. When determining the status that fits under any given licensure area, such assignments are counted for every license for which they could apply. For example, the Elementary Math assignment is an assignment that teachers can teach by holding any of the following three licenses: Mathematics, Elementary Education, or Early Childhood Education. If a teacher is noted as "Licensed for Assignment" for that assignment, they will be counted as such in the rows for all 3 license areas. This means that a person does not have to hold the license indicated in order to appear in that row, even if their status is Licensed for Assignment. Therefore, this table is best used as a way to get a sense of which licensure areas contains assignments taught by special permissions or out of compliance teachers.

A7. Assignment status by license area, 2017-18 (continued)

License or endorsement	Total N	Licensed for assignment	Special permissions	Out of compliance
Life sciences	1,885	1,827	96.9%	63 3.3% 6 .3%
Physical sciences (physics & chemistry)	1,759	1,691	96.1%	93 5.3% 6 .3%
Chemistry	1,586	1,523	96.0%	74 4.7% 4 .3%
Physics	1,250	1,199	95.9%	66 5.3% 2 .2%
Earth and space science/ earth science	1,033	988	95.6%	46 4.5% 4 .4%
Science 5-9	3,602	3,505	97.3%	159 4.4% 15 .4%
Science 5-8	3,602	3,505	97.3%	159 4.4% 15 .4%
Science 5-8	3,602	3,505	97.3%	159 4.4% 15 .4%
Business education -all-	1,090	1,012	92.8%	81 7.4% 2 .2%
Business	1,158	1,074	92.7%	88 7.6% 3 .3%
Accounting & data processing	899	858	95.4%	45 5.0% 1 .1%
Business education - clerical	907	851	93.8%	61 6.7% --- ---
Business education - secretarial	890	836	93.9%	59 6.6% --- ---
Business education-basic & econ.	727	698	96.0%	32 4.4% --- ---
Business education (except shorthand)	978	918	93.9%	64 6.5% 1 .1%
Business education (except bookkeeping)	966	906	93.8%	64 6.6% 1 .1%
Computer science	376	338	89.9%	39 10.4% 1 .3%
Keyboarding for computer application	566	502	88.7%	64 11.3% 2 .4%
Teachers of computer, keyboarding, and related technology applications	487	433	88.9%	53 10.9% 1 .2%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note. Many assignments qualify under multiple licensure areas. When determining the status that fits under any given licensure area, such assignments are counted for every license for which they could apply. For example, the Elementary Math assignment is an assignment that teachers can teach by holding any of the following three licenses: Mathematics, Elementary Education, or Early Childhood Education. If a teacher is noted as "Licensed for Assignment" for that assignment, they will be counted as such in the rows for all 3 license areas. This means that a person does not have to hold the license indicated in order to appear in that row, even if their status is Licensed for Assignment. Therefore, this table is best used as a way to get a sense of which licensure areas contains assignments taught by special permissions or out of compliance teachers.

A7. Assignment status by license area, 2017-18 (continued)

License or endorsement	Total N	Licensed for assignment		Special permissions		Out of compliance	
Social studies -all-	3,612	3,566	98.7%	45	1.2%	5	.1%
American Indian language and culture	78	71	91.0%	6	7.7%	1	1.3%
Economics	428	425	99.3%	3	.7%	---	---
Geography	829	819	98.8%	9	1.1%	1	.1%
History	1,958	1,944	99.3%	14	.7%	1	.1%
Political science	734	732	99.7%	1	.1%	1	.1%
Psychology	253	253	100.0%	---	---	---	---
Sociology	162	160	98.8%	1	.6%	1	.6%
Teacher/coordinator work-based learning	387	352	91.0%	33	8.5%	2	.5%
Elementary education	29,226	28,783	98.5%	444	1.5%	33	.1%
Pre-Kindergarten	1,040	979	94.1%	52	5.0%	10	1.0%
Pre-Kindergarten & Kindergarten	1,040	979	94.1%	52	5.0%	10	1.0%
Pre-primary	4,200	4,105	97.7%	88	2.1%	10	.2%
Early childhood education	21,307	20,996	98.5%	293	1.4%	25	.1%
Adult basic education	276	273	98.9%	3	1.1%	---	---
Parent and family education	425	388	91.3%	35	8.2%	3	.7%
Family education/early childhood educator	1,293	1,201	92.9%	81	6.3%	13	1.0%
Speech-language pathologist	2,161	2,141	99.1%	20	.9%	---	---
Emotional behavior disorders	3,944	3,626	91.9%	309	7.8%	15	.4%
Learning disabilities	4,264	4,023	94.3%	233	5.5%	22	.5%

Source: Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note: Many assignments qualify under multiple licensure areas. When determining the status that fits under any given licensure area, such assignments are counted for every license for which they could apply. For example, the Elementary Math assignment is an assignment that teachers can teach by holding any of the following three licenses: Mathematics, Elementary Education, or Early Childhood Education. If a teacher is noted as "Licensed for Assignment" for that assignment, they will be counted as such in the rows for all 3 license areas. This means that a person does not have to hold the license indicated in order to appear in that row, even if their status is Licensed for Assignment. Therefore, this table is best used as a way to get a sense of which licensure areas contains assignments taught by special permissions or out of compliance teachers.

A7. Assignment status by license area, 2017-18 (continued)

License or endorsement	Total N	Licensed for assignment		Special permissions		Out of compliance	
Autism spectrum disorders	2,264	2,046	90.4%	225	9.9%	11	.5%
Physically handicapped	1,274	1,211	95.1%	62	4.9%	3	.2%
Developmental/ adapted physical education	965	919	95.2%	45	4.7%	1	.1%
Physical and health disabilities	1,274	1,211	95.1%	62	4.9%	3	.2%
Oral/aural deaf education	1,245	1,189	95.5%	55	4.4%	2	.2%
Deaf or hard of hearing	1,468	1,397	95.2%	71	4.8%	4	.3%
Blind or visually impaired	1,325	1,257	94.9%	68	5.1%	2	.2%
Early childhood special education	2,946	2,668	90.6%	269	9.1%	15	.5%
Developmental disabilities	2,586	2,460	95.1%	128	4.9%	7	.3%
Mild to moderate mentally handicap	2,234	2,129	95.3%	107	4.8%	5	.2%
Moderate to severe mentally handicap	1,721	1,631	94.8%	87	5.1%	4	.2%
Mildly handicap	7,221	6,722	93.1%	495	6.9%	31	.4%
Academic and behavioral strategist	8,518	7,789	91.4%	734	8.6%	46	.5%
Career accommodation specialist	2	2	100.0%	---	---	---	---
Driver education	38	38	100.0%	---	---	---	---
Communications technology careers	421	376	89.3%	49	11.6%	2	.5%
Construction careers	373	331	88.7%	47	12.6%	---	---
Manufacturing careers	331	298	90.0%	36	10.9%	---	---
Medical careers	253	218	86.2%	36	14.2%	2	.8%
Creative design careers	2	2	100.0%	---	---	---	---

Source: Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note: Many assignments qualify under multiple licensure areas. When determining the status that fits under any given licensure area, such assignments are counted for every license for which they could apply. For example, the Elementary Math assignment is an assignment that teachers can teach by holding any of the following three licenses: Mathematics, Elementary Education, or Early Childhood Education. If a teacher is noted as "Licensed for Assignment" for that assignment, they will be counted as such in the rows for all 3 license areas. This means that a person does not have to hold the license indicated in order to appear in that row, even if their status is Licensed for Assignment. Therefore, this table is best used as a way to get a sense of which licensure areas contains assignments taught by special permissions or out of compliance teachers.

A7. Assignment status by license area, 2017-18 (continued)

License or endorsement	Total N	Licensed for assignment		Special permissions		Out of compliance	
Early childhood careers	5	3	60.0%	2	40.0%	---	---
Hospitality service careers	12	5	41.7%	7	58.3%	---	---
Transportation careers	57	36	63.2%	21	36.8%	---	---
Secondary guidance and counseling	907	904	99.7%	2	.2%	1	.1%
Middle school guidance & counseling	223	222	99.6%	1	.4%	---	---
Elementary guidance & counseling	251	251	100.0%	---	---	---	---
School counselor	1,323	1,319	99.7%	3	.2%	1	.1%
Librarian	71	64	90.1%	7	9.9%	---	---
School psychologist I	1,112	1,050	94.4%	62	5.6%	---	---
School psychologist	1,112	1,050	94.4%	62	5.6%	---	---
School social worker I	1,568	1,564	99.7%	3	.2%	1	.1%
School social worker II	1,238	1,236	99.8%	1	.1%	1	.1%
School social worker	1,568	1,564	99.7%	3	.2%	1	.1%
Public school nurse	615	615	100.0%	---	---	---	---
Reading consultant	1,767	1,731	98.0%	36	2.0%	3	.2%
Library media specialist	824	763	92.6%	60	7.3%	2	.2%
Community education director	111	111	100.0%	---	---	---	---

Source: Minnesota Department of Education's Staff Automated Reporting System –STAR.

Note: Many assignments qualify under multiple licensure areas. When determining the status that fits under any given licensure area, such assignments are counted for every license for which they could apply. For example, the Elementary Math assignment is an assignment that teachers can teach by holding any of the following three licenses: Mathematics, Elementary Education, or Early Childhood Education. If a teacher is noted as "Licensed for Assignment" for that assignment, they will be counted as such in the rows for all 3 license areas. This means that a person does not have to hold the license indicated in order to appear in that row, even if their status is Licensed for Assignment. Therefore, this table is best used as a way to get a sense of which licensure areas contains assignments taught by special permissions or out of compliance teachers.

A8. Assignment status by license area for white teachers, 2017-18

License or endorsement	Total N	Licensed for assignment	Special permissions	Out of compliance
Autism spectrum disorders	2,177	1973	90.6%	9
Librarian	71	64	90.1%	7
Teachers of computer, keyboarding, and related technology applications	471	423	89.8%	47
Computer science	364	328	90.1%	37
Keyboarding for computer application	547	489	89.4%	58
Home economics	450	402	89.3%	48
Arabic	56	50	89.3%	6
Manufacturing careers	326	293	89.9%	36
Communications technology careers	406	365	89.9%	45
Dance and theatre	354	309	87.3%	41
Construction careers	366	326	89.1%	45
Latin	77	67	87.0%	10
Medical careers	246	213	86.6%	34
American sign language	83	57	68.7%	23
Transportation careers	57	36	63.2%	21
Dance	48	30	62.5%	18
Hospitality service careers	12	5	41.7%	7

Source. Minnesota Staff Automated Reporting System –STAR.

Note. Includes the licenses in which the total number of white teachers with assignment >10 and the percentages of white teachers with special permissions or out of compliance are 10 percent or more.

A9. Assignment status by license area for teachers of color, 2017-18

License or endorsement	Total N	Licensed for assignment		Special permissions		Out of compliance	
Physical sciences (physics & chemistry)	58	55	94.8%	5	8.6%	1	1.7%
Chemistry	55	52	94.5%	5	9.1%	1	1.8%
Life sciences	53	48	90.6%	5	9.4%	---	---
Learning disabilities	147	131	89.1%	14	9.5%	2	1.4%
Reading leader	51	46	90.2%	5	9.8%	---	---
Reading	51	46	90.2%	5	9.8%	---	---
Reading consultant	51	46	90.2%	5	9.8%	---	---
Developmental disabilities	50	44	88.0%	5	10.0%	1	2.0%
Sciences -all	97	90	92.8%	10	10.3%	2	2.1%
Blind or visually impaired	29	27	93.1%	3	10.3%	---	---
Pre-primary	181	160	88.4%	19	10.5%	2	1.1%
Physics	38	36	94.7%	4	10.5%	---	---
Moderate to severe mentally handicap	37	32	86.5%	4	10.8%	1	2.7%
Social studies -all-	147	133	90.5%	16	10.9%	---	---
Physical education	101	89	88.1%	11	10.9%	1	1.0%
Science 5-9	128	119	93.0%	14	10.9%	1	.8%
Science 5-8	128	119	93.0%	14	10.9%	1	.8%
Science 5-8	128	119	93.0%	14	10.9%	1	.8%
English as a second language	208	184	88.5%	23	11.1%	1	.5%
General science (see Jr. high science)	81	75	92.6%	9	11.1%	1	1.2%
Health & physical education	112	99	88.4%	13	11.6%	1	.9%
American Indian language and culture	34	30	88.2%	4	11.8%	---	---
Elementary education	1,336	1,169	87.5%	160	12.0%	8	6%

Source: Minnesota Staff Automated Reporting System –STAR.

Note: Includes the licenses in which the total number of teacher of color with assignment >10 and the percentages of teachers of color with special permissions or out of compliance are 10 percent or more.

A9. Assignment status by license area for teachers of color, 2017-18 (continued)

License or endorsement	Total N	Licensed for assignment		Special permissions		Out of compliance	
Early childhood education	1,065	929	87.2%	129	12.1%	7	.7%
Jr. High science	66	60	90.9%	8	12.1%	1	1.5%
School psychologist I	33	29	87.9%	4	12.1%	---	---
School psychologist	33	29	87.9%	4	12.1%	---	---
Accounting & data processing	16	14	87.5%	2	12.5%	---	---
French	15	13	86.7%	2	13.3%	---	---
Ojibwe	21	18	85.7%	3	14.3%	---	---
Deaf or hard of hearing	34	29	85.3%	5	14.7%	---	---
Visual arts	54	44	81.5%	8	14.8%	3	5.6%
Early childhood special education	97	80	82.5%	15	15.5%	2	2.1%
Speech & theatre arts	19	16	84.2%	3	15.8%	---	---
Autism spectrum disorders	75	61	81.3%	12	16.0%	2	2.7%
Mildly handicapped	278	226	81.3%	49	17.6%	3	1.1%
Computer science	11	9	81.8%	2	18.2%	---	---
Academic and behavioral strategist	361	288	79.8%	68	18.8%	5	1.4%
Emotional behavior disorders	177	136	76.8%	39	22.0%	2	1.1%
Spanish	126	97	77.0%	29	23.0%	---	---
Secondary remedial reading	12	9	75.0%	3	25.0%	---	---
Secondary developmental reading	12	9	75.0%	3	25.0%	---	---
Theatre arts	12	9	75.0%	3	25.0%	---	---
Communications technology careers	15	11	73.3%	4	26.7%	---	---
American sign language	11	7	63.6%	3	27.3%	1	9.1%

Source: Minnesota Staff Automated Reporting System –STAR.

Note: Includes the licenses in which the total number of teacher of color with assignment >10 and the percentages of teachers of color with special permissions or out of compliance are 10 percent or more.

A9. Assignment status by license area for teachers of color, 2017-18 (continued)

License or endorsement	Total N	Licensed for assignment	Special permissions	Out of compliance
Business education (except shorthand)	21	15	71.4%	28.6%
Business education (except bookkeeping)	21	15	71.4%	28.6%
Chinese	52	38	73.1%	28.8%
Business education -all	26	18	69.2%	30.8%
Business	26	18	69.2%	30.8%
Business education - clerical	19	13	68.4%	31.6%
Business education - secretarial	19	13	68.4%	31.6%
Keyboarding for computer application	18	12	66.7%	33.3%
Teachers of computer, keyboarding, and related technology applications	16	10	62.5%	37.5%
Dance and theatre	19	10	52.6%	47.4%
Czech	19	6	31.6%	63.2%
Finnish	19	6	31.6%	63.2%
Norwegian	19	6	31.6%	63.2%
Polish	19	6	31.6%	63.2%
Swahili	19	6	31.6%	63.2%
Vietnamese	19	6	31.6%	63.2%
Hmong	19	6	31.6%	63.2%
Arabic	26	7	26.9%	65.4%

Source. Minnesota Staff Automated Reporting System –STAR.

Note. Includes the licenses in which the total number of teacher of color with assignment >10 and the percentages of teachers of color with special permissions or out of compliance are 10 percent or more.

A10. Top five areas of special permissions or out of compliance by Economic Development Region (EDR), 2017-18

EDR and License area	Total N	Licensed for assignment	Special permissions	Out of compliance
EDR1 - Northwest				
Industrial arts/Technology (general)	37	30	81.1%	7
Family and consumer sciences / home economics (general)	36	32	88.9%	5
Junior high sciences (general)	65	61	93.8%	9
Computer science/Keyboarding (general)	31	27	87.1%	4
Business education (general)	51	45	88.2%	6
EDR2 - Headwaters				
Computer science/Keyboarding (general)	16	14	87.5%	2
Physical/Health disabilities	24	21	87.5%	3
English/Literature/Communication arts (general)	71	66	93.0%	6
Business education (general)	25	23	92.0%	2
Junior High sciences (general)	62	61	98.4%	3
EDR3 - Arrowhead				
Computer science / keyboarding (general)	48	37	77.1%	10
Business education (general)	73	63	86.3%	10
19030000 physical/health disabilities	113	100	88.5%	13
Family and consumer sciences / home economics (general)	46	41	89.1%	5
Industrial arts / technology (general)	77	70	90.9%	6

Source. Minnesota Staff Automated Reporting System –STAR.

Note. Includes only grouped licenses.

A10. Top five areas of special permissions or out of compliance by Economic Development Region (EDR), 2017-18 (continued)

EDR and License area		Total N	Licensed for assignment		Special permissions		Out of compliance	
EDR4 – West Central								
Reading (general)		89	82	92.1%	8	9.0%	---	---
Computer science/Keyboarding (general)		40	37	92.5%	3	7.5%	---	---
Industrial arts/Technology (general)		53	50	94.3%	3	5.7%	---	---
Business education (general)		64	61	95.3%	3	4.7%	---	---
Agriculture (general)		46	44	95.7%	2	4.3%	---	---
EDR5 – North Central								
Physical/Health disabilities		46	41	89.1%	5	10.9%	---	---
Family and consumer sciences/Home economics (general)		36	33	91.7%	3	8.3%	---	---
Industrial arts/Technology (general)		58	56	96.6%	3	5.2%	---	---
Junior High sciences (general)		119	118	99.2%	6	5.0%	---	---
Business education (general)		46	44	95.7%	2	4.3%	---	---
EDR6E – Southwest Central								
Junior High sciences (general)		71	70	98.6%	4	5.6%	---	---
Physical/Health disabilities		27	26	96.3%	1	3.7%	---	---
Reading (general)		35	34	97.1%	1	2.9%	---	---
Pre-K/Kindergarten/pre-primary		91	89	97.8%	2	2.2%	1	1.1%
English/Literature/Communication arts (general)		73	72	98.6%	1	1.4%	---	---
EDR6W – Upper Minnesota Valley								
Computer science/keyboarding (general)		21	19	90.5%	2	9.5%	---	---
Reading (general)		11	10	90.9%	1	9.1%	---	---
Junior High sciences (general)		32	30	93.8%	2	6.3%	1	3.1%
English/Literature/Communication arts (general)		39	36	92.3%	3	7.7%	---	---
Industrial arts/Technology (general)		14	13	92.9%	1	7.1%	---	---

Source. Minnesota Staff Automated Reporting System –STAR.

Note. Includes only grouped licenses.

A10. Top five areas of special permissions or out of compliance by Economic Development Region (EDR), 2017-18 (continued)

EDR and License area	Total N	Licensed for assignment	Special permissions	Out of compliance
EDR7E– East Central				
Computer science/Keyboarding (general)	25	17	68.0%	32.0%
Business education (general)	38	31	81.6%	21.1%
Family and consumer sciences/Home economics (general)	34	31	91.2%	8.8%
Physical/Health disabilities	38	35	92.1%	7.9%
Industrial arts/Technology (general)	48	46	95.8%	4.2%
EDR7W – Central				
Computer science/Keyboarding (general)	60	50	83.3%	15.0%
Business education (general)	111	99	89.2%	9.0%
Industrial arts/Technology (general)	97	90	92.8%	6.2%
Junior High sciences (general)	298	291	97.7%	3.7%
Agriculture (general)	56	54	96.4%	3.6%
EDR8 – Southwest				
Family and consumer sciences/Home economics (general)	31	28	90.3%	9.7%
Junior High sciences (general)	109	102	93.6%	9.2%
Physical/Health disabilities	38	35	92.1%	7.9%
Computer science/Keyboarding (general)	34	32	94.1%	5.9%
Industrial arts/Technology (general)	36	34	94.4%	5.6%
EDR9 – South Central				
Computer science/Keyboarding (general)	39	34	87.2%	12.8%
Junior High sciences (general)	145	137	94.5%	10.3%
Business education (general)	67	62	92.5%	7.5%
Dance and theater arts (general)	20	19	95.0%	5.0%
Physical/Health disabilities	67	64	95.5%	4.5%

Source. Minnesota Staff Automated Reporting System –STAR.

Note. Includes only grouped licenses.

A10. Top five areas of special permissions or out of compliance by Economic Development Region (EDR), 2017-18 (continued)

EDR and License area	Total N	Licensed for assignment	Special permissions	Out of compliance
EDR10 – Southeast				
Computer science/Keyboarding (general)	68	61	7	7
Industrial arts/Technology (general)	106	99	8	7
Family and consumer sciences/Home economics (general)	95	88	7	7
Agriculture (general)	97	90	6	1
Business education (general)	123	117	7	6
EDR11 – 7 County Twin Cities				
World languages (Norwegian, Polish, Finnish, Czech, Swahili, Vietnamese, Hmong)	42	28	13	1
Dance and theater arts (general)	326	276	50	5
Computer science/Keyboarding (general)	223	203	22	2
Industrial arts/Technology (general)	449	419	33	3
Business education (general)	452	425	31	3

Source. Minnesota Staff Automated Reporting System –STAR.

Note. Includes only grouped licenses.

A11. License areas with a high number of inactive teachers, 2017-18

License or endorsement	Number of inactive teachers	Percentage of inactive teachers of all currently licensed teachers
Agricultural education	101	38.7%
Visual arts	962	38.8%
English/language arts	1,365	41.2%
Communication arts/ literature	2,719	40.2%
Reading	1,057	34.4%
Elementary remedial reading	187	54.8%
Secondary remedial reading	161	61.7%
Secondary developmental reading	192	57.1%
Speech	131	56.2%
Theatre arts	102	55.1%
English as a second language	1,320	36.6%
French	242	39.7%
German	175	42.9%
Spanish	947	38.8%
Health education	915	33.0%
Physical education	1,839	34.0%
Home economics	146	48.0%
Family and consumer sciences	119	32.0%
Industrial arts	153	32.3%
Mathematics	2,770	35.9%
Music	331	61.5%
Classroom music	188	27.4%
Vocal and classroom music	635	40.7%

Source: Minnesota Department of Education's Staff Automated Reporting System –STAR.

A11. License areas with a high number of inactive teachers, 2017-18 (continued)

License or endorsement	Number of inactive teachers	Percentage of inactive teachers of all currently licensed teachers
Vocal music	127	30.9%
Instrumental (band/orchestra) and classroom music	659	38.3%
Life sciences	1,221	35.8%
Physical sciences (physics & chemistry)	171	31.5%
Chemistry	324	30.1%
Physics	180	33.9%
Earth and space science/ earth science	199	32.4%
Science 5-9	187	29.7%
Science 5-8	1,065	35.1%
Science 5-8	153	41.9%
Business education -all	159	40.6%
Business	176	34.9%
Keyboarding for computer application	104	32.7%
Social studies -all	3,909	40.8%
History	114	77.0%
Teacher/coordinator work based learning	181	24.4%
Elementary education	19,893	42.7%
Pre-Kindergarten	1470	44.3%
Pre-primary	1217	41.7%
Early childhood education	2,032	50.4%
Adult basic education	190	66.0%
Parent and family education	502	46.2%
Family education/early childhood educator	183	48.5%
Speech-language pathologist	1,032	35.3%

Source: Minnesota Department of Education's Staff Automated Reporting System –STAR.

A11. License areas with a high number of inactive teachers, 2017-18 (continued)

License or endorsement	Number of inactive teachers	Percentage of inactive teachers of all currently licensed teachers
Emotional behavior disorders	1,733	27.1%
Learning disabilities	2,480	30.0%
Autism spectrum disorders	431	19.2%
Developmental/ adapted physical education	390	22.9%
Deaf or hard of hearing	135	34.2%
Early childhood special education	755	31.4%
Developmental disabilities	573	25.7%
Mild to moderate mentally handicap	1,210	39.1%
Moderate to severe mentally handicap	638	43.8%
Academic and behavioral strategist	804	41.7%
Driver education	300	38.7%
Secondary guidance and counseling	210	43.0%
School counselor	931	44.5%
Librarian	178	74.2%
School psychologist	348	30.2%
School social worker	916	42.2%
Public school nurse	763	55.3%
Library media specialist	392	37.3%

Source. Minnesota Department of Education's Staff Automated Reporting System –STAR.

Definitions of special permission

The following are categories of special permissions. These permissions were all repealed on July 1, 2018 and replaced with tiered licensure. Because this report looks at permission data in 2017-2018, the definitions are still provided here.

A **personnel variance** is a special permission granted to fully licensed teachers to serve in positions for which they are not licensed when no acceptable fully licensed teacher could fill the assignment. To assign a licensed classroom teacher “out-of-field” or “out-of-grade level,” the school district or charter school must apply for a personnel variance to the Minnesota Professional Educator Licensing and Standards Board. Personnel variances may be granted to the school district or charter school for an individual for no more than three years. The personnel variance special permission was created with the intent that within three years (granted annually), a licensed teacher would have the time to become fully licensed in that content area.

An **appeal variance** is issued when a district may need or desire to continue employment of an individual who has been granted three personnel variances and is in the process of completing all requirements for a professional license but needs one additional year to meet the standards for the license.

A **discretionary variance** is issued when a district demonstrates hardship such as when three personnel variances and an appeal variance have been exhausted.

A **temporary limited license** is a special permission granted to an individual who is not fully licensed when the school superintendent or administrative designee has indicated that no acceptable fully licensed teacher is available for the assignment. The individual must possess at least a bachelor’s degree with at least a minor in the field of a full-time or part-time assignment. Temporary limited licenses are valid for one school year and may be renewed for up to three school years.

An **experimental waiver** is a special permission granted for one or more licensed individuals to teach out of their area(s) of licensure to accommodate experimental (innovative) programs by delivering content in a unique way or for purposes of implementing a state approved alternative program. The waiver may also be used for an assignment for which there is no appropriate licensure. A waiver request can only be granted in one year increments. Experimental **program waivers** were granted by core subjects for the first time in 2005-06 to align with federal No Child Left Behind requirements

A **non-licensed community expert** is a special permission granted to allow a school district to hire an individual who is not a licensed teacher, but has a specific area of expertise that is related to the teaching assignment.

A **three-year, non-renewable license** allows a professionally licensed individual to teach out-of-field in a subject as they work towards full licensure after verifying enrollment in the content area program. A district only needs to apply for this license once and does not need to advertise for the position after the first year. The special permission was issued for the first time during the 2006-2007 school year.

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Wilder Research staff who contributed to this report included:

Phil Cooper
Rachel Fields
Bryan Lloyd
Nicole MartinRogers
Julia Miller
Maria Robinson
Dan Swanson

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451 Lexington Parkway North
Saint Paul, Minnesota 55104

651-280-2700 | www.wilderresearch.org

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