



## **Teacher Supply and Demand**

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**Fiscal Year 2015**

**Report**

**To the**

**Legislature**

**As required by**

**Minnesota Statutes,**

**section 127A.05, Subdivision 6**

**COMMISSIONER:**

**Brenda Cassellius, Ed. D.**

**Teacher Supply and Demand**

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## **ESTIMATED COST OF PREPARING THIS REPORT**

This report provides information, which is maintained and published as Minnesota Rules by the Office of Revisor of Statutes as a part of its normal business functions. Therefore, the cost information reported here does not include the cost of gathering the data and is limited to the estimated cost of actually analyzing the data, determining recommendations, and preparing this report document.

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This report will be available to the public on the Minnesota Department of Education website: <http://education.state.mn.us>.

## **DISCLAIMER**

The information presented in this report contains the numbers and percentages that were available in the Fall of 2014. The numbers are correct to the best of our knowledge. However, there remains a possibility that data need to be updated to correct for errors in reporting or data entry. Those who identify errors in the data are encouraged to notify the relevant data coordinator at Minnesota Department of Education or other state agency cited as data source.

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# 2015 REPORT OF TEACHER SUPPLY AND DEMAND IN MINNESOTA'S PUBLIC SCHOOLS

## Purpose and Executive Summary

Every two years, the Educator Licensing Division of the Minnesota Department of Education (MDE) is tasked with producing a report on the supply and demand of teachers. By statute, that report must contain data collected by surveying Minnesota public school districts, charter schools, and teacher preparation institutions.

This report presents findings addressing five research questions. The data for addressing these questions were obtained from data files maintained by the Minnesota Board of Teaching (BOT), the Minnesota Center for Health Statistics (MCHS), MDE, and the U.S. Census Bureau. The data from the surveys of districts, charter schools, and teacher preparation institutions also informed findings related to the research questions.

The research questions motivating this study are:

1. What are the five-year trends in teacher staffing? Do these trends vary by teacher race/ethnicity? What are the license areas of shortage and surplus? Do these trends vary by region of the state?
2. Are there differences in the teacher shortage areas in charter schools, rural schools, and urban schools?
3. What barriers do district staff perceive as impairing their ability to hire effective teachers?
4. What factors do teacher preparation institutions cite as influencing their ability to prepare effective teachers now and during the next 10 years?
5. What K–12 public school enrollment trends are expected for particular student subgroups (e.g., racial and ethnic categories and English language learners [ELLs]) for the next three, five, and 10 years?

This report summarizes the findings and highlights the perceived teacher shortage areas and trends as measured by the data collected.

## Data Sources and Limitations

The findings are based on analyses of data from the following data sources: BOT, MCHS, MDE, and the U.S. Census Bureau. These databases were:

- the database of special permissions maintained by MDE
- county-level birth data available from MCHS' data files and website
- Minnesota Automated Student System (MARSS), Minnesota Financial Reports (MFRs), licensure database, and Staff Automated Reporting system (STAR), all housed at MDE
- county-level intercensal population estimates and Longitudinal Employer-Household Dynamics data from the U.S. Census Bureau

Data also were collected through two surveys:

- (1) the survey of 83 percent of Minnesota's public school districts and charter schools, and
- (2) the survey of 94 percent of Minnesota's teacher preparation institutions.

The findings based on data from these surveys and agency-mandated data collection systems are considered accurate and reliable. The most uncertain findings are those involving longer-term forecasts (research question 5). Although the forecast model used was the most accurate of those tested, forecasts that extend beyond three years in the future are based on assumed birth rates and the number of women between 15 and 30 years old. Each estimate has some degree of imprecision; thereby affecting the overall forecast accuracy. Education administrators who rely on these forecasts are urged to consider whether migration and birth rates have changed since the 2012–13 period and adjust their personal projections accordingly.

## Key Findings

### Research Question #1

**Overall Picture of Teachers in Minnesota.** As of the beginning of the 2013–14 school year, there were 58,211 teachers employed in Minnesota's public schools, which is an increase of 2.5 percent from five years earlier. However, changes in numbers of teachers vary by economic development region, with changes to teacher numbers varying from -15 to +5 percent. There have been increases in numbers of Asian/Pacific Islander and Hispanic teachers, but 96.5 percent of Minnesota's teachers are Caucasian.

**Teacher Shortage Areas.** Special permissions data indicate that during 2013-14, districts had to hire 3,504 teachers who lacked the necessary licenses for the subjects and the grade levels taught. This corresponds to 6 percent of the entire teaching workforce. The number of teachers requiring special permissions has declined from 2008–09 by about 7 percent. Special permission data and experiences of district hiring officers converge on the following 11 shortage areas:

- Emotional behavior disorders (294 permissions)
- Learning disabilities (265 permissions)
- Developmental disabilities (145 permissions)
- Early childhood special education (91 permissions)
- English as a second language (86 permissions)
- Mathematics (78 permissions)
- School psychologist (66 permissions)
- Spanish (64 permissions)
- Physics (50 permissions)
- Developmental/adapted physical education (45 permissions)
- Chemistry (43 permissions)

Many district hiring officers also mentioned having difficulty finding qualified speech language pathologists (a licensed support position for which special permissions are not granted). The rank ordering of these hard-to-staff license areas varied slightly from year to year, but they remained within the top 11 or 12 for all five years investigated as part of this study.

**Areas of Teacher Surplus.** According to district hiring officers and the teacher preparation institutions, the teaching positions that are easiest to fill (or most difficult to place teaching program graduates) are as follows:

- K–6 elementary
- Physical education
- Social studies (high school and Grades 5–8)
- Communication arts and literature (high school and Grades 5–8)

**Demand for Teachers.** Several components go into estimating the demand for teachers, including teacher attrition, student enrollments, and student-teacher ratios.

- The teacher attrition rate between the 2008-09 and 2012-13 school years has been approximately 8 percent per year. The attrition rate between 2012-13 and 2013-14 is higher at 10.2 percent.
- Between the 2007-08 and 2013-14 school years, student enrollments in Minnesota public schools have increased by 1.4 percent, but no apparent increasing or decreasing enrollment patterns are apparent at the statewide level. Schools in 7 of 13 economic development regions saw decreasing enrollments, especially those in the Southwest Central region (decreased by 16.39 percent) and the Upper Minnesota Valley region (decreased by 9 percent). The regions that have experienced the largest enrollment increases were the Central region (7.83 percent increase) and the Metro region (3.20 percent increase).
- The population of students enrolled in Minnesota's public schools is becoming more diverse each year. The percentage of students who are of Caucasian descent has decreased by 1 percent per year. The five-year period also has seen a steady 23 percent increase in the number of students who are eligible for free or reduced-price lunch. The numbers of students who have limited English proficiency and/or who have special needs also increased by 5 percent.
- The most recent data available (2013) indicate that the average student-teacher ratios have remained steady at 14.7. When asked whether their district was forced to increase student-teacher ratios, 18 percent of the responding districts/charter schools indicated that they had increased their student-teacher ratios within the last two years.

In summary, attrition was relatively high between the 2012-13 and 2013-14 school years. Fewer districts are reducing their teacher workforce. Enrollments are holding at the same level as in 2012 and student-teacher ratios remain at the same levels statewide. The higher level of attrition and fewer districts reducing their workforce suggest greater demand.

**Teacher Supply.** Teachers who held the respective positions the previous year fill approximately 86 percent of the teaching positions available each year. Newly licensed teachers trained in Minnesota teacher preparation institutions filled 4.5 percent of the vacant positions, teachers transferring from another district filled 4.1 percent of the vacancies, and teachers

returning from service fill 3.5 percent of the vacancies. The remaining 2 percent of vacancies are filled by teachers who transfer from other states, private schools, or other countries or newly licensed teachers trained in out-of-state institutions.

- The numbers of new teacher licenses being awarded to completers of Minnesota teacher preparation institutions during the 5-year span of 2008 and 2013 (the last year for which complete data are available) have decreased by 7 percent. However, the larger pattern of licenses awarded to graduates of Minnesota institutions shows a larger decrease since 2004.
- The reserve pool of the total number of active license holders has increased for 8 of the 15 traditional teacher shortage areas, remained constant for 6 areas, and decreased for one shortage area (industrial arts).

Taken together, these data on teacher supply suggest an overall reduction in the supply of teachers, especially in teacher shortage areas.

## **Research Question #2**

The numbers of special permissions granted for districts have decreased in all locale types. The decreases were greatest for districts in suburban areas (27.5 percent decrease), followed by districts in rural areas (16.4 percent decrease), towns (16.1 percent decrease) and cities (11.8 percent decrease).

The numbers of permissions needed have decreased in public school districts and charter schools. Regular public school districts and charter schools saw a 15.2 percent decrease and 24.5 percent decrease, respectively, for permissions needed. Other types of districts (i.e., cooperatives, education districts, and academies) saw a 3.3 percent decrease in permissions needed.

The licensure areas requiring special permissions differ between charter schools and regular school districts. The top six licensure areas needing special permissions in charter schools included the core subjects of mathematics, communication arts/literature, and science in grades 5-8. In contrast, core subjects were not among regular districts' top 5 licensure areas requiring special permissions. Regular public school districts also had English as a second language as a licensure area requiring special permissions.

## **Research Question #3**

District hiring officers were asked whether certain standards or policies represented barriers to the hiring and retaining of teachers.

- Between 63 and 79 percent of the responding districts indicated that teacher-licensing standards, teacher testing requirements, and federal "highly qualified" requirements were either a large barrier or a small barrier for hiring effective teachers.
- Between 80 and 87 percent of the responding districts indicated that teacher-licensing standards, teacher testing requirements, and federal "highly qualified" requirements were either a large barrier or a small barrier for hiring effective teachers.
- When asked to list other types of barriers to hiring qualified teachers, districts and charter schools frequently mentioned districts locale and school size influenced the hiring of teachers. Being a charter school was also perceived to be a barrier to hiring effective

teachers. Other often-mentioned barriers include: lack of pay/resources, and lack of respect given to the teaching profession as a whole.

#### **Research Question #4**

Teacher-testing requirements were mentioned as a barrier by 73 percent of the institutions. The other major impediments mentioned by 48 percent of the institutions were the cost of higher education for students and the lack of scholarships. A minority of institutions also mentioned resources for complying with accountability provisions (16 percent), resources for faculty (16 percent), low teacher salaries (12 percent), and support for the teaching profession by the public (8 percent).

#### **Research Question #5**

Student enrollments in Minnesota's public schools are expected to increase by 2 percent during the next 10 years. This figure represents a growth rate that is much more modest than the most recent enrollment forecasts offered by the National Center for Education Statistics (NCES; 2013 forecast to 2022 with a growth rate of 13 percent).

Between 2014 and 2024, enrollments in elementary schools are expected to decrease by 5 percent while enrollments in high schools are expected to increase by 11 percent. Enrollments in middle schools will increase by 8 percent until about 2019 and then decrease by 4 percent through 2014.

The relatively small numbers of students in the racial and ethnic groups make separate forecasts for these specific groups too inaccurate to trust. However, it is possible to calculate the number of students of color as whole. It is expected that Minnesota's public school population will continue to become more racially/ethnically diverse, with the percentage of school populations representing students of color increasing by about 1 percent per year. By 2024, it is expected that 38 percent of the student population will be made up of non-Caucasian students.

The forecasts of English Language Learners (ELL) also were too inaccurate to trust. The future enrollments of these students are less related to the numbers of ELL students currently in the system and the existing population of immigrants, but rather future immigration rates.

### **Final Conclusions**

The available data suggest a slight increase in the demand for teachers, as evidenced by the percentages of district hiring officers' indicating that they have increased student-teacher ratios and eliminated vacant positions in recent years. These percentages are less than they were in the 2012 survey. The supply of teachers appears to have decreased somewhat, based on the numbers of new licenses awarded to completers of Minnesota's teacher preparation institutions.

The single indicators of supply-demand balance provide conflicting data. On the one hand, districts and schools require fewer special permissions than in the past. However, the percentages of districts indicating that it is impossible or very difficult to hire qualified teachers to fill vacancies in hard-to-staff areas are nearly double those seen in the 2012 survey.

Four trends should be of concern to policymakers. The first involves the diversity of Minnesota's public school population. The past 5 years have witnessed increases in the numbers of of

students needing free or reduced price lunch, the numbers of students with special needs and students with limited English proficiency. Public schools are becoming more ethnically diverse as well, with the percentage of students representing non-Caucasian racial and ethnic groups increasing by 1 percent per year. Yet Minnesota's teacher workforce remains 96 percent Caucasian. This disparity in diversity of the teaching workforce and student population may affect student academic achievement of students of color and Caucasian students alike (Dee, 2001).

Second, while the specific teacher licensure areas experiencing shortage remain the same, the percentage of districts indicating that it is difficult or impossible to hire qualified teachers in these areas is about double that seen in the 2012 survey.

Third, a larger percentage of districts and charter schools are indicating difficulty securing short-term and long-term substitute teachers. Respondents to the district survey also expect to have more difficulty hiring substitute teachers over the next 5 years.

Finally, testing requirements for teachers top the list of factors that challenge teacher preparation institutions' efforts to recruit and prepare teachers, and 63% of districts indicate that testing requirements represent either a small (27%) or large barrier (36%) to hiring teachers. It may be useful to determine if the issue applies to all three teacher tests ("basic" skills, pedagogy, and content) and what features of the tests are of concern. This study did not ask respondents about the specific tests which they think challenge ability to recruit, prepare and hire teachers.

# 1. Overview of the Study

## 1.1 Legislative Requirement

This study was conducted in compliance with Minnesota Statutes, section 127A.05, subdivision 6, which states the following:

The commissioner of education shall survey the state's school districts and teacher preparation programs and report to the education committees of the legislature by January 15 of each odd numbered year on the status of teacher early retirement patterns, the teacher shortage, and the substitute teacher shortage, including patterns and shortages in subject areas and regions of the state. The report must also include how districts are making progress in hiring teachers and substitutes in the areas of shortage and a five year projection of teacher demand for each district.

For this study, the Educator Licensing Division within the Minnesota Department of Education (MDE) conducted surveys of public school districts and charter schools in November–December 2014 in an attempt to determine how districts and charter schools were succeeding in staffing their schools with qualified teachers. The Educator Licensing Division also administered a survey to representatives of teacher preparation institutions in Minnesota to gather information on factors that may facilitate or hinder the preparation of highly qualified teachers. This study involved extensive analysis of data already stored within MDE databases.

## 1.2 Research Questions

This study focuses on research questions that go beyond what is required by statute to address other questions of interest to MDE policymakers, legislators, and other stakeholder groups. The five research questions for this study were as follows:

1. What are the five-year trends in teacher staffing? Do these trends vary by teacher race/ethnicity? What are the license areas of shortage and surplus? Do these trends vary by region of the state?
2. Are there differences in the teacher shortage areas in charter schools, rural schools, and urban schools?
3. What barriers do district staff perceive as impairing their ability to hire effective teachers?
4. What factors do teacher preparation institutions cite as influencing their ability to prepare effective teachers now and during the next 10 years?
5. What K–12 public school enrollment trends are expected for particular student subgroups (e.g., racial and ethnic categories, English language learners [ELLs]) for the next three, five, and 10 years?

## 1.3 Data Collection

The research questions were addressed using a variety of data sources, most of which are databases maintained by MDE. The sources were:

- Minnesota Center for Health Statistics (MCHS, part of the Minnesota Department of Health)
- MDE's 2014 survey of districts on teacher supply and demand
- MDE's 2014 survey of teacher preparation institutions
- Minnesota Automated Reporting Student System (MARSS)
- Minnesota Board of Teaching's (BOT) database containing special permissions to staff vacant teaching positions with nonlicensed teachers
- MDE's educator licensure database
- Minnesota Financial Reports (MFRs)
- Staff Automated Reporting system (STAR), and
- the U.S. Census Bureau.

A key to acronyms used throughout this report is presented in Text Box 1 (page 10). The data used to address each question are summarized in the following subsections.

### **Research Question #1: Teacher Staffing Patterns**

Data addressing the first research question come from seven sources:

- The STAR database, which lists staff working in each district and school during the fall and spring of each year and the assignments for each staff
- The special permissions database, which provides a measure of teacher shortage areas
- The teacher licensure database, which provides demographic information on all persons licensed to teach in Minnesota
- Data on student enrollments obtained from the MARSS database
- Student-teacher ratios found in MFRs submitted by districts
- Perception data collected through the district survey

### **Research Question #2: Shortage Areas in Charter Schools, Rural Schools, and Urban Schools**

The question on whether school type or school locale affects the ability to hire teachers was addressed using the same data sources as used for the first question: STAR data, special permissions data, MARSS data, the teacher licensure database, student enrollment data, and district survey data. Separate analyses were performed on the different types of schools.



### Text Box 1: Key to Acronyms Used Throughout This Report

| Acronym | Description  |
|---------|--|
| APE     | <b>Average percent error:</b> a measure of quality of a forecast. APES close to 0 suggest good forecasts.  |
| BOT     | <b>Minnesota Board of Teaching:</b> a Minnesota state agency that has an independent board of directors and is responsible for setting standards and approving teacher preparation programs, and awarding special permissions to teachers, schools, or districts.  |
| ELL     | <b>English Language Learners:</b> students in schools who are also learning to speak and write English   |
| MAPE    | <b>Mean Absolute Percent Error:</b> a measure of quality of a forecast, expressed in terms of total distance from 0.   |
| MARSS   | <b>Minnesota Automated Reporting Student System:</b> A database maintained by MDE that stores information on each student in Minnesota, per data provided by districts each year.  |
| MCHS    | <b>Minnesota Center for Health Statistics</b> (at Minnesota Department of Health): a division within the Minnesota Department of Health that collects health-related information from counties and other sources maintains that health-related information.  |
| MDE     | <b>Minnesota Department of Education:</b> Department of Minnesota state government that provides support to education systems and educators throughout the state, helps develop education policy for Minnesota, administers the state's education accountability systems, obtains data from districts, and submits reports to U.S. government agencies.  |
| MFR     | <b>Minnesota Financial Reports:</b> standardized reports submitted by districts each year that summarize the districts' finances.  |
| NCES    | <b>National Center for Education Statistics:</b> a division of U.S. Department of Education, Institute for Education Sciences that administers the National Assessment of Education Progress and numerous surveys, collects data from states, and publishes a number of annual reports, including <i>The Condition of Education</i> , <i>Education Digest</i> , and <i>Projections of Education Statistics</i> . |
| STAR    | <b>Staff Automated Reporting system:</b> districts reports that are submitted twice per year listing teachers currently serving in the school, the courses they teach. For teachers who are no longer teaching in the district, STAR requests a reason for the teachers' departures.   |

### Research Question #3: Barriers to Hiring Effective Teachers

Six closed-ended and two open-ended items on the district survey asked respondents about barriers that prevent them from hiring effective teachers.

### Research Question #4: Factors Affecting the Preparation of Effective Teachers

Data collected from the survey of teacher preparation institutions were used to gather information about their preparation of effective teachers.

## **Research Question #5: Enrollment Projections**

Enrollment projections were performed after developing the 3-year, 5-year, and 10-year enrollment forecast models that produce the most accurate projections. Analysts used historical data on live births, indicators of economic growth, and prior enrollments to test the accuracy of the various models. These data come from MCHS, the MARSS database, and databases maintained by the U.S. Census Bureau containing intercensal population estimates.

### **1.4 Economic Development Regions**

This report presents findings from the district survey and the teacher preparation institutions survey in the aggregate. That is, no district or institution was singled out. Otherwise, the smallest unit of analysis for this report is the economic development region, which is a collection of neighboring counties. These regions are portrayed in Text Box 2.

### **1.5 Study Limitations**

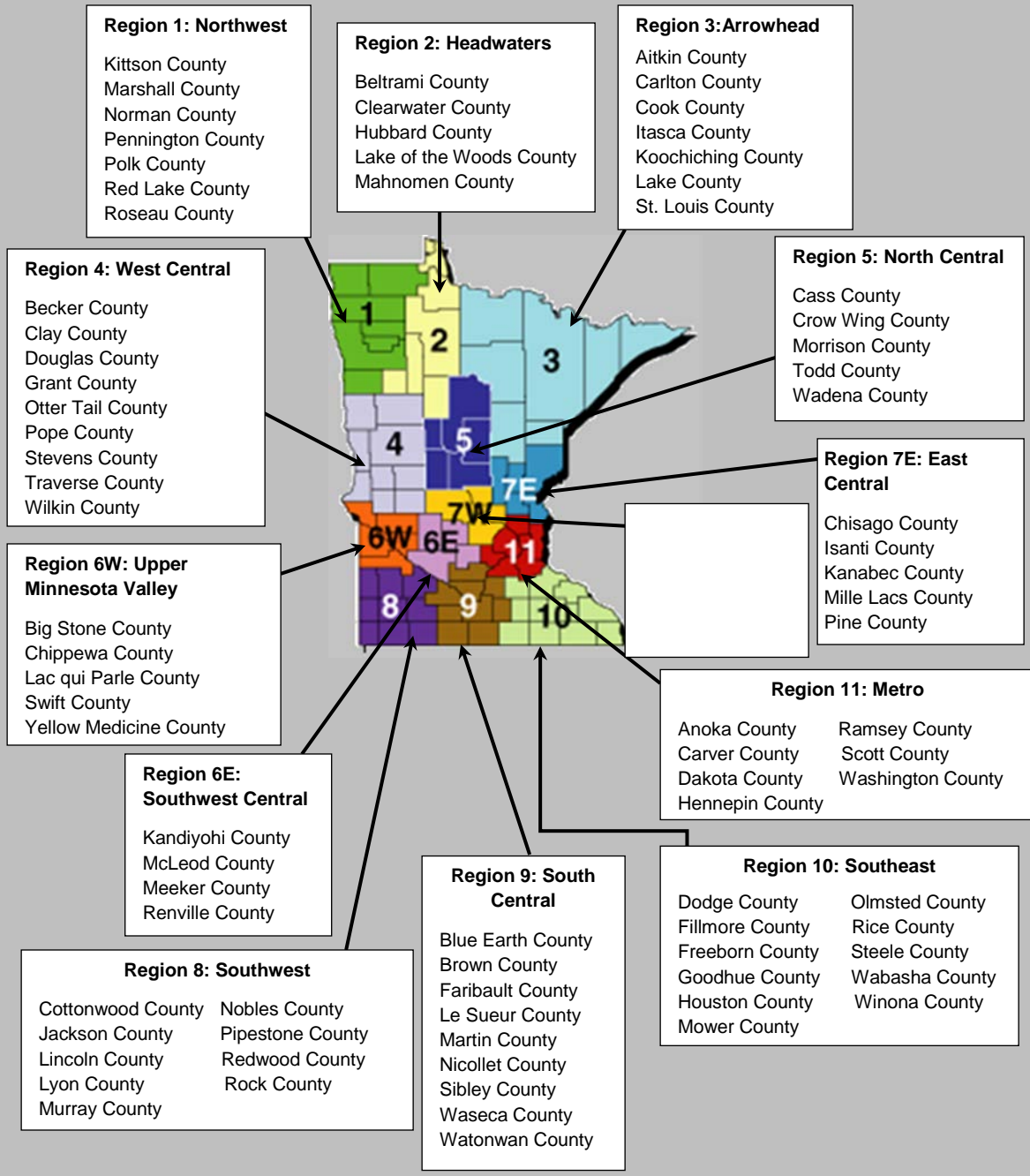
All precollected data used in this study come from standard reporting mechanisms within Minnesota or the United States. These data should be considered accurate and unbiased.

School superintendents, charter school administrators, or district hiring officers completed the district survey. The survey was sent to 502 district/charter school hiring officials who respond to the STAR data collection every year. Responses were received from 419 districts and charter schools, resulting in an 83 percent response rate.

Representatives of the teacher preparation institutions also completed a brief online survey. Of the 32 teacher preparation institutions in Minnesota, responses were obtained from representatives of 30 of those institutions, resulting in an 94 percent response rate. It should be noted, however, that there was only one respondent from each institution, making it possible that a representative's responses could reflect his or her own personal perspective of a particular teacher preparation program, not the collective perspectives of the programs.

**Text Box 2. Economic Development Regions as Defined by the Minnesota Department of Employment and Economic Development**

Many reports produced by the state of Minnesota present findings aggregated into multicounty regions. The regions align fairly well with the educational service cooperatives that previously provided support to schools and districts. Presenting findings by region—rather than by county or district—helps to preserve continuity with previous teacher supply-and-demand reports published by MDE and provides a simpler view of trends throughout the state. The regions and associated counties are as follows:



The most uncertain findings are the forecasts that address research question 5. Analysts tested eight credible forecast models using historical data (see Appendix G for a summary of these tests). Analysts chose the forecast model that produced the least biased and most accurate forecasts. Even though these forecast models yield good accuracy statistics, there remains some degree of uncertainty regarding the 5- and 10-year forecasts because those forecasts involve chains of estimates that themselves include some amount of uncertainty. Therefore, those who use forecast information for planning or capital investments should make adjustments to the forecasts based on their observations of changes in migration patterns and birth rates within their respective areas.

Finally, there may be statistics presented in this report that differ slightly from those presented in earlier reports. These discrepancies may be the result of data updates or using different time referents for counts (e.g., calendar year or school year). Readers are encouraged to accept the most recent figures, given that they represent the most current data available.

## **1.6 Structure of This Report**

The study findings are presented in Section 2 of this report, with subsections devoted to the specific research questions.

Section 2.1 focuses on research question 1. In that section, the findings on staff shortage areas (special permissions data, license data, and district hiring officers' responses to the district survey) will be presented. In addition, this section will present the findings on factors influencing the demand for teachers, such as attrition rates (in general and among recently licensed cohorts of teachers), teachers' reasons for leaving their positions, enrollment patterns, and student-teacher ratios. The findings on components of teacher supply also are included in this section. These include retention rates, the number of program completers emerging from Minnesota's teacher preparation institutions, teachers migrating in from other states, and trends in teacher licensing. This section includes findings for all of Minnesota and separate findings for each economic development region within the state.

Section 2.2 summarizes staffing patterns that are disaggregated by the race/ethnicity of teachers, school type, and school setting. These findings address research question 2.

The district hiring officers' responses to survey items on barriers to hiring effective teachers are discussed in Section 2.3. These findings related to research question 3.

Section 2.4 contains a summary of teacher preparation institutions' views of factors influencing teacher training. That is, data related to research question 4 are presented in this section.

Student enrollment projections—research question 5—are the subject of Section 2.5 of this report. Contained within this section are three-, five-, and 10-year enrollment projections for the state as a whole and students of color.

## 2. Findings

### 2.1 Teacher Staffing Patterns Since 2009–14

**Research Question 1:** What are the five-year trends in teacher staffing? Do these trends vary by teacher race/ethnicity? What are the license areas of shortage and surplus? Do these trends vary by region of the state?

A general picture of teacher staffing patterns during the past five years is presented first (Section 2.1.1). This information includes the number of teachers in the state per year, the number of teachers within the 13 economic development regions, and the numbers of teachers per licensure area.

Section 2.1.2 shows trends in staffing patterns by teacher race and ethnicity.

Section 2.1.3 includes information from single indicators of areas of teacher shortage and surplus. These indicators include the numbers of special permissions per licensure area and responses of district staff to survey items on areas of teacher shortage and surplus.

Section 2.1.4 focuses on the demand for teachers in Minnesota. The demand factors include trends in teacher attrition, trends in student enrollments, and student-teacher ratios.

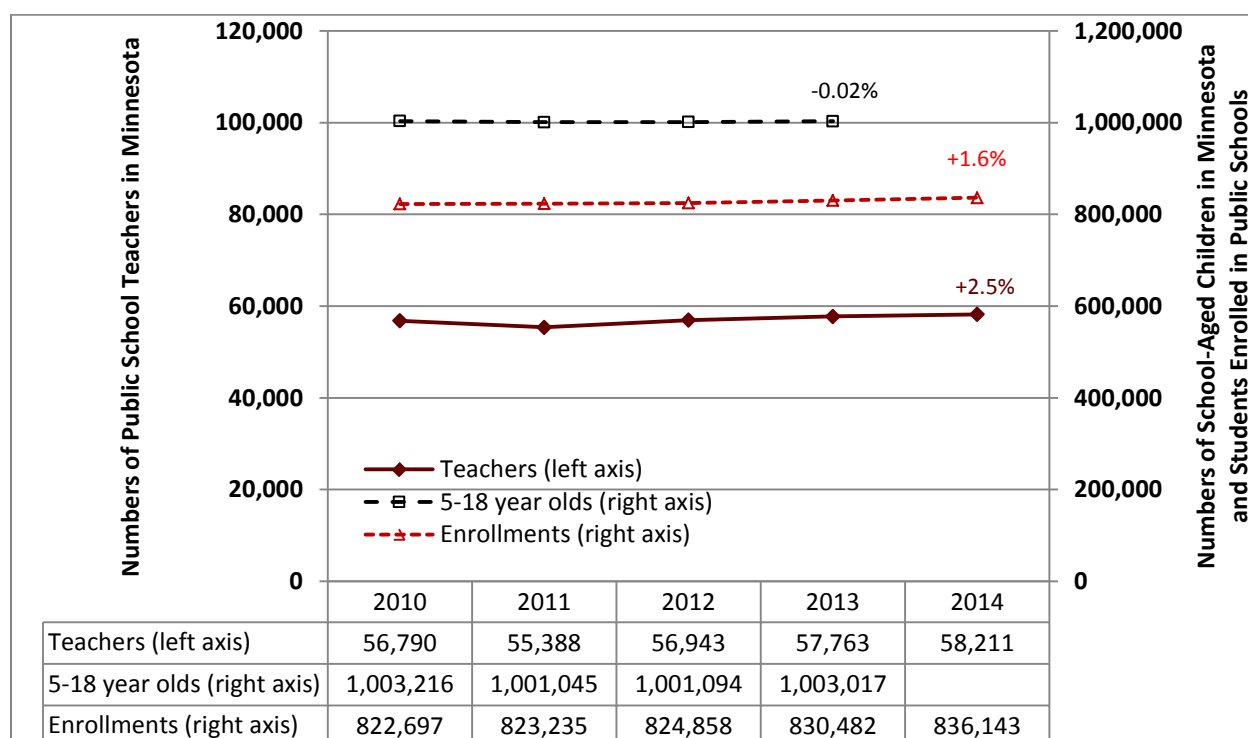
The last section (2.1.5) contains information on trends in teacher supply, including the number of candidates who complete teacher preparation programs each year and new licenses issued to teachers each year.

#### 2.1.1 General Picture of Teacher Staffing Patterns in Minnesota

The employment data reported through the STAR system identify staff serving in a capacity that requires licensure. Staff members serving as teachers were identified from STAR employment and assignment data. For this report, a teacher is defined as a licensed staff member who has at least one teaching assignment in a specific year.

The number of teachers has increased slightly since the 2009–10 school year. Figure 1 shows that the number of teachers increased from 56,790 in 2009–10 to 58,221 in 2013–14, which is a 2.5 percent increase across the five school years. In comparison, the approximate number of school-aged Minnesotans (ages 5–18) decreased by just 0.02 percent, and public school enrollments increased by 2 percent.

**Figure 1. The Number of Teachers in Minnesota Public Schools: 2009–10 to 2013–14**



Note. These include long-term substitutes but do not include short-call substitutes (a substitute fulfilling one assignment for less than 15 consecutive days). Prepared from the STAR system and the U.S. Census Bureau, Population Division, intercensal population statistics from 2010–13, found at <http://www.census.gov/popest/data/state/asrh/2013/files/SC-EST2013-AGESEX-CIV.csv>.

As seen in Table 1, there have been declines in the number of teachers for the past five years in 6 of 13 of Minnesota’s economic development regions. The decline occurred most notably in the Southwest Central region (5.5 percent). Seven regions experienced increases in the number of teachers, with the larger increases in the Southeast (5.2 percent), Metro (3.3 percent), and East Central (3.0 percent) regions. As an indication of corresponding changes to the populations within these regions, the changes to public school student enrollments are provided in the far-right column.

Table 2 shows the number of active licenses in the broad license areas from 2009–10 to 2013–14. The areas that saw the largest increases in the number of active licenses are mathematics (9.8 percent), agriculture and natural resources (5.9 percent), world languages and culture (5.8 percent), prekindergarten and elementary education (5.6 percent), and natural sciences (5.2 percent). The areas that saw the largest declines in the number of active licenses were trade and industrial (25.7 percent), family consumer sciences (19.5 percent), business (15.0 percent), industrial technology (8.3 percent), and health, safety, and physical education (7.5 percent).

**Table 1. The Number of Teachers per Region: 2009–10 to 2013–14**

| Region                 | SY 2009<br>10 | SY 2010<br>11 | SY 2011<br>12 | SY 2012<br>13 | SY 2013<br>14 | Change in Number<br>of Teacher From<br>09 10 to 13 14 | Enrollment<br>Changes from<br>09 10 to 13 14 |
|------------------------|---------------|---------------|---------------|---------------|---------------|---|--|
| <b>Total</b>           | <b>56,790</b> | <b>55,388</b> | <b>56,943</b> | <b>57,763</b> | <b>58,211</b> | <b>1,421 (2.5%)</b>                                   | <b>+0.02</b>                                 |
| 01: Northwest          | 1,127         | 1,108         | 1,114         | 1,125         | 1,122         | -5 (-0.4%)  | -3.40%                                       |
| 02: Headwaters         | 1,083         | 1,056         | 1,092         | 1,075         | 1,085         | 2 (0.2%)  | 3.22%  |
| 03: Arrowhead          | 3,093         | 3,014         | 3,074         | 3,066         | 3,071         | -22 (-0.7%)   | -2.02%                                       |
| 04: West Central       | 2,301         | 2,279         | 2,305         | 2,330         | 2,366         | 65 (2.8%)   | 1.69%  |
| 05: North Central      | 1,807         | 1,804         | 1,795         | 1,791         | 1,800         | -7 (-0.4%)  | -2.00%                                       |
| 06W: Upper MN Valley   | 1,174         | 1,159         | 1,171         | 1,152         | 1,159         | -15 (-1.3%)   | -15.31%                                      |
| 06E: Southwest Central | 561           | 541           | 542           | 532           | 530           | -31 (-5.5%)   | -7.27%                                       |
| 07W: Central           | 1,716         | 1,674         | 1,691         | 1,681         | 1,702         | -14 (-0.8%)   | -5.40%                                       |
| 07E: East Central      | 4,644         | 4,608         | 4,695         | 4,746         | 4,782         | 138 (3.0%)  | 7.31%  |
| 08: Southwest          | 1,601         | 1,578         | 1,603         | 1,609         | 1,610         | 9 (0.6%)  | 1.29%  |
| 09: South Central      | 2,626         | 2,575         | 2,638         | 2,676         | 2,666         | 40 (1.5%)   | 0.41%  |
| 10: Southeast          | 5,073         | 5,033         | 5,214         | 5,294         | 5,337         | 264 (5.2%)  | 1.16%  |
| 11: Metro              | 29,984        | 28,959        | 30,009        | 30,686        | 30,981        | 997 (3.3%)  | 2.98%  |

Note. Prepared from the STAR system

**Table 2. The Number of Total Teaching Licenses by License Area: 2009–10 to 2013–14**

| License Area                       | School<br>Year<br>2009 10 | School<br>Year<br>2010 11 | School<br>Year<br>2011 12 | School<br>Year<br>2012 13 | School<br>Year<br>2013 14 | Change From<br>2009 10 to<br>2013 14 |
|------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|--------------------------------------|
| Agricultural ed./Natural resources | 659                       | 645                       | 669                       | 666                       | 698                       | 39 (5.9%)                            |
| Business                           | 1,640                     | 1,600                     | 1,543                     | 1,490                     | 1,394                     | -246 (-15.0%)                        |
| Career and technical education     | 394                       | 391                       | 401                       | 392                       | 381                       | -13 (-3.3%)                          |
| Computer/Information technology    | 342                       | 354                       | 355                       | 349                       | 339                       | -3 (-0.9%)                           |
| English/Comm arts/Literature       | 9,027                     | 8,872                     | 9,182                     | 9,247                     | 9,132                     | 105 (1.2%)                           |
| Family/Consumer science            | 1,245                     | 1,173                     | 1,120                     | 1,052                     | 1,002                     | -243 (-19.5%)                        |
| Health/Safety/Physical education   | 11,703                    | 11,403                    | 11,282                    | 11,086                    | 10,824                    | -879 (-7.5%)                         |
| Industrial/Technology              | 785                       | 782                       | 766                       | 745                       | 720                       | -65 (-8.3%)                          |
| Mathematics                        | 4,715                     | 4,675                     | 4,951                     | 5,141                     | 5,179                     | 464 (9.8%)                           |
| Natural Sciences                   | 6,389                     | 6,345                     | 6,565                     | 6,651                     | 6,722                     | 333 (5.2%)                           |
| Pre-K/Elementary                   | 31,660                    | 31,335                    | 32,537                    | 33,310                    | 33,446                    | 1,786 (5.6%)                         |
| Social sciences                    | 5,949                     | 5,871                     | 6,082                     | 6,184                     | 6,225                     | 276 (4.6%)                           |
| Special education                  | 20,412                    | 20,171                    | 20,728                    | 20,705                    | 20,548                    | 136 (0.7%)                           |
| Trade/Industrial                   | 210                       | 201                       | 189                       | 177                       | 156                       | -54 (-25.7%)                         |
| Visual/Performing arts             | 4,894                     | 4,858                     | 4,900                     | 4,975                     | 4,935                     | 41 (0.8%)                            |
| World Language/Culture             | 4,242                     | 4,197                     | 4,401                     | 4,519                     | 4,487                     | 245 (5.8%)                           |

Note. These are counts of licenses, not teachers. Teachers may hold more than one license. Natural sciences include life sciences, physics, general science, chemistry, physical sciences, science 5–9, science 5–8, earth and space science, and general science.

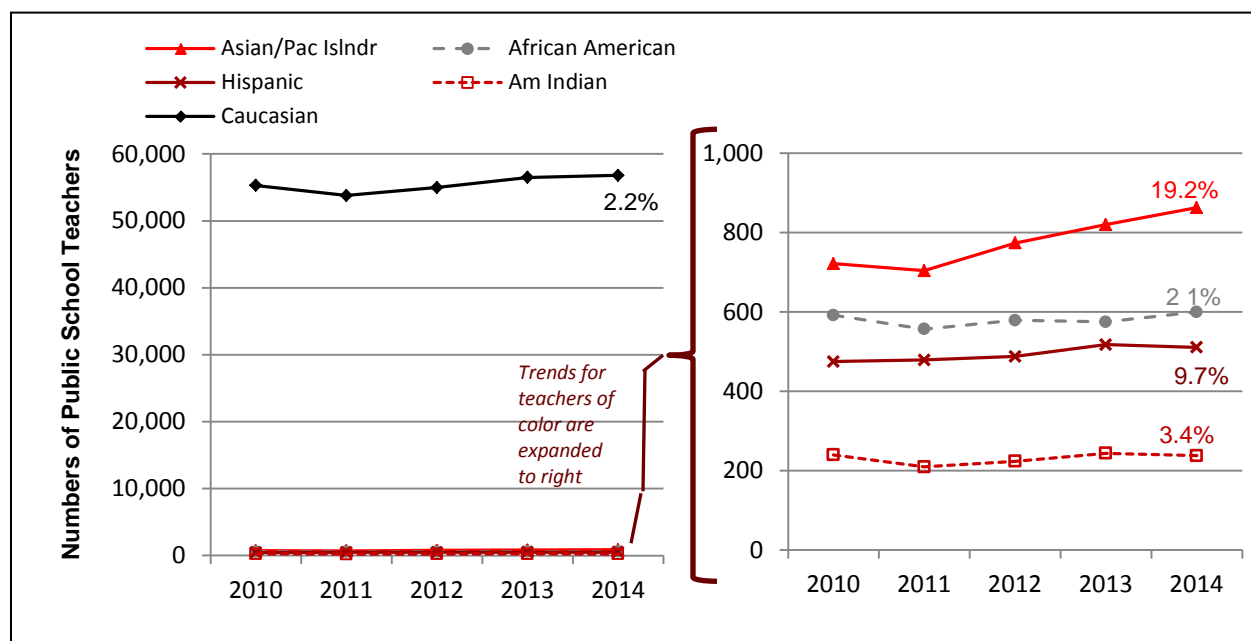
Note. These are counts of licenses, not teachers. Teachers may hold more than one license. Natural sciences include life sciences, physics, general science, chemistry, physical sciences, science 5–9, science 5–8, earth and space science, and general science.

## 2.1.2 Trends in the Diversity of Minnesota’s Teacher Workforce

Part of the first research question 1 asks about trends in the teacher workforce by teachers’ race or ethnicity. STAR employment and assignment data were examined to address this question. The data indicate increasing numbers of Asian American/Pacific Islander teachers and Hispanic teachers working in Minnesota’s public schools, compared with five years ago (see Figure 2). The numbers of teachers in these groups increased 19 percent and 10 percent, respectively (larger than the 2.5 percent increase in the overall number of teachers during this period).

Even with the relative increases in the numbers of teachers in some race and ethnic subgroups, the percentage of teachers of color within Minnesota’s teacher workforce was still only 3.8 percent in 2013–14. Table 3 also indicates that the race/ethnicity of newly licensed and employed teachers has remained constant over the last 5 years. Trends in the diversification of public school teachers in each region are reflected in the percentages for each subgroup in each region in Table 4.

**Figure 2. The Percentages of Teachers Representing Different Racial and Ethnic Groups: 2009–10 to 2013–14.**



Note. Prepared from STAR employment and assignment files.



**Table 3. The Percentage of Newly Licensed Teachers by Race/Ethnicity: 2008–09 to 2013–14**

| Race/Ethnicity                    | 2008–09 | 2009–10 | 2010–11 | 2011–12 | 2012–13 | 2013–14 |
|-----------------------------------|---------|---------|---------|---------|---------|---------|
| American Indian or Alaskan Native | 0.3%    | 0.4%    | 0.5%    | 0.5%    | 0.3%    | 0.4%    |
| Asian or Pacific Islander         | 2.4%    | 2.5%    | 3.0%    | 2.9%    | 3.0%    | 2.5%    |
| Black (Not of Hispanic Origin)    | 1.7%    | 1.7%    | 1.7%    | 1.7%    | 0.9%    | 1.6%    |
| Hispanic                          | 1.7%    | 1.8%    | 0.9%    | 1.2%    | 1.6%    | 1.4%    |
| White (Not of Hispanic Origin)    | 93.9%   | 92.9%   | 93.7%   | 93.5%   | 93.6%   | 93.7%   |
| Unknown                           | 0.0%    | 0.7%    | 0.3%    | 0.3%    | 0.6%    | 0.4%    |

**Table 4. The Race and the Ethnicity of Teachers in Minnesota and Economic Development Regions Within the State, 2009-10 to 2013–14**

| Region                 | 2010   | 2011   | 2012   | 2013   | 2014   | Percentage Change |
|------------------------|--------|--------|--------|--------|--------|-------------------|
| <b>Entire state</b>    |        |        |        |        |        |                   |
| Native American        | 237    | 218    | 229    | 244    | 245    | 3%                |
| Asian/Pacific Islander | 717    | 701    | 760    | 829    | 851    | 19%               |
| Hispanic               | 475    | 474    | 485    | 523    | 521    | 10%               |
| African American       | 587    | 544    | 567    | 563    | 594    | 1%                |
| Caucasian              | 54,679 | 53,380 | 54,755 | 55,509 | 55,803 | 2%                |
| <b>01: Northwest</b>   |        |        |        |        |        |                   |
| Native American        | 3      | 3      | 2      | 2      | 3      | 0%                |
| Asian/Pacific Islander | 0      | 0      | 0      | 0      | 1      | 100%              |
| Hispanic               | 1      | 2      | 2      | 3      | 2      | 100%              |
| African American       | 0      | 0      | 0      | 2      | 1      | 100%              |
| Caucasian              | 1,122  | 1,102  | 1,109  | 1,117  | 1,110  | -1%               |
| <b>02: Headwaters</b>  |        |        |        |        |        |                   |
| Native American        | 50     | 45     | 47     | 43     | 45     | -10%              |
| Asian/Pacific Islander | 1      | 1      | 2      | 2      | 3      | 200%              |
| Hispanic               | 3      | 3      | 2      | 3      | 3      | 0%                |
| African American       | 1      | 1      | 1      | 1      | 1      | 0%                |
| Caucasian              | 1,028  | 1,005  | 1,038  | 1,026  | 1,033  | 0%                |
| <b>03: Arrowhead</b>   |        |        |        |        |        |                   |
| Native American        | 23     | 23     | 28     | 28     | 28     | 22%               |
| Asian/Pacific Islander | 6      | 5      | 7      | 9      | 10     | 67%               |
| Hispanic               | 11     | 13     | 12     | 15     | 16     | 45%               |
| African American       | 3      | 3      | 3      | 5      | 6      | 100%              |
| Caucasian              | 3,047  | 2,968  | 3,017  | 3,006  | 2,994  | -2%               |

| Region                             | 2010  | 2011  | 2012  | 2013  | 2014  | Percentage Change |
|------------------------------------|-------|-------|-------|-------|-------|-------------------|
| <b>04: West Central</b>            |       |       |       |       |       |                   |
| Native American                    | 8     | 6     | 5     | 5     | 5     | -38%              |
| Asian/Pacific Islander             | 7     | 5     | 9     | 10    | 9     | 29%               |
| Hispanic                           | 1     | 1     | 1     | 1     | 3     | 200%              |
| African American                   | 1     | 0     | 0     | 0     | 0     | -100%             |
| Caucasian                          | 2,284 | 2,266 | 2,290 | 2,313 | 2,348 | 3%                |
| <b>05: North Central</b>           |       |       |       |       |       |                   |
| Native American                    | 5     | 5     | 5     | 4     | 4     | -20%              |
| Asian/Pacific Islander             | 3     | 3     | 3     | 2     | 4     | 33%               |
| Hispanic                           | 4     | 4     | 3     | 3     | 3     | -25%              |
| African American                   | 0     | 0     | 0     | 0     | 0     | 0%                |
| Caucasian                          | 1,793 | 1,790 | 1,784 | 1,780 | 1,784 | -1%               |
| <b>06E: Southwest Central</b>      |       |       |       |       |       |                   |
| Native American                    | 0     | 0     | 0     | 0     | 0     | 0%                |
| Asian/Pacific Islander             | 0     | 0     | 0     | 0     | 1     | 100%              |
| Hispanic                           | 2     | 1     | 1     | 1     | 2     | 0%                |
| African American                   | 0     | 0     | 0     | 0     | 0     | 0%                |
| Caucasian                          | 1,170 | 1,158 | 1,170 | 1,150 | 1,156 | -1%               |
| <b>06W: Upper Minnesota Valley</b> |       |       |       |       |       |                   |
| Native American                    | 1     | 1     | 1     | 1     | 1     | 0%                |
| Asian/Pacific Islander             | 0     | 0     | 0     | 1     | 1     | 100%              |
| Hispanic                           | 3     | 3     | 3     | 2     | 2     | -33%              |
| African American                   | 0     | 0     | 0     | 0     | 0     | 0%                |
| Caucasian                          | 556   | 536   | 538   | 528   | 525   | -6%               |
| <b>07E: East Central</b>           |       |       |       |       |       |                   |
| Native American                    | 1     | 0     | 2     | 1     | 1     | 0%                |
| Asian/Pacific Islander             | 2     | 2     | 2     | 3     | 4     | 100%              |
| Hispanic                           | 0     | 0     | 0     | 0     | 0     | 0%                |
| African American                   | 1     | 1     | 1     | 1     | 1     | 0%                |
| Caucasian                          | 1,710 | 1,670 | 1,686 | 1,675 | 1,696 | -1%               |
| <b>07W: Central</b>                |       |       |       |       |       |                   |
| Native American                    | 8     | 7     | 8     | 9     | 5     | -38%              |
| Asian/Pacific Islander             | 15    | 17    | 21    | 26    | 28    | 87%               |
| Hispanic                           | 11    | 11    | 12    | 17    | 17    | 55%               |
| African American                   | 10    | 8     | 8     | 8     | 10    | 0%                |
| Caucasian                          | 4,598 | 4,564 | 4,644 | 4,682 | 4,721 | 3%                |

| Region                       | 2010   | 2011   | 2012   | 2013   | 2014   | Percentage Change |
|------------------------------|--------|--------|--------|--------|--------|-------------------|
| <b>08: Southwest</b>         |        |        |        |        |        |                   |
| Native American              | 3      | 3      | 2      | 3      | 3      | 0%                |
| Asian/Pacific Islander       | 2      | 2      | 3      | 3      | 6      | 200%              |
| Hispanic                     | 8      | 5      | 4      | 3      | 5      | -38%              |
| African American             | 0      | 0      | 0      | 0      | 0      | 0%                |
| Caucasian                    | 1,581  | 1,563  | 1,588  | 1,598  | 1,591  | 1%                |
| <b>09: South Central</b>     |        |        |        |        |        |                   |
| Native American              | 2      | 2      | 2      | 1      | 1      | -50%              |
| Asian/Pacific Islander       | 8      | 6      | 8      | 11     | 10     | 25%               |
| Hispanic                     | 8      | 7      | 6      | 8      | 7      | -13%              |
| African American             | 3      | 2      | 1      | 1      | 3      | 0%                |
| Caucasian                    | 2,603  | 2,556  | 2,605  | 2,654  | 2,631  | 1%                |
| <b>10: Southeast</b>         |        |        |        |        |        |                   |
| Native American              | 3      | 4      | 2      | 3      | 3      | 0%                |
| Asian/Pacific Islander       | 20     | 19     | 19     | 21     | 16     | -20%              |
| Hispanic                     | 21     | 22     | 21     | 22     | 23     | 10%               |
| African American             | 8      | 7      | 12     | 13     | 12     | 50%               |
| Caucasian                    | 5,021  | 4,981  | 5,146  | 5,233  | 5,273  | 5%                |
| <b>11: Metro Twin Cities</b> |        |        |        |        |        |                   |
| Native American              | 130    | 119    | 125    | 144    | 146    | 12%               |
| Asian/Pacific Islander       | 653    | 641    | 686    | 741    | 758    | 16%               |
| Hispanic                     | 402    | 402    | 418    | 445    | 438    | 9%                |
| African American             | 560    | 522    | 541    | 532    | 560    | 0%                |
| Caucasian                    | 28,166 | 27,221 | 28,140 | 28,747 | 28,941 | 3%                |

Note. Data on the race and the ethnicity of teachers come from STAR assignment files. Data files containing these data consider race and ethnicity to be categories for the same characteristic. That is, Hispanic reflects all teachers who were identified as of Hispanic origin, regardless of racial identification.

### **2.1.3 Single Indicators of Teacher Shortage and Surplus Fields**

A common method for determining whether the supply of teachers is adequate for the demand for teachers is to examine a single statistic or indicator which shows whether supply and demand are in or out of balance and the direction of that imbalance. Two single indicators are presented in this report: (1) numbers of special permissions granted by BOT to teachers wanting to teach a subject or grade level for which they are not licensed, and (2) ratings made by district officials to show their difficulties in hiring teachers in different subject areas.

In Minnesota, teachers who wish to teach outside of their areas of licensure must obtain special permission to teach that subject. Districts and schools offering positions to these applicants must be unable to find a qualified fully licensed individual to fill the teaching vacancy. Thus, examining the licensure fields for which special permissions are granted and the number of those permissions per field allows MDE to assess which licensure areas are experiencing shortages and the magnitude of those shortages.

Subdivision 6 of Minnesota statute 127A.05 mentions another simple indicator of teacher shortage areas: surveys that ask district hiring officers about their experiences attempting to recruit and hire qualified teachers in various subject areas. These data can provide confirmation from the field about staffing areas for which too few qualified applicants exist.

#### ***Special Permissions***

The number of special permissions granted is a single indicator of fields for which too few teachers exist (see the definitions of special permissions in Text Box 3).

### Text Box 3. Definitions of Special Permissions

**Variance:** Minnesota Rule 8710.1400. A special permission granted for fully licensed teachers to serve in positions for which they are not licensed (out-of-field).

A **personnel variance** is a special permission granted to fully licensed teachers to serve in positions for which they are not licensed. 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 Board of Teaching. 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, a licensed teacher would have the time to become fully licensed in that content area.

**Waivers:** Minnesota Statutes, 122A.09, subd. 10. A special permission granted for one or more licensed individuals to teach out of their subject area to accommodate experimental (innovative) programs or for an assignment for which there is no appropriate licensure. A waiver is commonly used in an alternative setting (e.g., a care and treatment center, alternative learning center or charter school). Waivers are granted annually and there is no limit on the number of waivers an individual can be granted since there is no license that allows an individual to teach multiple content areas.<sup>1</sup>

**Temporary Limited License:** Minnesota Rule 8710.1250. A special permission granted to an individual who possesses at least a bachelor’s degree with a major or minor in the field. This person has not received teacher preparation. A temporary limited license is valid for one year and may be renewed for up to three school years.

**Short-Call Substitute License:** Minnesota Rule 8710.1000. A special permission granted to an individual when a district has advertised in good faith for regularly licensed teachers to serve as short-call substitute teachers but has been unable to secure a sufficient number of regularly licensed teachers to meet the district’s needs. The license is valid for two years, but only allows the individual to teach a specific assignment for up to 15 days at a time. If an individual has completed a teacher preparation program, but does not meet or intend to pursue a fulltime Minnesota teaching license, he/she may be issued a five-year, short-call substitute license. This may include, but is not limited to, individuals who do not meet testing, coursework, or continuing education requirements or individuals who have retired from teaching.

**Non-Licensed Community Expert:** Minnesota Statutes, section 122A.25. A special permission granted to 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.

**Non-Renewable License:** Minnesota Rule 8710.1410. This permission was issued for the first time for the 2006-07 school year. The nonrenewable license allows a professionally licensed individual to teach out-of-field in a subject as s/he works toward full licensure. A district only needs to apply for this license once and does not need to advertise for the position after the first year.

Table 5 and Figure 3 show the number of special permissions granted between 2009 and 2014.<sup>1</sup> The figure does not include limited short-call substitute licenses and duplicated counts for waivers.<sup>2</sup> The data indicate a 19 percent decrease in the most frequently used permission type (personnel variances) and a 7 percent decrease in number of limited licenses granted. Otherwise, the numbers of all other types of special permissions increased between 3 percent and 26 percent between 2009 and 2014.

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<sup>1</sup> Analysis of special permissions data revealed identical values within the electronic files, including four in the 2009–10 file, 21 in the 2010–11 file, and 18 in the 2012–13 file. The findings presented for special permissions, limited licenses, and variances do not include these duplicates.

<sup>2</sup> Total waivers granted with duplicated counts were 2,121 in 2009; 2,194 in 2010; 2,335 in 2011; 2,504 in 2012, 2,746 in 2013, and 2,416 in 2014.

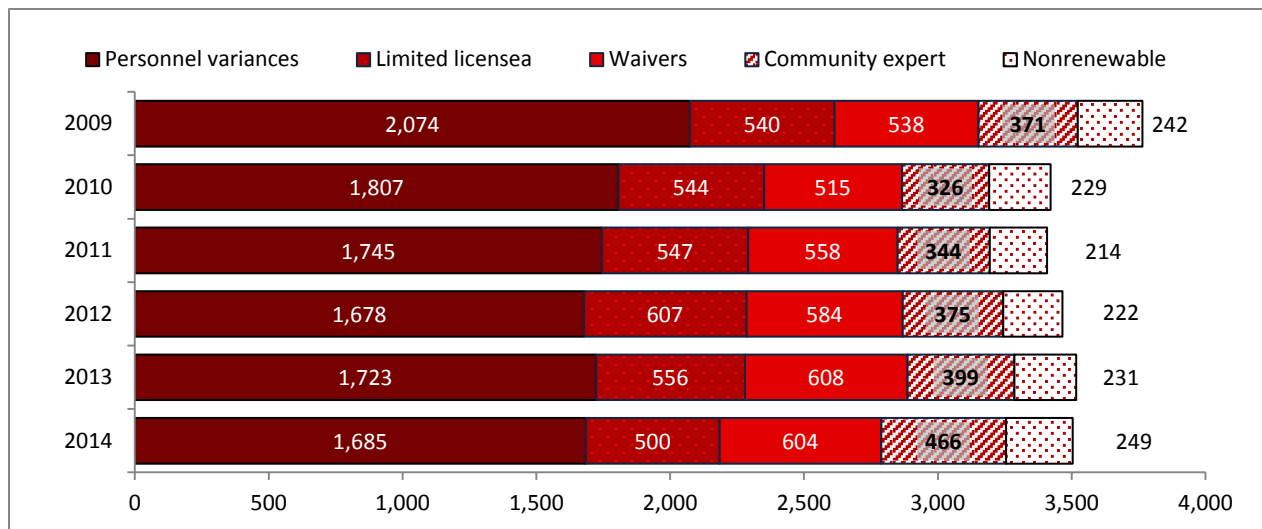
**Table 5. Special Permission Trends in All Licensure Areas: 2009–14**

| Permission Type              | 2009  | 2010  | 2011  | 2012  | 2013  | 2014  | Percentage Change 2009 14 |
|------------------------------|-------|-------|-------|-------|-------|-------|---------------------------|
| Personnel variances          | 2,074 | 1,807 | 1,745 | 1,678 | 1,723 | 1,685 | -18.8%                    |
| Limited license <sup>a</sup> | 540   | 544   | 547   | 607   | 556   | 500   | -7.4%                     |
| Waivers <sup>b</sup>         | 538   | 536   | 558   | 584   | 608   | 604   | 12.3%                     |
| Community expert             | 371   | 326   | 344   | 375   | 399   | 466   | 25.6%                     |
| Nonrenewable                 | 242   | 229   | 214   | 222   | 231   | 249   | 2.9%                      |
| Total                        | 3,765 | 3,421 | 3,408 | 3,466 | 3,517 | 3,504 | -6.9%                     |

Note. Prepared from BOT special permissions files, 2008–09 through 2013–14 school years.

<sup>a</sup>Does not include the number of limited short-call substitute licenses issued each year. <sup>b</sup>Experimental program waivers were granted by core subjects for the first time in 2005–06 to align with federal No Child Left Behind requirements. This table reflects the unduplicated count of waivers granted during each year.

**Figure 3. BOT Special Permission Trends in All Licensure Areas: 2009–2014**



Note. Prepared from BOT special permissions files, 2008–09 through 2013–14 school years.

Table 6 lists the 15 licensure areas for which the most variances and limited licenses were granted, along with the numbers granted between 2009 and 2014. The numbers of variances and limited licenses declined by 14 to 43 percent for eight subject areas. Seven areas saw between 2 and 25 percent increases in the numbers of licenses and variances.

**Table 6. The Numbers of Variances and Limited Licenses Granted by Subject Area: 2009–14**

| Licensure Subject Area            | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | Percentage Change |
|-----------------------------------|------|------|------|------|------|------|-------------------|
| Emotional behavior disorders      | 323  | 271  | 279  | 294  | 277  | 223  | -31.0%            |
| Learning disabilities             | 291  | 287  | 290  | 265  | 243  | 195  | -33.0%            |
| Elementary education              | 129  | 175  | 194  | 204  | 184  | 158  | 22.5%             |
| Developmental disabilities        | 189  | 173  | 177  | 145  | 150  | 114  | -39.7%            |
| English as a second language      | 94   | 66   | 76   | 86   | 97   | 105  | 11.7%             |
| Mathematics                       | 131  | 115  | 88   | 78   | 107  | 95   | -27.5%            |
| Communication arts/Literature     | 71   | 70   | 59   | 83   | 69   | 79   | 11.3%             |
| Early childhood special education | 126  | 95   | 94   | 91   | 71   | 75   | -40.5%            |
| Science 5-8                       | 80   | 62   | 45   | 53   | 59   | 69   | -13.8%            |
| School psychologist               | 52   | 44   | 53   | 66   | 68   | 65   | 25.0%             |
| Chemistry                         | 58   | 45   | 48   | 43   | 61   | 59   | 1.7%              |
| Library media specialist          | 46   | 31   | 32   | 25   | 40   | 53   | 15.2%             |
| Physics                           | 43   | 39   | 37   | 50   | 50   | 50   | 16.3%             |
| Reading                           | 65   | 97   | 82   | 62   | 49   | 50   | -23.1%            |
| Spanish                           | 87   | 86   | 78   | 64   | 59   | 50   | -42.5%            |

*Note.* The subject areas listed in this table represent the 15 subject areas with the most variances and limited licenses granted in 2014. See Appendix H for counts of variances and limited licenses for all subject areas between 2009 and 2014. The table does not include short-call substitutes. Prepared from BOT special permissions files, 2008–09 through 2013–14 school years.

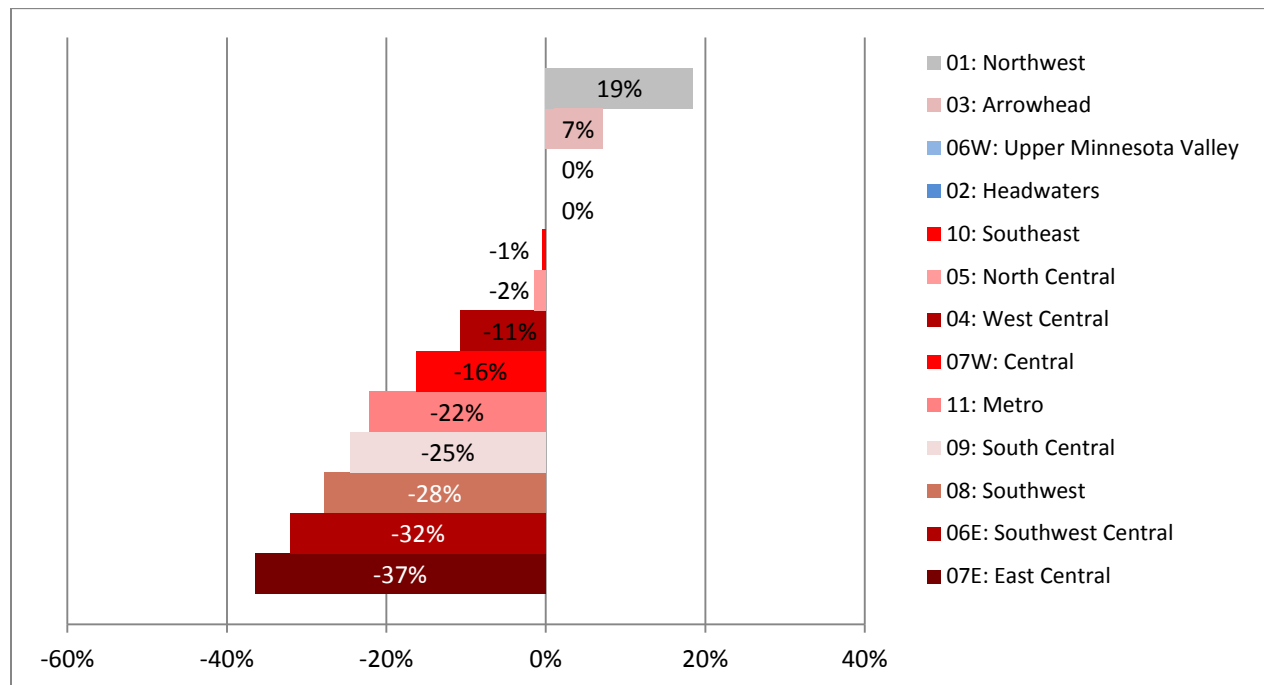
Table 7 displays similar information as in Table 6, but the data are for each of Minnesota’s economic development regions. The most variances were issued to teachers in the Metro region, whereas teachers in the Upper Minnesota Valley region were granted the fewest number of variances. As seen in Table 7, the numbers of variances and limited licenses granted in the Metro region have declined by 22 percent from 2009 to 2014. The Northwest region had a 19 percent increase in the numbers of limited licenses and variances granted between 2009 and 2014, and the Arrowhead region saw a 7 percent increase. Meanwhile, the East Central region saw a 37 percent decrease in variances and limited licenses granted, and the Southwest Central region saw a 32 percent decrease. This information also is presented in Figure 4 (page 24).

**Table 7. The Numbers of Variances and Limited Licenses Granted by Region: 2009–14**

| Region                      | 2009  | 2010  | 2011  | 2012  | 2013  | 2014  | Percentage Change |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------------------|
| 01: Northwest               | 54    | 49    | 48    | 65    | 61    | 64    | 18.5%             |
| 02: Headwaters              | 63    | 51    | 47    | 46    | 57    | 63    | 0.0%              |
| 03: Arrowhead               | 192   | 181   | 177   | 187   | 177   | 205   | 6.8%              |
| 04: West Central            | 103   | 85    | 68    | 82    | 80    | 92    | -10.7%            |
| 05: North Central           | 67    | 69    | 61    | 71    | 72    | 66    | -1.5%             |
| 06E: Southwest Central      | 50    | 27    | 44    | 38    | 38    | 34    | -32.0%            |
| 06W: Upper Minnesota Valley | 34    | 23    | 18    | 35    | 35    | 34    | 0.0%              |
| 07E: East Central           | 85    | 83    | 62    | 62    | 64    | 54    | -36.5%            |
| 07W: Central                | 141   | 128   | 113   | 114   | 119   | 118   | -16.3%            |
| 08: Southwest               | 151   | 125   | 134   | 148   | 142   | 109   | -27.8%            |
| 09: South Central           | 143   | 124   | 126   | 147   | 137   | 108   | -24.5%            |
| 10: Southeast               | 215   | 197   | 216   | 206   | 231   | 214   | -0.5%             |
| 11: Metro                   | 1,316 | 1,209 | 1,178 | 1,084 | 1,066 | 1,024 | -22.2%            |

Note. The table does not include short-call substitutes. Prepared from BOT special permissions files, 2008–09 through 2013–14 school years.

**Figure 4. The Percentage Change in Variances and Limited Licenses Granted by Region: 2008–09 to 2013–14**



Note. Prepared from BOT special permissions files, 2008–09 through 2013–14 school years.



## ***District Hiring Officers' Recent Experiences With Recruiting Licensed Staff***

The supply-and-demand survey measured district hiring officers' experiences in attempting to find qualified teachers for their vacant positions. The methodology for this survey are in Appendix A. The complete survey, along with frequency distributions for all items, is in Appendix B.

**Most Difficult Positions to Fill in the Past Two Years.** The respondents were asked the following question: "How easy or difficult was it to fill vacancies for the 2013–14 and 2014–15 school years in each of the following areas?" The response options were as follows:

- Could not fill all vacancies<sup>3</sup>
- Very difficult
- Somewhat difficult
- Easy
- N/A: No positions in this district or charter school
- N/A: No vacancies for this position

District/charter school hiring officers gave one of these responses to each of the 104 licensure areas presented. The licensure areas were grouped under the following broad categories: arts, special education, early childhood and elementary education, middle grade levels, high school education, languages, related education, career and technical education, administrative, licensed support staff, and nonlicensed support staff.

Specific licensure areas for which respondents indicated that teaching positions were impossible to fill (without a special permission) or very difficult to fill were considered "hard-to-staff". According to district informants, the top six hard-to-staff teaching areas involve teachers trained to work with students with special needs (responses for the top 15 hard-to-staff areas are depicted in Figure 5). Districts'/charter schools' responses indicate that they found it most difficult to find teachers to work with students with emotional-behavioral disorders: 11 percent of the districts were unable to fill vacancies through regular recruitment strategies, and another 33 percent reported that it was very difficult to fill vacancies in this area. District respondents also indicated difficulty in finding licensed teachers to work with students on the autism spectrum, with 8 percent of the districts stating that they were unable to fill vacancies without applying for a special permission and another 25 percent reporting that it was very difficult to fill vacancies in this area.<sup>4</sup>

The other special education positions in the top six hard-to-staff areas were developmental disabilities, specific learning disabilities, speech-language pathology, and early childhood special education. At least 20 percent of responding districts reported that they were unable to find licensed teachers to fill positions in these areas or found it very difficult to do so.

Rounding out the top 15 hard-to-staff licensure areas—according to districts and charter school—were high school chemistry (23 percent found it hard to staff), school psychologist (23 percent), high school mathematics (22 percent), high school physics (21 percent), industrial arts (19 percent), early childhood education (19 percent), English as a second language for Kindergarten through grade 6 (18 percent), Spanish (18 percent), and Mathematics for grades 5-8 (17 percent).

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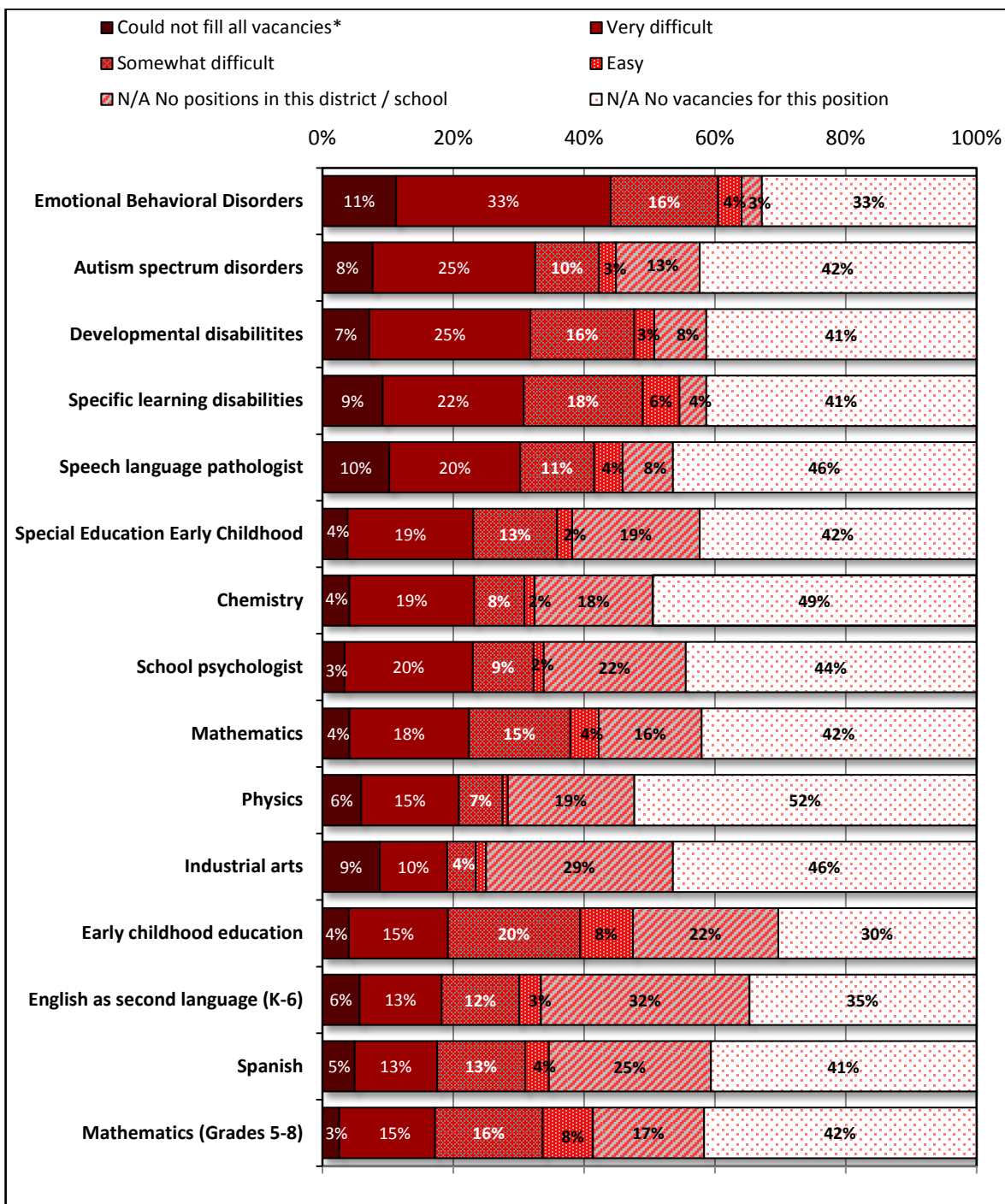
<sup>3</sup> For all teaching positions, this response option had an asterisk with the following footnote: "Or had to apply for special permissions to allow nonlicensed teachers to teach this subject."

<sup>4</sup> Many of the same licensure areas remained after eliminating districts that stated that they had no positions in the licensure area or had no vacancies in the past two years. For these alternative figures and rankings, see Figures 23 and 24 in Appendix B.

In addition, the survey included questions about how difficult it had been in the past two years to secure short- and long-term substitute teachers (see Table 8 and Appendix B). Ten percent indicated that it was “easy,” 43 percent answered that it was “somewhat difficult,” and 47 percent found it “very difficult” to secure short-term substitutes. The percentage of districts and charter schools that responded “very difficult” to this survey item was more than twice as large as the percentage who chose this response in 2012.

Eight percent indicated that it was “easy,” 43 percent answered that it was “somewhat difficult,” and 49 percent found it “very difficult” to secure long-term substitutes. Again, more than twice the number of districts or charter schools reported it very difficult to find long-term substitutes compared to two years ago.

**Figure 5. The Percent Distribution of Responses About the Ease of Filling Vacancies in the Past Two Years Ordered by Difficulty: Fall 2014**



Note. \*District responders were asked to mark this option if they had to obtain special permissions to fill a vacancy. License areas sorted based on district hiring officers' perceptions of difficulty in finding qualified applicants for vacancies (sorted from highest to lowest percentage of districts responding could not fill the position or very difficult to fill. Prepared from the MDE supply-and-demand survey, fall 2014.

<sup>a</sup>Similar analyses were performed after removing districts with no vacancies or no positions. Most of the same shortage areas emerged. See Figure 23 in Appendix B.

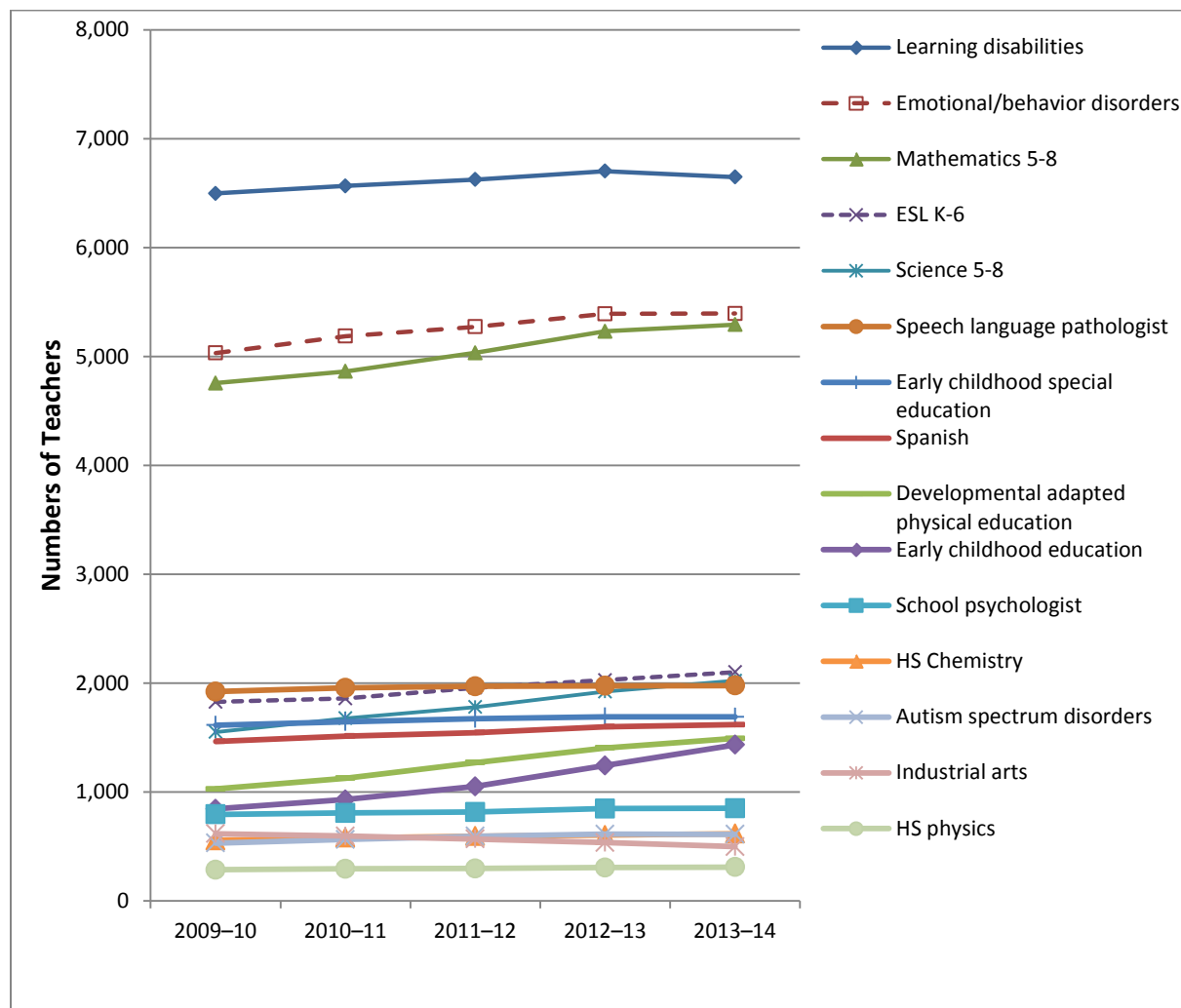
**Table 8. Percentage of Districts or Charter Schools Indicating Challenges in Finding Short-term and Long-term Substitute Teachers.**

| District and Charter School Response | Short Term Substitutes | Short Term Substitutes | Long Term Substitutes | Long Term Substitutes |
|--------------------------------------|------------------------|------------------------|-----------------------|-----------------------|
|                                      | 2012 Survey            | 2014 Survey            | 2012 Survey           | 2014 Survey           |
| Easy                                 | 35                     | 10                     | 25                    | 8                     |
| Somewhat difficult                   | 43                     | 43                     | 52                    | 43                    |
| Very difficult                       | 22                     | 47                     | 24                    | 49                    |

For the positions that had been identified as hard-to-fill over the past two years in the survey, the STAR assignment data was used to investigate how many licensed school staff members were in each of these areas over time. Figure 6 shows the numbers of staff members in these shortage areas for the past five years. The number of staff in these hard-to-staff fields decreased between eight and 20 percent from 2009-10 to 2013-14 for nine of these positions (HS mathematics, speech language pathologist, early childhood family educator/parent educator, developmental adapted physical education, Spanish, school psychologist, high school chemistry, school nurse, and high school physics), four positions didn't change by more than 5 percent (learning disabilities, emotional/behavior disorder, early childhood special education, and ESL K-6), and the number of staff for autism spectrum disorders increased by 25.4 percent over the 5 year period. As shown in Table 8 (page 30), the magnitude of shortage in these licensure areas also varied across economic development region.

For the positions that had been identified as hard-to-fill over the past two years in the survey, the STAR assignment data and the licensure data was used to investigate the number of unexpired licenses in each of these areas over time. Figure 6 shows the numbers of licenses in these shortage areas for the past five years. With the exception of one area (industrial arts), the number of licensed staff in these hard-to-staff fields increased between 2 and 70 percent from 2009-10 to 2013-14. The number of licensed school staff in industrial arts declined by 19 percent. The areas that saw the largest increase are early childhood education (70 percent), developmental adapted physical education (45 percent), science 5-8 (30 percent), autism spectrum disorders (15 percent), and English as second language K-6 (15 percent). As shown in Table 9, the magnitude of shortage in these licensure areas also varied across economic development region.

**Figure 6. The Numbers of Licensed School Staff in Areas Identified as Hardest to Fill: 2009–10 to 2013–14.**



Note. Teachers may hold licenses in multiple shortage areas. Prepared from the STAR system.

**Most Difficult Positions to Fill in the Next Five Years.** District representatives also were asked about the level of difficulty they expect to experience while trying to fill vacancies in some licensure areas in next five years. They were presented with a list of 21 licensure areas (see Appendix B, item 5 for the complete list). Fifteen of these licensure areas had at least 10 percent of the districts indicating that they will not be able to fill all vacancies<sup>5</sup> or that it will be very difficult to fill vacancies in these areas (Figure 7, page 31). These findings mirror those about areas of shortage in the past two years: District staff members expect to have difficulty hiring qualified teachers in special education fields. Twenty percent of the districts expect that they will not be able to fill all vacancies with qualified staff, and another 50 percent expect that it will be very difficult to do so. Other licensure fields which district hiring officers expect will be in short supply include chemistry (48 percent indicating that vacancies will be impossible or very difficult to fill),

<sup>5</sup> The response option *will not be able to fill all vacancies* had the following footnote: "Without applying for special permission(s) to allow nonlicensed teacher(s) to teach this subject."

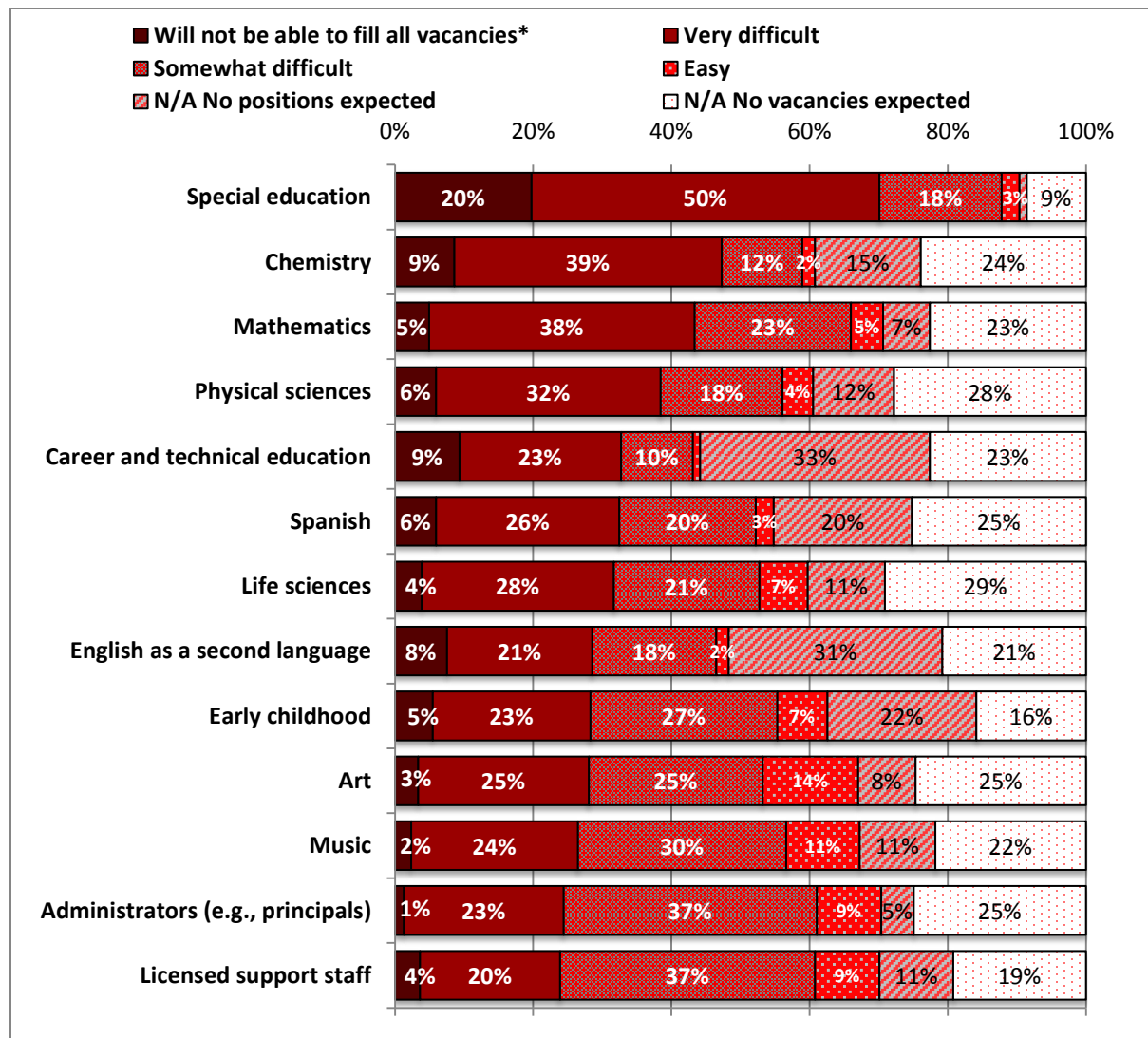
mathematics (43 percent indicating that vacancies will be impossible or very difficult to fill), and the physical sciences (38 percent indicating that vacancies will be impossible or very difficult to fill).

**Table 9. The Percentage of Districts That Indicated That They Were Unable to Fill Vacant Positions With Qualified Candidates or Found It Very Difficult to Do So by Region: Fall 2014**

| License Area                      | Overall | 01: Northwest | 02: Headwaters | 03: Arrowhead | 04: West Central | 05: North Central | 06E: Southwest Central | 06W: Upper MN Valley | 07E: East Central | 07W: Central | 08: Southwest | 09: South Central | 10: Southeast | 11: Metro |
|-----------------------------------|---------|---------------|----------------|---------------|------------------|-------------------|------------------------|----------------------|-------------------|--------------|---------------|-------------------|---------------|-----------|
| Emotional Behavioral Disorders    | 44      | 33            | 50             | 66            | 29               | 42                | 55                     | 50                   | 57                | 50           | 36            | 38                | 32            | 44        |
| Autism spectrum disorders         | 33      | 24            | 29             | 40            | 21               | 26                | 55                     | 20                   | 43                | 35           | 27            | 24                | 29            | 38        |
| Developmental disabilities        | 32      | 29            | 29             | 31            | 18               | 37                | 64                     | 40                   | 29                | 19           | 32            | 31                | 32            | 37        |
| Specific learning disabilities    | 31      | 38            | 21             | 46            | 18               | 32                | 27                     | 40                   | 36                | 23           | 27            | 24                | 27            | 33        |
| Speech language pathologist       | 30      | 29            | 14             | 26            | 21               | 63                | 64                     | 20                   | 29                | 38           | 18            | 17                | 34            | 25        |
| Special Education Early Childhood | 23      | 38            | 21             | 14            | 14               | 16                | 55                     | 0                    | 36                | 19           | 23            | 14                | 21            | 27        |
| Chemistry                         | 23      | 24            | 29             | 20            | 25               | 26                | 45                     | 20                   | 14                | 31           | 32            | 24                | 32            | 14        |
| School psychologist               | 23      | 20            | 29             | 23            | 4                | 5                 | 28                     | 30                   | 29                | 27           | 14            | 28                | 13            | 26        |
| Mathematics                       | 22      | 19            | 29             | 17            | 18               | 21                | 9                      | 30                   | 21                | 19           | 18            | 31                | 15            | 26        |
| Physics                           | 21      | 29            | 14             | 11            | 11               | 11                | 46                     | 10                   | 29                | 12           | 27            | 14                | 23            | 23        |
| Industrial arts                   | 19      | 9             | 43             | 7             | 20               | 18                | 21                     | 18                   | 10                | 43           | 19            | 18                | 28            | 28        |
| Early childhood education         | 19      | 48            | 36             | 17            | 29               | 21                | 27                     | 30                   | 7                 | 19           | 36            | 31                | 12            | 6         |
| English as second language (K-6)  | 18      | 14            | 7              | 11            | 11               | 11                | 45                     | 20                   | 21                | 31           | 23            | 21                | 20            | 19        |
| Spanish                           | 18      | 35            | 14             | 14            | 4                | 11                | 18                     | 10                   | 14                | 19           | 32            | 14                | 23            | 19        |
| Mathematics (Grades 5-8)          | 17      | 33            | 7              | 14            | 18               | 5                 | 18                     | 10                   | 21                | 15           | 14            | 24                | 15            | 19        |

*Note.* The numbers in table represent the percentages of all responses, even those districts that had no positions or vacancies. The survey requested respondents to use could not fill all vacancies if they needed to request special permissions to fill the positions. Prepared from the MDE supply-and-demand survey, fall 2014.

**Figure 7. The Percent Distribution of Responses About the Ease of Filling Vacancies in the Next Five Years Sorted From Most Difficult to Least Difficult: Fall 2014<sup>a</sup>**



Note. \*District responders were asked to mark this option if they had to obtain special permissions to fill a vacancy. District hiring officers were then presented with another item: staff with multiple licenses. This item received the second highest difficulty rating, but it is omitted here because it represents a larger perspective than just licensure areas. Fifty-six percent of the districts indicated that they would be unable to recruit such job candidates or would find it very difficult to do so. Prepared from the MDE supply-and-demand survey, fall 2014.

<sup>a</sup>A similar analysis was performed after removing districts that did not expect any vacancies or had no positions in that licensure area. See Figure 24 in Appendix B.

## 2.1.4 Trends in Teacher Demand

The examination of areas of staff shortages and surpluses using individual indicators provides little information about which components of teacher supply and demand may be contributing to the shortages/surpluses.<sup>6</sup> This section presents the findings related to the demand for teachers.

Teacher demand has multiple components:

- Positions vacated by teachers each year (i.e., attrition, interdistrict mobility, or retirement)
- Positions created or eliminated as a result of changes in student enrollments
- Adjustments to student-teacher ratios that may affect the numbers of positions available in schools each year

The findings related to these components will be described in the following subsections.

**Attrition.** In 2012–13 (the last year in which complete data are available), 5,899 teachers left their teaching positions in Minnesota, which represents a 10.2 percent attrition rate. Districts provide some information on teachers' reasons for leaving their positions as part of the STAR reporting process. When completing the fall staffing reports, districts are asked about licensed staff members who were employed the previous year but are no longer in the school. For those teachers, district STAR coordinators are asked to indicate the reason for each teacher's departure from the district.<sup>7</sup>

Reasons for leaving are provided in Table 10. The most prevalent reason for leaving in each year was retirement, which makes up 26 percent of all leavers in 2012–13.

After retirement, personal reasons represent the next most prevalent reason why teachers left in 2012–13 (22 percent of all leavers). Figure 8 (also page 33) shows the distribution of reasons for leaving as the percentages of teachers who left in 2012–13.

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<sup>6</sup> The components to teacher supply and demand are described in more detail in Lindsay, Wan, and Gossin-Wilson (2009). See also MacCullum and Ross (2010).

<sup>7</sup> It is important to note that these reasons for leaving represent district STAR coordinators' best information about teachers' departures. The accuracy of this information may vary across districts, depending on whether district hiring officers knew the teacher or whether an exit interview was conducted.

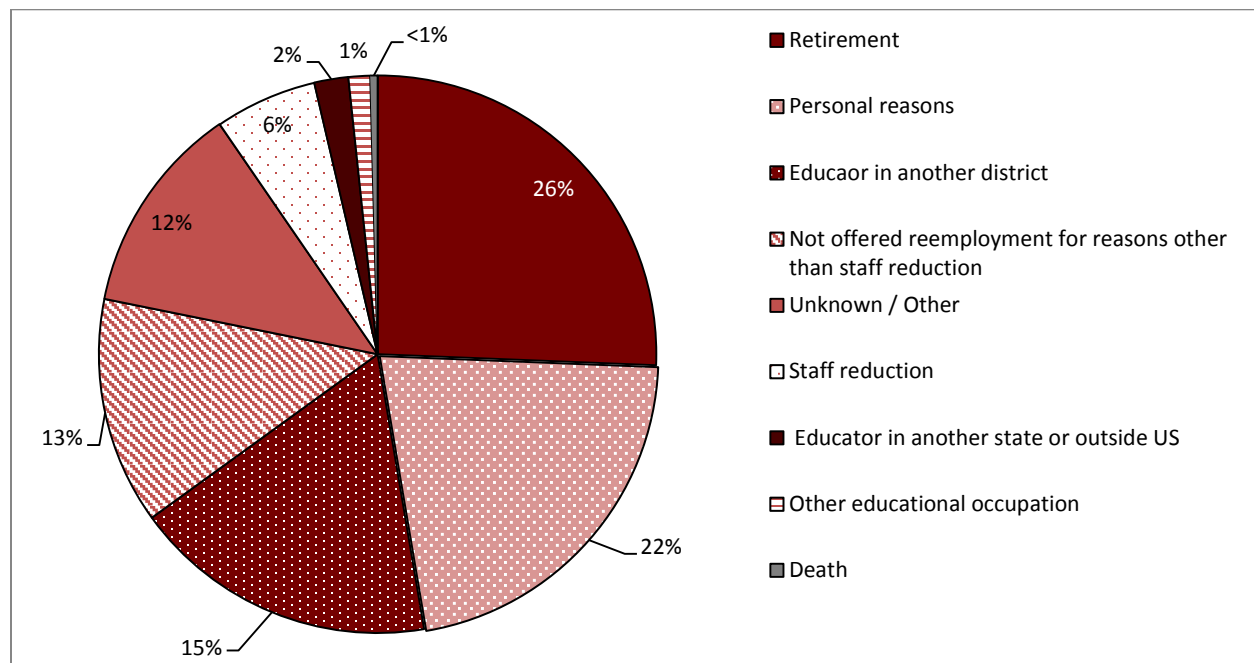


**Table 10. The Number of Teachers Leaving by Reason for Leaving: 2008–09 to 2012–13**

| Reason for Leaving  | 2008–09 (%) | 2009–10 (%) | 2010–11 (%) | 2012-13 (%) |
|---|-------------|-------------|-------------|-------------|
| Total   | 4,471       | 4,649       | 4,772       | 5,899       |
| Retirement  | 1,158 (26%) | 1,188 (26%) | 1,478 (31%) | 1,512(26%)  |
| Personal reasons  | 909 (20%)   | 992 (21%)   | 915 (19%)   | 1,280 (22%) |
| Not offered reemployment for reasons other than staff reduction | 700 (16%)   | 691 (15%)   | 631 (13%)   | 776 (13%)   |
| Staff reduction   | 667 (15%)   | 601 (13%)   | 574 (12%)   | 350 (6%)    |
| Educator in another district                                    | 464 (10%)   | 436 (9%)    | 533 (11%)   | 1,044(18%)  |
| Unknown/other   | 388 (9%)    | 573 (12%)   | 469 (10%)   | 722 (12%)   |
| Educator outside of Minnesota                                   | 101 (2%)    | 98 (2%)     | 115 (2%)    | 116 (2%)    |
| Other educational occupation                                    | 43 (1%)     | 51 (1%)     | 40 (1%)     | 74 (1%)     |
| Death   | 41 (1%)     | 19 (<1%)    | 17 (<1%)    | 25 (<1%)    |

Note. Attrition data for 2011–12 and 2013-14 are not complete. The numbers in parentheses represent the percentage within the column. Prepared with data from the STAR system.

**Figure 8. The Percent Distribution of the Reasons Why Teachers Left Their Teaching Positions in Minnesota: 2012–13**



Note. Attrition data for 2013-14 are not complete. Prepared from the STAR system.

Tables 11 and 12 provide more detailed information on the reasons why teachers left their positions. Table 11 indicates that across the regions, between 8 and 13 percent of teachers vacated their positions in 2012–13. The attrition rate in the Southwest region was the highest (13.3 percent). An examination of the reasons given for attrition in that region indicates that 22 percent chose to retire that year, 20 percent left for personal reasons, and 21 percent moved to another district (Table 12).

**Table 11. The Percentage of Teachers Leaving for Selected Reasons by Region: 2012–13**

| Region                 | Total Teachers by Region | Percentage Leaving for Any Reason | Retirement     | Personal Reasons | Not Offered Reemployment for Reasons Other Than Staff Reduction | Staff Reduction | Educator in Another District |
|------------------------|--------------------------|-----------------------------------|----------------|------------------|---|-----------------|------------------------------|
| Total                  | 57,763                   | 5,899<br>10.2%                    | 1,512<br>25.6% | 1,280<br>21.7%   | 776<br>13.2%  | 350<br>5.9%     | 1,044<br>17.7%               |
| 01: Northwest          | 1,125                    | 111<br>9.9%                       | 47<br>42.3%    | 14<br>12.6%      | 5<br>4.5%   | 8<br>7.2%       | 22<br>19.8%                  |
| 02: Headwaters         | 1,075                    | 81<br>7.5%                        | 26<br>32.1%    | 17<br>21.0%      | 4<br>4.9%   | 10<br>12.3%     | 14<br>17.3%                  |
| 03: Arrowhead          | 3,066                    | 363<br>11.8%                      | 134<br>36.9%   | 46<br>12.7%      | 41<br>11.3%   | 37<br>10.2%     | 70<br>19.3%                  |
| 04: West Central       | 2,330                    | 241<br>10.3%                      | 60<br>24.9%    | 27<br>11.2%      | 19<br>7.9%  | 24<br>10.0%     | 73<br>30.3%                  |
| 05: North Central      | 17,91                    | 186<br>10.4%                      | 77<br>41.4%    | 23<br>12.4%      | 16<br>8.6%  | 8<br>4.3%       | 49<br>26.3%                  |
| 06E: Southwest Central | 1,152                    | 105<br>9.1%                       | 42<br>40.0%    | 14<br>13.3%      | 7<br>6.7%   | 17<br>16.2%     | 19<br>18.1%                  |
| 06W: Upper MN Valley   | 532                      | 68<br>12.8%                       | 26<br>38.2%    | 6<br>8.8%        | 1<br>1.5%   | 5<br>7.4%       | 23<br>33.8%                  |
| 07E: East Central      | 1,681                    | 196<br>11.7%                      | 61<br>31.1%    | 23<br>11.7%      | 23<br>11.7%   | 11<br>5.6%      | 39<br>19.9%                  |
| 07W: Central           | 4,746                    | 416<br>8.8%                       | 103<br>24.8%   | 85<br>20.4%      | 73<br>17.5%   | 16<br>3.8%      | 76<br>18.3%                  |
| 08: Southwest          | 1,609                    | 214<br>13.3%                      | 47<br>22.0%    | 42<br>19.6%      | 9<br>4.2%   | 18<br>8.4%      | 45<br>21.0%                  |
| 09: South Central      | 2,676                    | 306<br>11.4%                      | 90<br>29.4%    | 64<br>20.9%      | 29<br>9.5%  | 11<br>3.6%      | 59<br>19.3%                  |
| 10: Southeast          | 5,294                    | 552<br>10.4%                      | 152<br>27.5%   | 96<br>17.4%      | 68<br>12.3%   | 42<br>7.6%      | 106<br>19.2%                 |
| 11: Metro              | 30,686                   | 3,060<br>10.0%                    | 647<br>21.1%   | 823<br>26.9%     | 481<br>15.7%  | 143<br>4.7%     | 449<br>14.7%                 |

Note. Teachers employed by more than one district are counted once per district. The totals do not add up to the total line because teachers leaving more than one district are displayed only once per district they served. Attrition data for 2013–14 are not complete. Prepared from the STAR system.

<sup>a</sup>The percentages in this table indicate the numbers of the *total workforce* who left for a particular reason. The numbers in Table 12 represent the number of attritions. <sup>b</sup>The percentages for these categories do not equal the total percentage because these are not an exhaustive list of reasons for leaving.

**Table 12. The Numbers of Teachers Leaving by Reason for Leaving and Region: 2012–13**

| Region                 | Total        | Retirement   | Personal Reasons | Not Offered Reemployment for Reasons Other Than Staff Reduction | Staff Reduction | Educator in Another District | Unknown/Other | Educator Outside of Minnesota | Other Educational Occupation | Death       |
|------------------------|--------------|--------------|------------------|---|-----------------|------------------------------|---------------|-------------------------------|------------------------------|-------------|
| <b>Total number</b>    | <b>5,899</b> | <b>1,512</b> | <b>1,280</b>     | <b>776</b>  | <b>350</b>      | <b>1,044</b>                 | <b>722</b>    | <b>116</b>                    | <b>74</b>                    | <b>25</b>   |
| Percentage             |              | <b>25.6%</b> | <b>21.7%</b>     | <b>13.2%</b>  | <b>5.9%</b>     | <b>17.7%</b>                 | <b>12.2%</b>  | <b>2.0%</b>                   | <b>1.3%</b>                  | <b>0.4%</b> |
| 01: Northwest          | 111          | 47           | 14               | 5   | 8               | 22                           | 5             | 6                             | 3                            | 1           |
|                        |              | 42.3%        | 12.6%            | 4.5%  | 7.2%            | 19.8%                        | 4.5%          | 5.4%                          | 2.7%                         | 0.9%        |
| 02: Headwaters         | 81           | 26           | 17               | 4   | 10              | 14                           | 2             | 5                             | 3                            | 0           |
|                        |              | 32.1%        | 21.0%            | 4.9%  | 12.3%           | 17.3%                        | 2.5%          | 6.2%                          | 3.7%                         | 0.0%        |
| 03: Arrowhead          | 363          | 134          | 46               | 41  | 37              | 70                           | 20            | 10                            | 3                            | 2           |
|                        |              | 36.9%        | 12.7%            | 11.3%   | 10.2%           | 19.3%                        | 5.5%          | 2.8%                          | 0.8%                         | 0.6%        |
| 04: West Central       | 241          | 60           | 27               | 19  | 24              | 73                           | 23            | 11                            | 4                            | 0           |
|                        |              | 24.9%        | 11.2%            | 7.9%  | 10.0%           | 30.3%                        | 9.5%          | 4.6%                          | 1.7%                         | 0.0%        |
| 05: North Central      | 186          | 77           | 23               | 16  | 8               | 49                           | 10            | 2                             | 0                            | 1           |
|                        |              | 41.4%        | 12.4%            | 8.6%  | 4.3%            | 26.3%                        | 5.4%          | 1.1%                          | 0.0%                         | 0.5%        |
| 06E: Southwest Central | 105          | 42           | 14               | 7   | 17              | 19                           | 3             | 2                             | 1                            | 0           |
|                        |              | 40.0%        | 13.3%            | 6.7%  | 16.2%           | 18.1%                        | 2.9%          | 1.9%                          | 1.0%                         | 0.0%        |
| 06W: Upper MN Valley   | 68           | 26           | 6                | 1   | 5               | 23                           | 6             | 1                             | 0                            | 0           |
|                        |              | 38.2%        | 8.8%             | 1.5%  | 7.4%            | 33.8%                        | 8.8%          | 1.5%                          | 0.0%                         | 0.0%        |
| 07E: East Central      | 198          | 61           | 23               | 23  | 11              | 39                           | 16            | 8                             | 11                           | 4           |
|                        |              | 31.1%        | 11.7%            | 11.7%   | 5.6%            | 19.9%                        | 8.2%          | 4.1%                          | 5.6%                         | 2.0%        |
| 07W: Central           | 416          | 103          | 85               | 73  | 16              | 76                           | 58            | 1                             | 3                            | 1           |
|                        |              | 24.8%        | 20.4%            | 17.5%   | 3.8%            | 18.3%                        | 13.9%         | 0.2%                          | 0.7%                         | 0.2%        |
| 08: Southwest          | 214          | 47           | 42               | 9   | 18              | 45                           | 42            | 9                             | 2                            | 0           |
|                        |              | 22.0%        | 19.6%            | 4.2%  | 8.4%            | 21.0%                        | 19.6%         | 4.2%                          | 0.9%                         | 0.0%        |
| 09: South Central      | 306          | 90           | 64               | 29  | 11              | 59                           | 46            | 3                             | 1                            | 3           |
|                        |              | 29.4%        | 20.9%            | 9.5%  | 3.6%            | 19.3%                        | 15.0%         | 1.0%                          | 0.3%                         | 1.0%        |
| 10: Southeast          | 552          | 152          | 96               | 68  | 42              | 106                          | 60            | 12                            | 13                           | 3           |
|                        |              | 27.5%        | 17.4%            | 12.3%   | 7.6%            | 19.2%                        | 10.9%         | 2.2%                          | 2.4%                         | 0.5%        |
| 11: Metro              | 3,060        | 647          | 823              | 481   | 143             | 449                          | 431           | 46                            | 30                           | 10          |
|                        |              | 21.1%        | 26.9%            | 15.7%   | 4.7%            | 14.7%                        | 14.1%         | 1.5%                          | 1.0%                         | 0.3%        |

Note. The data needed to calculate full attrition for 2013-14 are not complete (especially data from spring of 2014).

Prepared from the STAR system.

In the Northwest, North Central, and Southwest Central more than 40 percent of the departing teachers chose to retire that year.

The numbers of vacancies that year correspond to the total numbers of teaching positions within a field, suggesting that no particular fields are seeing more or less attrition than others.

Table 13 shows the numbers of teachers who vacated their positions during 2012–13 by licensure area and reason for leaving. The list of licensure areas is ranked-ordered according to numbers of positions vacated (decreasing order). The second column (taken from Table 2) indicates that the rankings correspond to the rankings of total positions in 2011-12.

**Table 13. The Numbers of Teachers Leaving for Selected Reasons by License Area: 2012–13**

| License Area                             | Rank Ordering<br>Number of Positions<br>in 2011-12 | Positions Vacated | Retirement | Personal Reasons | Not Offered<br>Reemployment for<br>Reasons Other<br>Than Staff<br>Reduction | Staff Reduction | Educator in Another<br>District |
|--|--|-------------------|------------|------------------|---|-----------------|---------------------------------|
| Prekindergarten/Elementary               | 1  | 2,709             | 818        | 562              | 348   | 147             | 434                             |
| Special education                        | 2  | 1,380             | 371        | 311              | 159   | 59              | 270                             |
| English/Communication arts/Literature    | 4  | 829               | 176        | 186              | 125   | 63              | 153                             |
| Social sciences                          | 6  | 576               | 119        | 100              | 95  | 50              | 117                             |
| Mathematics                              | 7  | 538               | 81         | 115              | 82  | 38              | 119                             |
| Health/Safety/Physical education         | 3  | 526               | 242        | 66               | 48  | 27              | 89                              |
| Visual/Performing arts                   | 8  | 459               | 131        | 94               | 59  | 21              | 79                              |
| World Language/Culture                   | 9  | 454               | 76         | 140              | 60  | 29              | 77                              |
| Natural sciences                         | 5  | 364               | 64         | 86               | 60  | 22              | 76                              |
| Business                                 | 10   | 82                | 30         | 11               | 13  | 2               | 18                              |
| Industrial/Tech                          | 12   | 82                | 34         | 12               | 6   | 7               | 16                              |
| Family/Consumer science                  | 11   | 74                | 39         | 12               | 5   | 6               | 4                               |
| Agricultural education/Natural resources | 13   | 35                | 5          | 9                | 1   | 2               | 9                               |
| Career and technical education           | 14   | 33                | 6          | 8                | 2   | 3               | 8                               |
| Trade/Industrial                         | 16   | 19                | 13         | 0                | 1   | 3               | 1                               |
| Computer/Information technology          | 15   | 17                | 1          | 3                | 3   | 0               | 7                               |

*Note.* Teachers may hold licenses in more than one area and are counted accordingly. The numbers for these categories do not sum to the total numbers of teachers leaving because this is not an exhaustive list of reasons for leaving. Attrition data for 2013–14 are not complete. Prepared from the STAR system. Natural sciences include life sciences, physics, general science, chemistry, physical sciences, science 5–9, science 5–8, earth and space science, and general science

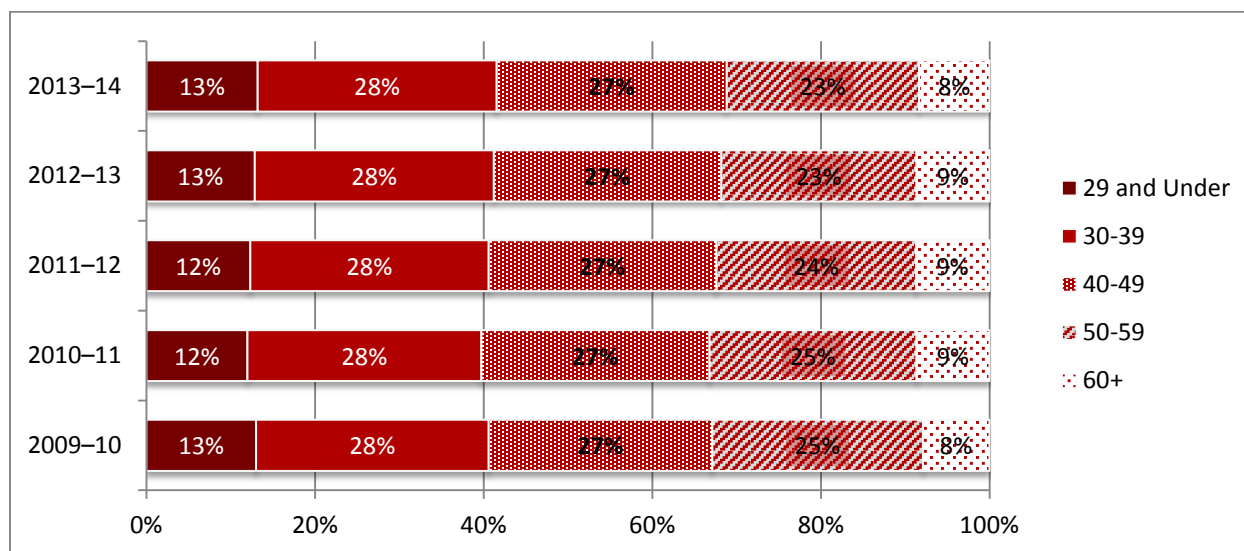
**Retirements.** Looking more closely at the retirement data, the percentages of all teachers who retired remained relatively constant between the 2008–08 and 2012–13 school years. The average age of teachers’ retirement has been steadily increasing each year (Table 14 and Figure 9). The percentages of teachers in each age group have been relatively stable over the five years.

**Table 14. The Percentage of Teachers Who Retired and Average Age of Retirement: 2008–09 to 2013–14**

| School Year | Percentage of Teachers Who Retired | Average Age of Retirement |
|-------------|------------------------------------|---------------------------|
| 2008–09     | 2.1%                               | 60.2                      |
| 2009–10     | 2.1%                               | 60.5                      |
| 2010–11     | 2.7%                               | 61.0                      |
| 2012–13     | 2.6%                               | 61.5                      |

Note. Attrition data for 2011–12 and 2013-14 are not complete. Prepared from the STAR system.

**Figure 9. The Percent Distribution of Teachers’ Ages: 2009–10 to 2013–14**



Note. Prepared from the STAR system.

**Attrition Among New Teachers.** This teacher supply-and-demand study also examined the numbers of new teachers in the 2008–09, 2009–10, 2010–11, 2011–12, and 2012–13 cohorts who left their positions during their first five years.<sup>8</sup> The cumulative attrition rates for each cohort across time are presented in Table 15. On average, 16.4 percent were no longer teaching in Minnesota after their first year, 22.4 percent left teaching within two years of entering the profession, 26.8 percent left within three years, 30.2 percent left within four years, and 32.3 percent left within their five years of entering the profession.

<sup>8</sup> If a teacher left his or her teaching position and returned in another school year, he or she is included as a returning teacher in that year (see section on teacher supply).

**Table 15. The Number of First-Year Teachers Who Leave the Profession in Minnesota: 2008–09 to 2013–14**

| Cohort Year | Number of First-Year Teachers | Return to Teaching 2009–10 | Return to Teaching 2010–11 | Return to Teaching 2011–12 | Return to Teaching 2012–13 | Return to Teaching 2013–14 |
|-------------|-------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| 2008–09     | 2,338                         | 1,954<br>-16.42%           | 1,841<br>-21.26%           | 1,746<br>-25.32%           | 1,665<br>-28.79%           | 1,582<br>-32.34%           |
| 2009–10     | 2,459                         |                            | 2,031<br>-17.41%           | 1,885<br>-23.34%           | 1,764<br>-28.26%           | 1,681<br>-31.64%           |
| 2010–11     | 2,209                         |                            |                            | 1,815<br>-17.84%           | 1,706<br>-22.77%           | 1,620<br>-26.66%           |
| 2011–12     | 2,406                         |                            |                            |                            | 2,052<br>-14.71%           | 1,873<br>-22.15%           |
| 2012–13     | 2,907                         |                            |                            |                            |                            | 2,452<br>-15.65%           |
| 2013–14     | 2,877                         |                            |                            |                            |                            |                            |

*Note.* First-year teachers include those newly licensed in Minnesota and those newly licensed from out of state or country but working in their first assignment in a licensed capacity. Prepared from STAR employment and assignment data.

Table 16 shows the reasons provided by districts for the departure of the teachers in the 2008–09 new teacher cohort within their first five years. The majority of the teachers from this cohort who left their positions during the first five years did so for personal reasons, followed by staff reductions, not offered reemployment for reasons other than staff reductions, and moved to another district. Similar patterns were evident among those teachers in other cohorts who left their positions.

**Table 16. The Reasons First-Year Teachers in 2008–09 Left Their Teaching Positions: 2008–09 Through 2012–13**

| Reason for Leaving Teaching Position                            | Not Returning in 2009–10 | Not Returning in 2010–11 | Not Returning in 2011–12 | Not Returning in 2012–13 <sup>a</sup> | Not Returning in 2013–14 |
|---|--------------------------|--------------------------|--------------------------|---------------------------------------|--------------------------|
| Total leaving   | 384                      | 201                      | 180                      | 180                                   | 141                      |
| Staff reduction   | 86                       | 29                       | 33                       | 1                                     | 5                        |
| Personal reasons  | 96                       | 54                       | 48                       | 15                                    | 19                       |
| Retirement  | 0                        | 0                        | 3                        | 0                                     | 0                        |
| Death   | 0                        | 0                        | 0                        | 0                                     | 0                        |
| Educator in another district                                    | 14                       | 6                        | 7                        | 1                                     | 4                        |
| Educator in another state or outside the United States          | 15                       | 5                        | 5                        | 0                                     | 3                        |
| Other educational occupation                                    | 3                        | 1                        | 2                        | 1                                     | 3                        |
| Not offered reemployment for reasons other than staff reduction | 85                       | 45                       | 34                       | 0                                     | 18                       |
| Unknown/other   | 85                       | 61                       | 48                       | 162                                   | 89                       |

a. Data on employment termination during 2011–12 is not complete. Therefore for many teachers who did not return in 2012–13, their reasons for leaving are unknown.

Note. If a teacher from the cohort left and returned to teaching in Minnesota before leaving again, he or she is counted for each departure from Minnesota. Prepared from STAR employment and assignment data.

**Table 17. The Reasons First-Year Teachers in 2008–09 Left Their Teaching Positions: 2008–09 Through 2012–13.**

| Reason for Leaving Teaching Position                            | Not Returning in 2009–10 | Not Returning in 2010–11 | Not Returning in 2011–12 | Not Returning in 2012–13 <sup>a</sup> | Not Returning in 2013–14 |
|---|--------------------------|--------------------------|--------------------------|---------------------------------------|--------------------------|
| Total leaving   | 384                      | 201                      | 180                      | 180                                   | 141                      |
| Staff reduction   | 86                       | 29                       | 33                       | 1                                     | 5                        |
| Personal reasons  | 96                       | 54                       | 48                       | 15                                    | 19                       |
| Retirement  | 0                        | 0                        | 3                        | 0                                     | 0                        |
| Death   | 0                        | 0                        | 0                        | 0                                     | 0                        |
| Educator in another district                                    | 14                       | 6                        | 7                        | 1                                     | 4                        |
| Educator in another state or outside the United States          | 15                       | 5                        | 5                        | 0                                     | 3                        |
| Other educational occupation                                    | 3                        | 1                        | 2                        | 1                                     | 3                        |
| Not offered reemployment for reasons other than staff reduction | 85                       | 45                       | 34                       | 0                                     | 18                       |
| Unknown/other   | 85                       | 61                       | 48                       | 162                                   | 89                       |

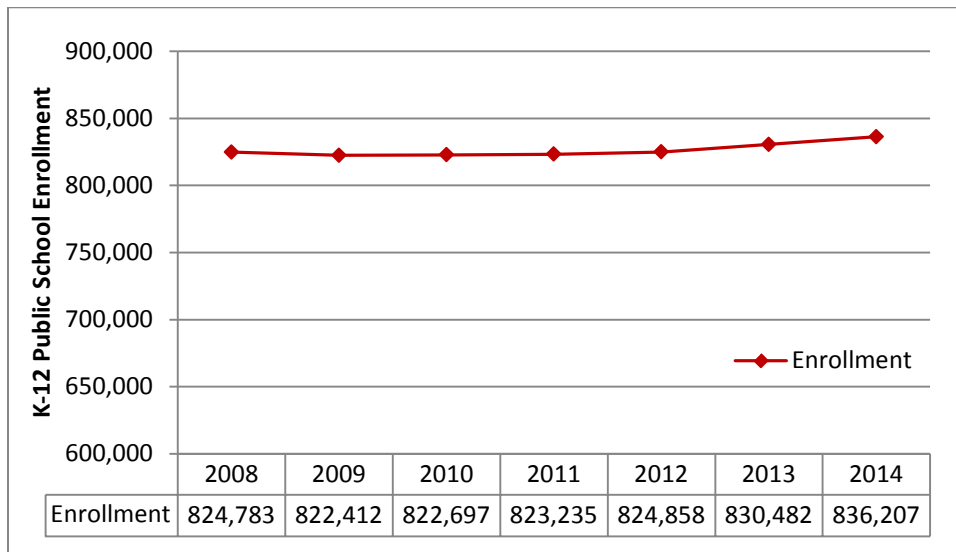
a. Data on employment termination during 2011–12 is not complete. Therefore for many teachers who did not return in 2012–13, their reasons for leaving are unknown.

Note. If a teacher from the cohort left and returned to teaching in Minnesota before leaving again, he or she is counted for each departure from Minnesota. Prepared from STAR employment and assignment data.

**Student Enrollments.** Enrollments in Minnesota’s public schools have changed little since the 2007–08 school year. As seen in Figure 10, there were 824,783 students attending public schools within the state in 2007–08. The enrollments increased to 836,207 in 2013–14, an increase of 1.4 percent.

However, the general statewide trends mask regional differences in student enrollments. As seen in Table 17, the two regions with the greatest enrollment increases were the Central region (7.8 percent) and the seven-county Metro region (3.2 percent). The regions with the greatest declines in enrollment were the Southwest Central region (decrease of 16.4 percent) followed by the Upper Minnesota Valley region (decrease of 9 percent). Enrollment increased by 3.2 percent between 2005–06 and 2011–12. Enrollments in the other 11 economic development regions decreased between 0.82 percent (Southeast region) and 18.66 percent (Southwest Central region).

**Figure 10. Student Enrollments in Minnesota's Public Schools: 2007–08 Through 2013–14**



Note. Prepared using MARSS data.



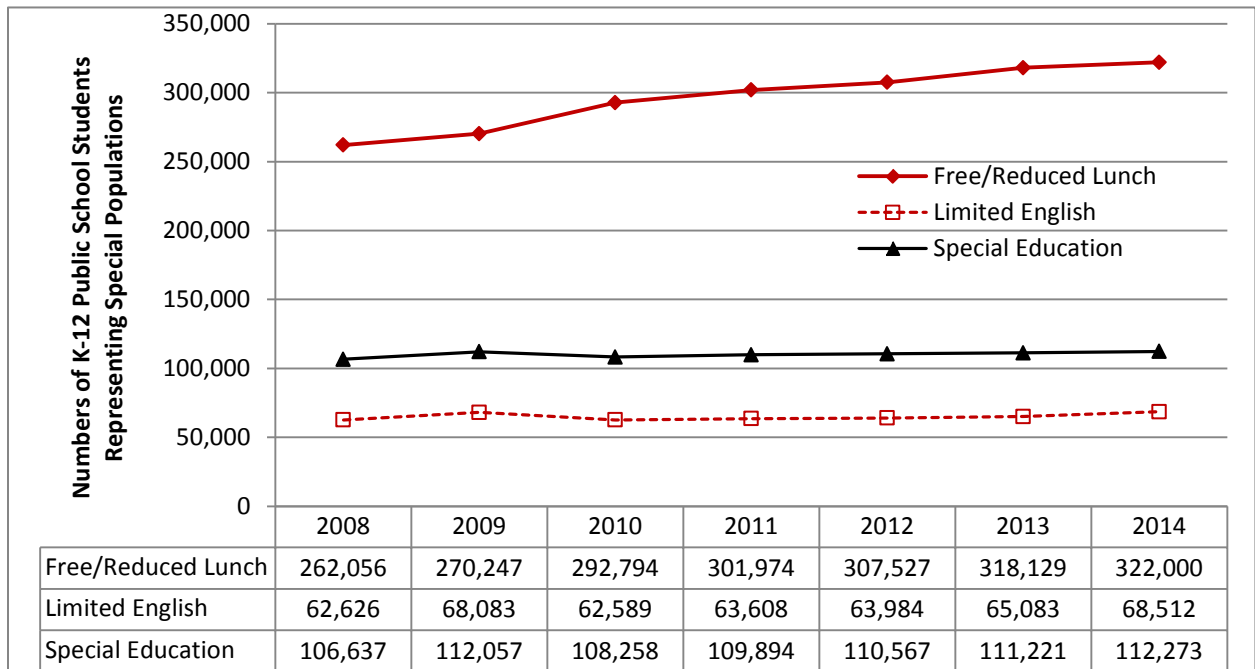
**Table 18. Public School Enrollments in Minnesota Regions: 2007–08 to 2013–14**

| Region                      | 2007-08 | 2013-14 | Change From 2007–08 |
|-----------------------------|---------|---------|---------------------|
| 01: Northwest               | 14,480  | 13,828  | -4.50%              |
| 02: Headwaters              | 13,198  | 13,389  | 1.45%               |
| 03: Arrowhead               | 44,815  | 43,207  | -3.59%              |
| 04: West Central            | 31,335  | 31,862  | 1.68%               |
| 05: North Central           | 26,053  | 24,801  | -4.81%              |
| 06E: Southwest Central      | 19,106  | 15,974  | -16.39%             |
| 06W: Upper Minnesota Valley | 7,821   | 7,116   | -9.01%              |
| 07E: East Central           | 27,806  | 26,023  | -6.41%              |
| 07W: Central                | 69,023  | 74,427  | 7.83%               |
| 08: Southwest               | 19,017  | 18,937  | -0.42%              |
| 09: South Central           | 32,725  | 32,428  | -0.91%              |
| 10: Southeast               | 74,322  | 74,959  | 0.86%               |
| 11: Metro                   | 445,082 | 459,307 | 3.20%               |

*Note.* Prepared using MARSS data. 2013-14 enrollments do not include 64 students whose county of residence is unknown.

**Enrollments Among Specific Student Populations.** The numbers of students enrolled in Minnesota’s public schools who represent state-defined special populations are presented in Figure 11 (page 42). Between 2008 and 2014, Minnesota’s public schools saw a 23 percent increase in the numbers of students eligible for free or reduced-price lunch (increasing from 32 percent to 39 percent of the total numbers of students). The numbers of students identified as eligible for special education services also increased but only by 5 percent (which is presently about 8 percent of the total public school population). The relative percentage of students needing special education services remained unchanged in the seven year span (13 percent). Compared with 2007–08, there are 9 percent more students with limited English proficiency, but the percentage of total students who have limited English proficience has remained constant at 8 percent.

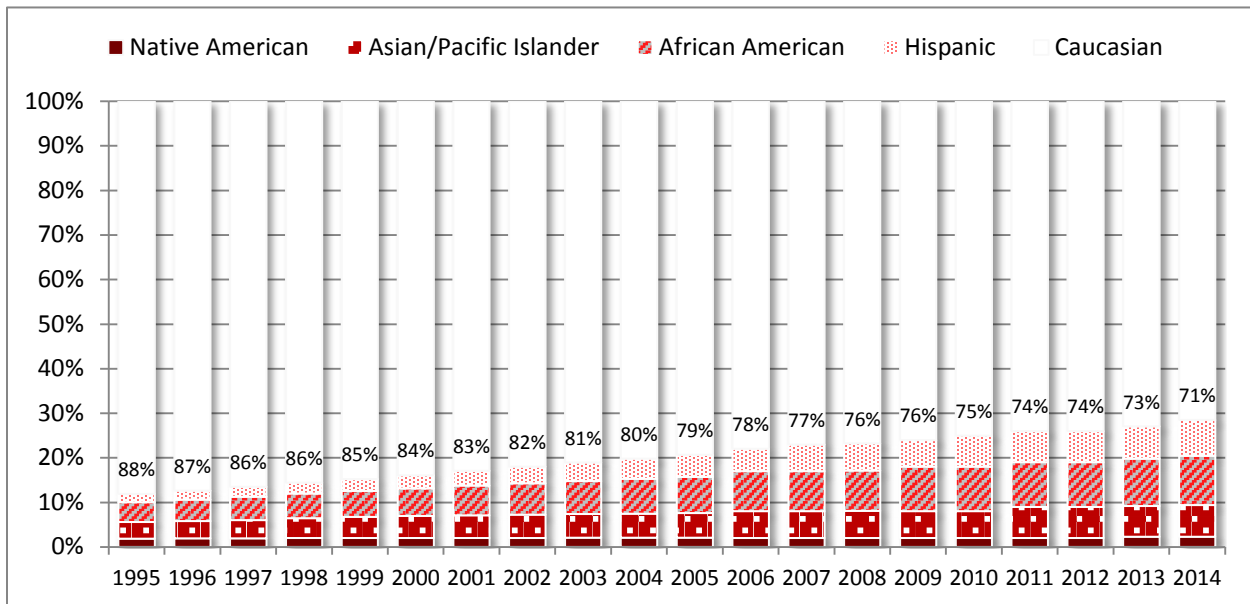
**Figure 11. The Number of Minnesota Public School Students Representing Special Populations: 2005–06 to 2013–14**



Note. Prepared using MARSS data.

**Enrollments of Students of Racial and Ethnic Minority Groups.** The percentage of students of color in Minnesota’s public schools continues to increase by approximately 1 percent per year. Since the 2007-08 school year, the percentage of students of color in Minnesota’s public schools has increased 5 percent from 24 percent to 29 percent during the 2013–14 school year. The gradual diversification of Minnesota schools is best indicated with the longer-term trend (see Figure 12 and Table 19).

**Figure 12. The Percentages of Minnesota Public School Students in Different Racial/Ethnic Groups: 1994–95 to 2013–14**



Note. Prepared using MARSS data.

**Table 19. The Numbers of Students (and the Percentage of Total Students) in Different Racial/Ethnic Groups in Minnesota’s K–12 Public Schools: 2008–14**

| Racial/Ethnic Group           | 2008    | 2009    | 2010    | 2011    | 2012    | 2013    | 2014    |
|-------------------------------|---------|---------|---------|---------|---------|---------|---------|
| <b>Native American</b>        | 17,423  | 17,714  | 17,858  | 18,103  | 18,375  | 18,944  | 19,275  |
|                               | 2%      | 2%      | 2%      | 2%      | 2%      | 2%      | 2%      |
| <b>Asian/Pacific Islander</b> | 49,984  | 51,268  | 52,320  | 53,928  | 55,442  | 57,190  | 59,477  |
|                               | 6%      | 6%      | 6%      | 7%      | 7%      | 7%      | 7%      |
| <b>African American</b>       | 77,157  | 78,624  | 79,756  | 82,234  | 84,307  | 88,196  | 92,356  |
|                               | 9%      | 10%     | 10%     | 10%     | 10%     | 11%     | 11%     |
| <b>Hispanic</b>               | 49,730  | 52,573  | 55,132  | 56,728  | 58,353  | 60,189  | 67,294  |
|                               | 6%      | 6%      | 7%      | 7%      | 7%      | 7%      | 8%      |
| <b>Caucasian</b>              | 630,489 | 622,233 | 617,631 | 612,242 | 608,381 | 605,963 | 597,805 |
|                               | 76%     | 76%     | 75%     | 74%     | 74%     | 73%     | 71%     |

Note. Prepared using MARSS data.

**Student-Teacher Ratios.** MFR data indicate that the ratio of students to all instructional staff in public school districts has remained quite consistent, going from 14.7 in 2007–08 to 14.7 in 2012–13 (Table 20). The Upper Minnesota Valley and Southwest Central regions have seen 4.7 and 4.4 percent increases in public school teacher-student ratios during this time, and the Southwest region has experienced an 11.2 percent drop in student-teacher ratios. The most recent MFR data shows that the Metro, Central, and East Central regions had the highest ratios at 17.0, 16.8, and 15.5 students per licensed instructional staff, respectively.

**Table 20. Average Ratio of Students to Licensed Teachers in Public School Districts by Region, 2007-08 to 2012-13.<sup>9</sup>**

| Region                      | Average Across Five Years | 2007–08 | 2008–09 | 2009–10 | 2010–11 | 2011–12 | 2012-13 | % Change between 2008-2013 |
|-----------------------------|---------------------------|---------|---------|---------|---------|---------|---------|----------------------------|
| All                         | 14.7                      | 14.7    | 14.7    | 14.7    | 14.7    | 14.6    | 14.6    | -0.7                       |
| 01: Northwest               | 12.6                      | 12.5    | 12.5    | 12.5    | 12.7    | 13.0    | 12.7    | 1.9                        |
| 02: Headwaters              | 12.4                      | 12.6    | 12.4    | 12.6    | 12.5    | 12.2    | 12.5    | -0.4                       |
| 03: Arrowhead               | 15.0                      | 15.3    | 15.2    | 15.2    | 14.9    | 14.7    | 14.8    | -3.2                       |
| 04: West Central            | 13.3                      | 13.0    | 13.3    | 13.3    | 13.3    | 13.3    | 13.6    | 3.9                        |
| 05: North Central           | 14.4                      | 14.4    | 14.5    | 14.2    | 14.3    | 14.3    | 14.3    | -0.8                       |
| 06E: Southwest Central      | 13.6                      | 13.5    | 13.7    | 13.7    | 13.4    | 13.5    | 14.1    | 4.4                        |
| 06W: Upper Minnesota Valley | 13.8                      | 13.5    | 13.6    | 14.0    | 14.0    | 13.9    | 14.1    | 4.7                        |
| 07E: East Central           | 15.5                      | 15.4    | 15.5    | 15.6    | 15.5    | 15.3    | 15.5    | 0.3                        |
| 07W: Central                | 16.8                      | 16.7    | 16.8    | 16.8    | 16.8    | 16.9    | 16.8    | 0.5                        |
| 08: Southwest               | 13.2                      | 13.9    | 14.1    | 13.1    | 13.2    | 12.4    | 12.4    | -11.2                      |
| 09: South Central           | 14.4                      | 14.3    | 14.3    | 14.6    | 14.4    | 14.6    | 14.3    | -0.1                       |
| 10: Southeast               | 15.1                      | 15.2    | 15.1    | 15.2    | 15.2    | 15.1    | 14.9    | -2.4                       |
| 11: Metro                   | 17.0                      | 17.0    | 17.0    | 17.0    | 17.0    | 17.2    | 17.0    | 0.0                        |

Note. Prepared from MFR data.

The fall 2014 district teacher supply-and-demand survey<sup>10</sup> included the following question about student-teacher ratios: “Has your district increased student-teacher ratios as a result of funding constraints (but not changes in enrollment) for the 2013–14 or 2014–15 academic years?” Overall, 18 percent of the districts (20 percent of public districts and 14 percent of charter schools) indicated having to increase student-teacher ratios in some way.

<sup>9</sup> These ratios are slightly lower than in previous reports, due to focus this year on *licensed* instructional staff.

<sup>10</sup> See Section 2.1.3 and Appendices A and B for more information about this survey.

In charter schools across the state, there were 13.1 students per licensed instructional staff in 2012–13, which is down from 13.7 in 2007–08 (Table 21). In 2012–13, the student-teacher ratios in charter schools within the 13 economic development regions ranged from 6 to 18, however many of these regional averages are based on a limited number of schools.

**Table 21. Average Student-Teacher Ratios in Minnesota’s Charter Schools by Region: 2007-08 to 2012–13**

| Region                      | Average Across Five Years | 2007–08 | 2008–09 | 2009–10 | 2010–11 | 2011–12 | 2012-13 | % Change between 2008-2013 |
|-----------------------------|---------------------------|---------|---------|---------|---------|---------|---------|----------------------------|
| All                         | 13.3                      | 13.7    | 13.2    | 13.2    | 13.2    | 13.3    | 13.1    | -1.5%                      |
| 01: Northwest <sup>a</sup>  | N/A                       | N/A     | N/A     | N/A     | N/A     | N/A     | N/A     | --                         |
| 02: Headwaters              | 11.2                      | 10.4    | 11.3    | 10.3    | 11.8    | 11.3    | 12.3    | 9.8%                       |
| 03: Arrowhead               | 11.5                      | 11.6    | 11.6    | 11.4    | 11.7    | 11.5    | 11.3    | -1.7%                      |
| 04: West Central            | 10.2                      | 12.3    | 10.0    | 11.2    | 10.0    | 11.5    | 6.0     | -41.2%                     |
| 05: North Central           | 10.1                      | 9.9     | 8.7     | 9.8     | 9.5     | 11.0    | 11.5    | 13.9%                      |
| 06E: Southwest Central      | 15.4                      | 20.6    | 17.5    | 14.6    | 13.0    | 14.5    | 12.5    | -18.8%                     |
| 06W: Upper Minnesota Valley | 8.2                       | 8.2     | 8.5     | 8.7     | 8.0     | 8.0     | 8.0     | -2.4%                      |
| 07E: East Central           | 19.3                      | 22.9    | 18.0    | 20.7    | 18.0    | 18.0    | 18.0    | -6.7%                      |
| 07W: Central                | 13.0                      | 13.3    | 12.7    | 13.0    | 11.2    | 13.8    | 14.3    | 10.0%                      |
| 08: Southwest               | 9.1                       | 10.3    | 7.3     | 9.2     | 9.0     | 8.0     | 11.0    | 20.9%                      |
| 09: South Central           | 11.1                      | 12.1    | 11.5    | 10.3    | 10.7    | 11.3    | 10.8    | -2.7%                      |
| 10: Southeast               | 11.7                      | 12.0    | 11.4    | 11.7    | 11.3    | 11.9    | 11.9    | 1.7%                       |
| 11: Metro                   | 14.1                      | 14.6    | 14.1    | 14.1    | 14.1    | 13.9    | 13.8    | -2.1%                      |

Note. Prepared from MFR data.

<sup>a</sup>There are no charter schools in this region.

## 2.1.5. Components of Teacher Supply

Are the numbers of teachers available in Minnesota sufficient for filling the vacant positions in Minnesota's schools? This is a question of teacher supply, which is the topic of this section.

Traditionally, the teachers who fill teaching positions come from four sources:

- Those teachers who filled the position the previous year (i.e., teachers retained)
- Teachers licensed in other states who seek employment as a teacher in Minnesota
- New teachers who have completed their teacher preparation programs and have been licensed to teach<sup>11</sup>
- The reserve pool: the numbers of licensed teachers who are willing and able to fill vacant positions but are not currently doing so

Initial information on the sources of teachers is provided first, based on STAR data. Subsequent subsections focus on each specific source.

Most teaching positions each year are filled by teachers who are returning from the year before. Between 86 percent and 90 percent of the teaching positions in Minnesota are filled by teachers who return to the position they held the previous year.

The most recent and complete STAR data (from Fall of 2013) indicates that 85.8 percent of the teachers (49,965 out of a total of 58,221 teachers) retained their position from the previous year.<sup>12</sup> The remaining 14.6 percent (8,246) of teachers were from the following sources (Figure 13):

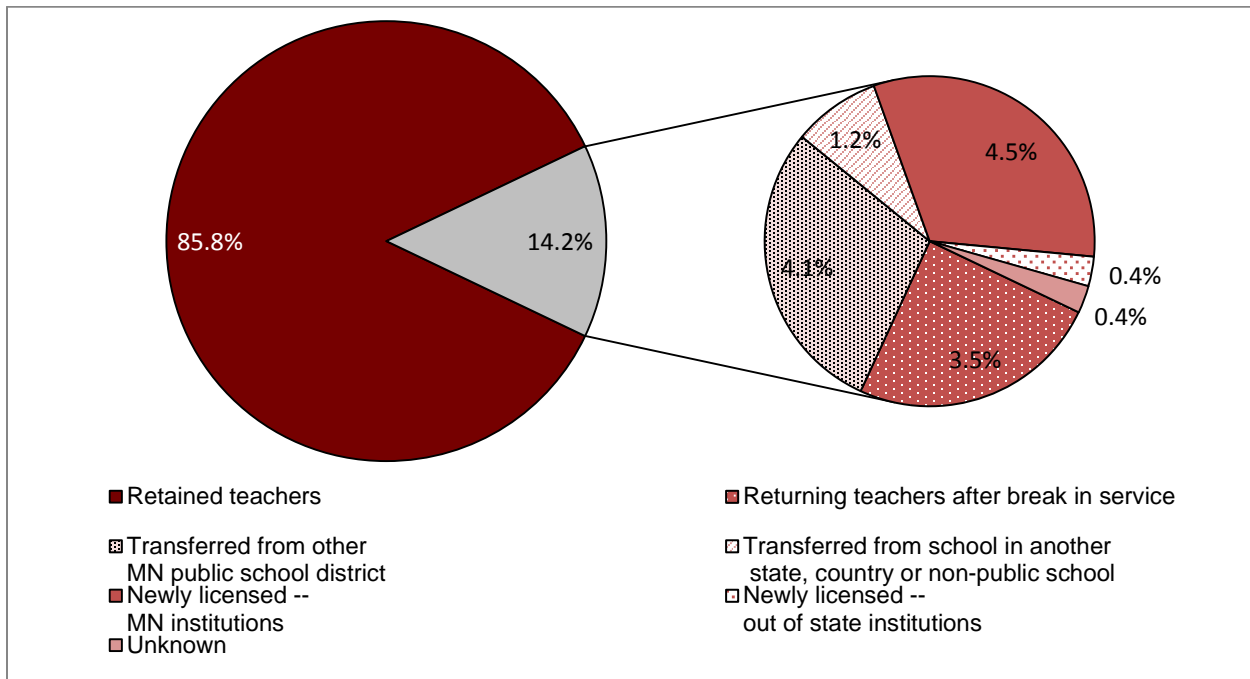
- Newly licensed staff who were trained in Minnesota teacher preparation institutions: 4.5 percent (2,637)
- "Movers": teachers who transfer from another public school system in Minnesota: 4.1 percent (2,395)
- Teachers returning to the profession after a break in service: 3.5 percent (2,044)
- Fully licensed staff who transfer from a school outside of Minnesota or from a nonpublic school: 1.2 percent (709)
- Newly licensed staff who completed teacher preparation programs outside Minnesota: 0.4 percent (240)

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<sup>11</sup> Many states also support alternative routes to certification or programs geared toward those who have graduated from a postsecondary institution with a major field of emphasis but did not take a course of study in teaching (e.g., Teach for America, TNTTP). These alternative routes often focus on preparing teachers in hard-to-staff licensure areas or hard-to-staff schools. Such teachers often take an intensive initial course of study before practice teaching and then receive provisional certification while they develop additional instructional and planning skills on the job.

<sup>12</sup> Note that this retention rate was calculated directly from STAR data and not by subtracting the attrition rate from 1. The difference of 2.5 percent (0.896 – (1 - 0.79)) presumably reflects teachers who changed the subjects they taught, teachers who moved from a teaching position within the district to an administrative or support position, and reporting error.

**Figure 13. Sources of Minnesota Teachers Who Filled Positions: 2013–14.**



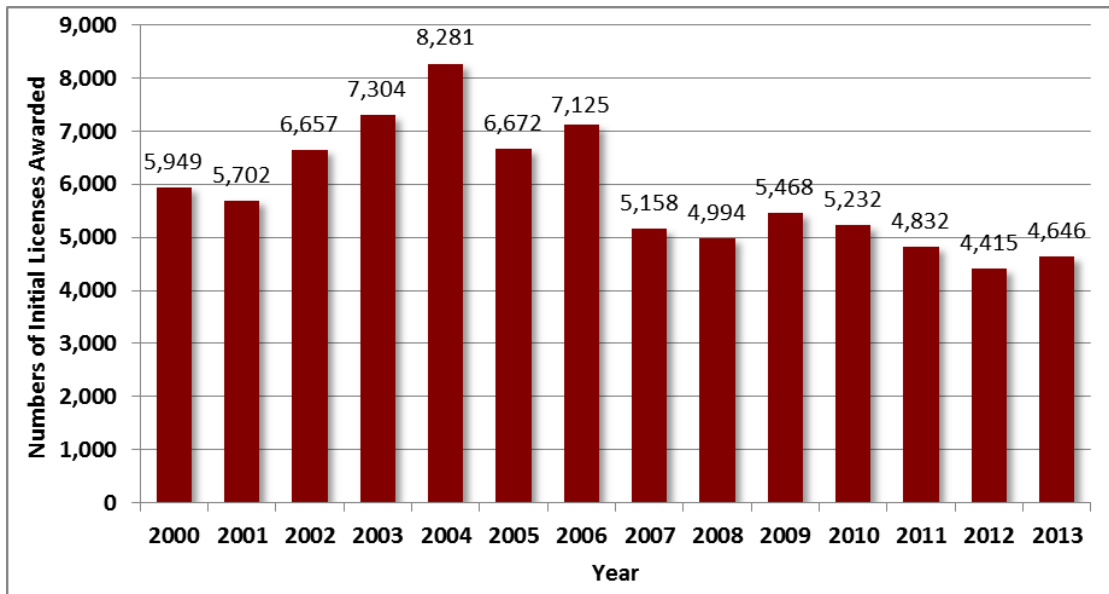
Note. Prepared with data from STAR system.

**Teacher Retention.** An analysis of STAR data indicates that about 89 percent of the teachers returned to their positions between the 2012–13 and 2013–14 school years. Information on those teachers who did not return to their positions and the reasons for their departure were discussed in Section 2.1.4.

**New Licenses Awarded.**<sup>13</sup> In 2014, 4,646 new teaching licenses were awarded to completers of Minnesota’s teacher preparation institutions (Figure 14). The numbers of new licenses by licensure area are presented in Table 22. Decreases were apparent in nearly every licensure field, regardless of whether those fields were designated fields of shortage or surplus.

<sup>13</sup> “Unlike prior versions of the teacher supply and demand report, this one does not include a breakdown of completers of teacher preparation programs by license area or by race/ethnicity. MACTE no longer collects those data from teacher preparation institutions.

**Figure 14. The Number of New Licenses Granted to Completers of Minnesota Institutions: 2000-2013**



Note. Prepared from MDE licensure data.

**Table 22. The Number of New Licenses Granted per License Area: 2009–10 to 2013–14**

| License Area                          | 2009–10 | 2010–11 | 2011–12 | 2012–13 | 2013–14 | Percentage Change from 2009-10 to 2013-14 <sup>a</sup> |
|---------------------------------------|---------|---------|---------|---------|---------|--|
| Agricultural education                | 46      | 45      | 47      | 81      | 48      | 4.3%   |
| Business                              | 110     | 47      | 48      | 45      | 20      | -81.8%   |
| Career and technical education        | 43      | 40      | 52      | 55      | 35      | -18.6%   |
| Computer/Information technology       | 24      | 43      | 73      | 24      | 7       | -70.8%   |
| English/Communication arts/Literature | 1,022   | 826     | 990     | 715     | 423     | -58.6%   |
| Family/Consumer sciences              | 27      | 15      | 24      | 15      | 8       | -70.4%   |
| Health/Safety/Physical education      | 326     | 266     | 345     | 342     | 182     | -44.2%   |
| Industrial/Tech                       | 25      | 14      | 23      | 25      | 3       | -88.0%   |
| Mathematics                           | 487     | 372     | 364     | 400     | 251     | -48.5%   |
| Natural sciences                      | 602     | 464     | 489     | 438     | 262     | -56.5%   |
| Other                                 | 23      | 26      | 25      | 21      | 23      | 0.0%   |
| Prekindergarten/Elementary            | 2,683   | 2,152   | 2,524   | 2,485   | 1,617   | -39.7%   |
| Social sciences                       | 589     | 430     | 478     | 446     | 286     | -51.4%   |
| Special education                     | 1,218   | 1,298   | 1,577   | 2,094   | 733     | -39.8%   |
| Visual and performing arts            | 280     | 255     | 280     | 310     | 212     | -24.3%   |
| World language/Culture                | 357     | 297     | 363     | 469     | 240     | -32.8%   |

Note. Natural sciences include life sciences, physics, general science, chemistry, physical sciences, science 5–9, science 5–8, earth and space science, and general science. Prepared from MDE Licensure data.



## 2.2 Educator Shortage Areas by Locale and District Type

**Research Question 2.** Are there differences in the teacher shortage areas in charter schools, rural schools, and urban schools?

This section examines whether the numbers of teachers in shortage areas and the types of shortage areas differ for different district types and locales. The data come from BOT’s special permissions file.

### 2.2.1 Variances and Limited Licenses: Locale and District Type

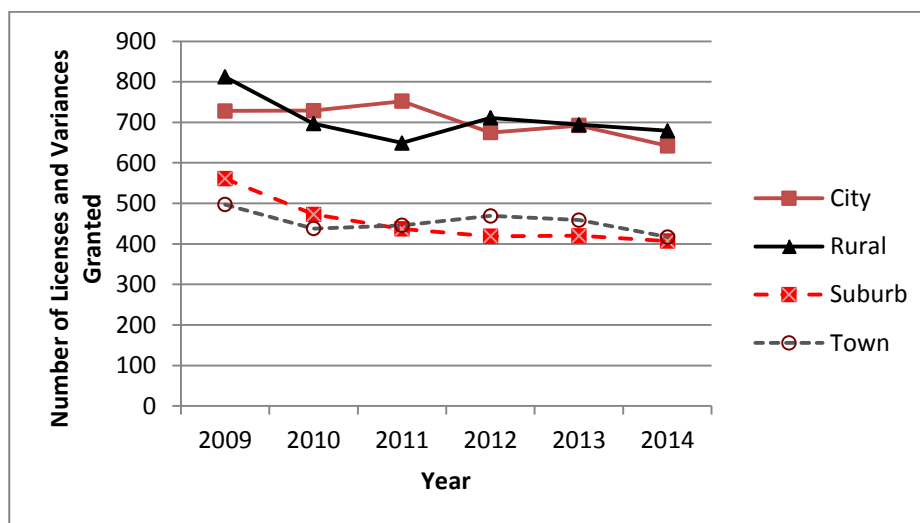
The locale type for each district was determined using locale codes in NCES Common Core of Data.<sup>14</sup> Table 23 shows the numbers of variances and limited licenses granted between 2009 and 2014 by locale type. All four locales saw a decline in permissions granted between 2009 and 2014, ranging from 12 to 28 percent. Figure 15 displays these trends across time.

**Table 23. The Numbers of Variances and Limited Licenses Granted by Locale: 2009–14**

| Locale | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | Percentage Change |
|--------|------|------|------|------|------|------|-------------------|
| City   | 728  | 729  | 752  | 675  | 692  | 642  | -11.8%            |
| Rural  | 812  | 697  | 649  | 711  | 694  | 679  | -16.4%            |
| Suburb | 561  | 473  | 437  | 419  | 420  | 407  | -27.5%            |
| Town   | 497  | 438  | 446  | 469  | 459  | 417  | -16.1%            |

*Note.* Sixteen cases do not have a locale code associated with the case in 2009; 14 cases do not have a locale code associated with the case in 2010; 8 cases do not have a locale code associated with the case in 2011; 11 cases do not have a locale code associated with the case in 2012; 14 cases do not have a locale code associated with the case in 2013; 40 cases do not have a locale code associated with the case in 2014. The table does not include short-call substitutes. Prepared from BOT special permissions files.

**Figure 15. The Numbers of Variances and Limited Licenses Granted by Locale: 2009–14**



*Note.* Prepared from BOT special permissions files.

<sup>14</sup> For a description of NCES CCD locale codes, see [http://nces.ed.gov/ccd/rural\\_locales.asp](http://nces.ed.gov/ccd/rural_locales.asp).

Table 24 shows the numbers of variances and limited licenses granted by different types of public schools. “Regular public” schools include independent, common, special, and intermediate school districts. Districts included in the “other” category include cooperatives, education districts, and academies. Regular public schools saw a 15.2 percent decline in the numbers of variances and limited licenses granted compared with a 24.5 percent decrease for charter schools and a 3.3 percent decrease for other schools.

Figure 16 and Figure 17 show the five licensure areas that were granted the most variances and limited licenses in 2014. Learning disabilities had the most variances and limited licenses granted for charter schools, whereas emotional behavioral disorders had the most of each for regular public school districts.

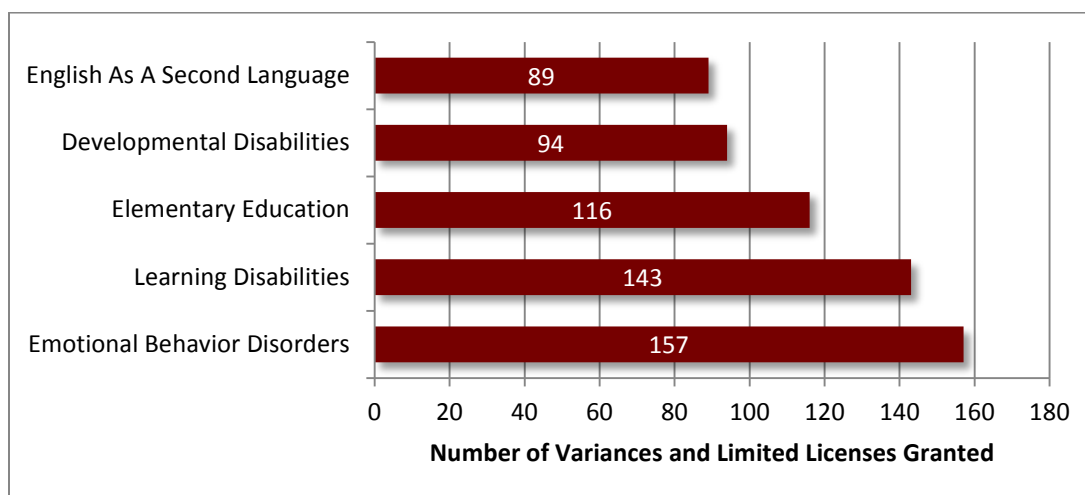
**Table 24. The Numbers of Variances and Limited Licenses Granted by District Type: 2009–14**

| District Type               | 2009  | 2010  | 2011  | 2012  | 2013  | 2014  | Percentage Change |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------------------|
| Regular public <sup>a</sup> | 2,002 | 1,765 | 1,712 | 1,648 | 1,680 | 1,697 | -15.2%            |
| Charter                     | 490   | 480   | 477   | 484   | 479   | 370   | -24.5%            |
| Other <sup>b</sup>          | 122   | 106   | 103   | 153   | 120   | 118   | -3.3%             |

Note. The table does not include short-call substitutes. Prepared from BOT special permissions files, 2008–09 through 2013–14 school years.

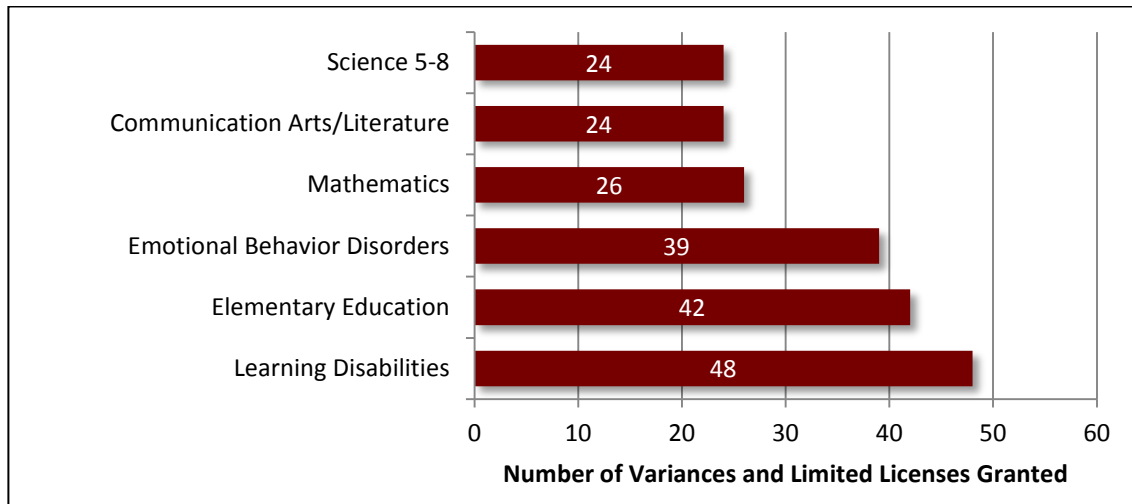
<sup>a</sup> “Regular public” includes independent, common, special, and intermediate school districts. <sup>b</sup> “Other” includes cooperatives, education districts, academies, and Bureau of Indian Education (BIE) tribal schools.

**Figure 16. The Numbers of Variances and Limited Licenses Granted Among Regular School Districts by Licensure Area: 2013–14**



Note. The figure represents the top five licensure areas with the most variances and licenses. Prepared from BOT, special permissions files, 2013–14 school year.

**Figure 17. The Numbers of Variances and Limited Licenses Granted for Teachers in Charter Schools by License Area: 2013–14**



*Note.* The figure represents the top six licensure areas with the most variances and licenses. Prepared from BOT special permissions files, 2013–14 school year.

## 2.2.2 Shortage Areas by Locale and District Type

Section 2.1.3 discusses the 14 positions for which at least 10 percent of the district representatives reported they either could not fill all vacancies with a licensed staff member or it was very difficult to fill vacancies. The degree to which these positions were hard to fill varied by both district type and locale (Table 25).

**Table 25. The Percentage of Districts That Indicated That It Was Very Difficult or Impossible to Fill Vacant Positions With Qualified Candidates by District Type and by Locale: Fall 2014**

| License Area                      | District Type |        |         |       | Locale |        |      |       |
|-----------------------------------|---------------|--------|---------|-------|--------|--------|------|-------|
|                                   | Overall       | Public | Charter | Other | City   | Suburb | Town | Rural |
| Emotional Behavioral Disorders    | 43            | 46     | 35      | 71    | 39     | 57     | 55   | 39    |
| Autism spectrum disorders         | 32            | 33     | 31      | 57    | 30     | 51     | 44   | 26    |
| Developmental disabilities        | 31            | 34     | 27      | 43    | 25     | 46     | 37   | 30    |
| Specific learning disabilities    | 30            | 32     | 29      | 29    | 36     | 32     | 27   | 30    |
| Speech language pathologist       | 30            | 33     | 17      | 29    | 16     | 30     | 41   | 28    |
| Special Education Early Childhood | 23            | 27     | 30      | 40    | 42     | 28     | 29   | 24    |
| High School Chemistry             | 23            | 29     | 5       | 57    | 13     | 22     | 36   | 23    |
| School psychologist               | 22            | 22     | 42      | 33    | 45     | 22     | 31   | 19    |
| High School Mathematics           | 22            | 27     | 21      | 67    | 23     | 35     | 32   | 23    |
| High School Physics               | 20            | 24     | 27      | 20    | 37     | 32     | 25   | 20    |
| Industrial arts                   | 19            | 35     | 27      | 6     | 37     | 13     | 33   | 25    |
| Early childhood education         | 18            | 36     | 34      | 7     | 35     | 29     | 30   | 34    |
| English as second language (K-6)  | 18            | 39     | 21      | 8     | 21     | 16     | 29   | 15    |
| Spanish                           | 17            | 20     | 14      | 14    | 13     | 19     | 18   | 20    |

*Note.* Prepared from MDE supply-and-demand survey, fall 2014.

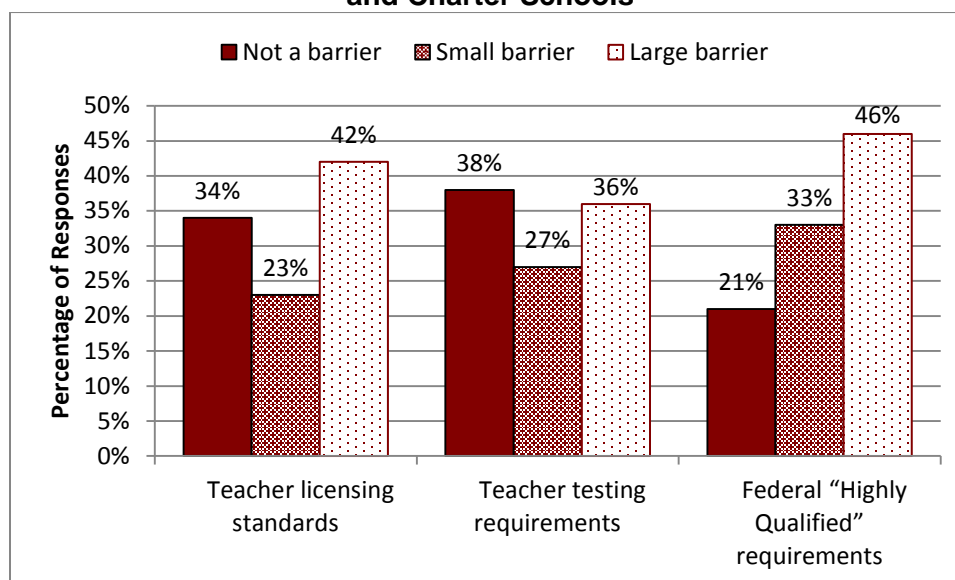
## 2.3 Barriers to Hiring Qualified Candidates

**Research Question 3.** What barriers do district staff perceive as impairing their ability to hire effective teachers?

The third research question was addressed with district hiring officials' responses to questions that appear at the end of the district survey. One series of items asked the district respondents whether specific licensing standards and other requirements were barriers to hiring effective teachers. The response options were as follows: not a barrier, small barrier, and large barrier. Teacher licensing standards were rated as a small or large barrier by 65 percent of the districts (Figure 18). Teacher testing requirements were rated as a small barrier or large barrier by 63 percent of the respondents, and 79 percent of the responding districts labelled federal highly-qualified requirements as a small or large barrier. There were some notable regional differences in the districts' responses to the items about barriers to hiring effective teachers (Table 26). Larger percentages of districts in the Northwest and Southwest regions generally found these standards and requirements to be a large barrier compared with districts in other regions.

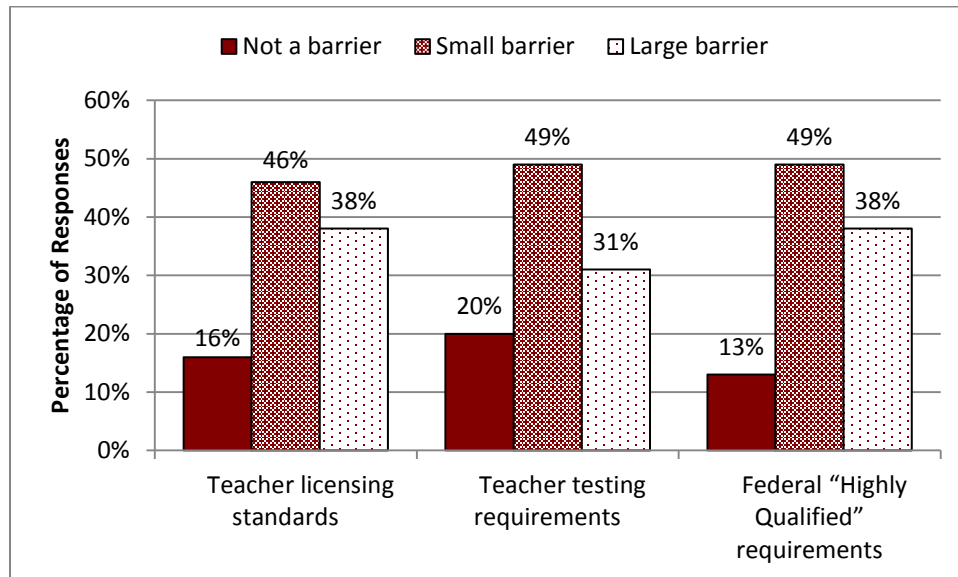
Respondents also were asked whether the same three requirements were barriers to *retaining* effective teachers (Figure 19). Responses showed a consistent pattern across the three types of requirements. Most respondents rated the requirements as small barriers, followed by large barriers. Aggregating the small barrier and large barrier responses together, most respondents (between 80-87 percent) consider the requirements to be small or large barriers.

**Figure 18. Barriers to *Hiring* Effective Teachers Reported by Districts and Charter Schools**



Note. Prepared from responses to MDE supply-and-demand survey, fall 2014.

**Figure 19. Barriers to Retaining Effective Teachers Reported by Districts and Charter Schools**



*Note.* Prepared from responses to MDE supply-and-demand survey, fall 2014.

Data also were examined to determine whether the responses were different for districts in different locales and different district types. As seen in Table 26, the findings indicate that public independent school districts were more likely than charter schools to consider these requirements to be large barriers to hiring effective teachers.

Appendix B contains responses from districts and charter schools to the open-ended question about other barriers to hiring effective teachers. Several themes emerge from these comments:

- Rural districts, smaller districts, and charter schools said that they were less able to compete against larger districts in urban or suburban areas for qualified candidates.
- Low salaries and lack of resources were impeding districts' and charter schools' ability to hire effective teachers.
- The lack of an adequate pool of qualified teachers was another impediment.
- The lack of societal respect for the teaching profession generally was impeding recruitment of teachers to teacher preparation programs and to school vacancies. The lack of respect also impeded the retention of teachers.

**Table 26. The Percentage of Districts Indicating That Standards and Requirements Presented a Large Barrier to Hiring Effective Teachers by Region**

| Region                            | Teacher Licensing Standards | Teacher Testing Requirements | Federal Highly Qualified Requirements |
|-----------------------------------|-----------------------------|------------------------------|---------------------------------------|
| Overall                           | 34                          | 38                           | 21                                    |
| Region 1: Northwest               | 68                          | 89                           | 53                                    |
| Region 2: Headwaters              | 29                          | 50                           | 21                                    |
| Region 3: Arrowhead               | 23                          | 31                           | 17                                    |
| Region 4: West Central            | 39                          | 54                           | 14                                    |
| Region 5: North Central           | 42                          | 53                           | 37                                    |
| Region 6E: Southwest Central      | 36                          | 36                           | 18                                    |
| Region 6W: Upper Minnesota Valley | 40                          | 50                           | 10                                    |
| Region 7E: East Central           | 14                          | 14                           | 7                                     |
| Region 7W: Central                | 38                          | 31                           | 8                                     |
| Region 8: Southwest               | 55                          | 68                           | 41                                    |
| Region 9: South Central           | 32                          | 32                           | 21                                    |
| Region 10: Southeast              | 28                          | 21                           | 18                                    |
| Region 11: Metro                  | 24                          | 23                           | 16                                    |

Note. Prepared from MDE supply-and-demand survey, fall 2014.

**Table 27. The Percentage of Districts Indicating That Standards and Requirements Presented a Large Barrier to Hiring Effective Teachers by Locale and District Type**

| District Characteristics | Teacher Licensing Standards | Teacher Testing Requirements <sup>a</sup> | Federal Highly Qualified Requirements |
|--------------------------|-----------------------------|---|---------------------------------------|
| <b>Overall</b>           | <b>34</b>                   | <b>38</b>                                 | <b>21</b>                             |
| <b>Locale</b>            |                             |   |                                       |
| City                     | 25                          | 27  | 16                                    |
| Suburb                   | 20                          | 20  | 18                                    |
| Town                     | 32                          | 35  | 22                                    |
| Rural                    | 38                          | 44  | 21                                    |
| <b>District type</b>     |                             |   |                                       |
| Charter                  | 22                          | 16  | 16                                    |
| Other <sup>a</sup>       | 71                          | 71  | 43                                    |
| Public District          | 36                          | 44  | 21                                    |

Note. Prepared from responses to MDE supply-and-demand survey, fall 2014.

<sup>a</sup> Only 7 districts classified as "Other" provided data on these survey items. Interpret with caution.

## 2.4 Impediments to the Preparation of New Teachers: Input From Teacher Preparation Institutions

**Research Question 4.** What factors do teacher preparation institutions cite as influencing their ability to prepare effective teachers now and during the next 10 years?

An online survey was created to capture the views of representatives of the 32 teacher preparation institutions on impediments to teacher preparation. Surveys were completed by 30 of these institutions, for a response rate of 93 percent. A copy of this survey, along with the percentage distributions of responses for all items on the survey and a complete listing of all text answers can be found in Appendix D.<sup>15</sup>

### 2.4.1 Program Completers Finding Teaching Positions

As seen in Table 28, the majority of representatives of teacher preparation institutions “agree” or “tend to agree” that program completers at their institutions, in general, were able to find positions within Minnesota schools (52 percent “agree” and 34 percent “tend to agree”). However, nearly two thirds of the institutions indicated that program completers in some licensure areas are experiencing difficulty finding teaching positions (34 percent “agree” and 31 percent “tend to agree”).

Compared to institutions’ responses to the same items on the 2012 institution survey, there appears to be stronger agreement that completers are able to obtain positions, yet teachers in some licensure areas still experience difficulty finding positions.

**Table 28. The Percentage Distribution of Responses to Survey Items About Program Completers Finding Teaching Positions: Fall 2014 (Fall 2012)**

| Survey Item   | Disagree | Tend to Disagree | Tend to Agree | Agree   |
|---|----------|------------------|---------------|---------|
| Program completers from my institution are able to find positions within Minnesota schools.                   | 3 (0)    | 10 (12)          | 34 (72)       | 52 (16) |
| Program completers in some teacher licensure areas are experiencing difficulty in finding teaching positions. | 10 (4)   | 24 (32)          | 31 (60)       | 34 (4)  |

Note. Prepared from MDE survey for MACTE institutions, fall 2014. Responses from Fall of 2012 are in parentheses.

<sup>15</sup> The survey covered other topics, including recruitment, admissions, and student teaching placements. Response distributions for these other topics are also displayed in Appendix D.



The survey respondents were asked to identify the licensure areas for which program completers were having difficulty finding teaching positions. Secondary-level social studies, English as a second language, secondary-level science (nonspecified), secondary mathematics, and special education (nonspecified) were the most frequently mentioned licensure areas (Table 29).

**Table 29. The Number of Teacher Preparation Institutions Mentioning Specific Licensure Areas Difficult to Place Program Completers: Fall 2014**

| Licensure Area                           | Number of Institutions<br>(Out of 27 responding to item) |
|--|--|
| Social studies/Social science            | 6  |
| English as a second language             | 5  |
| Science (nonspecified)                   | 4  |
| Mathematics                              | 3  |
| Spanish                                  | 3  |
| Elementary Education                     | 2  |
| English/Communication Arts               | 2  |
| Special Education (not specified)        | 2  |
| Developmental Adapted Physical Education | 1  |
| Early Childhood Education                | 1  |
| Elementary Art Education                 | 1  |
| Spanish (K-8)                            | 1  |
| Middle school English                    | 1  |
| French                                   | 1  |
| World Language (not specified)           | 1  |
| Middle school mathematics                | 1  |
| Chemistry                                | 1  |
| Life sciences (biology)                  | 1  |
| Physics                                  | 1  |
| Health                                   | 1  |
| Music Education                          | 1  |

*Note.* Table contains teaching fields when mentioned by each institution's primary respondent. Prepared from MDE survey of teacher preparation institutions, fall 2014.

## 2.4.2 Challenges for Teacher Preparation Institutions

Survey respondents were asked to describe the factors that inhibit their ability to prepare teachers in shortage areas.<sup>16</sup> The comments were categorized by topic. Testing requirements were cited as a challenging factor by 19 of the 26 institutions that responded to this item, and 17 noted the costs to obtain a postsecondary education/need for scholarships. The frequency of other responses is provided in Table 30.

**Table 30. The Numbers of MACTE Institutions Describing Various Factors That Challenge Their Capacity to Prepare Teachers in Teacher Shortage Areas: Fall 2014**

| Factor   | Number of Institutions<br>(out of 26 responding to item) |
|--|--|
| Testing requirements                                       | 19   |
| Higher education costs/need for scholarships               | 17   |
| Program accountability requirements                        | 11   |
| Budgetary constraints for Schools of Education/programs    | 7  |
| Too few teaching positions, student teaching opportunities | 6  |
| Costs to obtain license (excluding higher education costs) | 5  |
| Shortages of teacher educators, teacher educators of color | 5  |
| Low teacher salaries                                       | 4  |
| Lack of interest among youth/competition for other jobs    | 4  |
| Public support for the teaching profession                 | 2  |
| Other factor   | 7  |

*Note.* Prepared from MDE survey for teacher preparation institutions, fall 2014.

All of the responses are presented in Appendix D. A few representative comments for the most often cited factors are provided below.

### Testing requirements

- “testing requirements for licensure - Basic Skills tests have kept many students of color out of admission to the Teacher Education Program or from gaining full licensure; also students who have learning disabilities.”
- “Teachers of color -- majority are immigrants, and English is their second language. It is a major challenge for these teacher candidates to pass MTLE Basic skills or earn high enough scores in reading and writing in ACT or SAT. Thus, the retention rate is very low. We also realized that our ESL teacher candidates are able to pass their MTLE content and pedagogy, but, faced major challenges with Basic skills.”
- “Testing requirements are excessive and expensive. In the final survey given to candidates right before graduation, the most common concern voiced was the expense of the program--specifically testing expenses.”

<sup>16</sup> The survey item was as follows: “Are there institutional or public policy-related factors you believe present challenges for your institution’s capacity to prepare teachers in teacher shortage areas over the next 10 years? Examples might include a shortage of faculty, testing requirements for licensure, program accountability expectations, the need for scholarships, resource constraints, public support, etc. If yes, please describe.”

### Higher education costs/need for scholarships

- “Students of color who might be interested in pursuing a license often need scholarship funding; scholarship and grant funding are especially hard to find for grad students.”
- “There is a strong need for scholarships to draw candidates into the teaching profession. The overall cost of teacher preparation has increased in recent years due to increased testing requirements, overall increases in higher education costs, greater costs for federal and state compliance reporting. The demographics of fewer high school graduates overall means that the competition for candidates with other fields has increased. There need to be realistic incentives to attract new teachers to the field.”

### Accountability requirements

- “Program accountability and faculty qualification expectations are causing us to seek more adjunct positions, which affects program congruence.”
  - “As a unit that offers advanced teaching preparation programs, program accountability expectations in some teacher shortage areas create a burden that is shouldered by programs and candidates in the form of additional courses that are not aligned with other state or national expectations.”

### Budgetary constraints on Schools of Education/programs

- “Institutions are not as able to add innovative programs due to cost constraints faced by higher education and this makes it increasingly difficult to design and implement new programs to meet changing needs in the field.”
- “Resource constraints- small public university struggling with resources, don't have funds to market/outreach as much as we'd like to.”

### Faculty shortages/resources for faculty

- “We have limited resources for faculty with the proper credentials in need area in content area departments. I am working hard to change that, but it takes time and unified effort.”
- “It is difficult to find qualified faculty with both teaching experience at specific grade levels (5–8 for middle school endorsement or 9–12 for secondary with no overlap allowed) and who are academically trained in field specific graduate studies (i.e., master's or terminal degree in literature vs. English education) as rule is currently interpreted by BOT.”

### 2.4.3 Suggestions for Improving the Supply of Teacher Candidates in Shortage Areas

Institutions' respondents were asked to make suggestions about policies or programs that might improve recruiting, admission, and the preparation of teacher candidates in shortage areas.<sup>17</sup> The comments were categorized by topic. The most frequently mentioned suggestions were (1) financial incentives/scholarships/loan forgiveness (8 institutions) and (2) testing requirements (6 institutions). The numbers of institutions making suggestions about each topic are shown in Table 31.

**Table 31. The Numbers of Teacher Preparation Institutions Suggesting Various Policies or Programs to Improve the Preparation of Teachers in Teacher Shortage Areas: Fall 2014**

| Suggestion Category                                | Number of Institutions<br>(Out of 29 which provided response) |
|--|---|
| Financial incentives/scholarships/loan forgiveness | 8   |
| Broaden/intensify teacher recruitment efforts      | 5   |
| Loosen testing requirements                        | 4   |
| Relax accountability requirements                  | 4   |
| Improve public perception of teaching profession   | 4   |
| Provide programs with larger budgets               | 3   |
| Increase teacher salaries                          | 2   |
| Establish strong mentoring/induction programs      | 2   |
| Change content standards                           | 2   |

*Note.* Prepared from MDE survey of Teacher Preparation institutions, fall 2014.

All of the responses are presented in Appendix D. A few representative comments about selected types of suggestions are presented in the sections that follow.

#### Financial incentives/scholarships/loan forgiveness

- “People are out there who would like to teach in STEM, in special ed, in ESL. They are even willing to give the time to completing licensure programs but coming up with the money to pay for them is often difficult, especially at the grad level. Some form of expanded loan forgiveness program that is easily available would help. Some people can manage funding the licensure program as long as they can work but when they have to not have a salary at the time of student teaching, they are unable to complete the license. Districts could help by paying district paras in teacher ed programs a salary while they are student teaching. Student teaching grant programs designed to fund this portion of the license would be helpful to people who aren't already working within districts.

<sup>17</sup> The survey item was as follows: “Please use the space below to offer comments on this survey or insights on teacher supply and demand in Minnesota, including suggestions for policies or programs that might improve recruiting, admission and preparation of teacher candidates in shortage areas.”

- “There is a great need for scholarships in order to recruit and support future teachers from diverse backgrounds. The cost of licensure tests and the edTPA have only added to the financial challenges faced by many students. Internships to support candidates in their first year after completing program requirements would be very beneficial and provide the mentoring needed as they begin their career.”

#### Broaden/Intensify teacher recruitment efforts

- “Targeted recruiting to high school students that may have an interest in going into education in shortage areas.”
- “What suggestions or initiatives could persuade University faculty in content areas (eg biology professors) to encourage talented students to go into teaching--and through their own university's program?”

#### Loosen testing requirements

- “MTLE basics - what will it take for legislators to see that it is not working for the very communities we say we need more teachers? There's more re: MTLE like MTLE pedagogy becoming unnecessary, MTLE new vendor opportunity, MTLE accommodation issues, membership/cost structure, support materials, rollout etc.”
- “The basic skills tests, as well as the battery of other testing required for licensure must be rethought. I have worked on the edTPA for many years across multiple states. I would advocate that this highly innovative and pedagogically important measure be adopted as a requirement for licensure. With this in place, I would argue that additional content area exams would not be necessary if the candidate has fulfilled an undergraduate degree in the area of licensure. Likewise, students completing an undergraduate degree should not need to pass MTLE basic skills tests. All such standardized examinations become exclusionary measures, frustrating the potential of thousands of teacher candidates including those we would most like to recruit to the field. In particular, non-native english speakers, and students who come from communities speaking a non-standard version of english, tend to struggle with content-based assessments.”

#### Relax accountability standards

- “The perception that I feel dominates the landscape is that we are asking our candidates to do more and more each year with little to show for it. Currently, our institution tracks around 1,400 data points per student. The candidates "demonstrates" his or her ability to master these components. They are tested at every turn. I often wonder if we are producing better teachers than we used to produce. With all these data, is the profession getting better? I think we have bought into the data craze with little to show for it. I question if the data supports the improvement of the profession. Does the cost to produce the teacher of today meet the demands of the day. Intermediation with alternative programs has questioned our methods. The public is tired of paying a bill with little to show for it. I believe that we have the data we need to streamline our preparation. We need to hone in on the methods that really work. We need to disregard the practices that are redundant. I do not believe that by tracking over 1,400 data points that anyone person can master this before age 22. I think we can do better by reducing our overhead. The old saying "more with less" comes to mind.”

- “The MN Board of Teaching requires a minimum of one year to complete the approval process. The process is intensive and most institutions do not have the resources for developing (in the new EPPAS system) and implementing proposals once it is approved. State and federal regulations and reporting requirements continue to take more and more time for college-unit staff including faculty, which impacts students, program innovation and recruiting.”

Improve the public’s perceptions of the teaching profession

- “There needs to be a state "campaign" about the important role of a teacher in today's global world especially in shortage areas. We need public support to understand the profession better (so as to update old narratives about it), and to understand what it takes to prepare effective teachers. I see that DOE launched a campaign we could connect with perhaps? [www.teach.org](http://www.teach.org)”

## 2.5 Projections of Student Enrollments Through 2024

**Research Question 5.** What K–12 public school enrollment trends are expected for particular student subgroups (e.g., racial and ethnic categories and English language learners [ELLs]) for the next 3, 5, and 10 years?

The accuracy of different forecast models was tested using historical enrollment, population, and economic data. One model outperformed the others when attempting to predict enrollments 3, 5, and 10 years into the future at different levels of aggregation (county, region, and state). See Appendix G for more information on tests performed on forecast models.

The best-performing model is that which is currently used for enrollment projections in many other states and by NCES at the U.S. Department of Education. The foundation of that model is the grade progression ratio (GPR), or the percentage of students who progress from each specific grade level to the next, averaged across years.<sup>18</sup>

This section presents the findings from the GPR-based forecasts. The first subsection presents the enrollment forecasts at the state and region level for three, five, and 10 years (i.e., 2016–17, 2018–19, and 2023–24 school years). The second subsection focuses on the three-, five-, and 10-year forecasts for Caucasian students versus students of racial or ethnic minority groups.

Readers are again cautioned against placing too much certainty in the forecasts presented here. Forecast models based on GPRs were found to have mean absolute percent errors of 0.78 percent, 1.33 percent, and 3.94 percent for statewide forecasts at three years, five years, and 10 years, respectively.

### 2.5.1 Statewide Enrollment Forecasts

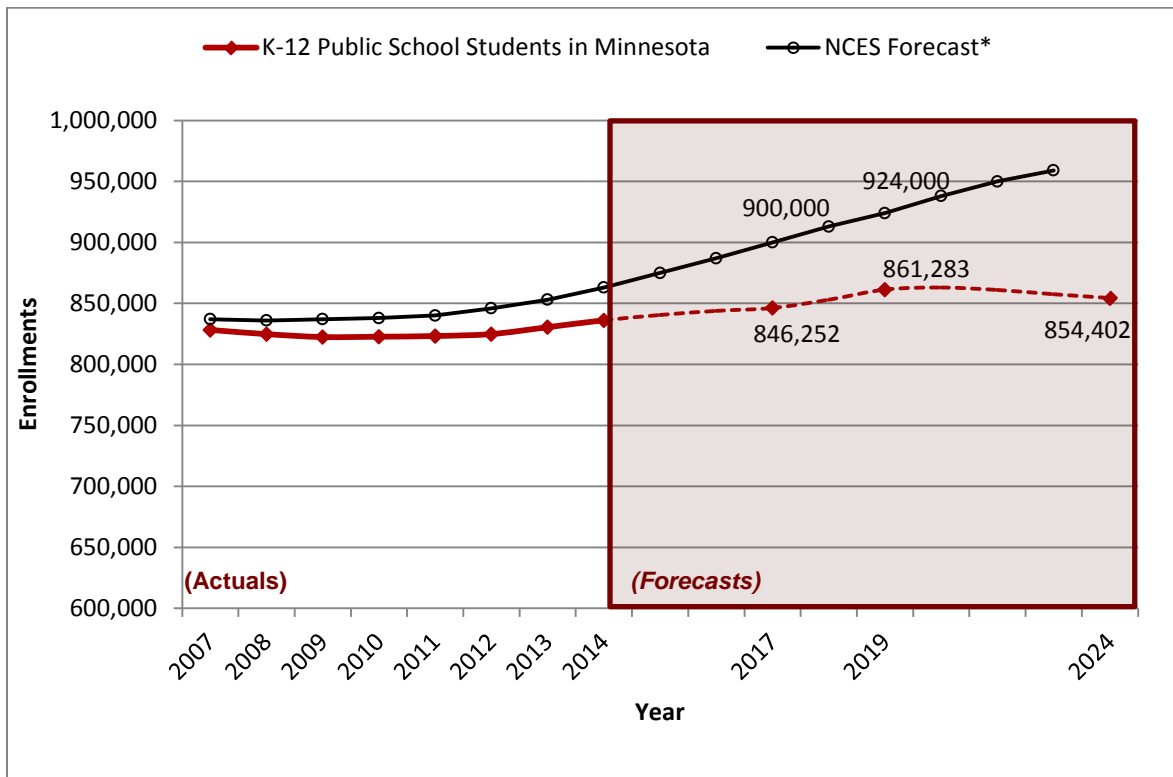
The forecasts based on the GPR model suggest that K–12 enrollments in Minnesota public schools will increase a total of 3 percent until around 2020, and then decrease by 1 percent between 2020 and 2024.<sup>19</sup>

NCES also publishes enrollment projections for the United States as a whole and for individual states. Their forecasts are produced using a similar model as used in these forecasts, with two exceptions: (1) the NCES forecasts do not include the most recent enrollment information collected by MDE or the most recent data on live births from Minnesota, and (2) the NCES forecasts include children served in publicly funded preschools. As shown in Figure 20, the forecasts performed for this report and those of NCES diverge during the earliest forecast periods and continue along different trajectories across time.

<sup>18</sup> This forecast model is sometimes called the survival approach, referring to the numbers of students who “survive” to the next grade level.

<sup>19</sup> Statewide average GPRs based on data between 2005 and 2014 are as follows: 0.953 (birth to kindergarten); 0.991 (kindergarten to Grade 1); 1.001 (Grade 1 to Grade 2); 1.006 (Grade 2 to Grade 3); 1.007 (Grade 3 to Grade 4); 1.009 (Grade 4 to Grade 5); 1.012 (Grade 5 to Grade 6); 1.033 (Grade 6 to Grade 7); 1.004 (Grade 7 to Grade 8); 1.031 (Grade 8 to Grade 9); 0.998 (Grade 9 to Grade 10); 0.986 (Grade 10 to Grade 11); and 1.013 (Grade 11 to Grade 12).

**Figure 20. Statewide Enrollment Forecasts for K–12 Public Schools**

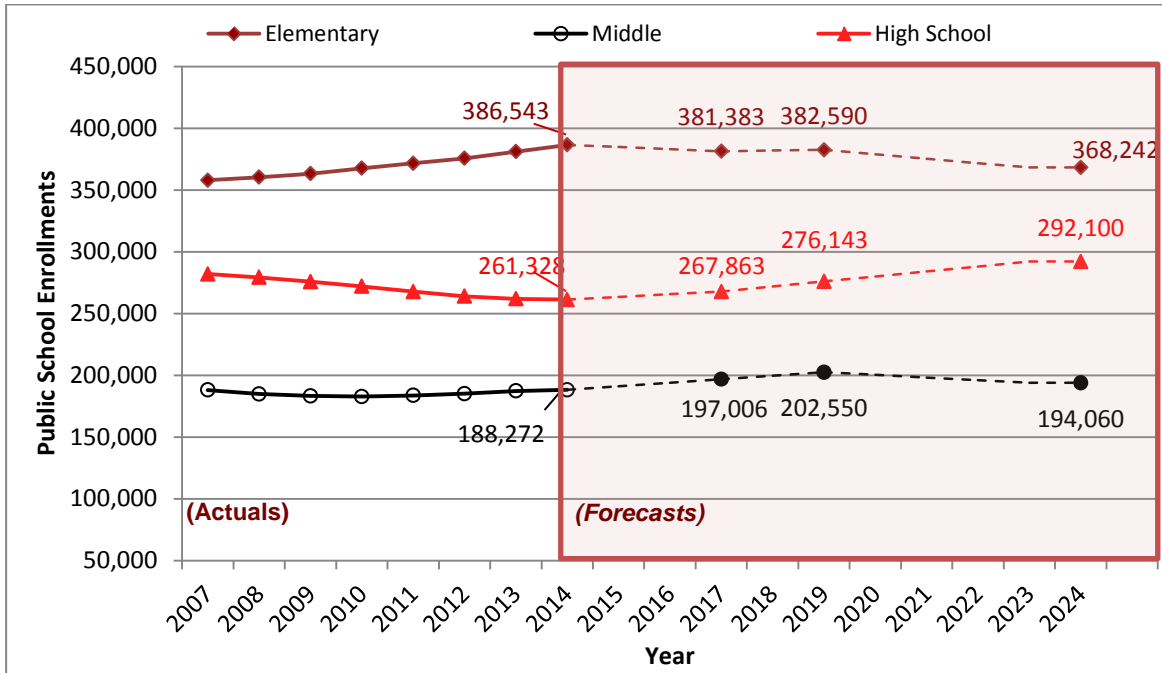


Note. \*NCES forecasts include prekindergarten children as well. Prepared from the following: (1) Minnesota forecasts based on historical GPRs calculated using annual enrollment counts from 2005 to 2014 (enrollment counts found in MARSS) and (2) NCES forecasts: <http://nces.ed.gov/pubs2014/2014051.pdf>

Figure 21 (page 65) shows the separate forecasts for Minnesota public school students in elementary schools (serving grades K-5), middle schools (serving grades 6-8), and high schools (serving grades 9-12). The forecast model suggests a modest 5 percent decrease in enrollments for elementary schools. Minnesota public high schools are expected to have an 11 percent increase in enrollment over the forecast period. For middle schools, there will be a slight increase through 2019, and then a decrease, ultimately resulting in a net increase of enrollments of 3 percent.



**Figure 21. Historical and Forecast Numbers of Students Enrolled in Minnesota's Public Elementary, Middle, and High Schools**



Note. Prepared from forecasts performed by MDE, based on historical enrollments (MARSS data), birth data (Minnesota Center for Health Statistics), numbers of females between 15-44 (U.S. Census Bureau), and GPRs.

### 2.5.2 Forecasts of Enrollments of Student Subgroups.

Attempts were made to forecast the numbers of students of different racial and ethnic groups using historical enrollment data. These forecasts were considered too inaccurate, presumably because of the relatively small numbers of students in these groups. However, forecast models that used historical enrollment data but focused just on Caucasian students did yield relatively accurate forecasts.

The model was used to forecast enrollments of Caucasian students in 2017, 2019, and 2024. Then the numbers of students of color were calculated by subtraction:

$$\text{Total enrollment forecast} - \text{forecast for Caucasian students} = \text{forecast for students of color.}$$

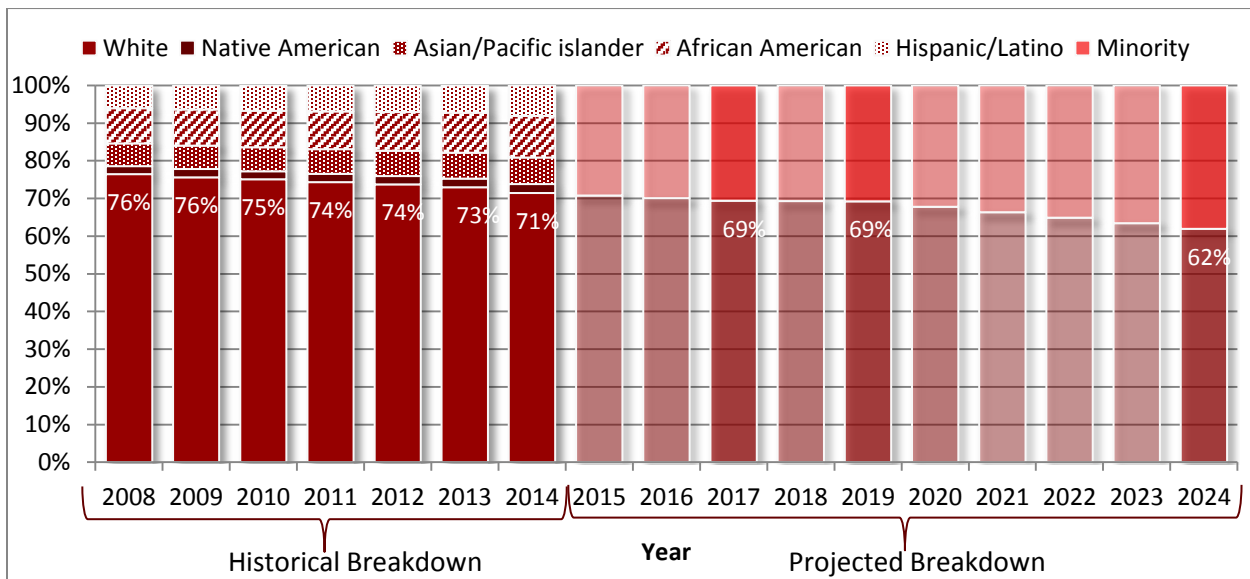
These forecasts are presented in Table 32. The forecasted ratios of Caucasian students versus students of racial and ethnic minority groups are displayed in Figure 22. In that figure, the bars for 2017, 2019, and 2024 are the forecast values, and therefore only show percentages for Caucasian students and students representing a racial/ethnic minority group. The bars for the intervening years (2015, 2016, 2018, 2020-2024) are lightly-shaded to signify that they are based on extrapolations between the forecast values.

**Table 32. Enrollment Estimates and Forecasts for Caucasian Students and Students Representing Racial/Ethnic Minority Groups**

| Basis for Enrollment Estimates | Year | Total Enrollment | Caucasian | Racial/Ethnic Minority |
|--------------------------------|------|------------------|-----------|------------------------|
| Actual                         | 2008 | 824,783          | 630,489   | 194,294                |
| Actual                         | 2009 | 822,412          | 622,233   | 200,179                |
| Actual                         | 2010 | 822,697          | 617,631   | 205,066                |
| Actual                         | 2011 | 823,235          | 612,242   | 210,993                |
| Actual                         | 2012 | 824,858          | 608,381   | 216,477                |
| Actual                         | 2013 | 830,482          | 605,963   | 224,519                |
| Actual                         | 2014 | 836,143          | 597,797   | 238,346                |
| Forecasts                      | 2015 | .                | .         | .                      |
| Forecasts                      | 2016 | .                | .         | .                      |
| Forecasts                      | 2017 | 846,252          | 587,303   | 258,949                |
| Forecasts                      | 2018 | .                | .         | .                      |
| Forecasts                      | 2019 | 861,283          | 596,347   | 264,936                |
| Forecasts                      | 2020 | .                | .         | .                      |
| Forecasts                      | 2021 | .                | .         | .                      |
| Forecasts                      | 2022 | .                | .         | .                      |
| Forecasts                      | 2023 | .                | .         | .                      |
| Forecasts                      | 2024 | 852,402          | 567,242   | 285,160                |

Note. Prepared from forecasts performed by MDE, based on historical enrollments (MARSS data), birth data (Minnesota Department of Health), the numbers of females between 15 and 44 years old (U.S. Census Bureau), and GPRs.

**Figure 22. Statewide Percentages of Minnesota Students—Actual and Forecast—by Race and Ethnicity.**



Note. Prepared from MDE analyses of historical enrollments, forecasts of births, and GPRs.

## 3. Summary and Conclusions

This study of teacher supply and demand in Minnesota's public schools was organized around a set of research questions that was generated by various stakeholders. The findings are summarized, by research question, in the sections that follow.

### 3.1 Summary

#### Research Question #1: What are the teacher staffing patterns in Minnesota?

**Overall Picture of Teachers in Minnesota.** As of the beginning of the 2013–14 school year, there were 58,211 teachers employed in Minnesota's public schools, which is an increase of 2.5 percent from five years earlier. However, changes in numbers of teachers vary by economic development region, with changes to teacher numbers varying from -15 to +5 percent. There have been increases in numbers of Asian/Pacific Islander and Hispanic teachers, but 96.5 percent of Minnesota's teachers are Caucasian.

**Teacher Shortage Areas.** Special permissions data indicate that during 2013-14, districts had to hire 3,504 teachers who lacked the necessary licenses for the subjects and the grade levels taught. This corresponds to 6 percent of the entire teaching workforce. The number of teachers requiring special permissions has declined from 2008–09 by about 7 percent. Special permission data and experiences of district hiring officers converge on the following 11 shortage areas:

- Emotional behavior disorders (294 permissions)
- Learning disabilities (265 permissions)
- Developmental disabilities (145 permissions)
- Early childhood special education (91 permissions)
- English as a second language (86 permissions)
- Mathematics (78 permissions)
- School psychologist (66 permissions)
- Spanish (64 permissions)
- Physics (50 permissions)
- Developmental/adapted physical education (45 permissions)
- Chemistry (43 permissions)

Many district hiring officers also mentioned having difficulty finding qualified speech language pathologists (a licensed support position for which special permissions are not granted). The rank ordering of these hard-to-staff license areas varied slightly from year to year, but they remained within the top 11 or 12 for all five years investigated as part of this study.

**Areas of Teacher Surplus.** According to district hiring officers and the teacher preparation institutions, the teaching positions that are easiest to fill (or most difficult to place teaching program graduates) are as follows:

- K–6 elementary

- Physical education
- Social studies (high school and Grades 5–8)
- Communication arts and literature (high school and Grades 5–8)

**Demand for Teachers.** Several components go into estimating the demand for teachers, including teacher attrition, student enrollments, and student-teacher ratios.

- The teacher attrition rate between the 2008-09 and 2012-13 school years the attrition rate for teachers has been approximately 8 percent per year. The attrition rate between 2012-13 and 2013-14 is higher at 10.2 percent. Moreover, 14 percent of respondents to the 2014 survey of districts responded “Yes” when asked whether they had to lay off teachers because of lack of resources. This number is 11 percentage points lower than when the same survey was administered in 2012.
- Between the 2007-08 and 2013-14 school years, student enrollments in Minnesota public schools have increased by 1.4, but no apparent increasing or decreasing enrollment patterns are apparent at the statewide level. Schools in 7 of 13 economic development regions saw decreasing enrollments, especially those in the Southwest Central region (decreased by 16.39 percent) and the Upper Minnesota Valley region (decreased by 9 percent). The regions that have experienced the largest enrollment increases were the Central region (7.83 percent increase) and the Metro region (3.20 percent increase).
- The population of students enrolled in Minnesota’s public schools is becoming more diverse each year. The percentage of students who are of Caucasian descent has decreased by 1 percent per year. The five-year period also has seen a steady 23 percent increase in the number of students who are eligible for free or reduced-price lunch. The numbers of students who have limited English proficiency and/or who have special needs also increased by 5 percent.
- The most recent data available (2013) indicate that the average student-teacher ratios have remained steady at 14.7. When asked whether their district was forced to increase student-teacher ratios, 18 percent of the responding districts/charter schools indicated that they had increased their student-teacher ratios within the last two years.

In summary, attrition was relatively high between the 2012-13 and 2013-14 school years. Fewer districts are reducing their teacher workforce, Enrollments are holding at the same level as in 2012 and student-teacher ratios remain at the same levels statewide. The higher level of attrition and fewer districts reducing their workforce suggest greater demand.

**Teacher Supply.** Teachers who held the respective positions the previous year fill approximately 86 percent of the teaching positions available each year. Newly licensed teachers trained in Minnesota teacher preparation institutions filled 4.5 percent of the vacant positions, teachers transferring from another district filled 4.1 percent of the vacancies, and teachers returning from service fill 3.5 percent of the vacancies. The remaining 2 percent of vacancies are filled by teachers who transfer from other states, private schools, or other countries, or newly licensed teachers trained in out-of-state institutions.

- The numbers of new teacher licenses being awarded to completers of Minnesota teacher preparation institutions during the 5-year span of 2008 and 2013 (the last year for which complete data are available) have decreased by 7 percent. However, the larger pattern of licenses awarded to graduates of Minnesota institutions shows a larger decrease since 2004.

- The reserve pool of the total number of active license holders has increased for 8 of the 15 traditional teacher shortage areas, remained constant for 6 areas, and decreased for one shortage area (industrial arts).

Taken together, these data on teacher supply suggest an overall reduction in the supply of teachers, especially in teacher shortage areas.

### **Research Question #2: Do shortage areas vary by district type or locale?**

The numbers of special permissions granted for districts have decreased in all locale types. The decreases were greatest for districts in suburban areas (27.5 percent decrease), followed by districts in rural areas (16.4 percent decrease), towns (16.1 percent decrease) and cities (11.8 percent decrease).

The numbers of permissions needed have decreased in public school districts and charter schools. Regular public school districts and charter schools saw a 15.2 percent decrease and 24.5 percent decrease, respectively, for permissions needed. Other types of districts (i.e., cooperatives, education districts, and academies) saw a 3.3 percent decrease in permissions needed.

The licensure areas requiring special permissions differ between charter schools and regular school districts. The top six licensure areas needing special permissions in charter schools included the core subjects of mathematics, communication arts/literature, and science in grades 5-8. In contrast, core subjects were not among regular districts' top 5 licensure areas requiring special permissions. Regular public school districts also had English as a second language as a licensure area requiring special permissions.

### **Research Question #3: What barriers are impairing districts' ability to hire effective teachers?**

District hiring officers were asked whether certain standards or policies represented barriers to the hiring and retaining of teachers.

- Between 63 and 79 percent of the responding districts indicated that teacher-licensing standards, teacher testing requirements, and federal "highly qualified" requirements were either a large barrier or a small barrier for hiring effective teachers.
- Between 80 and 87 percent of the responding districts indicated that teacher-licensing standards, teacher testing requirements, and federal "highly qualified" requirements were either a large barrier or a small barrier for hiring effective teachers.
- When asked to list other types of barriers to hiring qualified teachers, districts and charter schools frequently mentioned districts locale and school size influenced the hiring of teachers. Being a charter school was also perceived to be a barrier to hiring effective teachers. Other often-mentioned barriers include: lack of pay/resources, and lack of respect given to the teaching profession as a whole.

#### **Research Question #4: What factors influence teacher preparation institutions' ability to prepare effective teachers?**

Teacher-testing requirements were mentioned as a barrier by 73 percent of the institutions. The other major impediments mentioned by 48 percent of the institutions were the cost of higher education for students and the lack of scholarships. A minority of institutions also mentioned resources for complying with accountability provisions (16 percent), resources for faculty (16 percent), low teacher salaries (12 percent), and support for the teaching profession by the public (8 percent).

#### **Research Question #5: What are the forecasts for student enrollments for the next 10 years?**

Student enrollments in Minnesota's public schools are expected to increase by 2 percent during the next 10 years. This figure represents a growth rate that is much more modest than the most recent enrollment forecasts offered by the National Center for Education Statistics (NCES; 2013 forecast to 2022 with a growth rate of 13 percent).

Between 2014 and 2024, enrollments in elementary schools (Grades K–5) are expected to decrease by 5 percent while enrollments in high schools are expected to increase by 11 percent. Enrollments in middle schools will increase by 8 percent until about 2019 and then decrease by 4 percent through 2014.

The relatively small numbers of students in the racial and ethnic groups make separate forecasts for these specific groups too inaccurate to trust. However, it is possible to calculate the number of students of color as whole. It is expected that Minnesota's public school population will continue to become more racially/ethnically diverse, with the percentage of school populations representing students of color increasing by about 1 percent per year. By 2024, it is expected that 38 percent of the student population will be made up of non-Caucasian students.

The forecasts of English Language Learners (ELL) also were too inaccurate to trust. The future enrollments of these students are less related to the numbers of ELL students currently in the system and the existing population of immigrants, but rather future immigration rates.

### **3.2 Final Conclusions**

The available data suggest a slight increase in the demand for teachers, as evidenced by the percentages of district hiring officers' indicating that they have increased student-teacher ratios and eliminated vacant positions in recent years. These percentages are less than they were in the 2012 survey. The supply of teachers appears to have decreased somewhat, based on the numbers of new licenses awarded to completers of Minnesota's teacher preparation institutions.

The single indicators of supply-demand balance provide conflicting data. On the one hand, districts and schools require fewer special permissions than in the past. However, the percentages of districts indicating that it is impossible or very difficult to hire qualified teachers to fill vacancies in hard-to-staff areas are nearly double those seen in the 2012 survey.

However, four trends should be of concern to policymakers. The first involves the diversity of Minnesota's public school population. The past 5 years have witnessed increases in the numbers of students needing free or reduced price lunch, the numbers of students with special needs and students with limited English proficiency. Public schools are becoming more economically

diverse as well, with the percentage of students representing non-Caucasian racial and ethnic groups increasing by 1 percent per year. Yet Minnesota's teacher workforce remains 96 percent Caucasian. This disparity in diversity of the teaching workforce and student population may affect student academic achievement of students of color and Caucasian students alike (Dee, 2001).

Second, while the specific teacher licensure areas experiencing shortage remain the same, the percentage of districts indicating that it is difficult or impossible to hire qualified teachers in these areas is about double that seen in the 2012 survey.

Third, a larger percentage of districts and charter schools are indicating difficulty securing short-term and long-term substitute teachers. Respondents to the district survey also expect to have more difficulty hiring substitute teachers over the next 5 years.

Finally, testing requirements for teachers top the list of factors that challenge teacher preparation institutions' efforts to recruit and prepare teachers, and 63% of districts indicate that testing requirements represent either a small (27%) or large barrier (36%) to hiring teachers. It may be useful to determine if the issue applies to all three teacher tests ("basic" skills, pedagogy, and content) and what features of the tests are of concern.

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## Appendix A. Methodology for the District Survey

The Minnesota teacher supply-and-demand district survey was used to collect district hiring officials' perceptions of staff shortage. The survey went through multiple revisions before being fielded. Minnesota education officials consulted with experts from American Institutes for Research out of concern that the prior district survey had a low response rate and that the information the survey was not valid. The review of the survey had several goals: (1) increase district response rates from 2011; (2) identify and delete information on the survey that could be collected elsewhere; and (3) revise the survey so that the information collected from district representatives would be useful and valid. The first step was the review of MDE's other data sources (e.g., the STAR database) to identify areas of overlap between existing data and the district survey. Next, meetings across the course of several weeks were conducted with MDE officials to discuss possible changes to the design and questions of the survey. The survey went through multiple revisions.

After all the questions and the design was finalized, two cognitive interviews were conducted with district hiring officials who would actually complete the survey to ensure that the questions were easily understood and that there were no problems with the survey. Each interview lasted approximately one hour. The survey went through additional revisions based on the feedback received during the cognitive interviews, and then the final survey was finalized.

The survey was administered online by MDE in fall 2014. It was determined that STAR coordinators for each district would be the best recipients of the survey because they would be able to easily identify the best person with knowledge of district hiring decisions. A list of STAR coordinators for each district was obtained, and a prenotification e-mail was sent out approximately one week prior to the survey being administered. The texts of the e-mails were tailored with each STAR coordinator's name by using a mail merge.

The online survey was created using Survey Monkey. STAR coordinators received an e-mail approximately one week after the prenotification e-mail that explained the purposes of the district survey and to whom the survey should be forwarded to. The online survey allowed respondents to save and edit their responses across different sittings. Response rates were monitored daily, and weekly reminder e-mails were sent out to districts that had not yet responded.

The data collection procedures employed are those recommended by Dillman (2007) to ensure high response rates. First, MDE leaders sent an e-mail notification and invitation to participate in the survey. The initial e-mail described the survey and its purpose, emphasized the importance of their participation, ensured confidentiality of responses, and provided instructions on how to participate. Three follow-up e-mail messages were sent to the nonresponding districts, and these e-mails emphasized the benefits of the survey and encouraging participation.

The sampling frame consisted of a list of 504 unique e-mail addresses for STAR representatives for public, charter, special and other districts in Minnesota. MDE sent e-mail invitations to take the online survey to all of these e-mail addresses. Completed surveys were obtained from 396 districts/charter schools, for a response rate of 79 percent.

# Appendix B. Supply-and-Demand Survey for Districts

The survey is appended with response percent distributions.



## Supply and Demand Survey for Districts

|                                   |  |
|-----------------------------------|--|
| Name of person completing survey  |  |
| Title of person completing survey |  |
| Telephone                         |  |
| E-mail address                    |  |
| County                            |  |
| District or charter school name   |  |

### Staff Shortages

1. How easy or difficult was it to fill vacancies for the 2011–12 and 2012–13 school years in each of the following areas? *Select one answer for each row.*

| Arts        | Easy | Somewhat difficult | Very difficult | Could not fill all vacancies* | No positions in this district | No vacancies for this position |
|-------------|------|--------------------|----------------|-------------------------------|-------------------------------|--------------------------------|
| Dance       | 3%   | 3%                 | 4%             | 1%                            | 66%                           | 23%                            |
| Orchestra   | 2%   | 4%                 | 2%             | 0%                            | 62%                           | 31%                            |
| Band        | 8%   | 15%                | 8%             | 1%                            | 21%                           | 48%                            |
| Music vocal | 7%   | 21%                | 11%            | 3%                            | 17%                           | 44%                            |
| Theatre     | 3%   | 7%                 | 3%             | 2%                            | 48%                           | 39%                            |
| Visual arts | 8%   | 15%                | 10%            | 3%                            | 20%                           | 46%                            |

\*Or had to apply for special permission(s) to allow nonlicensed teacher(s) to teach this subject.

| <b>Special Education</b>                 | Easy | Somewhat difficult | Very difficult | Could not fill all vacancies* | No positions in this district | No vacancies for this position |
|--|------|--------------------|----------------|-------------------------------|-------------------------------|--------------------------------|
| Academic and behavioral strategist **    | 3%   | 8%                 | 12%            | 3%                            | 41%                           | 36%                            |
| Autism spectrum disorders                | 3%   | 11%                | 27%            | 8%                            | 14%                           | 46%                            |
| Blind or visually impaired               | 0%   | 3%                 | 9%             | 3%                            | 44%                           | 44%                            |
| Career and technical with disabilities   | 0%   | 4%                 | 8%             | 2%                            | 42%                           | 46%                            |
| Deaf or hard of hearing                  | 0%   | 4%                 | 11%            | 3%                            | 35%                           | 49%                            |
| Developmental/adapted physical education | 5%   | 13%                | 12%            | 2%                            | 17%                           | 53%                            |
| Developmental disabilities               | 3%   | 17%                | 27%            | 7%                            | 9%                            | 44%                            |
| Emotional behavior disorders             | 4%   | 18%                | 37%            | 11%                           | 3%                            | 37%                            |
| Physical and health disabilities         | 2%   | 7%                 | 13%            | 2%                            | 21%                           | 57%                            |
| Special education director               | 1%   | 4%                 | 7%             | 3%                            | 42%                           | 46%                            |
| Speech-language pathologist              | 6%   | 9%                 | 6%             | 1%                            | 18%                           | 61%                            |
| Special education early childhood        | 3%   | 10%                | 4%             | 2%                            | 42%                           | 41%                            |
| Specific learning disabilities           | 4%   | 13%                | 22%            | 10%                           | 9%                            | 52%                            |

\*Or had to apply for special permission(s) to allow nonlicensed teacher(s) to teach this subject.

\*\*This is a newly established license. A teacher of special education, an academic and behavioral strategist is authorized to provide evaluation and specially designed instruction to eligible children and youth with disabilities, from kindergarten through age 21, who have a range of mild to moderate needs in the areas of academics, behavior, social, emotional, communication, and functional performance. These students come from the primary disability areas of autism spectrum disorders (ASD), developmental cognitive disability (DCD), emotional or behavioral disorders (EBD), other health disorders (OHD), and specific learning disabilities (SLD). This teacher is not prepared to serve needs beyond those that are moderate in these disability areas.

| <b>Early Childhood and Elementary Education</b> | Easy | Somewhat difficult | Very difficult | Could not fill all vacancies* | No positions in this district | No vacancies for this position |
|---|------|--------------------|----------------|-------------------------------|-------------------------------|--------------------------------|
| Early childhood education                       | 1%   | 5%                 | 6%             | 2%                            | 35%                           | 53%                            |
| K–6 elementary                                  | 2%   | 13%                | 20%            | 4%                            | 20%                           | 44%                            |
| K–8 world languages                             | 1%   | 4%                 | 9%             | 6%                            | 36%                           | 50%                            |
| Reading specialist/ interventionist (K–6)       | 6%   | 20%                | 24%            | 9%                            | 5%                            | 45%                            |
| Math specialist/interventionist (K–6)           | 1%   | 3%                 | 1%             | 1%                            | 61%                           | 34%                            |
| Computer/keyboarding (K–6)                      | 8%   | 21%                | 16%            | 4%                            | 23%                           | 31%                            |
| Bilingual/bicultural education (K–6)            | 0%   | 1%                 | 1%             | 1%                            | 68%                           | 30%                            |
| Immersion education (K–6)                       | 43%  | 23%                | 9%             | 1%                            | 11%                           | 13%                            |
| English as a second language (K–6)              | 2%   | 9%                 | 9%             | 6%                            | 41%                           | 40%                            |

\*Or had to apply for special permission(s) to allow nonlicensed teacher(s) to teach this subject.

| <b>Middle Grade Levels</b>                         | Easy | Somewhat difficult | Very difficult | Could not fill all vacancies* | No positions in this district | No vacancies for this position |
|--|------|--------------------|----------------|-------------------------------|-------------------------------|--------------------------------|
| 5–8 communication arts and literature (English)    | 3%   | 9%                 | 10%            | 2%                            | 39%                           | 39%                            |
| 5–8 mathematics                                    | 1%   | 4%                 | 8%             | 2%                            | 49%                           | 37%                            |
| 5–8 science  | 12%  | 14%                | 4%             | 1%                            | 29%                           | 41%                            |
| 5–8 social studies                                 | 1%   | 7%                 | 7%             | 3%                            | 32%                           | 53%                            |
| Agriculture (middle-level)                         | 7%   | 10%                | 6%             | 2%                            | 35%                           | 42%                            |
| Business (middle-level)                            | 2%   | 8%                 | 20%            | 4%                            | 19%                           | 52%                            |
| Family and consumer science (middle-level)         | 2%   | 5%                 | 6%             | 1%                            | 40%                           | 47%                            |
| Reading specialist/ interventionist (middle-level) | 16%  | 17%                | 9%             | 2%                            | 16%                           | 41%                            |
| Computer/keyboarding (middle-level)                | 1%   | 4%                 | 4%             | 1%                            | 57%                           | 34%                            |
| Industrial arts (middle-level)                     | 3%   | 9%                 | 9%             | 1%                            | 20%                           | 59%                            |
| Bilingual/bicultural education (middle-level)      | 1%   | 2%                 | 3%             | 1%                            | 64%                           | 31%                            |
| Immersion education (middle-level)                 | 2%   | 0%                 | 0%             | 2%                            | 43%                           | 55%                            |
| English as a second language (middle-level)        | 3%   | 13%                | 13%            | 6%                            | 34%                           | 37%                            |

\*Or had to apply for special permission(s) to allow nonlicensed teacher(s) to teach this subject.

| <b>High School Education</b>                      | Easy | Somewhat difficult | Very difficult | Could not fill all vacancies* | No positions in this district | No vacancies for this position |
|---|------|--------------------|----------------|-------------------------------|-------------------------------|--------------------------------|
| Agriculture                                       | 6%   | 13%                | 9%             | 2%                            | 17%                           | 55%                            |
| Business  | 18%  | 16%                | 9%             | 1%                            | 18%                           | 39%                            |
| Chemistry   | 4%   | 16%                | 19%            | 4%                            | 16%                           | 44%                            |
| Communication arts and literature (English)       | 8%   | 17%                | 15%            | 3%                            | 17%                           | 43%                            |
| Earth and space science                           | 1%   | 7%                 | 16%            | 6%                            | 21%                           | 56%                            |
| Family and consumer science                       | 7%   | 15%                | 15%            | 3%                            | 17%                           | 45%                            |
| Life sciences                                     | 24%  | 10%                | 2%             | 1%                            | 17%                           | 47%                            |
| Mathematics                                       | 21%  | 11%                | 3%             | 1%                            | 18%                           | 47%                            |
| Physics   | 2%   | 6%                 | 3%             | 1%                            | 47%                           | 42%                            |
| Social studies                                    | 1%   | 3%                 | 4%             | 2%                            | 54%                           | 38%                            |
| Reading specialist/ interventionist (high school) | 1%   | 4%                 | 4%             | 2%                            | 33%                           | 58%                            |
| Computer/keyboarding (high school)                | 0%   | 4%                 | 5%             | 2%                            | 48%                           | 43%                            |
| Industrial arts                                   | 2%   | 5%                 | 11%            | 9%                            | 31%                           | 51%                            |
| Bilingual/bicultural education(high school)       | 0%   | 2%                 | 2%             | 1%                            | 62%                           | 34%                            |
| Immersion education(high school)                  | 0%   | 0%                 | 1%             | 1%                            | 69%                           | 31%                            |
| English as a second language(high school)         | 2%   | 6%                 | 7%             | 5%                            | 43%                           | 41%                            |

\*Or had to apply for special permission(s) to allow nonlicensed teacher(s) to teach this subject.

| <b>Languages</b>       | Easy | Somewhat difficult | Very difficult | Could not fill all vacancies | No positions in this district | No vacancies for this position |
|------------------------|------|--------------------|----------------|------------------------------|-------------------------------|--------------------------------|
| American Sign Language | 0%   | 1%                 | 2%             | 3%                           | 72%                           | 24%                            |
| Arabic                 | 0%   | <1%                | 1%             | 0%                           | 79%                           | 20%                            |
| Chinese                | 0%   | 1%                 | 1%             | 2%                           | 77%                           | 21%                            |
| French                 | 1%   | 4%                 | 2%             | 0%                           | 67%                           | 27%                            |
| German                 | <1%  | 2%                 | 2%             | 1%                           | 66%                           | 30%                            |
| Greek                  | 0%   | 0%                 | 0%             | <1%                          | 80%                           | 20%                            |
| Hebrew                 | 0%   | 0%                 | 0%             | <1%                          | 80%                           | 20%                            |
| Italian                | 0%   | 0%                 | 0%             | <1%                          | 80%                           | 20%                            |
| Japanese               | 0%   | 0%                 | <1%            | <1%                          | 80%                           | 20%                            |
| Latin                  | 0%   | <1%                | 1%             | 1%                           | 79%                           | 20%                            |
| Norwegian              | 0%   | 0%                 | 0%             | <1%                          | 80%                           | 20%                            |
| Ojibwa                 | 0%   | 1%                 | 1%             | 1%                           | 76%                           | 22%                            |
| Polish                 | 0%   | 0%                 | 0%             | 1%                           | 80%                           | 20%                            |
| Russian                | 0%   | 0%                 | 0%             | <1%                          | 80%                           | 20%                            |
| Spanish                | 4%   | 14%                | 13%            | 5%                           | 26%                           | 43%                            |
| Swedish                | 0%   | 0%                 | 0%             | <1%                          | 80%                           | 20%                            |

\*Or had to apply for special permission(s) to allow nonlicensed teacher(s) to teach this subject.

| <b>Related Education</b>    | Easy | Somewhat difficult | Very difficult | Could not fill all vacancies* | No positions in this district | No vacancies for this position |
|-----------------------------|------|--------------------|----------------|-------------------------------|-------------------------------|--------------------------------|
| Adult basic education       | 3%   | 8%                 | 4%             | 1%                            | 48%                           | 37%                            |
| Driver and traffic safety   | 2%   | 6%                 | 7%             | 1%                            | 46%                           | 39%                            |
| Health                      | 9%   | 13%                | 3%             | 2%                            | 19%                           | 56%                            |
| Library media specialist    | 3%   | 5%                 | 7%             | 4%                            | 32%                           | 53%                            |
| Parent and family education | 4%   | 11%                | 11%            | 6%                            | 33%                           | 41%                            |
| Physical education          | 26%  | 12%                | 4%             | 2%                            | 9%                            | 48%                            |

\*Or had to apply for special permission(s) to allow nonlicensed teacher(s) to teach this subject.

| <b>Career and Technical Education</b> | Easy | Somewhat difficult | Very difficult | Could not fill all vacancies* | No positions in this district | No vacancies for this position |
|---------------------------------------|------|--------------------|----------------|-------------------------------|-------------------------------|--------------------------------|
| Communication technology careers      | 1%   | 3%                 | 3%             | 3%                            | 57%                           | 36%                            |
| Construction careers                  | <1%  | 2%                 | 2%             | 5%                            | 57%                           | 39%                            |
| Creative design careers               | 0%   | 1%                 | 1%             | 1%                            | 65%                           | 33%                            |
| Hospitality service careers           | <1%  | 1%                 | <1%            | 1%                            | 70%                           | 29%                            |
| Manufacturing careers                 | 1%   | 1%                 | 2%             | 3%                            | 63%                           | 33%                            |
| Medical careers                       | 0%   | 1%                 | 1%             | 2%                            | 69%                           | 29%                            |
| Transportation careers                | 0%   | 1%                 | 1%             | 3%                            | 71%                           | 27%                            |

\*Or had to apply for special permission(s) to allow nonlicensed teacher(s) to teach this subject.

| <b>Administrative</b>              | Easy | Somewhat difficult | Very difficult | Could not fill all vacancies | No positions in this district | No vacancies for this position |
|------------------------------------|------|--------------------|----------------|------------------------------|-------------------------------|--------------------------------|
| Community education director       | 2%   | 6%                 | 4%             | 2%                           | 32%                           | 57%                            |
| Coordinator of work-based learning | 2%   | 3%                 | 3%             | 3%                           | 47%                           | 45%                            |
| Principal                          | 11%  | 24%                | 5%             | 1%                           | 7%                            | 52%                            |
| Assistant principal                | 9%   | 9%                 | 1%             | 1%                           | 45%                           | 35%                            |
| Superintendent                     | 6%   | 8%                 | 5%             | 1%                           | 15%                           | 66%                            |
| Assistant superintendent           | 2%   | 3%                 | <1%            | 0%                           | 64%                           | 32%                            |
| Human resources director           | 3%   | 6%                 | 1%             | <1%                          | 46%                           | 45%                            |
| Athletic director                  | 2%   | 6%                 | 4%             | 2%                           | 32%                           | 57%                            |
| Finance director/manager           | 2%   | 3%                 | 3%             | 3%                           | 47%                           | 45%                            |

| <b>Licensed Support Staff</b> | Easy | Somewhat difficult | Very difficult | Could not fill all vacancies* | No positions in this district | No vacancies for this position |
|-------------------------------|------|--------------------|----------------|-------------------------------|-------------------------------|--------------------------------|
| School counselor              | 2%   | 6%                 | 4%             | 2%                            | 32%                           | 57%                            |
| School nurse                  | 2%   | 3%                 | 3%             | 3%                            | 47%                           | 45%                            |
| School psychologist           | 11%  | 24%                | 5%             | 1%                            | 7%                            | 52%                            |
| School social worker          | 9%   | 9%                 | 1%             | 1%                            | 45%                           | 35%                            |

\*Or had to apply for special permission(s) to allow nonlicensed person to fill a position.

| <b>Licensed Support Staff</b> | Easy | Somewhat difficult | Very difficult | Could not fill all vacancies | No positions in this district | No vacancies for this position |
|-------------------------------|------|--------------------|----------------|------------------------------|-------------------------------|--------------------------------|
| Athletic director             | 7%   | 9%                 | 2%             | 0%                           | 25%                           | 57%                            |
| Finance director/manager      | 5%   | 9%                 | 6%             | 1%                           | 10%                           | 69%                            |
| School counselor              | 9%   | 15%                | 7%             | 3%                           | 19%                           | 49%                            |
| School nurse                  | 5%   | 15%                | 15%            | 2%                           | 19%                           | 47%                            |
| School psychologist           | 2%   | 10%                | 20%            | 3%                           | 22%                           | 46%                            |
| School socialworker           | 3%   | 16%                | 8%             | 1%                           | 22%                           | 50%                            |

| <b>Nonlicensed Support Staff</b> | Easy | Somewhat difficult | Very difficult | Could not fill all vacancies | No positions in this district | No vacancies for this position |
|----------------------------------|------|--------------------|----------------|------------------------------|-------------------------------|--------------------------------|
| Assessment coordinator           | 5%   | 9%                 | 3%             | <1%                          | 27%                           | 55%                            |
| Curriculum coordinator           | 5%   | 8%                 | 2%             | 1%                           | 38%                           | 47%                            |
| Dean of students                 | 9%   | 6%                 | 2%             | <1%                          | 48%                           | 35%                            |
| Gifted and talented coordinator  | 3%   | 5%                 | 2%             | 1%                           | 51%                           | 39%                            |

| <b>Other Staff?</b>  | Easy                  | Somewhat difficult    | Very difficult        | Could not fill all vacancies* | No positions in this district | No vacancies for this position |
|----------------------|-----------------------|-----------------------|-----------------------|-------------------------------|-------------------------------|--------------------------------|
| Other, specify       |                       |                       |                       |                               |                               |                                |
| <input type="text"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>         | <input type="radio"/>         | <input type="radio"/>          |
| Other, specify       |                       |                       |                       |                               |                               |                                |
| <input type="text"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>         | <input type="radio"/>         | <input type="radio"/>          |

\*Or had to apply for special permission(s) to allow nonlicensed teacher(s) to teach this subject.

*Listing of responses for "other staff"*

- Alternative Learning Center Teachers (Exp Prgrmmg)
- Art
- Audiologist
- Board Certified Behavior Analyst
- Bus Driver
- Bus Drivers
- Chemistry
- Coaching extra-curricular
- DCD
- ECSE - Birth - 2
- Educational Assistants
- Elementary Education Teacher
- Engineering
- Engineering Coordinator
- Engineering/STEAM/STEM
- English
- English-2 Candidates
- Exp. Program Teacher



- FACs
- Food Service
- Hmong Literacy
- Horticulture
- Industrial Technology
- K-6 Elementary
- Korean Language
- Long term sub spanish
- Medical Terminology
- MN K-6 Licensed teacher with AMI (Association Montessori Internationale) certification
- Montessori TRAINED k TEACHER
- Office Assistant
- OTA
- para's
- Paraprofessional
- paraprofessionals
- Paraprofessionals
- paraprofessionals SPED
- parent and family educator
- Physical Science
- Physical Therapist
- Robotics, Project Lead the Way (digital electronics)
- Special Ed - all areas
- special education
- Special Education
- Special Education - EBD
- Special Education Coordinator
- special education substitutes
- SPED paras
- Speech Language
- Speech Latg. Pathologist
- Sub Teachers
- substitute bus driver
- Substitute teachers
- Techonoly
- Transition

**2. Was your district forced to reduce your existing teacher workforce\* for the 2011–12 or 2012–13 academic years due to funding constraints (but not due to decreasing enrollment)?**

\*Include positions that were occupied by a teacher but were eliminated due to funding constraints (i.e., “reductions in force”). Do not include teacher positions that were eliminated due to decreasing enrollment or inability to find a qualified teacher.

Yes 14%  
No 86%

[IF YES]

**2 a. What positions were targeted for reduction? Please type subject areas in the box below.**

Following is a listing of all responses.

- 1 elementary position
- 13-14 Multiple Subject Areas 14-15 Middle School Reductions
- 14-15 Unknown at this date
- All grade levels & curriculum areas were impacted by reductions. Other non-teaching positions at all levels were also reduced or eliminated.
- Art
- at this time, we have not done this, but anticipate doing this in the next couple of years.
- Dean and classroom teachers
- Elective and College in the High School courses
- Elementary
- Elementary Art , Jr/Sr remedial assistance, Elementary classrooms
- Elementary classroom
- Elementary K-6 teachers and Gifted & Talented
- elementary teacher
- Elementary Teacher, Social teacher,
- English, Social Studies, Elementary K-6
- Family and Consumer Science
- Family and Consumer Science, Industrial Arts, Music, Art,
- Fine Arts (Music), administration, custodial
- Foreign Language, Industrial technology
- Foreign language, Title I
- Grade 3 / Multiage
- Guidance Counselor, Family and Consumer Science
- Guidance Counselors and Computer Technology middle level
- Guidance, FACS, Welding, Title, Tech. Coordinator, Testing Coordinator
- HS Social Studies, Elementary classroom
- Industrial Technology
- interventionist
- kindergarten, elementary, FACS
- Language arts, math, agriculture, industrial technology
- math interventionist
- Math specialist and Spanish in lower and middle school
- math, vocal music
- Media Center, Elementary Interventions
- N/A
- Non Core subjects
- none
- Not whole positions, but partial FTE reductions in Spanish, Language Arts, Social Studies, Phy-Ed, Business Ed, and Special Ed
- Physical Education
- physical education, science
- Principal, the supt and principal were combined into 1 position
- Reading
- School counselor by .4 FTE/Elementary by .5
- Social Studies, Math, Science, Language Arts, Art, Physical Education
- Spanish, FamilyConsumer Science
- Special education - DCD and SLP
- Speech, .2 Art, .12 Math, online programming
- Teachers on Special Assignment
- Technology and Science
- Title 1, Assessment Coordinator, GT Coordinator, ASD Specialist, Due Process Coach, Instructional Coach, Social Work
- We closed our entire 7-12 portion on the school due to do financial constraints.
- We did not replace a retired elementary teacher.
- We had to reduce portions of several positions so the effects were widespread.

**3. Did your district eliminate specific courses for the 2013–14 or 2014–15 academic years due to funding constraints (but not due to decreasing enrollment)?**

Yes        10%  
No         90%

[IF YES]

**3a. In what subjects have you eliminated courses? Please type answer in the box below.**

- (Business/Accounting classes). We are offering this year but will not offer next year because no one will be licensed to teach courses.
- Agriculture/Business
- all 7-12
- Art
- art- visual
- Business
- Business, art, FACS
- Chemistry & Physics
- Elementary Art
- FACS
- German
- Gifted & Talented
- Global language Spanish and TV Production (Ind. Tech class)
- Health Occupations, Auto Mechanics
- Home Economics, Industrial Technology
- Impacted class size and or sections offered versus eliminating courses
- Industrial Arts, Business, German.
- math
- Mechanical Drafting
- Middle School Computer Technology
- N/A
- none
- physical education
- physics
- Social electives
- Spanish we had to go online
- Spanish, Language Arts, Business Ed, Social Studies
- Spanish, PLTW

- Special programming
- technology, arts, physical education
- Title I Teachers
- Upper Level Foreign Language, Many Electives
- We now alternate Algebra II and Geometry each year.

**4. Has your district increased student-teacher ratios due to funding constraints (but not due to changes in enrollment) for the 2011–12 or 2012–13 academic years?**

Yes 18%  
No 82%

[IF YES]

**4a. In what subjects have you increased the student-teacher ratio? Please type answer in the box below.**

- 2013-14 only - English, Social Studies, Elementary
- 2nd grade, HS science, math
- Across the Board - More emphasis on non-core subjects
- Across the board (determined by student registration)
- ALL (17responses)
- Early childhood special education, speech language services for students on IEPs
- ECFE
- Elementary classes only (11 responses)
- Elementary classrooms, secondary english and social studies
- Elementary classrooms, Secondary subjects: math, science, social studies, language arts
- Elementary Ed/Phy Ed & Health/Math
- Elementary, Language arts, math, social studies, science, physical education, FACS
- elementary, math
- elementary, physical education, vocational
- English
- English, social studies, math
- General increase
- Grades 4 and 5, SH classes
- High School
- Kindergarten
- Kindergarten, Special Education, Sixth Grade
- math
- Math & English

- math intervention
- math-reading
- Math, Science, Phy ED , Health
- N/A
- Physical Education
- Science, Math
- social studies
- SPED, elective classes
- These questions don't make sense to me because our funding is directly tied to enrollment.
- Very slight increases in elementary grades and middle school grades -- no reductions in staff

## Future Staffing Needs

5. Next, consider your staffing needs for the *next five years*. In general, how easy or difficult do you think it will be for you to fill the vacancies in your district with applicants in each of the following fields or broad categories? For staffing needs other than those listed below, please use the “Other” category and specify any other staffing needs you anticipate.

| Area  | Easy | Somewhat difficult | Very difficult | Will not be able to fill all vacancies* | No positions in this district expected | No vacancies for this position expected |
|---|------|--------------------|----------------|---|--|---|
| Art   | 14%  | 25%                | 25%            | 3%                                      | 8%                                     | 25%                                     |
| Music                                       | 11%  | 30%                | 24%            | 2%                                      | 11%                                    | 22%                                     |
| Special education                           | 3%   | 18%                | 50%            | 20%                                     | 1%                                     | 9%                                      |
| Early childhood                             | 7%   | 27%                | 23%            | 5%                                      | 22%                                    | 16%                                     |
| Elementary education                        | 43%  | 28%                | 9%             | 0%                                      | 12%                                    | 8%                                      |
| Computer/keyboarding                        | 6%   | 20%                | 15%            | 4%                                      | 28%                                    | 28%                                     |
| Chemistry                                   | 2%   | 12%                | 39%            | 9%                                      | 15%                                    | 24%                                     |
| Life sciences                               | 7%   | 21%                | 28%            | 4%                                      | 11%                                    | 29%                                     |
| Physical sciences                           | 4%   | 18%                | 32%            | 6%                                      | 12%                                    | 28%                                     |
| Mathematics                                 | 5%   | 23%                | 38%            | 5%                                      | 7%                                     | 23%                                     |
| Communication arts and literature (English) | 19%  | 33%                | 13%            | 1%                                      | 8%                                     | 26%                                     |
| Social studies                              | 36%  | 21%                | 5%             | 0%                                      | 7%                                     | 30%                                     |
| Spanish                                     | 3%   | 20%                | 26%            | 6%                                      | 20%                                    | 25%                                     |
| A Chinese language                          | 0%   | 2%                 | 7%             | 3%                                      | 73%                                    | 15%                                     |
| American Sign Language                      | 0%   | 2%                 | 6%             | 5%                                      | 69%                                    | 18%                                     |
| Career and technical education              | 1%   | 10%                | 23%            | 9%                                      | 33%                                    | 23%                                     |
| English as a second language                | 2%   | 18%                | 21%            | 8%                                      | 31%                                    | 21%                                     |
| Immersion education                         | 1%   | 3%                 | 6%             | 3%                                      | 70%                                    | 17%                                     |
| Administrators (e.g., principals)           | 9%   | 37%                | 23%            | 1%                                      | 5%                                     | 25%                                     |
| Licensed support staff                      | 9%   | 37%                | 20%            | 4%                                      | 11%                                    | 19%                                     |
| Staff with multiple licenses                | 1%   | 20%                | 45%            | 11%                                     | 7%                                     | 16%                                     |

|   |                       |                       |                       |                       |                       |                       |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Other: Specify below<br><input style="width: 100%;" type="text"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other: Specify below<br><input style="width: 100%;" type="text"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

\*Without applying for special permission(s) to allow nonlicensed teacher(s) to teach this subject.

*All responses to “other” presented below:*

- ag. education
- All areas of Special Education
- ALL special education licensure areas--LD,EBD,AU,PI,VI,DHH
- Alternative Learning Teacher (Exp Prgrmmg)
- Any assignment < 1.0 FTE
- Band
- Bilingual Education
- Bus driver
- Business classes
- Coaching extra-curricular
- DHH, Speech, EBD, ASD, DCD
- Economics, Geography, U.S. History
- FACS
- Family & Consumer Science
- family and consumer science
- Family Consumer Science
- Family Education
- Guidance Counselor
- Highly Qualified Paraprofessionals
- Hmong Literacy/Culture
- Industiral Tech, FACS
- IndustrialTech - Ag
- Latin
- Licensed School Nurse
- Licensed School Nurses
- Media Director
- None
- OT
- paraprofessionals SPED
- parent educator
- School Psychologists
- School Social Worker
- Spanish Program Coordinator
- Special ed
- Special Education
- Special Education - Emotional Behavior Disorders
- special education setting IV

- Speech
- Speech Language Pathologist
- Speech Pathologist
- Speech/lang. Pathologist
- Substitute Teachers
- Superintendent
- Support Staff
- Theatre and Vocal Arts
- Visual Arts



**6. If there are any other staff positions that you anticipate will be very difficult to fill over the next five years, please list them in the box below. Include any positions not listed above or not defined in sufficient specificity (e.g., a certain type of special education teacher).**

**All responses are reported here:**

- A teacher with an ASD license
- ABS and Austim teachers, OTs/PTs
- Agriculture
- Agriculture, Business, Food Occupations, Early Childhood Family Ed
- All of the areas of teaching are facing a severe shortage and districts are not able to secure fully licensed teachers because of many constraints that have been imposed on individuals applying for teaching licensure in the state. Many can work in other career areas without the stringent requirements set forth.
- All Spec Ed Teacher positions will be next to impossible to fill.
- All Special Education (ASD, EBD, LD) and Mathematics
- All SPED, Math, Science,
- all special education areas are difficult to fill
- All types of special education especially Vision Impaired, Deaf/Hard of Hearing, DAPE, Physical Impaired, Director of Special Education
- AML trained elementary teachers with a MN K-6 teaching license
- ANY special education teacher or related service position
- ASD
- ASD Special Ed, EBD Special Ed
- ASD, DCD, EBD, School Psychologist, Physics, Ag
- ASD, DD, EBD, Math Specialist, School Psych
- ASD, EBD
- Autism, DCD
- Autism, EBD, Speech Language Pathologist, Driver's Education
- Band & Music teacher combined license
- Buildings and Grounds Supervisor, School Bus Maintenance
- bus drivers, SPED paraprofessionals
- Business, German, Home Ec., Nursing
- Career and Technology Education, Learning Disabilities, Developmental Disabilities, Early Childhood Special Education, Emotional Behavior Disorders
- Chemistry & Physics
- Coaches

**Additional responses to question 6:**

- College Math
- Dakota and Ojibwe Language Immersion teachers for grades 5, 6, 7, 8

- DAPE, School Social Workers, Speech Clinicians
- DCD Sped Ed., LD/EBD Sped Ed., Autism Sped Ed, Math High School, Industrial Arts,Media
- DCD, EBD, Speech
- DD, DAPE, ASD, ESL
- Deaf/ Hard of Hearing Teachers
- Due to the MTLE exams it may be difficult to find teachers in all areas. So many young people are refusing to go into the education field for three main reasons: One, MTLE exams they are ridiculous. Two, salary levels, and three, teachers are one of the most disrespected professions.
- Early Childhood Special Ed, Parent Ed and FACS
- Early Childhood Special Education; Speech Therapy
- EBD and DCD Special Education Teachers
- EBD and DD Teachers
- EBD or ASD teachers, DAPE Teachers,
- EBD Special Education
- EBD Teacher
- EBD Teacher, ASD Teacher
- EBD Teacher, Speech/Lang., Occupational Therapy, Physical Therapy
- EBD, ASD,
- EBD, LD, DCD, Autism.....
- ECFE Parent Education
- ELL
- Family and Consumer Science and ASD licensed teacher
- Guidance Counselors, Any Special Education positions
- Have had difficulty hiring a Technology Director
- Human Resource Coordinator
- Industrial Technology, Ag Sciences
- Industrial Technology,, FACS
- K-12 Spanish, K-6 SLD, 9-12 Language Arts
- Latin / Logic / Upper Level Math & Science / Experienced AP Teachers
- LD and EBD Special Ed teachers
- Licensed School Nurses, Psychologists
- MARSS Coordinators and Business Managers (knowledge of UFARS)

**Additional responses to question 6:**

- Math & Science
- Math, science
- Math, Sciences, F&CS, Vocational
- Media Specialist; superintendent

- Montessori trained principal
- New licensure areas that MN develops, always changing.
- Non-certified para-professionals
- NONE
- office manager
- Paraprofessionals
- Paraprofessionals, and Bus Drivers
- Payroll
- Physics, autism
- psychologists
- School Nurse with vocational license
- School psych, speech lang, quality sped teachers, science licensure areas, elective areas (i.e business, tech, etc.)
- School Psychologist,
- Setting IV special education teachers, Area Learning Center teachers, licensed administrators in alternative programs
- SLD Special Education and EBD Special Education
- SLP
- Social Worker
- Sp. Ed. DCD; EBD; ASD
- spec education- impossible
- Special Ed - any area - School Psychologist
- Special Ed Speech Path.
- Special Education (all areas), Math, IndustrialTechnology, Science, Superintendent
- Special education at the secondary level is much, much harder to fill than elementary special education. Please note.
- Special Education Paraprofessionals
- Special Education Teacher - EBD

**Additional responses to question 6:**

- Special Education Teacher with Autism Certification
- Special education teachers with any disabilities- almost impossible to find
- Special Education with Work Experience
- Specifically physics - college prep level
- SPED teachers with Autism licensure
- SpEd: ASD, DD, DA/PE, EBD
- Speech and Language, School Psychologist, Industrial Tech, Media Director, ESL, Physics, Chemistry
- Speech Language Pathologist
- Speech Language Pathologist, School Psychologist, Audiologist, Coordinator of Special Education
- Speech Language Pathologists
- Speech Language Pathology, Autism Certification, The new sped licensing will create difficulty

- Speech Language teachers, Industrial Technology with STEM emphasis
- Speech Pathologist
- Speech/Language Instructors, Industrial Technology, FACS, Business, For. Language, All Special Ed
- Substitute Teachers are at a shortage this year.
- Substitute teachers is a major concern now and appears to be in the future.
- Superintendent, Special Education DCD & EBD
- Teachers for the Developmentally Cognitively Delayed, Deaf/Hard of Hearing, Blind/Visually Impaired
- Teachers licensed in EBD, Teachers licensed in ASD, Physics and Chemistry, Industrial Arts
- teachers with ASC certification
- Title 1 , Speech Pathologist
- Vision, EBD, DCD, Autism
- vocation, agricultural, science, math, special education

**7. In the next five years, how likely is it that your district will do the following?**

| Step   | Not at all likely | Somewhat likely | Very likely | Don't know |
|--|-------------------|-----------------|-------------|------------|
| Reduce your existing teacher workforce* due to funding constraints (but not due to decreasing enrollment)  | 34%               | 33%             | 15%         | 18%        |
| Eliminate specific courses due to funding constraints (but not due to decreasing enrollment)   | 39%               | 33%             | 13%         | 16%        |
| Increase student-teacher ratios due to funding constraints (but not due to changes in enrollment)  | 30%               | 39%             | 17%         | 14%        |
| Open additional teaching positions (i.e., adding positions above and beyond replacements for those who retire, leave the district, or exit the profession) | 42%               | 27%             | 16%         | 15%        |

\*Include positions that were occupied by a teacher but will be eliminated due to funding constraints (i.e., “reductions in force”). Do not include teacher positions that will be eliminated due to decreasing enrollment or inability to find a qualified teacher.

## Substitute Teachers

8. How much difficulty did your district have during the 2011–12 or 2012–13 academic years in securing substitute teachers? *Mark one response for each row.*

| Type                            | Easy | Somewhat difficult | Very difficult |
|---------------------------------|------|--------------------|----------------|
| Short-term substitute           | 10%  | 43%                | 47%            |
| Long-term substitute (>15 days) | 8%   | 43%                | 49%            |

9. How much difficulty do you anticipate having to secure substitute teachers *in the next five years*? *Mark one response for each row.*

| Type                            | Easy | Somewhat difficult | Very difficult |
|---------------------------------|------|--------------------|----------------|
| Short-term substitute           | 7%   | 36%                | 57%            |
| Long-term substitute (>15 days) | 8%   | 36%                | 56%            |

## Barriers to Hiring and Retaining Effective Teachers

10. To what extent are the following factors barriers for your district in hiring and retaining effective teachers?

| Factors                                    | Not a barrier | Small barrier | Large barrier |
|--|---------------|---------------|---------------|
| <b>Hiring</b>                              |               |               |               |
| a. Teacher licensing standards             | 34%           | 23%           | 42%           |
| b. Teacher testing requirements            | 38%           | 27%           | 36%           |
| c. Federal “Highly Qualified” requirements | 21%           | 33%           | 46%           |
| <b>Retaining</b>                           |               |               |               |
| a. Teacher licensing standards             | 16%           | 46%           | 38%           |
| b. Teacher testing requirements            | 20%           | 49%           | 31%           |
| c. Federal “Highly Qualified” requirements | 13%           | 49%           | 38%           |

**11. Tell us in the space below other factors that are barriers for your district in hiring and retaining effective teachers. Please type answer in the boxes below.**

**Other factors that are barriers for hiring**

*All responses provided here:*

- -Not enough candidates who have the appropriate mindset to ensure all students regardless of circumstance achieve in school. -Not enough candidates with cultural competence.
- Lack of reciprocity with neighboring states. 2. Loss of teaching prospects to North Dakota schools. 3. Testing requirements that make little educational sense. Is there a reason that teachers seeking licensure in Early Childhood and primary elementary education are required to pass tests in college algebra? 4. Testing bureaucracy. Example- We hired a licensed music teacher from North Dakota and he was licensed in MN for one year until he passed MN testing requirements. He took his tests in July of 2014 and passed ALL required tests, he had the "pass" results sent to him and he sent this information, payment, and application in to MDE licensing. After contacting the Board of Teaching, they were not able to issue a "bridge" license due to their interpretation of the statute. Due to the fact that he did not have the "official" scores until after school started he was not able to obtain a license until two weeks into the school year. We hired an additional substitute teacher for over a week to assure we had a "licensed" teacher in the classroom. The music teacher then had to apply for a short call sub license for the next so he would be temporarily licensed while he waited for his official results to be processed. 5. Inability to offer competitive wages in high need areas. Students graduating with tech, math, science, etc. degrees can enter the private workforce at far higher wages that the 34K we are able to offer to 1st year teachers.
- Small school and in Rural Minnesota. We are all fighting for the same candidates. 2. Salary comparisons between large and small districts. 3. Licensing requirements. 4. Society and media's negative views on education. 5. Accountability based upon test scores. 6. Salaries in other areas of employment with degrees. 7. Costs of higher education and student loan debt. 8. Reduced number of applicants for positions. 9. Colleges and Universities only graduating so many candidates per positions. They are limiting the number of candidates that get into their programs each year, in for example speech communications. 10. Colleges and Universities no longer offering certain licenses, such as tech ed.
- lack of teacher candidates of color 2) minimal resources for recruiting 3) Challenges of creating career ladders in the organization due to seniority rights of teachers 4) Fewer students entering teaching professional because of low salaries and workload
- A lot of times its the timing the universities take to get final grades posted, and then for the teachers to get everything in to MDE to get their license.
- A portion (about 40% of classroom space) is in need of renovation. Classrooms in communities with newer schools offer a better physical environment. Housing in the community is difficult for a new teacher to find.
- Ability to pay competitive wage with the private sector.
- All of our staff are required to have AMI certification which is a Master's Degree level teaching program. There is no recognition for this training and the highly trained, highly qualified staff are then also required to have a MN State Teaching License. This places a huge burden on staff both financially and academically as they need to complete dual licenses in order to teach at our school. It is very difficult to find individuals who have completed training in both areas. This also puts a burden on administration as we search to find staff and substitutes.
- Applicant Pool. Limited in most areas.
- Applicants do not appear to be well prepared.
- Applicants wanting to move to or stay in a rural area.
- As a charter school we use our general budget dollars for additional costs in bussing, leasing our building, and paying property taxes. If we, a charter school could own our building then we would be able to use some the additional dollars saved from leasing and paying property taxes to increase the salaries of our teachers. In addition, charter schools are not on a equal playing ground when it comes to health benefits for our employees compared to "traditional" large public school districts. If we were able to have opportunities for similar health benefits for our employees it would also help retain and hire teachers.

- As a charter school, we do not always get a lot of applicants
- As a small district, it is difficult to compete for experienced teachers.
- As we continue to experience declining enrollment we need multiple licensed teachers or we will be forced to try to hire teachers part time and that will be very difficult.
- At times, there is not much competition for positions.. Due to lack of licensed personnel
- Attracting licensed teachers to small rural districts is extremely difficult. Very often they are the "lone individual" in a department. Over time, it seems that we become "training" sites and as soon as possible they move on as they have no community connections. From a special ed perspective, people are less interested in holding that position and the reasons I consistently and frequently hear are "paperwork", "liability", and "meeting the expectation of parents". In our Ed. District as well in the member districts, it is becoming more common to have to hire staff on variances or as community experts. The ongoing training is extensive and requires a large time equipment by peers and administration as they are not equipped for all of the facets of being a special education teacher. This all placed additional burden on those who are doing all they can to be effective in their own positions. Salaries for teachers is more and more a factor across the board. Teachers are coming out with huge student loans and starting at a salary that doesn't compare to many other professional positions with comparable 4 year degrees. All of the teacher accountability requirements are also being talked about and I have overheard "it just isn't worth it" more than once. Finally, I have seen some good applicants (at least on paper) inquire about teaching who have experience but have not been licensed in MN. Getting the license is costly and time consuming so several of those people have decided not to pursue education again - I believe that if they have been successful teachers out of state and re-locate to MN, we should honor that and have the ability to employ them without making it more difficult. In general, it seems that the difficulty with hiring and retaining educational staff is at a crisis level.
- Availability of licensed personnel
- Barriers for hiring experienced, effective teachers have been primarily salary and benefits. We cannot pay as much as larger districts do, or provide benefits to the extent that other districts do. Consequently, teachers with families have had a difficult time coming on board, as our health insurance is paid for the teacher only.
- Because of funding we don't have a very high salary schedule so if teachers are looking at other districts they wont choose us because of our lower salaries
- Because of our commitment to smaller class sizes and limitations in funding, we have a difficult time compensating teaching staff in the same manner as other schools in our area of the state. We are seeing success with smaller class sizes, but because area schools can compensate similar teaching positions at a rate of at least 10,000.00 more in salary annually, it is tough to compete.
- Because we are a small pre-K-12 school find someone to teach all of the sciences will be extremely difficult. As will find a PE/Health teacher K-12. Good Ag/Industrial Tech teachers are impossible to find. There is a huge shortage in this area
- Being a Charter School we will not be able to match a traditional public school salary scale due to the funding charter school receive.
- Being in Northwest Rural Minnesota, our geographical location is a large barrier for hiring employees. We are in a rural community, weather conditions are harsh, and young people are more attracted to the metro areas. We have a shortage or lack of housing options, and there is a difficulty obtaining a Minnesota Teaching License. It has been extremely difficult to get our transferred teachers from out of state to acquire a MN teaching license.
- Being located in a rural area creates some barriers in the hiring process.
- Being very rural.
- Candidates meeting licensure requirements/expectations necessary within the State of Minnesota.
- Charter school funding inequities limit the compensation parity for licensed teachers relative to traditional school systems.
- Charters overall don't get the same level of funding as districts so it is hard to offer a competitive wage and retain teachers.
- Competing with North Dakota for new teachers. Pay is better and they have no testing requirements.
- Competition among district and from states near us without the testing requirements.



- Competition with private sector for certain license areas.
- competitive salaries
- Competitive salaries and compensation. Location of the district outside the metro area.
- Content majors with teaching licensure. High level math/science. Experienced AP teachers. Pay/pay-scale. Retention. Part-time FTEs.
- Contract pay schedules
- Cost of 4 year degree vs. starting teacher salary Demands placed on teaching profession Negative light that is portrayed about education Public pensions under fire
- Custodians and Bus Drivers Very few people now in the state have a boiler license. Bus drivers good luck finding one. The difficulty in obtaining this license is also impossible to find. In
- demands of jobs in special education and salary
- Different License requirements for the various categories taught in Science and Vocational. The Funding Formula change in Sped will create significant havoc. The Paperwork requirements in Sped that Minnesota places on top of the Federal requirements are a very large impediment to retaining quality Sped teachers and delivery adequate student services.
- Due to funding cannot afford to pay teachers much.
- Due to our small size, hiring licensed teachers for very part-time positions is very challenging. Right now we have one teacher on a variance teaching art, technology and environmental education which then equals a full time position.
- ECFE Parent Educator is always difficult. This position is about 3 hours a week. Since we are so rural it is hard to obtain teachings for part-time positions
- Educators and education in general has taken a great of criticism the past few years. I beleive it deters our brightest and best from entering the field.
- Experience and effectiveness in Urban Education
- Fairmont Area Schools is located in rural south central MN. Many new teachers desire teaching positions in or near metropolitan areas. Our entry level teaching salary is \$36,308. With the rising cost of a college degree, entry level salaries will need to be increased significantly over the next few years to attract qualified teachers.
- Financial resources to attract good candidates.
- Finding appropriately licensed MN teachers with Montessori training (or the desire to complete)
- Finding licensed career and technical teachers
- Finding qualified teachers in areas of shortages. Really have trouble finding licensed teachers for our Dual Language Program. Need to have both an elementary license and be proficient in Spanish. This has been our toughest area.
- Finding teachers that are willing to live in a very small town, or willing to drive a few miles. Our teacher pay is lower than a first year teacher's pay in the traditional public schools around our area. We can't compete with their salaries. We also ask our teachers to wear many hats; we need to have very flexible and willing people to perform a variety of jobs and work together as a team.
- Finding teachers who want to work with students from a low-income background and who will be successful with our population is extremely challenging.
- First of all, this survey was not set up well for Special Education Cooperatives. The Northwest Regional Interdistrict Council #382-52 was not even listed in your drop down box for districts other than "01"! Surprised I even received the survey. The choosing of what county we are located in or represent was also a challenge since the NWRIC covers 5 counties in the NW Minnesota. One of our greatest barriers is location. Many people are not willing to move to a very rural area when jobs are available in other areas. The next barrier is that Special Education does not seem to be an appealing career choice any more. Fewer and fewer students are pursuing a license in those areas. I anticipate many retirements in the next few years and am concerned that I will not be able to fill any of the position with a licensed person. One barrier for hiring Speech/Language Clinicians is the requirement that they must have a Masters' Degree to be licensed to work in school districts. Colleges are limiting the amount of students admitted into Masters' programs and creating a shortage in

schools. All but one of my Speech/Language Clinicians is working under a limited-license granted by the board of teaching. We need to change the rules to allow 4-year Communication degree majors to be licensed to work in schools. I have not hired a fully licensed (masters' degree) speech teacher for many years. We just keep training in those working under the limited license for 2-3 years and then they move away or decide to pursue a degree in some other field. Must time and energy is put into retraining.

- Focus on categories of licenses.
- For charter schools, and especially new charter schools, our most significant barrier is funding and being able to attract and retain teachers with a decent salary.
- For many years we were able to recruit excellent teachers from North Dakota. They have increased teacher salaries and do not put new teachers through such a ridiculous set of tests and other hoops to obtain a license. ND also has the rule of 85. If I were a young teacher and had to choose between MN & ND, it would be hard to choose MN.
- Funding Benefits Salary schedule
- Funding for small schools needs to be improved for us to stay competitive in hiring and retaining teachers. Because we are a charter school and cannot levy, we are limited by the general funding formulas.
- Funding is always an issue. We have a very difficult time competing with other school districts in the amount of salaries we start staff at, and any increases they can expect. We have been lucky in not needing to reduce staff, but it is difficult to attract them simply because we can't pay them enough to walk in the door. Funding additional benefits has also been almost impossible.
- Generally there is a drastic reduction in applicants in ALL teaching areas, including Elementary Education.
- Geographic location
- Geographic location of being a smaller rural school. New hires want the comforts and choices of a larger economic community. If this is not in commuting distance they don't even apply for the job. Not as many young adults going into education as a post-secondary choice.
- Geographical location - rural small town near the Twin Cities. Lack of teachers in specific fields where pay is greater in the private industry: math, science, SPED.
- Getting candidates is difficult. Out of state candidates won't even apply because of all the hoops they have to jump through and the cost of the license and tests is excessive. A teacher with a valid North Dakota license can teach in several states but not Minnesota. Loosen the requirements and make teacher quality a local responsibility. I want good teachers and I think I can get that with North Dakota standards.
- Getting qualified people to even apply for our open positions out in rural MN is a huge barrier.
- Greater-MN location - Non-Metro
- Having a small district and not allowing science teacher to teach in multiple areas (Chemistry/Physics) under the same license
- hiring out of state teachers
- I believe the pay level for teachers needs to be examined. Increasing the wage (additional funding to school) will expand the number of people who consider teaching as a profession. The wages paid to teachers are a real problem for all Minnesota schools.
- In a small district such as ours, teachers with multiple skill areas and holding multiple licenses are worth their weight in gold. We attempt to allow student interest and desire to drive our course offerings through the registration process. This puts tremendous pressure on our ability to staff various courses within a subject area due to the license requirements.
- In our geographical location it is difficult to find any substitutes for paraprofessionals and even hard to find highly qualified paras. The population just doesn't have the capacity to supply this workforce. The number of applicants for elementary teachers has dropped dramatically over the past few years. We used to get 30-40 applications for a position and this past summer we received 5-10 for an open 5th grade position. I feel one reason for the shortage is the negative picture that continues to be painted for educators. A lot of pressure is placed on teachers and they have a lot of social and emotional barriers to overcome with a lot of students. They work wonders with children, but are then told they are not doing their job over and over again. This perception is driving highly qualified individuals away from the profession.

- In the western suburbs, we have stiff competition from larger districts like Wayzata and Minnetonka who pay better. We have a very difficult time filling any position that is < 1.0 FTE.
- Inability to pay prevailing wages for STEM fields
- Initial starting pay for hard to find areas does not compete with private sector positions - ie - math, chemistry. We start teachers at too low of salary to be competitive. When looking at preparation time, cost of education and diminishing respect for the teaching profession we are seeing more of our students not looking towards teaching as a viable future. If you look at the number of students entering the field of teaching and the number of positions open there seems to be fewer available for positions. When this is tied to geographic locations in the state you see even greater shortages as you venture further from the metro area.
- International educators find it very difficult to get licensed in Minnesota. For example, numerous licensed educators in Korea have more or less given up getting licensed in Minnesota. These teachers are a great resource to Sejong or other Minnesota schools but have a hard time navigating the licensure procedures whether that is alternative or regular licensure.
- It is difficult to obtain a second teaching license. In a small school we need teachers to be able to teach more than one subject area and it is very difficult for teachers to add a license. Classes are not easily available for teachers to take while teaching. Distance from colleges and available classes is a burden.
- lack of appeal for our geographic location compensation and benefits
- Lack of applicants due to salary constraints.
- Lack of funding
- Lack of quality licensed candidates
- License-Colleges don't give flexible course offerings to meet variance requirements within 3 years.
- Licensing requirements in Science and Special Education make it very difficult to find candidates for a small rural school. In most situations, a teacher in a small, rural school will have multiple assignments requiring multiple licensures. Offering part-time positions in these areas has not been successful - these folks are able to find full-time employment in larger districts. Additionally, we are finding that colleges or universities do have not candidates enrolled in these programs.
- Licensing requirements particularly when hiring certified teachers from other states. The amount of testing and/or courses to get certified in Minnesota is ridiculous!
- Licensing requirements placed on us by the board of teaching are making it very difficult to hire in areas like science and SPED, ASD. The hoops that prospective teachers have to jump through to get a license in MN is causing a shortage in of licensed staff in all areas. We can't hire licensed teachers from neighboring states because of they don't meet our over the top licensing requirements. The Board of teaching has too much control in deciding who gets a license to teach in MN.
- Licensure for Theatre, Dance and Vocal Arts instructions. Public institutions do not offer Theatre & Dance Licenses.
- Limited pool of applicants in Special Education. Not all schools are preparing teachers the same.
- Limited pool of Deaf and Hard of Hearing teachers.
- Limited supply of teachers graduating from preparation programs.
- Location
- Location Economy
- location size salary
- location teacher licensing no licensure reciprocity between states
- Location and available workforce
- Location and low salary schedule
- location being more rural starting salaries budget reductions
- Location of our School District Low number of qualified candidates MTLE too difficult outside of area of study

- Low number of applications for open positions. Often have to take non qualified applicants.
- low socioeconomic teaching experience
- Many teachers are poorly trained at their universities.
- Mid-year hires very difficult.
- Minnesota licensure requirements are different than surrounding states and this causes a lot of problems.
- MN is always thinking it is better than other states and its standards really make hiring some areas very difficult, e.g., physics/chemistry licensure. Other states allow more liberal, broad science license to teach.
- MTEL - Makes no sense. MN Colleges certify the programs of study are completed by all teachers. Board of teaching certifies the teachers, School administrators have three years of probational data to determine teacher effectiveness. The MTEL should be given as a score only feedback. Accountability is already in the system.
- Multiple science classes that each require their own license. Finding people with the correct license combinations is very hard. Special Education requirements are so extreme they greatly reduce the number of teacher who want to teach special education.
- Need to have a more competitive wage.
- Needs of the students continue to increase, our budget does not. We need to do something with contracts to allow districts to compete with business world.
- Negative climate that surrounds public education. Difficult parents that blame teachers or the school for their child's problems. Relatively low pay. Multitude of demands placed on teachers today (standardized testing, SPED, mental health, etc.)
- No reciprocity between states for licensing. Limited quality applicants with the appropriate licensure. Increase in special populations needing Special Education or EL licensure. Limited programs to obtain Media Specialist licensure, difficulty and length of those programs and need for this license.
- No teacher licensing reciprocity
- None
- Not a large enough supply of teachers who are top quality candidates in most every field, especially in the special ed area.
- not a real barrier but just a small pool of candidates for open positions
- Not as competitive salary and benefits compared to larger area schools.
- Not as many candidates coming out of teacher programs Tenure of teachers not as long as used to be in general Shortage of subs that used to be sometimes hired in a particular district Smaller district-not as large variety of course offerings and opportunities
- Not enough capacity at universities for turning out speech teachers. We do not need the speech degree requirements for all of our students receiving speech services. If our new special education teachers have to get additional certification by five years, we may have to let them go after three if they do not have required certification. We could have tenure requirements due to licensing in other areas. There is too much messing around with special education certifications.
- Not enough colleges producing graduates for all licensure areas, poor teaching programs at some of the universities
- Not enough teachers with appropriate licensures.
- Not many applicants
- Number of candidate pool for open teaching positions.
- Only having part-time positions available.
- Our biggest factor is our pay and benefits. In order to keep the PreK-6 open in Ivanhoe we had to close the 7-12 and sign a tuition agreement. We also signed a decrease in benefits AND a pay freeze over the next 3 year. Teachers are only being paid 29,000 starting, which is well below the neighboring districts.

- Our district has a desire to hire a diverse teacher population. Part of this requires us to recruit teacher candidates from other states. There are MN state licensure requirements that at times pose as an obstacle for these candidates. For instance, our district recruits teachers for our Bilingual/immersion programs who happen to be from other states. The teachers have had a difficult time with licensing and it has caused some to debate on whether or not they stay with our district.
- Our district has a hard time competing with other suburban districts due to funding issues as well as the district being in Statutory Operating Debt for many years. It is difficult to be competitive in salaries with Minneapolis, Osseo, Anoka etc. Small districts like Brooklyn Center don't have the resources (about 12-15 people in our central office) of other districts so it is difficult to recruit, train, and retain teachers. The talent pool is thin as far as high quality teaching candidates and principals candidates. Out of 45 principal applicants, we had 2 quality candidates.
- Our funding is so low that we cannot find teachers who will work for what we can afford to pay them.
- Our high school offers a two year college degree in partnership with our local community college. High school teachers must have a masters degree in the content area they teach to offer the college credit. The pool of high school teachers with these qualifications, who are also capable of coaching or advising activities, is extremely small. Secondly, licensure requirements and work load requirements for special education teachers is making it nearly impossible to fill these positions with qualified individuals.
- Our largest struggle in hiring is finding qualified special education teachers, there are just not enough that are willing to drive to our location and meet the needs that we need to serve.
- Our location and lack of housing, financial problems with high cost of transporting student and low numbers.
- Our location and the fact that since we are a small school we don't have the funds to offer competitive salaries.
- Our rural location/salary schedule
- Our salaries are not competitive with Rochester and metro area school districts and our school district is driving distance to both these areas.
- Out state we don't have many people in our community that are willing to come to the out state for hard to fill fields. When looking at Salary we have lost teachers that have decided to go to the Metro and teach because of the pay and benefits. I wish we were on the same playing field with our Metro colleagues.
- Parenting License is difficult to obtain and not worth the cost for the minimal hours position.
- Part time positions based on student enrollment
- Partial Positions Limited out state applicant pools. No applicants Difficulty obtaining MN licenses for VI teachers Doctorate required for Physical Therapist Can't compete with Medical agencies for SLPs, OTs, PTs, Nurses Delayed licensing process from MDE
- Pay scale and remote location.
- Pay We are a small district surrounded by much larger districts. Pay is much better other places.
- Pay Lack of affordable housing
- Pay & Benefits
- Pay and benefits - we cannot compete with business and industry \*CTE teachers are very difficult to attract due to the lack of pay and benefits relative to business and industry \*The pools of candidates in most positions are very shallow \*The quality of teacher candidates in general has dramatically decreased \*We are concerned about the college system preparation programs and the low standard they have in place for program entrance - we need more teachers and better teachers coming out of our colleges CTE, AG, Industrial Arts, FACS, and Technology Ed teachers are almost impossible to find. The college system has dropped most of these programs or are producing very few new teachers in these critical areas. We will be forced to eliminate these programs in our school system due to the lack of good teachers available to hire. This area of need is at a critical stage and I am afraid it is too late to ramp-up the supply before the bottom falls out and these important programs are gone. The State of MN and the Department of Education has devalued these programs for so long, the college systems eliminated their teacher preparation programs and school districts have shut these programs down. In addition to the teacher shortage, these programs also require ongoing capital investments in facilities and equipment, they have been too easy for school boards to cut during a budget crisis. If we do not get facility and equipment support, the shortage of teachers will not matter. From the workforce development perspective, we have created a huge problem for our high tech manufacturers and industries.

- Processing time with the licensing system at key time periods. Time lags between testing requirements and results.
- Purely Financial considerations.
- Qualifies candidates in specialist positions in special education
- Remoteness, Lack of funds for higher salaries.
- Retainment of teachers is difficult as we are limited in providing annual raises.
- Rural Area Salary
- rural location, not enough licensed applicants, travel to several locations
- Rural location. Especially hard to find teachers licensed in specialty areas (i.e. parent education, industrial arts, etc.). Part time positions are hard to fill.
- Rural school located 50 miles from nearest university.
- Rural, out-state location makes it difficult to get a good pool of applicants for any job openings.
- Salaries
- Salaries and benefits
- Salaries of the metro schools is much higher than rural district. The rural districts become training grounds.
- salaries too low
- Salary and benefits
- Salary not as high as other big school district.
- School finance is the biggest barrier to hiring new people. Young people are not attracted to a profession where they will be under-compensated and under-funded.
- Science Teachers because of Licensure. Low availability of ECFE Teachers, Coordinators and Parent Educators
- Shortage of properly licensed and qualified applicants.
- Shortage of specialist type teachers in rural area.
- Since the charter school is not a traditional school, the charter school does have difficulty attracting quality teacher candidates.
- small district we need to find teachers to work in multiple fields
- Small pool of applicants
- Small pool of qualified applicants.
- Small rural schools have only one science teacher at the high school. They need to be licensed in life sciences, earth sciences, chemistry and physics. Typically they are not.
- Small schools in rural Minnesota that have high poverty struggle to hire new teachers.
- Some of the factors that our school District faces is that we are a very small school District in a very rural area, we have two schools in our District that are located around 80 miles apart, we have a hard time trying to find teachers with a license in the field that we are trying to fill at the Indus School, these positions are usually for 7-12 grade class, such as Math and English. This school is located in Birchdale Minnesota which is a very remote area, that is located in between International Falls and Baudette Minnesota. We have had to fill for various in order to have teachers placed in these positions, because of this.
- Some positions are part time due to the size of our school.
- Special ed license requirements are too restrictive.
- Special Education at the secondary level, having to be highly qualified in all core subject areas. Dual Language Spanish immersion, difficulty passing all MTLE's

- Specialty Areas are hard to find in out state areas. Due to our Diverse Student Population we have difficulty finding bilingual support staff Transfer of Out of state Licensures huge barriers
- Speech pathologist - there are not enough programs, existing programs are not taking enough applicants, and there is a huge demand. I don't understand why there have been "gates" created, but this situation is beyond frustrating. I have a highly qualified person who has applied to 15-20 schools across the country, in addition to MN. She is 1 of 200+ and programs are taking 10-15. Special Ed - especially EBD, SLD. People are not going into this field and I don't blame them. Kids are harder and they are spending more time having to worry about paperwork (IEPs, etc) than teaching (which is why they went into education). My best sped teachers are burning out after 3-5 years and there aren't many people waiting to take their place. In rural MN we get 1-2 apps for sped positions and they are not quality applicants. The last 3 we've hired have been regular ed teachers on variances that are going back to school. This is not sustainable. School Psychs - I don't think we can pay these people enough to seriously consider a job in education. If you look at job postings, you will see many districts looking. Again, demand exceeds supply by a huge margin. Science - in rural MN this is a supply/demand issue as well, especially in Physical Sciences. I think MDE/the state has created licensing structures that are not reasonable. Teachers can learn the content - we just need licensed teachers that we can grow into good teachers, but we aren't even getting good applicants.
- State teacher testing requirements. The small number of qualified teacher applicants.
- State testing and licensing requirements are factors in our ability to hire teachers of color - particularly teachers of color from other states.
- Stereotypes about charter schools
- Stress of the position with all the new accountability standards. Money - low wage compared to business world.
- Teacher workload and burn out.
- Teachers that are excellent and have a teaching degree from Mexico or another country but are not considered teachers in MN. These teachers have to start the teacher training process all over again in order to teach in MN. This is very frustrating especially when we would like to have foreign languages spoken in our schools and with our children. Native speakers are so wonderful to have as teachers.....wish the red tape was not so thick!
- Teachers willing to Teach at risk Students! Teachers Salaries!
- Teaching candidates from other states (IA, SD, ND, WI, NE) won't come to Minnesota.
- The applicant pool for virtually all subject areas has significantly diminished in the last three years. Many less applicants to choose from.
- The biggest problem is getting qualified substitute teachers. The other thing is getting long term subs in foreign language, upper level science, and upper level mathematics courses.
- The cost of benefits (ACA).
- The economy is relational. All-Day, Every Day Kindergarten has sucked up many elementary teachers. There continues to be a shortage of quality and qualified SPED teachers and Upper Level Science Teachers. This is compounded when you live in rural MN and can't match higher paying district salaries. There are no post-secondary schools in MN that have Industrial Technology/STEM teacher programs. We have cut our own legs here and need to fix that ASAP. Too much pressure and focus was on all students going to four-year colleges and now we have a shortage of skilled labor for the trades area and no one to teach it. The constant change by the legislature with standards, testing and political whims effect students everyday and we can't compete as we are always in a state of change and can't get traction on what we are doing. With that as the background, who wants to enter education as a profession????? When will the state help us and promote education as a great career?? Media campaign????
- The extreme requirements to become licensed as a special education teacher has been very difficult. Very few programs even give people the opportunity to graduate with a bachelor's degree. The testing has been a turn-off to individuals and a significant barrier. Not having reciprocity between states for licensure results in about 5 people not accepting my positions each year (I just had someone from Colorado ask about MN licensure because they are considering moving to town; when she found out the requirements she said she would stay in CO). The number of special education licenses is a significant barrier, particularly in small towns. Our location and not being close to colleges is difficult. The colleges are getting better at offering online courses,

but not all of the courses are online and not all people like online. I tried to work with universities to see if they would allow us a hybrid model and had very poor response.

- The funding District 885 receives to maintain competitive salaries (ISD 885 is one of the lowest funded district's per pupil, receiving \$1000 less/pupil than many of our immediate neighbors).
- The lack of alignment between the goals and mandates of the WBWF legislation and the former, but still present state graduation requirements make it almost impossible for high schools to successfully prepare students for their futures!
- The licensing standards can be difficult for teachers, but I do believe that the standards should be high. The time it takes to process the license of new teachers can sometimes be frustrating. We have jobs waiting and it sometimes takes a while for them to get the license.
- The MTLE exams are almost to the point of prejudicial. I do not understand how giving a timed test to teacher candidates will determine if he/she is going to be a quality teacher. For example, I do not care or find it essential information if a science or math or any teacher is able to complete 50 math problems in 50 minutes. If any testing is needed then have it be in there licensure area not a so called BASIC math, writing, reading test. It is time to respect our universities and trust them to have the teacher candidates to be ready to be productive teachers. I totally disagree with the testing requirements of college students. We are losing way to many potentially strong candidates due to the testing requirements.
- The need for teachers with multiple licenses. Very few out there. Some of the licenses don't cover needs in a small school. Example: most teachers come out of school with Chemistry or Physics. In a small school they need both.
- the overall public perception regarding teaching in general. The increased requirements at the University level, i.e. TPA.
- The pool of "good" candidates in shrinking. Also, the best seem to want to gravitate toward the metro. Many new grads have stated that colleges are not encouraging students to enter the field. Also, college preparation of potential graduates needs improvement concerning licensure process and issues. Many do not realize the steps in obtaining licensure and trust the college will submit the necessary paperwork for getting licensure. Most colleges can't be trusted to complete the license paperwork and get it submitted like their supposed to.
- The pool of applicants has reduced significantly in recent years. Many of the teachers who have subbed are now being hired leaving very little subs available. Quality sped teachers and service providers continues to be the area of highest need given the needs of the children have increased drastically. Additionally, finding licensed science teachers in rural districts is a challenge. We had to eliminate a business teacher position this year due to no licensed applicants. We tried a community expert license last year that was not successful.
- The requirement for Speech--Language teachers to have a graduate degree and the minimal number of very qualified students that the colleges are taking into this program. The length of time for these individuals to be on a variance should be increased. Many of our 4-year degreed individuals are much better then some of our Master-degreed individuals, so this requirement is becoming a huge question.
- The sheer number of college students pursuing degrees in any education field are shrinking drastically. This shortage of teacher candidates will have a negative impact, especially in rural districts. Also, public scrutiny has played a role in this.
- There are not enough qualified candidates.
- There are not enough special education and mathematics teachers.
- There is a limited number of applicants in specific areas and the teacher contract pay is low compared to non-educational jobs.
- There is simply not a pool of candidates. I will begin advertising for a life science teacher soon for next year and I do not anticipate I will get a single candidate. In my opinion the MTLE has become a major barrier for students who may once have considered education as a career. Teacher pay is also an issue. Too frequently, candidates with the skills to be good teachers can do much better financially in other careers. Geography is an issue in my district. We are considered to be too far from almost everywhere.
- There seems to be a shortage of qualified candidates coming into the field in northern Minnesota. There are several reasons for this including rising college costs, low pay for teachers, testing and licensing requirements too rigorous compared to other states, and limited schools for specific licensure(like ag, special ed, speech, etc).



- Three year limit for variances.
- Very few Physics, Chemistry, Ag and FACS teachers coming out of college.
- Very small pool of candidates, especially in the music, business, and science areas.
- We are 25 miles from Fargo, ND and our salary schedule is quite short of Fargo's and West Fargo's. This is becoming an issue for us and other schools. Also, they have the Rule of 85 for retirement and Minnesota lost the Rule of 90. This will also be a factor in retention of teachers.
- We are a large rural school district – a number of applicants come from small area school districts. We have noticed a reduction in the qualified applicants for all positions.
- We are a licensed desert in our area in Central Minnesota. Rural and not much to choose from. Getting licensed teachers has seemed very difficult. Particularly at secondary level regarding specialty disciplines/licensure and early childhood/preschool, technology specialist are a pipe dream right now.
- We are a rural school and that is a big factor on being able to get and maintain employees.
- We are a small rural school that may not be able to pay or offer the opportunities as larger metro areas can.
- We are a small rural school. We have great difficulty in attracting teachers willing to work part-time in our rural areas. We do not have an enrollment that allows full-time positions in many areas. Science, Computers, and specialty areas are very hard for us to fill. Science with the multiple licenses has been very difficult to fill. Computer teachers are very hard to fill as we can only afford part-time people. It would be great to have more ability in the use of variances from year to year.
- We are a small school that often times does not have a need for a full time teacher in a specialty position. We often encounter a need for a less than full time teacher who holds multiple licensures.
- We are a special education cooperative in rural southern Minnesota and have a very difficult time competing with salaries and benefits offered by districts in the Twin Cities area.
- We are a very rural district, already many staff do not live in the district but live in the area's regional center. And the unemployment level is very low with a large variety of jobs available and they are competitive jobs due to great benefit packages.
- We are a very small district (850 students p-12) who come from 3 very small communities. I often tell people that we don't have people roaming the streets of Cosmos looking for a full time (or even part-time chemistry/physics) job. The same can be said for health/PE and DAPE ...the same can be said for music. Ten years ago I hired a PE Health teacher whose application came with 82 others. This summer I hired a PE Health teacher whose application came with 4 others. One of the struggles besides licensed teachers not living in or around small towns is teachers struggle to pass the MTLE. I think the MTLE is very important but when I hear of a choir director trying to get his band license but can't pass the MTLE because he doesn't know the history of Russian music from the 1500's I think that is a bit beyond high school band. I currently have a "special permission" health PE teacher who has tried the MTLE for Adaptive PE twice and is having difficulty getting past all the special ed disabilities test. I also have a social studies teacher who we retain as a full time sub who is struggling to pass the MTLE test on psychology because he doesn't know psychologists from the early 1900s and what they represented. Again...a little above high school unless we are teaching AP or Concurrent enrollment. Again, I feel strongly that MTLE is keeping the very poor teachers out but it may be a bit too rigorous in some areas. Just musing...
- We are a very small school that has always prided itself on hiring fully licensed teachers. This year many school districts saw a shortage in applicants for positions in many areas. In talking with two teachers that are on limited licenses they have said that the tests being timed and the mere scope of them in order to get licensed is not always easy. The frustration of these individuals is evident as they talk about these tests. The time constraint knowing that they only have a certain amount of time to get their license is also very strenuous for the individual as well as the districts. The colleges are not making things easy either as in order for experienced teachers to get another licensure they have to "quit" their real teaching jobs and student teach! This is quite a hardship for the district that needs to have the teacher in place, but thankful that they are willing to add additional licensure. This is very troublesome especially in the special education department. Our district for the first time in several years has two teachers on limited licenses and one on a variance. These are also not long enough. These teachers are doing a terrific job, doing what we want them to do, the students love them and in our district it is very strenuous to get people to apply for our jobs! Future teachers from other states are no longer coming to Mn. for licensure as in the past because of the difficulty of obtaining a license with all of the extra requirements beyond their own state licensing. it is quite intimidating to think that one was good enough to be licensed and teach in another state and that Mn. would require such an additional burden

to get licensed. The other issue is the staffing at MDE - with the shortage of teachers AND the shortage of staff at MDE to assist us we are at their mercy to get approvals in a timely manner. They have done their very best to accommodate but certainly feel for their workload. We hope that things can change for the future educators of Minnesota.

- We are an Arts charter school with a small budget and are increasingly seen as an alternative school for kids who are not being served in their district Sped programs. This creates an interesting atmosphere that some teachers are frustrated by.
- We are in rural Minnesota without a lot to draw in new, younger teachers
- We are located in a rural areas and availability of licensed professionals in education in certain fields can be difficult. Especially if we need to replace some one right away.
- We are located in a very rural northern minnesota community
- We cannot find licensed, qualified teachers for our CTE and elective courses. The MTLE requirements also prevent us from hiring what would be qualified teachers. Salary and benefits are a huge barrier when it comes to hiring teachers for our district.
- We do not get many qualified applicants. Many who apply are newly licensed.
- We live in a very rural community and not all teachers are willing to live in a rural community. Funding to pay teachers enough to want to live in our area. Finding Science teachers that fit the correct specific licensure area.
- We would appreciate more flexibility in hiring people who are licensed in other states. Because of Minnesota State Requirements, it is cumbersome for students out of state to get licensed.
- We're a small school district located in Greater MN. Our salary schedule and benefits are not competitive with larger districts or districts located in suburban or metropolitan areas.
- What we are able to pay compared to large districts make us a stepping stone for larger districts which leads to turn over every few years.
- When we cannot find a licensed teacher, we get a variance. Variances are only good for a maximum of 3 years. If a teacher is successful on a variance for 3 years, they should be able to get a license. We have difficulty providing compensation packages that are competitive with larger districts. Often when we do get a good teacher, they leave us for higher paying districts after we have invested in their effective development. The current teacher testing system is a barrier. We had a physical education teacher candidate who could not pass the math portion. He will never use that level of math in a physical education class. Why does he need to pass this test? We also have had experienced candidates from other states but our state does not recognize certain aspects of their license. For example, another state may grant a K-6 license and the candidate has taught Kindergarten for 5 years in that state. However, our state only licenses them 1-6 and not K. This is ridiculous.
- Young people are not choosing to go into special education field, for many reasons, so colleges are not producing the number of graduates with special education licenses. From my perspective, the most significant barrier was the fact that a new college grad could graduate from college with all credits, recommendation for licensure and then couldn't pass the reading and math tests so couldn't be licensed. Hopefully this barrier is being addressed. It is also my understanding that young people are choosing not to go into special education because of the contentiousness of the field, with parents seemingly to have more power over educational decisions than the school. I have also talked to college students who indicate they are afraid of the paperwork burden of special education, so they are choosing not to get that licensure. Here is another issue.....We had an early childhood special education teacher vacancy. We recruited from another agency in another state. The person was licensed as an ECSE teacher in the other state. Minnesota would not acknowledge her license and indicated that she needs to take 20-25 additional "general education" courses in human relations, basic assessment, etc. in order to be licensed in Minnesota in ECSE. This is just incredulous as she has been working in the exact same field in another state, with the exact same job responsibilities and yet MN indicates she is not able to be licensed until she takes more classes!

## Other factors that are barriers for retaining

*All responses provided here:*

- -Not enough money for charter schools to pay salaries that are competitive with districts--especially for teachers with 10 or more years of experience. -
- Not enough state aid to schools to retain teachers with the ability to offer higher salaries. 2. The increases that we receive are not keeping up with inflation, and if you go back to Governor Carlson we are almost \$2400 behind in per pupil dollars in state aide on the formula per pupil.
- Loss of staff to metro schools who can offer more competitive wages.
- 1) burn out (especially in EBD license) 2) lack of adequate preparation in college 3) only 1 year probationary period for staff who transfer between districts (not cities of the first class)
- A huge barrier that needs to be examined is the teacher tenure reform. We retain some teachers who we'd rather not retain. We we are going to improve schools we need to examine the number of teachers who were maybe once good but have settled into complacency.
- Ability to keep up with the financial commitments in maintaining a competitive salary structure.
- Amount of assessments to be given during the school year Perceived amount of tasks increase each year Student achievement percentages and how they relate to teacher evaluation Tenure requirements might change in the next few years
- As a charter school we use our general budget dollars for additional costs in bussing, leasing our building, and paying property taxes. If we, a charter school could own our building then we would be able to use some the additional dollars saved from leasing and paying property taxes to increase the salaries of our teachers. In addition, charter schools are not on a equal playing ground when it comes to health benefits for our employees compared to "traditional" large public school districts. If we were able to have opportunities for similar health benefits for our employees it would also help retain and hire teachers.
- As a small rural MN School District, we have more of a problem retaining. We train new staff, provide experience, and obtain jobs in larger districts that are able to provide better salary & benefits. Housing opportunities are limited unless the staff member desires to build new.
- Being a small charter school and not having access to the same money allocations as larger districts puts us at a disadvantage in keeping our salaries competitive.
- Being able to pay a fair wage for licensed staff.
- Being very rural.
- Being we are a small District located in a remote area once we do get license staff we have a hard time keeping any highly qualified staff to stay with the District because of the location of the two schools.
- Benefits
- Border state with different pay and benefits. Licensure requirements. Increased need of special populations. More standards/requirements of teachers without the ability to add time or wage increases. Mental and physical fatigue, social concerns.
- budget reductions
- Burnout because there are not enough substitutes and our students have a lot of needs and teachers have a lot on their plates.
- Can not renew a one year restricted license due to above
- Charter School revenue not adequate
- Compensation and benefit packages are small in relation to metro areas.
- compensation and benefits fear of budget cuts
- Competition for skilled employees in a very competitive market. Our rate of pay may not keep up with other industries around us.

- Competition from other school districts.
- Competition from other school looking to recruit qualified teachers can make it hard to find teachers.
- competition with larger districts benefits packages
- Competition with private sector for certain license areas. Master Contract terms and conditions. PELRA.
- Credentials sub-par Pre-service teaching opportunities in the world of technology
- demands of jobs in special education
- Distance from larger cities. Southland is a smaller school district about 20 miles from the nearest larger city -- Rochester and Austin
- District is somewhat isolated. Keeping staff in the area can be a challenge.
- Due to funding cannot afford to increase wages much.
- Economy
- Effectiveness in classroom management
- Feeling of helplessness with constant change and new requirements Provide incentives for staying so many years Look at college debt/repayment programs
- Financial resources to retrain good teachers.
- For Special Education, paperwork and difficult legal processes are taking a toll. As teachers enter the workforce with an ABS license, they are required to go back to get a categorical disability area. I am concerned that with the additional education requirements and the load that goes with special education, teachers will either choose a different area of special education or leave education all together.
- Funding Benefits Salary schedule
- Funding constraints
- Funding....when staff is reduced, the education field loses qualified teachers to the private sector; never to get them back.
- Geography
- health benefits costs potential for career growth job security (year-to-year contracts) teacher evaluation process turning people away from profession
- High cost of group insurance for small schools with high loss ratios has made it cost prohibitive to keep group insurance. Teachers will leave our District for another school because of better group insurance rates. Teachers should be allowed to go on the exchange and apply the District contribution to insurance outside of the school. Anti public school attitude and all the mandates for testing and state wide evaluations for teachers and principals is discouraging to staff. It takes energy and time away from actual instruction.
- high expectations from school
- High stakes tests for professionals can sometimes be the wrong idea. Many good teachers may have trouble with these and be great teachers.
- Higher education driving licensure.
- If teachers are on a limited license or a variance, these are short term for districts. They need to be renewed each year and teachers in shortage areas cannot be retained if they are not licensed. Teachers that want to get additional licenses in some cases must have in order to keep their job cannot get them because of college requirements even though they already have a teaching license. Tough times!
- If you can't find them, hard to retain them!
- In a small district, there are limited opportunities for teacher leadership opportunities
- In spite of what MDE indicates, local districts are NOT the cause for hours and hours of angst and time for special educators to complete paperwork requirements. Any special educators of whom I know of that have left the field, have left the field or retired early due to the paperwork requirements---not because they weren't interested in continuing to teach students. There have been numerous committees reviewing paperwork

requirements, but nothing has changed for the better in regard to paperwork reduction in the 20+ years I have been in the field.

- Inability to compete with salaries in some of the other parts of the state
- Increased licensing requirements low pay increased demands on monitoring lack of respect for profession lack of year round professional development (not affordable, but is needed if increased demands continue)
- Increasing demands in classroom; difficult and demanding parents
- It seems that we have the best retention if we can get people to come back to the area after leaving for college. The connection to the community is huge. Without that, we are training sites in the step to moving on. It is difficult to compete with districts who are located in areas that have much more to offer and a larger staff to support the teachers both professionally and socially.
- Keeping Pay scale competitive and class sizes down.
- Lack of funding
- Lack of housing options and extreme weather conditions are sometimes a factor. Also, being so close to the North Dakota border, we have a hard time competing with the pay scale that Grand Forks and Fargo Public Schools can offer. It is also more attractive to some to live in a larger rural city (Fargo/Grand Forks) than to live in rural small town community that can't offer the culture and activities.
- Less stressful and more attractive work outside the field of education; testing requirements and paperwork requirements; frustration with focus on testing rather than the whole education of children; lack of resources within the district especially in the ability to enhance or expand technology; difficulty in union relations and union leadership positions
- Licensure for Theatre, Dance and Vocal Arts instructions. Public institutions do not offer Theatre & Dance Licenses.
- Licensure issues with lack of variances also prevent staff from staying longer. After the variances are used up we have to let those staff members go as we have no place for them to teach with the licensure they may have. Also the unpredictable enrollments from year to year in the rural areas make it difficult to hang on to staff as reductions need to be made according to cash flow.
- Limited housing and entertainment.
- Limited License People - Time restraints to pass Testing
- Living in a rural area, staff live in and commute from larger communities. Once an opening comes up in those larger community or closer to their home towns, they leave.
- Low funding=more burden on the teachers we do have. For example, they have to teach, lead an after school activity, give up prep time and attend all of our school events. This creates a high burn-out rate.
- Low Salary Schedule and location
- Mentorship for young teachers Pay Need for instructional support Lack of affordable housing
- Money that we can afford to pay teachers!
- n/a
- Nearby metro schools that offer better contracts.
- New teachers not properly prepared for dealing with classroom management. Will need to non-renew more teachers this year for this reason than ever before.
- None
- None -we have high teacher retention
- Not being able to have general exploratory classes taught by any general licensed teacher and only having variance availability for 3 years
- Number of students graduating from programs. Colleges discontinuing programs (career/technical - especially). Number of people qualified who want to live in our region. Competition with other fields.
- Occasionally, we lose staff to inner metro/suburbs.

- Once we get a licensed person hired we have good retention however, again location to a larger community and less commuting draws staff away. Burn out is also a factor. Seems to be more behavior and environmental issues with student today coming from low socioeconomic homes and single or generational family. School staff often have to deal with things they didn't think about when going into the profession.
- Once we get staff we keep most of those that are good. Special education paperwork has caused us to lose a few.
- One barrier for retaining Speech/Language Clinicians is the requirement that they must have a Masters' Degree to be licensed to work in school districts. Colleges are limiting the amount of students admitted into Masters' programs and creating a shortage in schools. All but one of my Speech/Language Clinicians is working under a limited-license granted by the board of teaching. We need to change the rules to allow 4-year Communication degree majors to be licensed to work in schools. I have not hired a fully licensed (masters' degree) speech teacher for many years. We just keep training in those working under the limited license for 2-3 years and then they move away or decide to pursue a degree in some other field. Must time and energy is put into retraining.
- Only having part-time positions available.
- Our barrier for retaining is competition from schools closer to the metro area with better salary schedules and benefit packages.
- Our pay is less than that of bigger surrounding schools. We tend to be a training ground for them.
- Our proximity to larger districts who pay significantly higher salaries. One hour to the Twin Cities, 15 minutes to Red Wing, 30 minutes to Rochester. As a small district this is a tough, ongoing challenge.
- Paperwork requirements in special education. Difficult parent interactions in special education. Staff injuries from students. Competition with other districts for employment. Public perception of education- seen as public servants - not professionals.
- Pay and benefits. Medical insurance is getting more and more expensive.
- Pay for teachers in closer to big cities is much higher - we do not have the funding to provide this.
- Pay in outstate, location, demand of students.
- Pay Scale If only part time they won't stay Teachers are recruited to higher paying private business jobs
- Pay scale and extra duties (burnout).
- Pay scale low, student behavior, State expectations
- Pay scale.
- Pay-job offerings in other fields that pay better Increasing paperwork in special education
- Paying enough and paying proper benefits to compete.
- Peer review. Requirements for license renewal
- Pre-K teachers leaving for K-12 positions that offer more pay.
- Promotional opportunities - small district.
- Public perception of educators.
- Public School districts in the area have higher rates of pay, and could be less work/smaller amount of time commitment than working at a small charter school.
- Retention of teachers is difficult also due to low salaries and the disrespect students, families, and communities give to so many teachers.
- Rising cost of health insurance.
- Rochester Public Schools' Salary Schedule.
- Rural Area Salary
- Rural educational concerns.
- Salaries

- Salaries and benefits
- Salaries! Burnout!
- Salary and benefits.
- Salary constraints as compared to private sector.
- salary- competing with metro areas, rural location, not enough licensed applicants, travel
- Salary, marriage, moving or career change.
- Same as above - in the western suburbs, we have stiff competition from larger districts like Wayzata and Minnetonka who pay better. We have a very difficult time keeping a teacher in any position that is < 1.0 FTE.
- Same as above plus need for part time.
- Same as above.
- School finance is the biggest barrier to retaining new teachers. New teachers will not want to stay in a profession where they will be under-compensated and under-funded.
- see above
- small school size with no opportunities for advancement
- Small town not always appealing to employees.
- Special ed - burnout due to increasing demands of students and paperwork burden. The "Paperwork Reduction Bill" did very little to help. Money - I'm competing for teachers in an area where a regional center can pay more and offer better benefits. I've lost 3 of my best teachers to that district in the last 2 years.
- Special Education Due Process / Paperwork Growth in Fargo, ND and West Fargo, ND schools.
- Special Education requirements are beyond excessive and have taken the joy out of teaching special education. Special education teachers have a high burn-out rate and are quick to leave if they can find another option.
- Special education workload drives many out of our best teachers out of special education positions. Secondly, a significant lack of time and funding for high quality, ongoing training and professional development drives many teachers out of the profession.
- Stagnant salaries make it difficult for staff to want to stay.
- Stress due to teacher evaluation systems and too much focus on limited test scores. Teachers feel that stress regardless of how we try to emphasize other factors. No part of society is being held accountable for student performance other than educators. Unreasonable parent demands, parent choice, parent neglect, the economy, the media, the entertainment industry, and the challenging physical and mental health of our children and the factors that cause these issues, all seem to be ignored by the politicians. It is easier to blame teachers and schools for all of these challenges and not fund the schools to address them. Our Governor and legislators seemed to be saying we even support bullying in our schools. This is the atmosphere that makes it more difficult to retain teachers who are initially eager to learn more and get better at their craft.
- Teacher salaries in general, housing availability, gameful employment of spouse, insurance and benefits.
- Teacher salary schedules often do not compete with the business sector, causing many new teachers to switch careers.
- Teacher workload and burn out.
- Teacher/substitute quality. At times, due to a limited candidate pool we're forced to hire staff that typically wouldn't be hired. In general, our candidate pools for all positions is getting smaller and the overall caliber of candidates isn't as strong as 10 years ago. As a result, some inferior candidates are hired for a short term and placed on unrequested leave in an attempt to hire more qualified personnel.
- The ability to mentor the inexperienced teachers coming to our District will be a key in retaining these staff members.
- the above, plus the fact that salaries do not increase at the same rate that living expenses do. Charter schools have their own particular demands, and autonomous opportunities that not every teacher is suited for.

- The demands of special ed teachers. Good sped teachers are going into gen ed position due to unreasonable paperwork requirements. They did not go into this profession to manage paperwork. They chose teaching to make a difference in the lives of children with disabilities. The priorities in sped are driving quality teachers from the profession.
- The job is difficult, the pay is not enough.
- The main factor in teacher retention this year was commuting time. In exit interviews, the most common theme was a long commute (45 minutes or more) and jobs opening up closer to home. Other retention factors that contribute to teacher attrition are the funding we can devote towards our benefits package, salary, and the highly demanding job of teaching in charter school with over 75% free and reduced lunch, and a significant ELP population.
- The nature of our community is challenging with the many issues children face living in poverty. Their struggles bring many challenges to the classroom on a daily basis. Staff members devote so much time and effort into the education of all of our children and are exhausted at the end of each day after dealing with multitudes of behavioral issues. We do not have enough funds to hire social workers, case managers, behavioral specialists etc. so our staff will burn out rapidly. We will continue the need to find new qualified staff to serve our population until we receive enough funds to hire the professionals necessary to be of service to our community.
- The number of mandates that are placed on teachers without giving more time and pay.
- The pay is the primary reason we lose teachers. For example, this past summer we lost 3 teachers; one to retirement and two teachers to local school districts. The two that left were going to increase their salaries about \$10,000/year; which is a huge factor and reason for staff leaving. We also do not have steps/lanes in our salary structure, like traditional public schools, so our yearly increase is minimal, usually 2 or 3% for cost of living.
- The private sector is pulling quality staff from public education largely due to their capacity to pay more.
- The time and expense to complete MDE requirements that extends above and beyond a teacher's duty day.
- There is fierce competition from other districts wanting to hire our experienced teachers.
- Too many mandates and requirements being put on teachers with no extra time to do them. Teaching is turning into more than a 9 month profession but it is not being funded.
- Unfunded mandates
- We are a district with little employment opportunities for spouses of teachers and many look towards larger districts with more.
- We are a high poverty district.
- We are a small, single-section district. Teachers prefer to teach in multi-section schools so that they can specialize.
- We are located in a very rural northern Minnesota community
- We are such a small district, our salary schedule is not as aggressive as our surrounding districts. We may hire good teachers, but they soon leave to the districts who have more competitive salary schedules.
- We can't keep people because of the salary schedule
- We have overcome the barrier of pay. We have decided since we are no longer in SOD that we can hire teachers away from larger districts and pay them for their Masters and years of experience...while that is a hiring issue the same can be said for retaining. As long as we continue to work on increasing our pay for teachers through the negotiating process we CAN retain teachers who don't need to run to Litchfield or Willmar to get more pay.
- We hire a lot of young teachers which affects our retention because of life changes, otherwise we are able to retain the majority of our teachers.
- We pay a competitive salary based upon area schools but teachers don't want to move to a rural community to teach.
- We struggle retaining high-performing teachers because of the pay scale the district is able to offer.



- We've had some special education staff waiting for resolution on the license testing requirement. It would be nice to resolve that as to what test they need to take and pass in order to receive full licensure.
- You have to be able to pay your staff and with no money in the budget, you cannot expect them to stay.

**12. When hiring effective teachers, what important qualifications do you find lacking in teacher applicants? Please tell us those qualifications by typing them in the box below.**

*All responses provided here:*

- -Ability to work in teams -
- -Classroom management skills -Lack of experience -Lack of ability to raise test scores (i.e. effective lesson planning) -Lack of diversity training
- -cultural competence -tenacity to close the achievement gap -deep understanding of reading instruction - teachers of color -
- -International experience -English as a Second Language experience and training - licensed or actual.
- -Lacking in experience/training on how to work with language learners. -Lacking in experience/training on restitution.
- -Many new teachers don't have the content knowledge or belief system to be successful -Most of the training they will need begins when they enter the district -If student teachers are supervised by poor cooperating teachers, they learn poor habits -Most new teachers don't know how to teacher reading - a reading license should be a requirement of all teachers
- -Philosophical agreement with our vision/mission. -Cultural competence -Professionalism
- \*Standards knowledge \*Teacher Professional Growth knowledge \*Marzano Framework The best teachers I've hired come from Gustavus, Concordia and UMMorris and MSU Mankato.
- 1. Proper licensure 2. Content mastery. 3. Teaching strategies 4. Classroom management.
- Assessment techniques 2. Data analysis 3. Using data to drive instruction
- Effective classroom management strategies. 2. Effective methods of lesson design. 3. Best practices in grading. 4. Ability to establish relationships and rapport with students.
- 1. Understanding of PLC's. 2. Understanding of what the job truly entails. 3. Commitment to longevity in the district they are hired.
- 1) managing classroom and student behaviors 2) working with diverse students 3) differentiating instruction 4) professionalism (social media, working with others, adhering to policies etc)
- A high level of knowledge in subject area. A willingness to work longer hours. Technology Skills and the overall maturity level of the candidates.
- A solid understanding of standards-based and/or mastery-based curriculum and instruction is significantly lacking in both new and veteran teachers. In addition, teachers entering the profession lack an understanding of what a high functioning team of teachers needs to do and how to do it.
- Ability to adjust to different settings. Emotional intelligence Work ethic
- Ability to analyze data and use it to make instructional decisions. Classroom management skills and the ability to work with students who are not typical learners. Collaborative skills, flexible thinkers, differentiation, and use of technology to increase student engagement and understanding.
- Ability to build a rapport with at-risk youth. Good work ethic. Willingness to go above and beyond. Altruism-not teaching for the money.
- Ability to infuse technology into instruction and learning. Understanding of boundaries between teachers and students.

- Ability to teach in diverse classroom settings. Ability to receive and act on feedback.
- Able to teach more than one subject! Communication skills for teaching at risk students!
- Adequate licensure Adequate experience Understanding what it means to do special education paperwork correctly and completely.
- All teachers • High quality lesson planning—basic components of lessons (Madeline Hunter type stuff), connection of content to formative/summative assessments, and connection to standards. • Data collection and application to instructional adjustments • Toolbox of high quality instructional strategies (Marzano strategies are from the 90s and I don't even see these as basics in their repertoire)...Now it should be Hattie's research... • Ability to differentiate instruction to multiple skill levels • Proactive classroom and behavior management—data collection and adjustment goes into this as well • Cultural competence Sped Teacher specific o Directing the work of para-educators o Standards-based IEP writing and instruction o Data collection and using the data to inform next steps o Implementing ASD and Behavior type proactive strategies, such as visual schedules, visual communication books, social stories, modifications, accommodations o Effective co-teaching
- Applicable experience working with urban free and reduced students. Teacher education instruction spending little or no time on classroom management principals.
- Appropriate licensure Willingness to locate to Northern Minnesota Inability to pass MTLEs
- Appropriate licensure in some cases (Secondary Sciences, Media Specialist)
- Appropriate licensure.
- Appropriate licensure. Characteristics - intelligence, work ethic, interpersonal skills especially with kids and judgment. The new teachers from our training institutes are much higher quality than they were in previous years but there are fewer of them.
- Awareness of how to differentiate instruction for their students. Ability to change their teaching style to accommodate the needs of the students.
- Behavior Management
- Belief that all students can be successful in school and achieve at high levels Relationship focused Must demonstrate how they would teach to a diverse population of students outlining differentiation techniques they use Understand how learners grow and develop Creates environment that supports individual and collaborative learning Content knowledge-used to solve issues Use of multiple assessments to monitor student growth and progress Uses a variety of strategies to build skills and apply knowledge Ongoing professional development Pursues opportunities for leadership
- Best practice techniques Research based knowledge of content area
- Bilingual, and bi-cultural.
- Building good peer relations Value Professional Learning Communities and Collaboration Importance of relationship Building with Students and Staff
- Class room management skills
- Classical Background
- classroom and positive behavior management skills #1 differentiated instruction working with special needs children lesson planning without a teachers' guide drives them crazy
- classroom behavior management cultural competency awareness of white privilege and impact on teaching/relationship building
- Classroom control for new teachers is a challenge. All teachers struggle with developing curriculum that meets the needs of all standards. Administrative Office Staff struggles with keeping everything documented regarding meeting standards.
- Classroom experience and classroom management expertise.
- Classroom Management Special Education - Due Process paperwork

- classroom management experience with delivering and applying the strategies they learned in college cultural sensitivity understanding of student disabilities and how to respond to the needs of students with disabilities It would be great to have future teachers participate in a semester of internship.
- Classroom Management Lesson or instructional portfolio - so many lessons are created for the first time Intervention strategies Ability and willingness to initiate parent discussions
- classroom management skills
- Classroom management skills
- Classroom Management Skills
- classroom management skills understanding of students with disabilities
- Classroom management skills are lacking. Experience with diverse populations - being culturally competent.
- Classroom management skills, ability to individualize instruction effectively, teaching experience
- Classroom management strategies Culturally responsive Ability to teach in an urban setting
- Classroom management strategies, a good handle on effective instructional strategies, how to create interventions when students don't learn material the first time.
- Classroom management, organization - planning enough material for class period.
- Classroom management. The ability to handle students with serious mental health issues.
- Classroom trainings, understanding of common core and state standards. They had more time in classrooms and less tests. Hands on learning and seeing more examples with different styles of multiple teachers.
- College and Universities are not keeping up with current trends and practices. The band and vocal license requirements are difficult to obtain. And we can't afford a full-time band and choral instructor. 2 applicants for high school English. 0 applicants for band instructor. Para-professionals are extinct. And if the IEP states a 1-1; then, it makes the issue more difficult.
- Commitment to coach and do other things besides just teach. EdMn has been telling teachers not to take on too much during their first years. When I started teaching 20+ years ago, I coached 3 sports, worked dances, officiated, and taught summer school. It was the best thing for my teaching and connection with students and families.
- Common Sense
- Correct licensing for harder to fill positions, possibly in special education, the arts, phy ed. or other specialty type courses/classrooms. Experience in public schools.
- creative thinking
- creativity and problem solving skills
- Cultural Competency. Strong classroom management
- Cultural responsive training.
- Deep understanding of Minnesota Standards
- Depends on the area of licensure. Some areas we just have trouble finding a licensed candidates. Thankfully, there are the avenues of Community Expert and variances to hire teachers in those tough to find areas of licensure. We have found some really good candidates and hired them through the Community Expert and variance process. We need teacher applicants to know how to personalize learning for students. The days of teaching one way to the class are over. Not sure how much time teacher preparation programs are spending on this. Our district does a lot of training in this area.
- Discipline experience Hours involved State Testing information How to deal with parents How to ask for help
- Diversity, Math Licensure
- Do not have licensure in specific areas like: Chemistry, Physics.
- Effective Principles of teaching needs to be more of a focus at university teaching programs.

- Enough personalities that are more dynamic - the less to pick from means the greater chance to find that outstanding person.
- Ethics, open to change, salary expectations
- Experience
- Experience Licensure to teach in more than one subject area
- Experience - teaching rigorous classes. Content knowledge. Ability to work with Special Education accommodations/modifications and knowledge of disabilities (especially ADHD, OHD, and ASD).
- Experience (many who apply are newly licensed)
- Experience and expertise working with inner city children living in poverty.
- Experience dealing with parents. Classroom management confidence.
- Experience in school improvement efforts.
- Experience in the classroom
- experience in urban education classroom management skills deep content knowledge
- Experience is probably the biggest limitation. Teachers with more experience rarely apply for teaching jobs here due to salary limits.
- Experience with Autism spectrum disorders Experience with Mental Health comorbidity
- experience with behavior management, experiential learning curriculum development
- Experience working with Native American students.
- Experience, initiative...commitment.
- Experience, licensure, MTEL completion.
- Experience; quality character; skills in working with others; teamwork/collaboration; simple work ethic
- Experience.
- Experiene
- Extra-Curricular Expertise Work Ethic
- Familiarity with data driven decisions. Classroom management skills
- Finding teachers able to work with students below grade level and those with an understanding of various factors (socioeconomic status, etc.) that can impact teaching and learning. Special Ed teachers that are qualified in compliance paperwork.
- For us it is experience of what a Montessori classroom is and how it can really benefit children and adults.
- Good quality of applicants.
- Grit. Do teachers want to grow as educators and can they work with others. Are they willing to put the time and energy into the investment it takes to be a solid educator.
- Hands on experience.
- high motivation teachers, have passion for teaching.
- How to teach urban learners, knowledge of "data driven instruction" and "backwards planning" using state standards to define what students need to know and be able to do.
- How to write compliant IEPs How to complete compliant special education evaluations How to design and implement effective reading and math interventions for students with disabilities How to effectively communicate with other staff, parents and teachers How to effectively manage very dysregulated students
- Human relation skills
- I continue to be flabbergasted by the lack of practical teaching skill in college graduates. It appears the training programs are still very heavy in theory and light in practical application. For example, recent grads continue to

have little knowledge or experience in the use of formative assessment, standards-based grading, differentiation strategies, etc. They know 'about' these topics, but really don't understand how to employ high quality, research based strategies within a classroom. As a state, I would argue we need to develop many more teacher training paths. These paths would be very heavy on practical application (ie. the art and science of teaching). One path I can see being very effective is having school districts in essence becoming 'lab schools' to allow training paths which would allow teachers to add additional areas to their licenses, or allow persons with bachelor's degrees to gain the necessary training within our schools to become licensed educators.

- I don't find them lacking at all. We have been very happy with the hires we have made.
- I don't have one consistent example of this
- I have been very fortunate to be able to hire quality teachers of all ages. My main concern is the lack of teacher candidates that are available to the rural districts. Another huge concern is the lack of opportunities for teachers that want to expand their licensure while being a full time teacher. I have a k-6/ 5-8 math licensed teacher, who has contacted many universities and the MDE to find a program that would allow this educator to add a 9-12 math licensure and still remain a full time educator. This has almost become an impossibility unless this person chooses to resign and become a full time student again. I think this is unacceptable.
- I haven't found any qualifications lacking, I think being a very rural school district makes it difficult to hire and retain teachers.
- I think our current applicants are as good as they have ever been.
- Instructional technology Ability/willingness to differentiate instruction
- Integrity Work Ethic Flexibility Understanding of the Collaborative Component to effective teaching Capacity to Engage Students
- Interview Skills Willingness to explore obtaining additional Licensure areas
- Interview skills Knowledge of license requirements Master Agreement knowledge
- It appears that not all teacher candidates have received exposure to current educational research. In all honesty, we have not had many recent opportunities to worry about qualifications. We are happy if our candidates have a license--we can train them on the rest.
- It can be somewhat difficult to find teachers with experience, if a teacher is tenured, they generally are hard to get to move to a charter setting. It is also difficult to find teachers with experience in a non-traditional setting.
- It seems when they leave college they are not prepared to take over a classroom.
- Job responsibilities/ hours worked and expectations of job.
- Knowledge and experience with due process. Lack of coach-ability. Lack of student management skills. Lack of supervising paraprofessionals. Some have a lack of technology skills.
- Knowledge of academic standards. Work ethic.
- Knowledge of accommodating special needs in the general ed classroom - specifically autism
- knowledge of due process, not good with technology integration
- knowledge of highly qualified requirements
- Knowledge of Professional Learning Communities Knowledge of Data Analysis Techniques Knowledge of Best Practices in Teaching Pedagogy
- knowledge or technology classroom management skills
- Lack of experience, or skill set- i.e. Reading, Math
- Lack of training in cultural diversity & technology.
- Lacking knowledge in educational standards, differentiated instruction, and high effect size teaching strategies.
- Language
- Licensure
- licensure urban experience

- Licensure / testing issues are a problem We seek teachers who are Positive, Enthusiastic and those who can lead.
- Licensure. If they are licensed, mental health concerns prevail.
- Life experiences with outside factors that affect a school. These would include dealing with parents, discipline issues beyond the scope of school. and staff that work from 8-4 and are never seen again in our school community or just plain in our community.
- Making sure teachers understand the MN state content standards as well as knowing how to find and analyze student performance data.
- Male candidates are scarce and the ones we do see frequently lack communication skills and content knowledge (or the ability to express their knowledge). Communication skills are generally lacking. Expertise outside the classroom such as coaching or advising is very limited and, ultimately, hurts our overall system
- Many applicants do not have the high academic acumen we need. Our school has been fortunate to find bright and enlightened folks, but many who are going in the field are not from the top quartile. I would estimate that we would want to hire about 25% of those who student taught here.
- Many have limited exposure and experience to various technology--Google apps, online learning systems, website management, etc.... Mostly it's poor writing of their cover letter and resume. Many do not research our school and make reference to how they would work well with our system, mission and students.
- Many teaching candidates lack the ability to write well.
- Meeting highly qualified requirements
- Most of the teachers that we hire are first year teachers that have no experience in teaching or they have licenses that are for middle school only, both of our schools are K-12 schools, so it is very hard to place a teacher that holds a license in middle school when we need a 7-12 grade teaching license.
- Mostly experience.
- Motivation, Preparedness
- Motivation, so many of our applicants want to be given a book to teach out of and told what to do, we find it hard to find motivated teachers who think outside of the box and teach creatively to meet the needs of their students. It seems as though it is almost too easy to get your teaching license, we are always amazed at how low the GPAs of our applicants are, surprised that a college would accept them into a program with such poor scores. Testing at the end of the education seems to be tough but it also seems like many students study really hard for those tests to pass but really haven't learned much from the other four years of education. Behavior management seems to lack across the board, teachers come in clueless on how to actually handle behaviors within their classroom, we do a lot of coaching and mentoring in the first few years on how to develop strengths in this area.
- Multi-licenses, experience
- multiple certification
- Multiple License
- Multiple licensure
- Multiple licensure which are very helpful in small districts
- n/a
- Necessary licensure, time management skills.
- none
- None
- None.
- Not enough diverse candidates
- Online Learning Facilitation skills Blended Learning Facilitation skills Ability to effectively communicate in a non-verbal manner - feedback, engagement, etc;

- Organizational skills-- focus on details like punctuality, professionalism, etc Being able to take feedback without being offended
- Overall, we are very pleased with the hires that we make for our District. If there is a concern, these are the typical factor: Passage of all required tests. Work ethic - many do not put in the time to be successful. They think this profession is an 8 am - 4 pm job based on the union master agreement, rather than a salaried career. They are not aware of PLC and collaborative work. They do not necessarily know how to integrate technology into the learning for students.
- Passion
- past experience in the position;
- Practical experience
- preparation qualification
- Preparation and discipline
- Preparation for teaching How their applications are put together and the time they put in as they prepare of interviews is lacking. The pool of candidates is smaller, we were fortunate that the quality was there and our district attracts good candidates.
- Preparation, classroom management/behavior management skills
- Prior experience. Long term employment experience.
- problem solving skills, computer skills
- Professional and life experiences.
- Professional Learning Community Training
- Professionalism understanding of key educational concepts and trends
- Proper licensure. Too often, i cannot even get an applicant.
- Quality Experience
- realistic expectations of the workload practical experience with any new training in reading that has taken place see change in committment to school activities (new teachers don't want to do any) - only do them until they can resign them
- relationship skills with kids communication skills classroom management skills
- Responsibility, Common Sense and Accountability
- See previous comments
- small candidate pool because of remoteness.
- Solid understanding of behavior management strategies and techniques. Understanding of culturally relevant teaching strategies.
- Some applicants are not personable or dependable.
- Sometimes soft skills are not there. Sometimes just not well prepared.
- Special Education Due Process
- Special Education needs that are increasing and classroom teachers do not know enough about strategies, accommodations, working with special education teams and what their responsibilities are to meet the needs of these students. There needs to be more classes and experiences regarding special education in general; especially mental health concerns.
- Specific training in teaching READING.
- Sped staff with solid understanding of their responsibilities. Math teachers willing to work with a diverse array of student abilities and the pay scale. Science teachers with comprehensive licensure- our curriculum offerings are broad and our school and staff are small.

- Strong work ethics Ability to differentiate their teaching strategies to meet all ability levels in the classroom Keeping up on latest technology
- Student management
- Teacher that can collaborate with others. Teacher that is a lifelong learner. Teacher that is committed to the school, students and community.
- Teachers are lacking appropriate licensure in the following areas: special education, vocational, and language arts.
- Teachers new to the profession lack the ability to align the MN state standards to lesson design. More emphasis needs to be placed on this at the college level.
- Teachers with multiple licensures are very difficult to find. Specializations such as school psychologists, speech clinicians and school social workers are difficult to find.
- Teaching experience in the grade level needed.
- Team concept. Understanding that it isn't a 7:30-3:30 job, more is required and you don't get more money to do it right. Engaging students means more than a piece of technology. Connections with students. Someone should require a course that covers Marzano's the Art and Science of Teaching.
- Technology and computer knowledge and training
- technology skills
- Technology Skills
- Technology skills to implement into teaching and teaching using differentiation/individual needs of students as their guide. Lacking projected based learning expectations
- Technology, MN Standards, Classroom Management
- The ability for teachers to form connections with students. They almost seem afraid of the students. Another qualification lacking is a sense of being a critical thinker or an outside the box type thinker.
- The ability to differentiate instruction. Hands down this is it!
- The ability to take their knowledge of content and share it efficiently and effectively with diverse learners.
- The ability to truly understand the background of our students. Such as economic, emotional, and family make-up. It seems our current students come from such varied backgrounds it is hard for new teachers to understand why they can't learn or why they don't care if they learn or not. These are learned skills that come with experience, not sure if teacher prep would be able to adequately provide accurate training in these areas. Learning how to talk with parents about their children is also critical. Some of our new teachers do not stop to think of how valuable these children are to their parents. We need to be sure to always realize we are talking about people's pride and joys.
- The applications that we get have had numerous jobs, the letters of recommendation are reflective of items that draw our attention. It is much safer for the district to hire someone they know is a great teacher on a variance than to hire a fully licensed teacher in an area that has a record of poor teaching! This is a great question because in small schools we are not given a large pool of applicants and have been caught in hiring teachers that are not effective just because they had the "right " license. This is not a good practice and is happening year after year!
- The integration of technology into lessons is not coming from the colleges as new teachers are getting this exposure from student teaching. Understanding mental health and special education of students is very lacking. College classes spend way too much time on "methodology" and not near enough time on the real world of teaching. I really feel that student teaching should be a minimum of one year in length and some of the college classes can go by the wayside.
- The low amounts of applications.
- The main qualification lacking is experience utilizing WIDA standards for LEP students. Most applicants have never used them, even if they have used "can do" standards and objectives in their classrooms.
- The number applicants in the pool. Soft skills, People skills.
- The number of qualified candidates. Candidates with multiple license areas

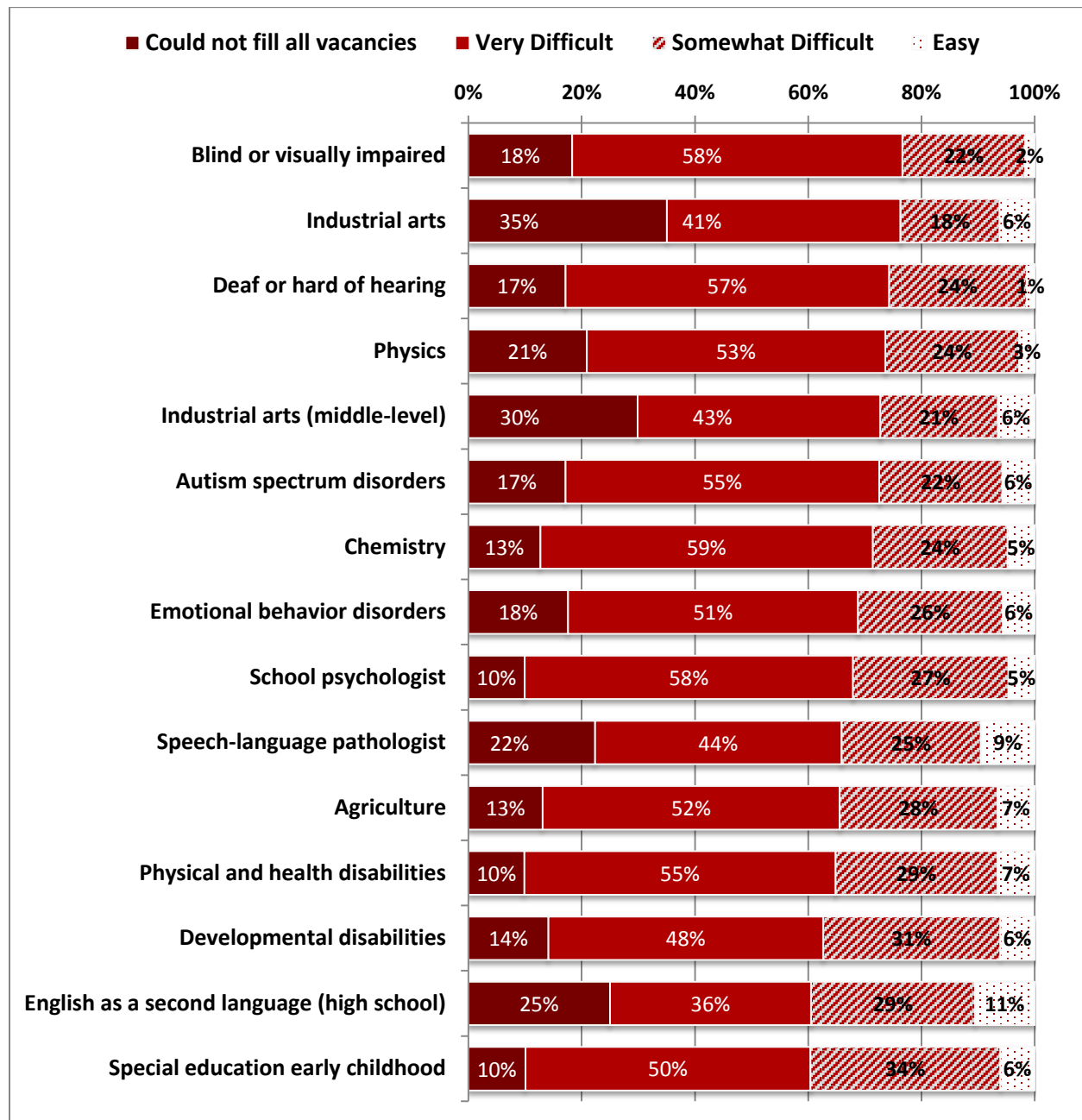


- The sense to initiate, create, and problem-solve without being told what, when, where, and why we do things.
- The use and knowledge of technology.
- There has been a lack of experience in the field, classroom management strategies have been lacking. Also a lack of how to use data to inform instruction. Our application pool has been too shallow.
- They seem to see it as a job and not a career- something you have to give more than 8 hours a day to. Teaching/education is a lifetime commitment that does not work for many people because they can't or don't make it a career.
- To many requirements - to many mandates
- True due process experience, behavior management strategies and techniques and problem solving difficult parent situations are areas that new staff consistently struggle with.
- understanding of and experience in small, rural school settings.
- Understanding of best practice teaching pedagogy. We are starting to see candidates coming out of accelerated teacher programs and they lack the overall pedagogy of teaching.
- Understanding of data driven instruction and how to utilize data for more effective classroom teaching
- Understanding of non-traditional instructional methods Ability to work with and understand the needs of at-risk youth
- Understanding of standards driven instruction, formative assessments, differentiation
- Understanding of the standards; understanding of the research and methodology behind effective instructional practices; integration of technology tools
- Understanding student engagement, formative assessment, current practices with teaching. We're still training teachers to lecture, give notes, and give tests. Teachers are trying to cover too much material and they are not trained in getting middle school and high school students to read and comprehend, Too much dependence on traditional methods of teaching.
- Understanding the big picture of education; finance, communication with stakeholders and school law.
- Use of data to improve achievement; strategies to engage learners; skillful collaboration
- Use of technology.
- Valid experience Lack of understanding of subject matter Classroom management skills Understanding of standards/benchmarks and/or the inability to communicate this information in an interview or put into practice Poor general communication
- We are
- We are a small high school with a unique environment. Teachers have to be comfortable with creating their own curriculum.
- We are hiring staff that are not licensed for the area. Huge amounts of time and effort are put into training to "get them up to speed".
- We have a small school, so it's difficult for us to find teachers who are licensed 7-12, they are either licensed for middle or high school and that isn't what we need.
- We have had impressive applicant pools for our positions.
- willingness to be coached
- Willingness to do whatever it takes for all children and staff to be successful (i.e. volunteer, coach, tutor, etc.).
- Willingness to go the extra mile. Applicants are not as motivated or detail oriented as in the past.
- With new teachers - classroom management.
- work ethic
- Work ethic community involvement
- Work ethic and working independently.

- Work ethic.
- Working together with other teachers/staff.
- Working with others. Commitment to the profession and a willingness to work beyond a set number of hours in the day. Although the special ed teachers are "exposed" to the due process requirements, their actual knowledge of the requirement and what it actually "looks" like is lacking. The understanding that all teachers are responsible for educating students and there are not special ed kids and general ed kids but just kids. Lacking any knowledge of co-teaching and what effective practice looks like.

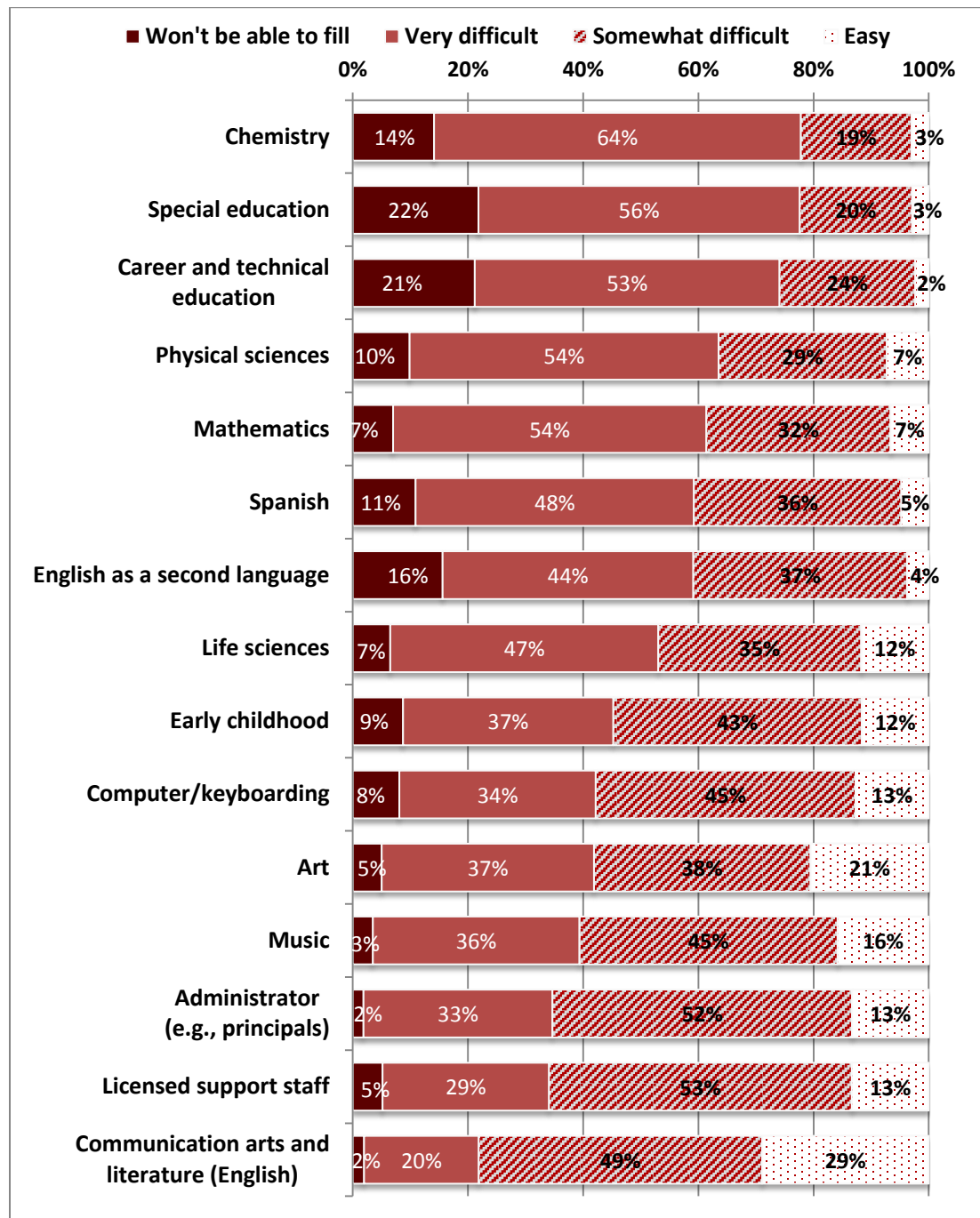
**Thank you for participating. You or someone else in your district can revisit the survey to fill in any missing sections. This can be done from any computer as long as the same log-in information is used.**

**Figure 23. Level of Difficulty in Hiring Teachers During the Last Two Years, Based on Responses of Those Districts or Charter Schools That Had Vacancies, Top 15 Rank Ordered From the Most Difficult to the Least Difficult**



Note. The findings in this figure represent the difficulty in obtaining teachers among districts that had actual vacancies in these fields. Licensure fields in which fewer than 15 percent of the districts reported having vacancies were removed from the analysis.

**Figure 24. Expected Level of Difficulty in Hiring Teachers Within the Next Five Years, Based on Responses of Districts That Expect to Have Vacancies, 15 Top Licensure Fields, Rank Ordered From the Most Difficult to the Least Difficult**



Note. The licensure areas presented here are those in which at least 15 percent of the districts expected openings in the next five years. Three licensure areas were omitted based on the 15 percent criteria: the number of schools expecting to hire in that area and the percentages of those schools. Omitted licensure areas were: (1) American sign language (13 percent of districts/schools expect to hire for vacant positions), (2) Immersion education (13 percent expect to hire for vacant positions), and (3) A Chinese language (12 percent of districts/schools expect to hire for vacant positions). Districts also responded to staff with multiple licenses, for which 216 out of the 296 districts (73 percent) responded that it will be very difficult or that they expect to be unable to find qualified candidates.

## **Appendix C. Methodology for the 2014 Teacher Supply-and-Demand Study Survey for Representatives of Teacher Preparation Institutions**

Survey research experts and teacher and supply and demand experts the American Institutes for Research assisted MDE in designing an online survey to capture information directly from representatives of the 32 teacher preparation institutions.

The online survey was created using Survey Monkey. Representatives from teacher preparation institutions received an e-mail approximately one week after a prenotification e-mail that explained the purposes of the survey. A unique survey link was embedded in the e-mail, thus allowing respondents to save and edit the survey across multiple sittings. Response rates were monitored daily and weekly reminder emails were sent out to representatives of the teacher preparation institutions who had not yet responded.

Surveys were completed by 30 of these institutions, for a response rate of 94 percent. A copy of this survey, along with the percent distributions of responses for all items on the survey and a complete listing of all text answers, is in Appendix D.

## Appendix D. 2014 Teacher Supply-and-Demand Study Survey for Representatives of Teacher Preparation Institutions

The following survey items focus on the extent to which market forces affect your institution's decisions about recruitment, admissions, preparation, and placement of teacher candidates. For each item, indicate the degree to which you agree or disagree. The survey is appended with response percent distributions and all of the survey responses.

### A. Recruitment and Admissions

| Question  | Disagree | Tend to Disagree | Tend to Agree | Agree |
|---|----------|------------------|---------------|-------|
| 1. My institution seeks out potential candidates interested in teaching in state-identified shortage areas.   | 17%      | 24%              | 31%           | 28%   |
| 2. The faculty and non-faculty advisors in my institution counsel potential teacher candidates toward teaching fields in which more teaching positions are available. | 10%      | 10%              | 52%           | 28%   |
| 3. My teacher preparation institution makes a concerted effort to recruit teacher candidates from racial or ethnic minority groups into our programs.                 | 0%       | 17%              | 55%           | 28%   |
| 4. My institution adjusts admissions criteria based on demand for teachers in various licensure fields.   | 72%      | 21%              | 3%            | 3%    |
| 5. Criteria for admission into my teacher preparation institution are less challenging for those seeking to teach in state-identified areas of shortage.              | 86%      | 10%              | 3%            | 0%    |

### B. Student Teaching Placements

| Question   | Disagree | Tend to Disagree | Tend to Agree | Agree |
|--|----------|------------------|---------------|-------|
| 6. My institution is able to place teacher candidates into student teaching positions in nearby schools.                       | 3%       | 10%              | 34%           | 52%   |
| 7. Local schools are not offering student teaching opportunities for candidates in state-identified areas of teacher shortage. | 31%      | 34%              | 31%           | 3%    |
| 8. My institution has difficulty finding student teaching opportunities for candidates in some areas.                          | 10%      | 24%              | 31%           | 34%   |

8a. If you answered “Agree” or “Tend to Agree” to Item 8, for which teaching areas (licensure areas) do you have the most difficulty finding placements?

- Some difficulty in special ed secondary placements in a variety of content areas are periodically difficult
- Middle school mathematics and English
- These questions are not applicable to our advanced teaching prep programs.
- Science
- Early Childhood Education
- Our hardest fields to place candidates is secondary education. It includes Comm. Arts, Social Studies, Math and Music.
- The most challenging fields in which to place student teachers are as follows: English as a Second Language World Languages & Cultures: Spanish Social Studies Health Grades 5-12
- Special Education; TESL; elementary locations for Art Education and K-8 Spanish; some DAPE; we require mentor teachers to be fully licensed, and many in our area are on variances.
- Social Studies, Sciences, Math
- Secondary science, social science, Spanish, and mathematics
- Physics, ESL
- K - 6
- Elementary Education
- French and Spanish
- Second Languages and Cultures (World Language and ESL) Science (Biology, Chemistry) Social Studies English (Comm Arts)
- ELL, Social Studies, Science

### C. Job Placements for Program Completers

| Question  | Disagree | Tend to Disagree | Tend to Agree | Agree |
|---|----------|------------------|---------------|-------|
| 9. Program completers from my institution are able to find positions within Minnesota schools.                    | 3%       | 0%               | 66%           | 31%   |
| 10. Program completers in some teacher licensure areas are experiencing difficulty in finding teaching positions. | 7%       | 41%              | 48%           | 3%    |

10a. If you answered “Agree” or “Tend to Agree” to Item 10, for which licensure areas is there the least demand for teachers?

**All answers are included here.**

- The fields that are historically in over supply include elementary, 5-12 social studies, and K-12 PE. We license in all those areas and have candidates seeking jobs in them. However, even in these areas, more candidates are finding positions, especially in charter schools, alternative secondary settings, and school districts where they already work as paras or subs.
- Physical Education
- These questions are not applicable to our advanced teaching prep programs.
- elementary education
- Social studies

- Elementary, 5-12 social studies and comm arts
- [NAME OF INSTITUTION] sends most candidates into it's nationwide parochial system, but some do successfully enter public school fields in Minnesota as well as other states.
- Communication Arts & Literature Social Studies Elementary Ed
- Social Studies and Physical Education
- Candidates are finding positions but in some fields it tends to take longer and they must be more willing to relocate. This is true in fields such as Social Studies, Elementary Education and Music Education.
- EI Ed
- Elementary Education, Social Studies, Physical Education
- Social Studies
- Social Studies - has 80 - 85 % placement - this is our lowest placement percentage (They are also finding international positions) Early Childhood - There are positions; however, salary level is low and candidates are not interested in the positions
- Social Studies Elementary Education

**11. Are there institutional or public policy-related factors you believe present challenges for your institution's capacity to prepare teachers in teacher shortage areas over the next 10 years? Examples might include a shortage of faculty, testing requirements for licensure, program accountability expectations, the need for scholarships, resource constraints, public support, etc. If yes, please describe.**

All answers are included here.

- issues related to preparing candidates for current teacher shortage fields: STEM fields other than teaching are more lucrative and attractive to the students pursuing these content areas. Students of color who might be interested in pursuing a license often need scholarship funding; scholarship and grant funding are especially hard to find for grad students. Testing requirements are hard for some students to meet, but this issue has been improved with the licensure waivers provided by the state.
- Testing requirements add additional cost and hurdles for some students to complete the program or achieve Licensure. Additionally, the increase in testing demands for k-12 students and compliance with curricular standards as a K-12 teacher is decreasing the allure of becoming a teacher as less innovation and creativity as a teacher is allowed.
- Testing requirements and costs associated with MTLE and edTPA assessments discourage students. Program accountability and faculty qualification expectations are causing us to seek more adjunct positions, which affects program congruence.
- As a unit that offers advanced teaching preparation programs, program accountability expectations in some teacher shortage areas create a burden that is shouldered by programs and candidates in the form of additional courses that are not aligned with other state or national expectations. Specifically, [NAME OF INSTITUTION] opted to no longer offer our approved Special Education, Learning Disabilities program due to additional course and credit requirements that were necessary to maintain approval after rule changes were implemented during 2012. [NAME OF INSTITUTION] felt the additional course requirements were not aligned with national calls for affordability and speed to competency, especially when considering the population served by our institution. [NAME OF INSTITUTION] is committed to developing competent teachers, including those within identified shortage areas. However, it is important that legislators and rule makers understand the cost and return on investment considerations that programs and candidates face when determining which programs to offer and complete.
- N/A
- All of the following present challenges to our program in preparing teachers in teacher shortage areas: testing requirements for licensure; program accountability expectations; need for scholarships; and fewer resources due to budget constraints and added program accountability requirements.



- testing requirements for licensure, particularly for new immigrants and people of color; teaching is less attractive to many students than other professions
- Support for our ELL candidates is lacking
- Some license areas (5-12 math) lack sufficient applicant numbers to justify a secondary math expert into the full time faculty. This has historically forced us to rely on adjunct faculty. Are preparing to advertise for a sec math position.
- No.
- State testing requirements (MTLE), Shortage of faculty and staff to fully support teacher candidates, Increasing state (and possibly federal) accountability that takes away resources to support teacher candidates, Incentive to enter the teaching profession (licensure requirements, working conditions, demands/responsibilities, scholarships available etc: issues maybe real or perceived). Policies/procedures/practices that are "unfriendly" or "insensitive" to non-traditional teacher candidates or adult learners e.g., unfunded full time student teaching. Policies/procedures/practices that are biased (even if unintended) towards certain groups which then impact those groups disproportionately in a negative way. E.g. the whole premise of MTLE basic skills; the limited accommodations to counter the nature of MTLE with time limits and multiple choice items; the financial structure of licensure requirements that burden some candidates more than others etc etc. The list in the examples are right on!
- Yes; it is difficult for teacher candidates, whose first language is not English, to pass the MTLE. Most of these candidates are pursuing a license in ELL, which is a shortage area in Minnesota.
- testing requirements (basic skills) can be a barrier for some teacher candidates availability scheduling wise for potential teacher candidates to complete required general ed. courses prior to entering professional education students' financial constraints limited scholarship support
- We do not offer degrees in most of the shortage areas due to the amount of faculty and extra classes we would need to offer. Our school is smaller so the cost effectiveness of offering these degrees are not worth it at this time.
- There is a strong need for scholarships to draw candidates into the teaching profession. The overall cost of teacher preparation has increased in recent years due to increased testing requirements, overall increases in higher education costs, greater costs for federal and state compliance reporting. The demographics of fewer high school graduates overall means that the competition for candidates with other fields has increased. There need to be realistic incentives to attract new teachers to the field. Institutions are not as able to add innovative programs due to cost constraints faced by higher education and this makes it increasingly difficult to design and implement new programs to meet changing needs in the field.
- 1. If the proposed Federal regulations become law and IHEs have to track the students of program completers, that will be costly and almost impossible to manage. 2. It is difficult to find diversity among faculty. 3. The expenses for students are way too high: edTPA, MTLE, and so forth. It is almost impossible for program completers to obtain a license without debt, and teaching does not pay a high salary to compensate for the debt.
- Faculty shortage 2. Program accountability expectations 3. Resource constraints 4. Lack of pay after graduating 5. Number of standards one needs to pass 6. Number of tests one needs to take in pre-service program 7. Costs of test in pre-service program 8. Difficulty in public schools, achievement gap, violence, racial tension, etc.
- a shortage of faculty - university prefers doctorate, not many available in SPED and TESL in particular testing requirements for licensure - Basic Skills tests have kept many students of color out of admission to the Teacher Education Program or from gaining full licensure; also students who have learning disabilities program accountability expectations - we are a small university, may have issues with PERCA requirements for low volume programs the need for scholarships - more available for loan forgiveness, but not for candidates in their first two years of college; need more scholarships available for high needs areas in particular resource constraints- small public university struggling with resources, don't have funds to market/outreach as much as we'd like to
- Some programmatic constraints such as tuition and length of time may present a barrier for some students.
- Licensure testing requirements for non native English speakers; public support (including university faculty support) for science and math students to pursue teaching

- Identified in the prompt were variables including "a shortage of faculty, testing requirements for licensure, program accountability expectations, the need for scholarships, resource constraints, and public support". The challenge for many families of undergraduates is the high cost of a private liberal arts education and the uncertain employment environment, perception of limited compensation, and the general negative tone regarding schooling and teaching in mass media. Graduate students also face balancing the responsibilities of family, work, and stability with regard to testing requirements for licensure, program accountability expectations, the need for scholarships, resource constraints, and public support.
- The large number of content standards for science makes it challenging for students to obtain both the 5-8 general science license and a 9-12 chemistry, life science, or physics license in 4 years. In regard to the shortage of teachers of color, testing requirements have been a barrier for some of our teacher candidates of color. The large focus on accountability in teacher education takes time and energy away from programs that we would like to focus more on such as recruiting diverse candidates and candidates for shortage areas.
- 1. Teachers of colors -- majority are immigrants, and English is their second language. It is a major challenge for these teacher candidates to pass MTLE Basic skills or earn high enough scores in reading and writing in ACT or SAT. Thus, the retention rate is very low. We also realized that our ESL teacher candidates are able to pass their MTLE content and pedagogy, but, faced major challenges with Basic skills. 2. The need for scholarships available for math and science teachers. 3. Shortage of faculty due to being in a rural community. 4. Getting schools to take teacher candidates for practicum and student teaching experiences.
- One of the most important projects currently underway in the teacher education programs at UMD is the need to diversify the number of teachers prepared coming from under-represented populations. We have focused much of our work on American Indian education, but we need to enhance our ability to support American Indian students, as well as students from under-represented populations. Our primary programs at the moment are combined licensure programs, that are successful in preparing teachers who are highly desired in the field due to the breadth and depth of their preparation (early childhood and SPED, elementary ed. and SPED). However, these programs are also very time consuming and expensive due to multiple licensure testing requirements. In order to diversify our candidate pool we will need to offer additional stand alone programs, and this will require further resources in terms of staff as well as student teaching placement options. In terms of our secondary education options, we need to enhance our appeal for majors in the STEM areas. Mathematics remains stable in our college, but overall science fields have dropped of by over 70% in the past ten years - and this remains a high needs area lacking teachers as well. Our plan is to target and attract women and minorities to the teaching field in STEM. We are hopeful this will be successful in the years to come.
- Shortage of placements in some licensure areas for rural schools like UM Morris. The schools work well with us for the most part, but there are simply fewer placements available. Testing requirements are excessive and expensive. In the final survey given to candidates right before graduation, the most common concern voiced was the expense of the program--specifically testing expenses. Public perception of teacher preparation is negative, and facts and data do not seem to change negative perceptions.
- A. Testing requirements are barriers for candidates who are second language learners and/or ethnically diverse students (see MTLE Taskforce documentation), B. Small programs (for shortage areas) are more expensive to run and often must be subsidized by the teacher education institution that are already managing lower enrollments overall and legislative cutbacks, C. Scholarships are needed to recruit diverse candidates (e.g., minority, income-based, second language), and D. The MN Board of Teaching requires a minimum of one year to complete the approval process. The process is intensive and most institutions do not have the resources for developing (in the new EPPAS system) and implementing proposals once it is approved.
- It is more difficult to recruit candidates into teacher shortage areas. With fewer students in those areas, there are resource constraints on the university and a need for scholarships for students.
- Some high demand areas; for example the sciences, have low enrollment because of low interest; therefore, it is difficult to keep these running at full capacity.

All answers are included here.

- issues related to preparing candidates for current teacher shortage fields: STEM fields other than teaching are more lucrative and attractive to the students pursuing these content areas. Students of color who might be interested in pursuing a license often need scholarship funding; scholarship and grant funding are especially hard to find for grad students. Testing requirements are hard for some students to meet, but this issue has been improved with the licensure waivers provided by the state.

- Testing requirements add additional cost and hurdles for some students to complete the program or achieve Licensure. Additionally, the increase in testing demands for k-12 students and compliance with curricular standards as a K-12 teacher is decreasing the allure of becoming a teacher as less innovation and creativity as a teacher is allowed.
- Testing requirements and costs associated with MTLE and edTPA assessments discourage students. Program accountability and faculty qualification expectations are causing us to seek more adjunct positions, which affects program congruence.
- As a unit that offers advanced teaching preparation programs, program accountability expectations in some teacher shortage areas create a burden that is shouldered by programs and candidates in the form of additional courses that are not aligned with other state or national expectations. Specifically, Capella opted to no longer offer our approved Special Education, Learning Disabilities program due to additional course and credit requirements that were necessary to maintain approval after rule changes were implemented during 2012. Capella felt the additional course requirements were not aligned with national calls for affordability and speed to competency, especially when considering the population served by our institution. Capella is committed to developing competent teachers, including those within identified shortage areas. However, it is important that legislators and rule makers understand the cost and return on investment considerations that programs and candidates face when determining which programs to offer and complete.
- N/A
- All of the following present challenges to our program in preparing teachers in teacher shortage areas: testing requirements for licensure; program accountability expectations; need for scholarships; and fewer resources due to budget constraints and added program accountability requirements.
- testing requirements for licensure, particularly for new immigrants and people of color; teaching is less attractive to many students than other professions
- Support for our ELL candidates is lacking
- Some license areas (5-12 math) lack sufficient applicant numbers to justify a secondary math expert into the full time faculty. This has historically forced us to rely on adjunct faculty. Are preparing to advertise for a sec math position.
- No.
- State testing requirements (MTLE), Shortage of faculty and staff to fully support teacher candidates, Increasing state (and possibly federal) accountability that takes away resources to support teacher candidates, Incentive to enter the teaching profession (licensure requirements, working conditions, demands/responsibilities, scholarships available etc: issues maybe real or perceived). Policies/procedures/practices that are "unfriendly" or "insensitive" to non-traditional teacher candidates or adult learners e.g., unfunded full time student teaching. Policies/procedures/practices that are biased (even if unintended) towards certain groups which then impact those groups disproportionately in a negative way. E.g. the whole premise of MTLE basic skills; the limited accommodations to counter the nature of MTLE with time limits and multiple choice items; the financial structure of licensure requirements that burden some candidates more than others etc etc. The list in the examples are right on!
- Yes; it is difficult for teacher candidates, whose first language is not English, to pass the MTLE. Most of these candidates are pursuing a license in ELL, which is a shortage area in Minnesota.
- testing requirements (basic skills) can be a barrier for some teacher candidates availability scheduling wise for potential teacher candidates to complete required general ed. courses prior to entering professional education students' financial constraints limited scholarship support
- We do not offer degrees in most of the shortage areas due to the amount of faculty and extra classes we would need to offer. Our school is smaller so the cost effectiveness of offering these degrees are not worth it at this time.
- There is a strong need for scholarships to draw candidates into the teaching profession. The overall cost of teacher preparation has increased in recent years due to increased testing requirements, overall increases in higher education costs, greater costs for federal and state compliance reporting. The demographics of fewer high school graduates overall means that the competition for candidates with other fields has increased. There need to be realistic incentives to attract new teachers to the field. Institutions are not as able to add innovative programs due

to cost constraints faced by higher education and this makes it increasingly difficult to design and implement new programs to meet changing needs in the field.

- 1. If the proposed Federal regulations become law and IHEs have to track the students of program completers, that will be costly and almost impossible to manage. 2. It is difficult to find diversity among faculty. 3. The expenses for students are way too high: edTPA, MTLE, and so forth. It is almost impossible for program completers to obtain a license without debt, and teaching does not pay a high salary to compensate for the debt.
- Faculty shortage 2. Program accountability expectations 3. Resource constraints 4. Lack of pay after graduating 5. Number of standards one needs to pass 6. Number of tests one needs to take in pre-service program 7. Costs of test in pre-service program 8. Difficulty in public schools, achievement gap, violence, racial tension, etc.
- a shortage of faculty - university prefers doctorate, not many available in SPED and TESL in particular testing requirements for licensure - Basic Skills tests have kept many students of color out of admission to the Teacher Education Program or from gaining full licensure; also students who have learning disabilities program accountability expectations - we are a small university, may have issues with PERCA requirements for low volume programs the need for scholarships - more available for loan forgiveness, but not for candidates in their first two years of college; need more scholarships available for high needs areas in particular resource constraints- small public university struggling with resources, don't have funds to market/outreach as much as we'd like to
- Some programmatic constraints such as tuition and length of time may present a barrier for some students.
- Licensure testing requirements for non native English speakers; public support (including university faculty support) for science and math students to pursue teaching
- Identified in the prompt were variables including "a shortage of faculty, testing requirements for licensure, program accountability expectations, the need for scholarships, resource constraints, and public support". The challenge for many families of undergraduates is the high cost of a private liberal arts education and the uncertain employment environment, perception of limited compensation, and the general negative tone regarding schooling and teaching in mass media. Graduate students also face balancing the responsibilities of family, work, and stability with regard to testing requirements for licensure, program accountability expectations, the need for scholarships, resource constraints, and public support.
- The large number of content standards for science makes it challenging for students to obtain both the 5-8 general science license and a 9-12 chemistry, life science, or physics license in 4 years. In regard to the shortage of teachers of color, testing requirements have been a barrier for some of our teacher candidates of color. The large focus on accountability in teacher education takes time and energy away from programs that we would like to focus more on such as recruiting diverse candidates and candidates for shortage areas.
- 1. Teachers of colors -- majority are immigrants, and English is their second language. It is a major challenge for these teacher candidates to pass MTLE Basic skills or earn high enough scores in reading and writing in ACT or SAT. Thus, the retention rate is very low. We also realized that our ESL teacher candidates are able to pass their MTLE content and pedagogy, but, faced major challenges with Basic skills. 2. The need for scholarships available for math and science teachers. 3. Shortage of faculty due to being in a rural community. 4. Getting schools to take teacher candidates for practicum and student teaching experiences.
- One of the most important projects currently underway in the teacher education programs at UMD is the need to diversify the number of teachers prepared coming from under-represented populations. We have focused much of our work on American Indian education, but we need to enhance our ability to support American Indian students, as well as students from under-represented populations. Our primary programs at the moment are combined licensure programs, that are successful in preparing teachers who are highly desired in the field due to the breadth and depth of their preparation (early childhood and SPED, elementary ed. and SPED). However, these programs are also very time consuming and expensive due to multiple licensure testing requirements. In order to diversify our candidate pool we will need to offer additional stand alone programs, and this will require further resources in terms of staff as well as student teaching placement options. In terms of our secondary education options, we need to enhance our appeal for majors in the STEM areas. Mathematics remains stable in our college, but overall science fields have dropped of by over 70% in the past ten years - and this remains a high needs area lacking teachers as well. Our plan is to target and attract women and minorities to the teaching field in STEM. We are hopeful this will be successful in the years to come.
- Shortage of placements in some licensure areas for rural schools like UM Morris. The schools work well with us for the most part, but there are simply fewer placements available. Testing requirements are excessive and

expensive. In the final survey given to candidates right before graduation, the most common concern voiced was the expense of the program--specifically testing expenses. Public perception of teacher preparation is negative, and facts and data do not seem to change negative perceptions.

- A. Testing requirements are barriers for candidates who are second language learners and/or ethnically diverse students (see MTLE Taskforce documentation), B. Small programs (for shortage areas) are more expensive to run and often must be subsidized by the teacher education institution that are already managing lower enrollments overall and legislative cutbacks, C. Scholarships are needed to recruit diverse candidates (e.g., minority, income-based, second language), and D. The MN Board of Teaching requires a minimum of one year to complete the approval process. The process is intensive and most institutions do not have the resources for developing (in the new EPPAS system) and implementing proposals once it is approved.
- It is more difficult to recruit candidates into teacher shortage areas. With fewer students in those areas, there are resource constraints on the university and a need for scholarships for students.
- Some high demand areas; for example the sciences, have low enrollment because of low interest; therefore, it is difficult to keep these running at full capacity.

**11. Please use the space below to offer comments on this survey or insights on teacher supply and demand in Minnesota, including suggestions for policies or programs that might improve recruiting, admission and preparation of teacher candidates in shortage areas.**

***All answers are included here.***

- People are out there who would like to teach in STEM, in special ed, in ESL. They are even willing to give the time to completing licensure programs but coming up with the money to pay for them is often difficult, especially at the grad level. Some form of expanded loan forgiveness program that is easily available would help. Some people can manage funding the licensure program as long as they can work but when they have to not have a salary at the time of student teaching, they are unable to complete the license. Districts could help by paying district paras in teacher ed programs a salary while they are student teaching. Student teaching grant programs designed to fund this portion of the license would be helpful to people who aren't already working within districts.
- Reducing the content standards might actually increase rigor and creativity of curriculum taught and delivered by teachers. Additionally, more creative and innovative individuals might be drawn to the profession of teaching if provided a working situation allowing for more autonomy in curriculum delivery and design.
- As MN BOT and MDE increase the reporting requirements, the investment of time and money for all institutions and programs can become burdensome. Again, accountability is essential, but any accountability criteria should consider the ROI for all stakeholders. For example, there is an opportunity to de-couple the assessment of teacher competency (especially for advanced preparatory programs) from expected course, credit and seat time requirements and expectations. This would enable programs to recruit and develop teachers more easily for shortage areas by driving down program costs and decreasing the needed monetary investment from prospective candidates.
- We have a very small program (3-5 student teachers per academic year) and we do not recruit. All of our candidates self identify and apply to our program. We also only offer secondary licenses (with the exception of Art and languages K-12). Many of the questions in this survey do not apply to our program.
- There is a great need for scholarships in order to recruit and support future teachers from diverse backgrounds. The cost of licensure tests and the edTPA have only added to the financial challenges faced by many students. Internships to support candidates in their first year after completing program requirements would be very beneficial and provide the mentoring needed as they begin their career.
- PR program to improve public perception of teachers; higher starting salary for new teachers
- Schools need to be more open to placing student teachers in all areas
- Targeted recruiting to high school students that may have an interest in going into education in shortage areas. Greater incentive for teacher candidates in shortage areas (loan forgiveness programs?)

- There got to be increased capacity for the MN Board of Teaching staff to respond in a more timely manner to PERCAs and RIPAs, especially RIPAs in shortage areas. Increased capacity must also be about better support and not just about policing and compliance, and more timely leadership on issues such as revisiting and upgrading SEPs, impact of proposed federal regulations etc. There have been inequitable access of some private IHEs to financial appropriations at the legislative level. This got to change so that public tax dollars be focused on the needs of the teacher candidates and on the needs of the state to "grow our own" diverse teaching workforce especially in shortage areas. For some low-enrolled but shortage areas (e.g. some CTE fields), we must be proactive in some sort of state strategy to address the challenge. There needs to be a state "campaign" about the important role of a teacher in today's global world especially in shortage areas. We need public support to understand the profession better (so as to update old narratives about it), and to understand what it takes to prepare effective teachers. I see that DOE launched a campaign we could connect with perhaps? [www.teach.org](http://www.teach.org) MTLE basics - what will it take for legislators to see that it is not working for the very communities we say we need more teachers? There's more re: MTLE like MTLE pedagogy becoming unnecessary, MTLE new vendor opportunity, MTLE accommodation issues, membership/cost structure, support materials, rollout etc. .... Re: survey. It would be great to include a link to the official "shortage areas" list on the MDE website when it was first mentioned in the survey. Otherwise, THANK YOU.
- I would like to see some kind of alternative to the MTLE for teacher candidates whose first language is not English.
- K-12 partner concerns expressed about limited or no availability with certain licensure programs (i.e., industrial tech, FACs, ELL) challenges associated with recruiting/retaining diverse teacher candidates. Suggest state level promotional campaign to pursue teaching in high need areas. Continue reviewing/determining value/purpose of MTLE and its association with effective teacher prep.
- I think for us to recruit students in these areas we need to focus on it starting in high school and show them the possibilities of going into this field. Students who are taking AP or do well in these classes should be targeted to give them options and possibly scholarships.
- Increase scholarship or loan forgiveness options for candidates pursuing teacher education.
- The perception that I feel dominates the landscape is that we are asking our candidates to do more and more each year with little to show for it. Currently, our institution tracks around 1,400 data points per student. The candidates "demonstrates" his or her ability to master these components. They are tested at every turn. I often wonder if we are producing better teachers than we used to produce. With all these data, is the profession getting better? I think we have bought into the data craze with little to show for it. I question if the data supports the improvement of the profession. Does the cost to produce the teacher of today meet the demands of the day. Intermediation with alternative programs has questioned our methods. The public is tired of paying a bill with little to show for it. I believe that we have the data we need to streamline our preparation. We need to hone in on the methods that really work. We need to disregard the practices that are redundant. I do not believe that by tracking over 1,400 data points that anyone person can master this before age 22. I think we can do better by reducing our overhead. The old saying "more with less" comes to mind.
- In Greater Minnesota, we are seeing large shortages in almost all areas of teaching, even in Early Childhood Ed and Elementary Ed. Extreme shortages exist in all areas of SPED and DAPE, fairly high in ESL, math, chemistry. Comm. Arts becoming a shortage area. Suggestions - SD has the Opportunity scholarship for students who maintain a B GPA to attend a state public school, \$5,000/year. This could help to attract well qualified candidates into teaching by providing funding to do so - especially if it was targeted to students of color and/or those seeking licensure in high needs area. Scholarship should be renewable for 4 years for those maintaining that GPA. Preparation - the opportunity for a year-long student teaching experience would be desired, but would need to be a paid internship for candidates, as most are struggling with not having a job during one semester of student teaching; could not support themselves if student teaching was extended to a full academic year without financial support to cover their living expenses.
- Finding exceptional K-12 mentor teachers can be a barrier especially when some districts assign the K-12 schools to the respective institution.
- Professional development, new faculty mentoring, and induction programs to support new teachers, particularly in shortage areas would help in both recruitment and retention of quality educators.
- Low teacher pay is a barrier to recruiting teachers in areas such as math and science.
- 1. BOT to offer teacher license for teacher candidates who only want to teach and earn a degree in Early Childhood Education (Birth to 5 years of age). These highly qualified ECE teachers are not able to teach in ECFE, Kindergarten Readiness, or preschool in a public school settings (higher salary), because public

schools require a teacher license to teach in the public school system. I would like BOT to consider offering teacher license for Birth to 5 years of age. Currently, the closest teacher license would be Birth to 3rd grade (Students that opt for 0 - 5 years, typically do not want to waste their time taking substantial courses and student teaching for K - 3rd grade.

- In recruiting and supporting diverse teacher candidates, the basic skills tests, as well as the battery of other testing required for licensure must be rethought. I have worked on the edTPA for many years across multiple states. I would advocate that this highly innovative and pedagogically important measure be adopted as a requirement for licensure. With this in place, I would argue that additional content area exams would not be necessary if the candidate has fulfilled an undergraduate degree in the area of licensure. Likewise, students completing an undergraduate degree should not need to pass MTLE basic skills tests. All such standardized examinations become exclusionary measures, frustrating the potential of thousands of teacher candidates including those we would most like to recruit to the field. In particular, non-native english speakers, and students who come from communities speaking a non-standard version of english, tend to struggle with content-based assessments. Low-income students in general are less likely to pursue a teaching career when faced with exam fee barriers (and lengthy licensure programs). I am an advocate for post-bac options for teacher preparation, as well as allowing university degree programs to be counted towards content knowledge rather than measuring through standardized examination.
- What suggestions or initiatives could persuade University faculty in content areas (eg biology professors) to encourage talented students to go into teaching--and through their own university's program?
- Small programs (for shortage areas) are more expensive to run and often must be subsidized by the teacher education institution that are already managing lower enrollments overall and legislative cutbacks, B. Scholarships are needed to recruit diverse candidates (e.g., minority, income-based, second language), C. The MN Board of Teaching requires a minimum of one year to complete the approval process. The process is intensive and most institutions do not have the resources for developing (in the new EPPAS system) and implementing proposals once it is approved, D. State and federal regulations and reporting requirements continue to take more and more time for college-unit staff including faculty, which impacts students, program innovation and recruiting, E. Better support for the development on non-conventional and alternative programs (note: there is a cost for the development of these programs that is prohibitive due to tight institutional budgets, F. Alternative and non-conventional program documentation need to be developed in collaboration (and with feedback prior to the official preview process) with MNBOT staff to help institutions clearly communicate their program design and how standards are met. Earlier feedback could contribute to a more timely review and approval of the program proposal.
- I suggest using not applicable for some questions. Provide targeted funds for recruitment, training and placement of a more diverse teacher work force. TC2 with Bush is not the answer. As a Bush participant, we see that more work needs to be done in this area.
- Continued state emphasis on the issue and outreach for students is important along with financial incentives. These incentives could also include those to universities who prepare these individuals since program costs for lower enrollments can be an issue.
- I am not sure when the original email about this survey was submitted to us; however, I received the reminder email on 12-30-14; this is during the winter break time for institutions. Many of these questions should be discussed throughout the academic year to provide solid feedback with time to thoroughly research the answers. Also, the question about changing admission criteria for high demand areas is vague.

**Thank you for providing input to the Minnesota Department of Education!**

## Appendix E. Birth Patterns Involved in Making GPR-Based Enrollment Forecasts

Long-range forecasts using GPRs require analysts to examine population patterns. Specific trends that need to be examined include the following:

- The numbers of births in the last five years,
- The birth rate—sometimes called the fertility rate—representing the numbers of births occurring among women of childbearing age
- The numbers of women ages 15–44 (considered childbearing years).
- The numbers of females ages 10–39 who will be of childbearing age in five years.
- The numbers of females ages 5–34 who will be of childbearing age in 10 years.

The GPR model was run 15 times: once for the entire state of Minnesota, once for projecting white students only, and once for each of the 13 economic development regions. No forecast models were run focusing on students and women of color in Minnesota because the numbers of those populations were insufficient for producing a reliable forecast model.

The following sections discuss the types of population data needed for GPR-based forecast models, sources for the population data, the calculations that go into making forecasts, and current population trends related to these forecasts.

### Numbers of Births

Data on the numbers of births are used to make three-year projections, and these data can be obtained from public access databases on the website maintained by MCHS (Minnesota Department of Health).<sup>20</sup> The numbers of births, in general and by the race of the mother, are available for consecutive years between 2002 and 2012. Data for years not available on MCHS's website were obtained from the *Minnesota Health Statistics Annual Summaries* (which can be found on another page of MCHS's website. Data for the years before 1996 were obtained through an inquiry to MCHS's helpdesk.

The annual birth trends for Minnesota are reflected in Figure 25. The figure shows a 16 percent increase in births between 1995 and 2007, with the statewide annual numbers of births peaking at 73,674. For the following three years, the numbers of births decreased again to 68,407 (a 7.7 percent decrease). The numbers of births have remained relatively constant since 2012.

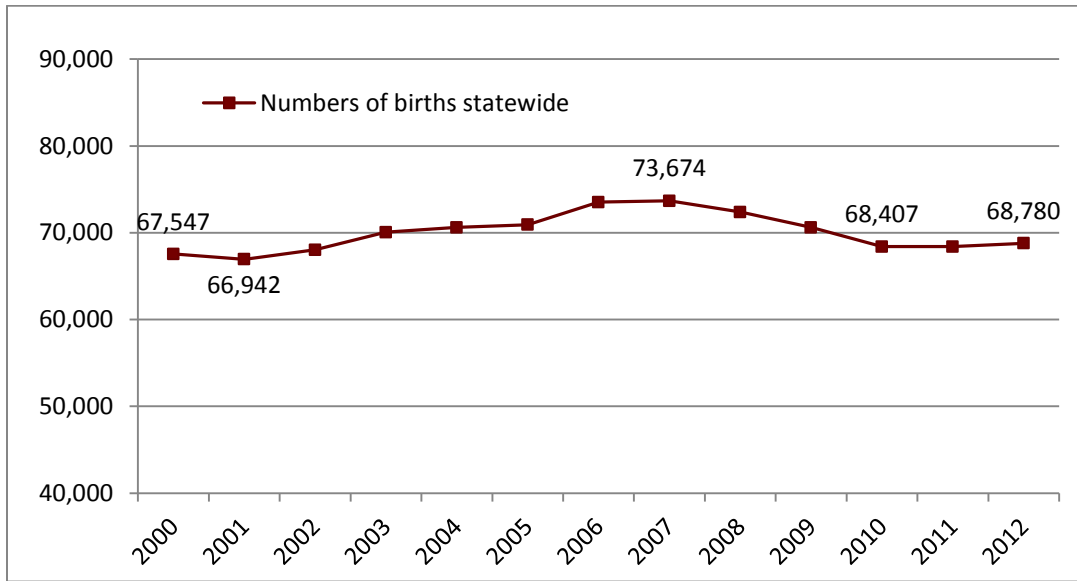
The numbers of births are necessary for determining the likely number of kindergarten students five years in the future. Forecasts of kindergarten students are derived by multiplying the numbers of children born in a given year by the *birth–K* progression ratio. Forecasts of kindergarten cohorts four or more years in the future become more complicated as a result of time lags in the availability of official data on live births (or natality) within the state. Therefore, forecasters need to estimate the numbers of births likely to occur during a calendar year.

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<sup>20</sup> Tables containing birth data for the years 1996, 1998, 2000, and 2002–2010 by county can be found on the website of the Minnesota Department of Health at <http://www.health.state.mn.us/divs/chs/countytables/index.htm>. For the missing years, 1997, 1999, and 2001, county level birth data came from the *Minnesota Health Statistics Annual Summary*, which can be found at <http://www.health.state.mn.us/divs/chs/annsum/index.htm>.



**Figure 25. The Numbers of Children Born in Minnesota: 2000-2010**



Note. Prepared from data from MCHS.

## Numbers of Women Between 15 and 44 Years of Age

The number of likely births in a given year is predicted based on two other estimates:

- The numbers of female Minnesotans between the ages of 15 and 44 (considered the reproductive years) during the birth year (i.e., five years prior to the year of the kindergarten cohort in the forecast year).
- The fertility rate (the numbers of births for each 1,000 women between 15 and 44 years of age; explained in the next section).

Population estimates were obtained from data files available on the U.S. Census Bureau's website.<sup>21</sup> The tables and the interactive tools on the Census Bureau's website show the annual estimates of the female population by racial group, ethnicity, county and state, and age group (and by all of these demographic factors combined). Separate population estimates are provided for each of 18 five-year age groups. By looking at the numbers of females in the 5–9, 10–14, 15–19, 20–24, 25–29, 30–34, 35–39 groupings, one can get an initial figure of the numbers of females who will be 15–44 in the year for which the birth forecast is being made.

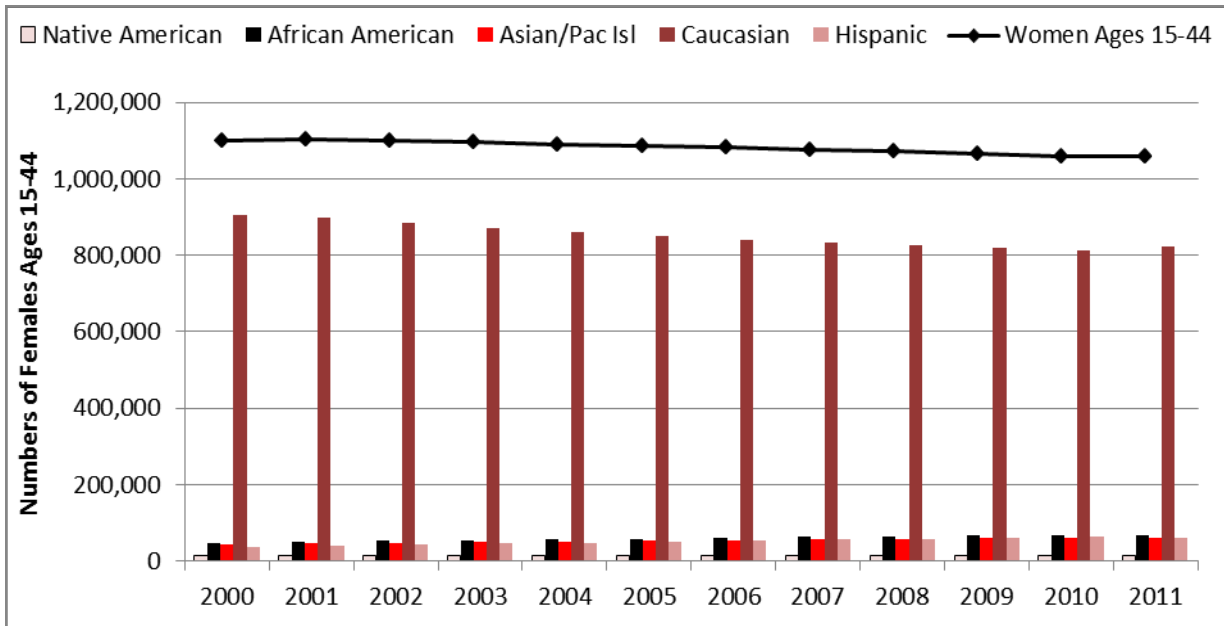
The numbers of Minnesota women ages 15–44 between the years 2000 and 2011 are portrayed in Figure 26. The figure shows that the total numbers of women within this age group ranged from 1,044,201 in 2011 to 1,083,916 in 2000.

The numbers of Caucasian females within this age range have decreased by 12.4 percent between 2000 and 2011. Meanwhile, the numbers of females of racial and ethnic groups have

<sup>21</sup> Population estimates by age, sex, race and year for the 1990s and 2000s can be accessed from the following website: <http://www.census.gov/popest/data/historical/index.html>. The state and county links within these pages were used for state and county estimates.

increased 9 percent, 196 percent, 221 percent, and 399 percent for Native American, African-American, Asian and Pacific Islanders, and Hispanic populations, respectively.<sup>22</sup>

**Figure 26. The Numbers of Minnesota Females Ages 15–44**



Note. Prepared from intercensal population estimates from the U.S. Census Bureau.

The process for forecasting the numbers of females in this 15–44 age range during the birth year also is complicated by time lags in the publication of population estimates. Estimation is therefore based on the number of females ages 10–39 five years prior to the birth year (or 10 years prior to year in which these children will enter kindergarten). Ten-year forecasts also integrate the numbers of 5–35-year-olds 10 years prior to the birth year. The average percent errors and mean absolute percent errors were considered to be in the acceptable range (see Table 33).

<sup>22</sup> To be consistent with earlier reports on teacher supply and demand in Minnesota, race/ethnicity is considered to be the same construct. That is, an individual can be placed into only one category (along with the category of other/multiple racial groups). The U.S. Census Bureau, MCHS, and the Minnesota State Demographic Center currently consider race and ethnicity as two separate constructs, allowing individuals to be given a value for both. Most Hispanics in Minnesota group align themselves with the Caucasian racial group.

**Table 33. Discrepancies in Five-Year Predictions of Females Ages 15–44.**

| a. Year forecast made (Year $x$ ) | b. Number of 10–39-year-old females in Year $x$ | c. Year for which forecast is made (Year $x + 5$ ) | d. Number of 15-44 year old females during Year $x + 5$ | e. Forecast versus Actual (column d – column b as a percentage) |
|-----------------------------------|---|--|---|---|
| 1990                              | 1,027,326                                       | 1995   | 1,047,560   | -1.93%  |
| 1991                              | 1,030,426                                       | 1996   | 1,052,888   | -2.13%  |
| 1992                              | 1,032,606                                       | 1997   | 1,054,372   | -2.06%  |
| 1993                              | 1,037,968                                       | 1998   | 1,053,665   | -1.49%  |
| 1994                              | 1,040,287                                       | 1999   | 1,054,543   | -1.35%  |
| 1995                              | 1,042,070                                       | 2000   | 1,083,916   | -3.86%  |
| 1996                              | 1,043,654                                       | 2001   | 1,086,587   | -3.95%  |
| 1997                              | 1,042,215                                       | 2002   | 1,084,036   | -3.86%  |
| 1998                              | 1,039,416                                       | 2003   | 1,079,356   | -3.70%  |
| 1999                              | 1,039,259                                       | 2004   | 1,074,722   | -3.30%  |
| 2000                              | 1,062,830                                       | 2005   | 1,069,949   | -0.67%  |
| 2001                              | 1,061,581                                       | 2006   | 1,065,989   | -0.41%  |
| 2002                              | 1,058,021                                       | 2007   | 1,062,063   | -0.38%  |
| 2003                              | 1,052,468                                       | 2008   | 1,056,396   | -0.37%  |
| 2004                              | 1,047,619                                       | 2009   | 1,050,519   | -0.28%  |
| 2005                              | 1,044,006                                       | 2010   | 1,045,685   | -0.16%  |
|                                   |   |  | Average Percent Error                                   | -1.87%  |
|                                   |   |  | (Mean Absolute Percent Error)                           | 1.87%   |

*Note.* Adapted from intercensal estimates from a website maintained by the U.S. Census Bureau, Population Division.

Calculations are by MDE.

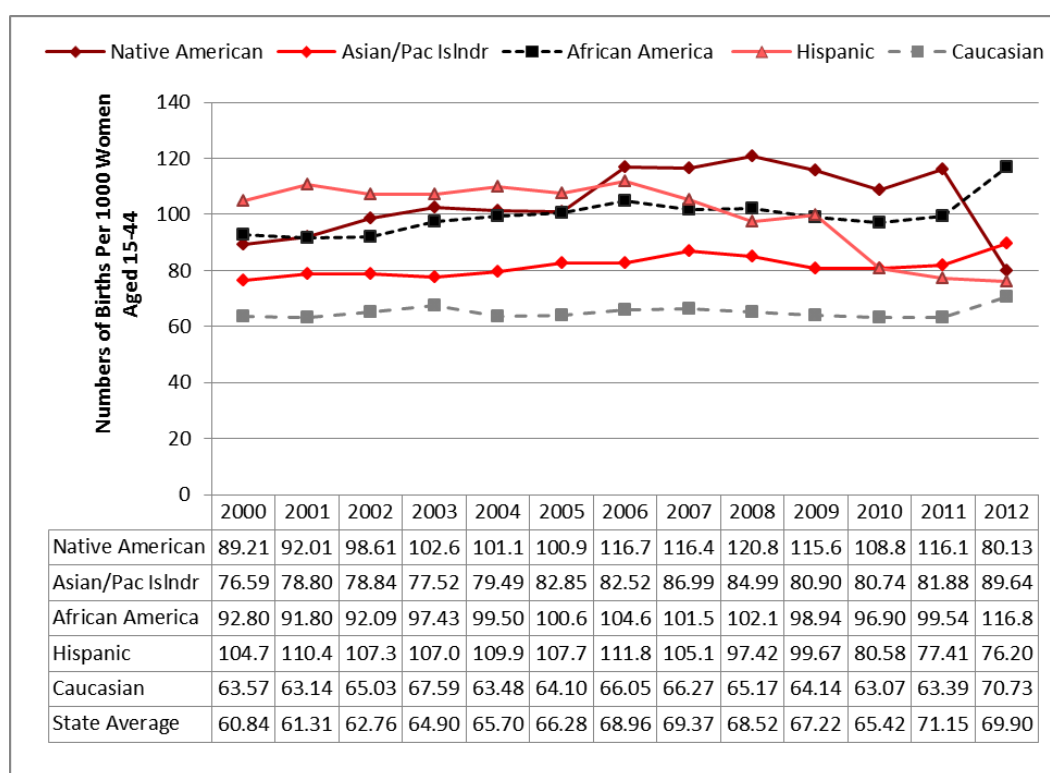
## Fertility Rates

Fertility rate is defined as the number of births that occur for every 1,000 females between the ages of 15 and 44.<sup>23</sup> This statistic then represents a combination of the two statistics previously described—the numbers of births and the numbers of women between 15 and 44 years old.

The sources for birth data and data on the populations of women between 15 and 44 years old have already been presented. Because of slight changes in the definitions of fertility rate from year to year, the forecasts presented in this report are based on analysts' own calculations of fertility rate, not the figures presented annually by MCHS and the National Center for Health Statistics.

Fertility rates were calculated for Minnesota as a whole, for the various race/ethnic groups, and for the 87 Minnesota counties (which were then aggregated for each economic development region). The statewide fertility rates are presented in Figure 27. For most groups, fertility rates started declining at or before 2008. For African American women, Asian/Pacific Islander women, and Caucasian women, fertility rates appear to have increased between 2011 and 2012.

**Figure 27. Fertility Rates in Minnesota from 2000 to 2012**



Note. Prepared from population statistics from the U.S. Census Bureau's intercensal estimates. The numbers of births are found on the MCHS website.

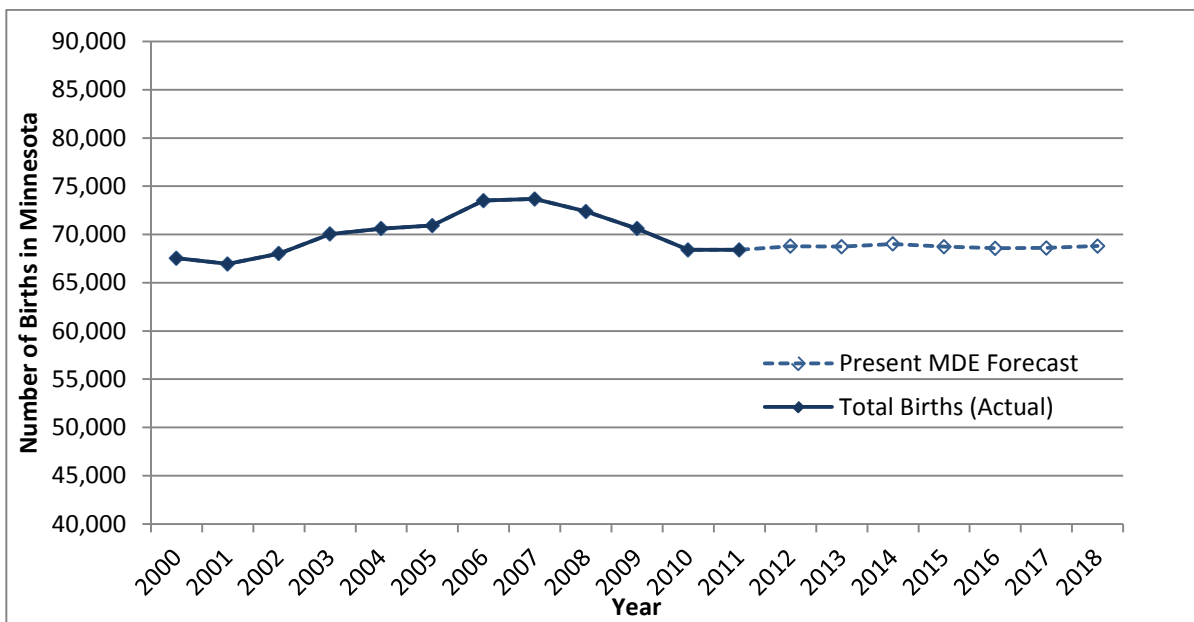
<sup>23</sup> This definition is consistent with definitions currently used by MCHS, the National Center for Health Statistics (part of the Centers for Disease Control and Prevention), and the U.S. Census Bureau. Fertility rate is distinct from two similar statistics that are often reported with natality data: pregnancy rate (the numbers of pregnancies occurring per 1,000 women ages 15–44) and birth rate (the numbers of births per 1,000 population). However, the definition of fertility rate used here differs from the definition of fertility rate often used in research: the number of children that a woman is expected to have over the course of her lifetime. This latter definition has little relevance to the process of forecasting public school enrollments.

Consistent with fertility rates at the national level, Minnesota’s fertility rates show higher numbers of births among racial and ethnic minority groups. While the numbers of women of color between the ages of 15 and 44 may be levelling off, the higher fertility rate may still lead to the continued increase in numbers of racial and ethnic minority children.

## Summary

The process of making enrollment forecasts requires making additional estimates, including: (1) the numbers of births in recent years and (2) the numbers of women ages 15–44 for the birth year (or an estimate of the size of that group of females). Analysts can use the most recent birth rates and multiply those rates by the estimated numbers of women between 15 and 44 for a given birth year. These estimates of the numbers of births for a given year then become part of the GPR calculations, given that these children will become kindergarteners in five years. Using the just-described process for determining the future numbers of births, it can be expected that annual numbers of births statewide will remain near current levels (averaging 68,700 per year) through 2018.

**Figure 28. The Projected Numbers of Births Through 2018**



## Appendix F. Tests of Forecast Models

To determine which forecast model to use for this teacher supply-and-demand study, a series of forecast models was created and tested. These models included the following:

1. Simply using the mean score from the previous year as the basis of forecast.
2. Growth models based on percentage increase/decrease from year to year.
3. Model based on growth progression ratios, or the numbers of children born in a given year, the percentage of those children who enter kindergarten, and the percentage of students who progress from grade to grade each year.
4. A series of regression models, including the following:
  - a. Forecast enrollment = enrollment during year of prediction + annual growth rate in projections
  - b. Forecast enrollment = enrollment during year of prediction + percent difference in cohorts of children from year to year. This second term represents the following:
    - The percent difference between the cohort currently ages 5–18 and the cohort ages 2–15 (for three-year forecasts),
    - The percent difference between the cohort currently ages 5–18 and the cohort ages 0–13 (for five-year forecasts)
    - The percent difference between the cohort currently ages 5–18 and the group of those likely to be born in five years (i.e., the number of women ages 10–39 × fertility rate) and present 8-year-olds.
  - c. Forecast enrollment = enrollment during year of prediction + growth rate in the last three years weighted by recency.
  - d. Forecast enrollment = best of models 4a, 4b, and 4c, plus the number of housing starts during previous three years (an indicator of economic functioning).
  - e. Forecast enrollment = best of models 4a, 4b, and 4c, plus the net job growth during the three previous years (an indicator of economic functioning).

Analyses involving each of these models were conducted for the 87 Minnesota counties and again for the 13 economic development regions. Only models 1–3 were tested at the state level. Bias and accuracy were examined for each model by calculating the average percent errors (APEs) and mean absolute percent errors (MAPEs). The former statistic helps to determine whether models produce biased forecasts (i.e., whether the forecasts are consistently above or below the actual value). MAPEs are used as indicators of the magnitude of discrepancy between forecast values and actual values. These statistics were calculated as follows:<sup>24</sup>

$$APE = \frac{(\text{forecast value} - \text{actual value})}{\text{actual value}} \times 100$$

$$MAPE = \left| \frac{(\text{forecast value} - \text{actual value})}{\text{actual value}} \right| \times 100$$

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<sup>24</sup> APE is usually calculated with (actual value – forecast value)/actual value. The terms in the numerator were reversed so that negative numbers would reflect underestimates and positive numbers would reflect overestimates.

The results of the tests of forecast models are presented in Table 34.

**Table 34 Estimates of Bias and Accuracy for Eight Models of Enrollment Forecasts**

| Level of Aggregation        | Period | Error Statistic | Method 1 | Method 2 | Method 3 | Method 4a | Method 4b | Method 4c | Method 4d | Method 4e |
|-----------------------------|--------|-----------------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|
| County Estimates            | 3 yr   | APE             | 2.44%    | 9.50%    | 0.56%    | -2.81%    | -2.61%    | -2.89%    | -2.85%    | -2.93%    |
|                             |        | MAPE            | 5.49%    | 16.34%   | 3.00%    | 8.14%     | 8.08%     | 6.38%     | 8.57%     | 8.14%     |
|                             | 5 yr   | APE             | 5.03%    | 17.21%   | 1.70%    | -4.01%    | -4.06%    | -4.42%    | -4.23%    | -4.05%    |
|                             |        | MAPE            | 8.74%    | 27.71%   | 4.32%    | 13.63%    | 13.37%    | 10.10%    | 13.71%    | 13.32%    |
|                             | 10 yr  | APE             | 12.45%   | 39.15%   | 4.10%    | -3.39%    | -4.52%    | -5.46%    | -4.10%    | -4.34%    |
|                             |        | MAPE            | 17.36%   | 58.37%   | 8.10%    | 27.04%    | 25.87%    | 19.00%    | 27.14%    | 22.88%    |
| Economic Development Region | 3 yr   | APE             | 1.76%    | 6.92%    | -0.14%   | -0.91%    | -1.21%    | -0.64%    | -0.51%    | -0.93%    |
|                             |        | MAPE            | 3.97%    | 12.05%   | 1.61%    | 2.86%     | 2.97%     | 2.29%     | 2.40%     | 2.84%     |
|                             | 5 yr   | APE             | 3.77%    | 12.58%   | 0.19%    | -1.37%    | -1.87%    | -0.90%    | -0.81%    | -1.55%    |
|                             |        | MAPE            | 6.36%    | 20.63%   | 2.59%    | 4.74%     | 4.90%     | 3.64%     | 4.07%     | 4.79%     |
|                             | 10yr   | APE             | 9.35%    | 28.13%   | -0.86%   | -2.00%    | -2.93%    | -0.82%    | -1.46%    | -2.59%    |
|                             |        | MAPE            | 12.93%   | 43.48%   | 5.26%    | 9.26%     | 9.46%     | 6.00%     | 8.53%     | 8.75%     |
| State                       | 3 yr   | APE             | -0.90%   | -3.76%   | -0.47%   | —         | —         | —         | —         | —         |
|                             |        | MAPE            | 1.89%    | 3.76%    | 0.78%    | —         | —         | —         | —         | —         |
|                             | 5 yr   | APE             | -0.87%   | -5.51%   | -0.11%   | —         | —         | —         | —         | —         |
|                             |        | MAPE            | 2.53%    | 5.51%    | 1.33%    | —         | —         | —         | —         | —         |
|                             | 10 yr  | APE             | -0.46%   | -9.78%   | -0.85%   | —         | —         | —         | —         | —         |
|                             |        | MAPE            | 2.87%    | 9.78%    | 3.95%    | —         | —         | —         | —         | —         |

Note. Prepared from MDE tests of accuracy of forecast models using public school enrollment data (MARSS) from the 1992–93 school year to the 2011–12 school year.

The model that produced the most accurate forecasts at the county, region, and state levels is model 3, the one that relies on GPRs to examine the numbers of children progressing through the academic grades. APEs for this model appear to be balanced around 0, suggesting that the model does not produce biased forecasts. MAPEs ranged from 0.78 percent to 8.10 percent.

## Appendix G. Counts of Variances and Limited Licenses Granted by Year and Subject Area

2014

| SUBJECT AREA                        | COUNT | PERCENT |
|-------------------------------------|-------|---------|
| EMOTIONAL BEHAVIOR DISORDERS        | 223   | 0.1021  |
| LEARNING DISABILITIES               | 195   | 0.0892  |
| ELEMENTARY EDUCATION                | 158   | 0.0723  |
| DEVELOPMENTAL DISABILITIES          | 114   | 0.0522  |
| ENGLISH AS A SECOND LANGUAGE        | 105   | 0.0481  |
| MATHEMATICS                         | 95    | 0.0435  |
| COMMUNICATION ARTS/LITERATURE       | 79    | 0.0362  |
| EARLY CHILDHOOD SPECIAL EDUCATION   | 75    | 0.0343  |
| SCIENCE 5-8                         | 69    | 0.0316  |
| SCHOOL PSYCHOLOGIST                 | 65    | 0.0297  |
| CHEMISTRY                           | 59    | 0.0270  |
| LIBRARY MEDIA SPECIALIST            | 53    | 0.0243  |
| PHYSICS                             | 50    | 0.0229  |
| READING                             | 50    | 0.0229  |
| SPANISH                             | 50    | 0.0229  |
| SPEECH-LANGUAGE PATHOLOGIST         | 50    | 0.0229  |
| COMPUTER KEYBOARDING AND TECHNOLOGY | 49    | 0.0224  |
| TEACHER/COORDINATOR WORK BASED LRNG | 49    | 0.0224  |
| DEVELOPMENTAL/ADAPTED PHYSICAL ED.  | 43    | 0.0197  |
| SOCIAL STUDIES -ALL-                | 34    | 0.0156  |
| AUTISM SPECTRUM DISORDERS           | 32    | 0.0146  |
| VISUAL ARTS                         | 31    | 0.0142  |
| EARLY CHILDHOOD EDUCATION           | 30    | 0.0137  |
| PARENT AND FAMILY EDUCATION         | 28    | 0.0128  |
| PHYSICAL EDUCATION                  | 25    | 0.0114  |
| AMERICAN SIGN LANGUAGE              | 24    | 0.0110  |
| BUSINESS                            | 24    | 0.0110  |
| HEALTH EDUCATION                    | 24    | 0.0110  |
| FAMILY AND CONSUMER SCIENCES        | 22    | 0.0101  |
| LIFE SCIENCES                       | 19    | 0.0087  |
| BLIND OR VISUALLY IMPAIRED          | 17    | 0.0078  |
| MEDICAL CAREERS                     | 17    | 0.0078  |
| THEATRE ARTS                        | 15    | 0.0069  |



| SUBJECT AREA                         | COUNT | PERCENT |
|--------------------------------------|-------|---------|
| DEAF OR HARD OF HEARING              | 14    | 0.0064  |
| FRENCH                               | 14    | 0.0064  |
| VOCAL AND CLASSROOM MUSIC            | 13    | 0.0059  |
| TECHNOLOGY                           | 12    | 0.0055  |
| AGRICULTURAL EDUCATION               | 11    | 0.0050  |
| INSTR(BAND/ORCH) AND CLASSROOM MUSIC | 11    | 0.0050  |
| ACADEMIC AND BEHAVIORAL STRATEGIST   | 10    | 0.0046  |
| CONSTRUCTION CAREERS                 | 10    | 0.0046  |
| EARTH AND SPACE SCIENCE              | 10    | 0.0046  |
| CHINESE                              | 9     | 0.0041  |
| COMMUNICATIONS TECHNOLOGY CAREERS    | 8     | 0.0037  |
| MANUFACTURING CAREERS                | 8     | 0.0037  |
| COUNSELOR OR TEACHING INTERN         | 7     | 0.0032  |
| GERMAN                               | 7     | 0.0032  |
| LATIN                                | 7     | 0.0032  |
| PHYSICAL AND HEALTH DISABILITIES     | 7     | 0.0032  |
| PRE-PRIMARY                          | 7     | 0.0032  |
| TRANSPORTATION CAREERS               | 7     | 0.0032  |
| DANCE                                | 6     | 0.0027  |
| SCHOOL COUNSELOR                     | 5     | 0.0023  |
| BILINGUAL/BICULTURAL EDUCATION       | 3     | 0.0014  |
| DANCE AND THEATRE                    | 3     | 0.0014  |
| HOSPITALITY SERVICE CAREERS          | 3     | 0.0014  |
| SCHOOL SOCIAL WORKER                 | 3     | 0.0014  |
| ARABIC                               | 2     | 0.0009  |
| DIRECTOR OF SPECIAL EDUCATION        | 2     | 0.0009  |
| DISTRICT SUPERINTENDENT              | 2     | 0.0009  |
| DRIVER EDUCATION                     | 2     | 0.0009  |
| SHORT CALL SUBSTITUTE TEACHER        | 2     | 0.0009  |
| COMMUNITY EDUCATION DIRECTOR         | 1     | 0.0005  |
| HMONG                                | 1     | 0.0005  |
| JAPANESE                             | 1     | 0.0005  |
| OJIBWE                               | 1     | 0.0005  |
| ORAL/AURAL DEAF EDUCATION            | 1     | 0.0005  |
| PRINCIPAL K-12                       | 1     | 0.0005  |
| READING LEADER                       | 1     | 0.0005  |

2013

| SUBJECT AREA                        | COUNT | PERCENT |
|-------------------------------------|-------|---------|
| EMOTIONAL BEHAVIOR DISORDERS        | 277   | 12.1545 |
| LEARNING DISABILITIES               | 243   | 10.6626 |
| ELEMENTARY EDUCATION                | 184   | 8.0737  |
| DEVELOPMENTAL DISABILITIES          | 150   | 6.5818  |
| MATHEMATICS                         | 107   | 4.6950  |
| ENGLISH AS A SECOND LANGUAGE        | 97    | 4.2563  |
| EARLY CHILDHOOD SPECIAL EDUCATION   | 71    | 3.1154  |
| COMMUNICATION ARTS/LITERATURE       | 69    | 3.0276  |
| SCHOOL PSYCHOLOGIST                 | 68    | 2.9838  |
| CHEMISTRY                           | 61    | 2.6766  |
| SCIENCE 5-8                         | 59    | 2.5889  |
| SPANISH                             | 59    | 2.5889  |
| PHYSICS                             | 50    | 2.1939  |
| READING                             | 49    | 2.1501  |
| SPEECH-LANGUAGE PATHOLOGIST         | 48    | 2.1062  |
| VISUAL ARTS                         | 46    | 2.0184  |
| HEALTH EDUCATION                    | 43    | 1.8868  |
| PARENT AND FAMILY EDUCATION         | 42    | 1.8429  |
| LIBRARY MEDIA SPECIALIST            | 40    | 1.7552  |
| DEVELOPMENTAL/ADAPTED PHYSICAL ED.  | 39    | 1.7113  |
| TEACHER/COORDINATOR WORK BASED LRNG | 36    | 1.5796  |
| PHYSICAL EDUCATION                  | 33    | 1.4480  |
| SOCIAL STUDIES -ALL-                | 33    | 1.4480  |
| EARLY CHILDHOOD EDUCATION           | 31    | 1.3602  |
| KEYBOARDING FOR COMPUTER APPL       | 27    | 1.1847  |
| LIFE SCIENCES                       | 21    | 0.9215  |
| BUSINESS                            | 19    | 0.8337  |
| AMERICAN SIGN LANGUAGE              | 18    | 0.7898  |
| THEATRE ARTS                        | 18    | 0.7898  |
| COMPUTER KEYBOARDING AND TECHNOLOGY | 17    | 0.7459  |
| VOCAL AND CLASSROOM MUSIC           | 17    | 0.7459  |
| EARTH AND SPACE SCIENCE             | 16    | 0.7021  |
| TECHNOLOGY                          | 16    | 0.7021  |
| FAMILY AND CONSUMER SCIENCES        | 15    | 0.6582  |
| DEAF OR HARD OF HEARING             | 14    | 0.6143  |
| CHINESE                             | 13    | 0.5704  |
| MEDICAL CAREERS                     | 12    | 0.5265  |
| DANCE                               | 10    | 0.4388  |
| PHYSICAL AND HEALTH DISABILITIES    | 10    | 0.4388  |
| TRANSPORTATION CAREERS              | 9     | 0.3949  |

| <b>SUBJECT AREA</b>                  | <b>COUNT</b> | <b>PERCENT</b> |
|--------------------------------------|--------------|----------------|
| CONSTRUCTION CAREERS                 | 8            | 0.3510         |
| COUNSELOR OR TEACHING INTERN         | 8            | 0.3510         |
| BLIND OR VISUALLY IMPAIRED           | 7            | 0.3072         |
| INSTR(BAND/ORCH) AND CLASSROOM MUSIC | 7            | 0.3072         |
| LATIN                                | 7            | 0.3072         |
| AGRICULTURAL EDUCATION               | 6            | 0.2633         |
| FRENCH                               | 6            | 0.2633         |
| PRE-PRIMARY                          | 6            | 0.2633         |
| COMMUNICATIONS TECHNOLOGY CAREERS    | 5            | 0.2194         |
| ACADEMIC AND BEHAVIORAL STRATEGIST   | 4            | 0.1755         |
| BILINGUAL/BICULTURAL EDUCATION       | 4            | 0.1755         |
| MANUFACTURING CAREERS                | 4            | 0.1755         |
| GERMAN                               | 3            | 0.1316         |
| SCHOOL SOCIAL WORKER                 | 3            | 0.1316         |
| AUTISM SPECTRUM DISORDERS            | 2            | 0.0878         |
| SCHOOL COUNSELOR                     | 2            | 0.0878         |
| SHORT CALL SUBSTITUTE TEACHER        | 2            | 0.0878         |
| ARABIC                               | 1            | 0.0439         |
| BUSINESS EDUCATION -ALL-             | 1            | 0.0439         |
| CAREER ACCOMMODATION SPECIALIST      | 1            | 0.0439         |
| DANCE AND THEATRE                    | 1            | 0.0439         |
| DRIVER EDUCATION                     | 1            | 0.0439         |
| HOSPITALITY SERVICE CAREERS          | 1            | 0.0439         |
| JAPANESE                             | 1            | 0.0439         |
| OJIBWE                               | 1            | 0.0439         |

## 2012

| <b>SUBJECT AREA</b>               | <b>COUNT</b> | <b>PERCENT</b> |
|-----------------------------------|--------------|----------------|
| EMOTIONAL BEHAVIOR DISORDERS      | 294          | 12.8665        |
| LEARNING DISABILITIES             | 265          | 11.5974        |
| ELEMENTARY EDUCATION              | 204          | 8.9278         |
| DEVELOPMENTAL DISABILITIES        | 145          | 6.3457         |
| EARLY CHILDHOOD SPECIAL EDUCATION | 91           | 3.9825         |
| ENGLISH AS A SECOND LANGUAGE      | 86           | 3.7637         |
| COMMUNICATION ARTS/LITERATURE     | 83           | 3.6324         |
| MATHEMATICS                       | 78           | 3.4136         |
| SCHOOL PSYCHOLOGIST               | 66           | 2.8884         |
| SPANISH                           | 64           | 2.8009         |
| READING                           | 62           | 2.7133         |
| SCIENCE 5-8                       | 53           | 2.3195         |
| PHYSICS                           | 50           | 2.1882         |

| <b>SUBJECT AREA</b>                  | <b>COUNT</b> | <b>PERCENT</b> |
|--------------------------------------|--------------|----------------|
| CHEMISTRY                            | 43           | 1.8818         |
| TEACHER/COORDINATOR WORK BASED LRNG  | 43           | 1.8818         |
| HEALTH EDUCATION                     | 41           | 1.7943         |
| PARENT AND FAMILY EDUCATION          | 38           | 1.663          |
| SOCIAL STUDIES -ALL-                 | 38           | 1.663          |
| VISUAL ARTS                          | 32           | 1.4004         |
| SPEECH-LANGUAGE PATHOLOGIST          | 31           | 1.3567         |
| PHYSICAL EDUCATION                   | 30           | 1.3129         |
| LIBRARY MEDIA SPECIALIST             | 25           | 1.0941         |
| AMERICAN SIGN LANGUAGE               | 24           | 1.0503         |
| VOCAL AND CLASSROOM MUSIC            | 22           | 0.9628         |
| COMPUTER KEYBOARDING AND TECHNOLOGY  | 21           | 0.919          |
| LIFE SCIENCES                        | 21           | 0.919          |
| PHYSICAL AND HEALTH DISABILITIES     | 19           | 0.8315         |
| KEYBOARDING FOR COMPUTER APPL        | 17           | 0.744          |
| EARLY CHILDHOOD EDUCATION            | 16           | 0.7002         |
| TECHNOLOGY                           | 16           | 0.7002         |
| BUSINESS                             | 15           | 0.6565         |
| THEATRE ARTS                         | 15           | 0.6565         |
| CHINESE                              | 14           | 0.6127         |
| DANCE                                | 14           | 0.6127         |
| DEAF OR HARD OF HEARING              | 14           | 0.6127         |
| FAMILY AND CONSUMER SCIENCES         | 14           | 0.6127         |
| MEDICAL CAREERS                      | 14           | 0.6127         |
| INSTR(BAND/ORCH) AND CLASSROOM MUSIC | 12           | 0.5252         |
| COMMUNICATIONS TECHNOLOGY CAREERS    | 11           | 0.4814         |
| CONSTRUCTION CAREERS                 | 10           | 0.4376         |
| COUNSELOR OR TEACHING INTERN         | 10           | 0.4376         |
| EARTH AND SPACE SCIENCE              | 10           | 0.4376         |
| TRANSPORTATION CAREERS               | 10           | 0.4376         |
| MANUFACTURING CAREERS                | 8            | 0.3501         |
| AGRICULTURAL EDUCATION               | 5            | 0.2188         |
| AGRICULTURE PRODUCTION/FARM MGMT     | 5            | 0.2188         |
| BLIND OR VISUALLY IMPAIRED           | 5            | 0.2188         |
| SCHOOL COUNSELOR                     | 5            | 0.2188         |
| FRENCH                               | 4            | 0.1751         |
| SCHOOL SOCIAL WORKER                 | 4            | 0.1751         |
| LATIN                                | 3            | 0.1313         |
| PRE-PRIMARY                          | 3            | 0.1313         |
| GERMAN                               | 2            | 0.0875         |
| HMONG                                | 2            | 0.0875         |
| HOSPITALITY SERVICE CAREERS          | 2            | 0.0875         |

| SUBJECT AREA                    | COUNT | PERCENT |
|---------------------------------|-------|---------|
| JAPANESE                        | 2     | 0.0875  |
| ADULT BASIC EDUCATION           | 1     | 0.0438  |
| AGRICULTURE (NON VOCATIONAL)    | 1     | 0.0438  |
| ARABIC                          | 1     | 0.0438  |
| BILINGUAL/BICULTURAL EDUCATION  | 1     | 0.0438  |
| CAREER ACCOMMODATION SPECIALIST | 1     | 0.0438  |
| CLASSROOM MUSIC                 | 1     | 0.0438  |
| CREATIVE DESIGN CAREERS         | 1     | 0.0438  |
| DANCE AND THEATRE               | 1     | 0.0438  |
| VOCATIONAL AGRICULTURE          | 1     | 0.0438  |

### 2011

| SUBJECT AREA                        | COUNT | PERCENT |
|-------------------------------------|-------|---------|
| LEARNING DISABILITIES               | 290   | 12.6527 |
| EMOTIONAL BEHAVIOR DISORDERS        | 278   | 12.1291 |
| ELEMENTARY EDUCATION                | 194   | 8.4642  |
| DEVELOPMENTAL DISABILITIES          | 177   | 7.7225  |
| EARLY CHILDHOOD SPECIAL EDUCATION   | 94    | 4.1012  |
| MATHEMATICS                         | 88    | 3.8394  |
| READING                             | 82    | 3.5777  |
| SPANISH                             | 78    | 3.4031  |
| ENGLISH AS A SECOND LANGUAGE        | 76    | 3.3159  |
| COMMUNICATION ARTS/LITERATURE       | 59    | 2.5742  |
| SCHOOL PSYCHOLOGIST                 | 53    | 2.3124  |
| CHEMISTRY                           | 48    | 2.0942  |
| SCIENCE 5-8                         | 45    | 1.9634  |
| DEVELOPMENTAL/ADAPTED PHYSICAL ED.  | 38    | 1.6579  |
| PHYSICS                             | 37    | 1.6143  |
| PARENT AND FAMILY EDUCATION         | 36    | 1.5707  |
| HEALTH EDUCATION                    | 35    | 1.5271  |
| TEACHER/COORDINATOR WORK BASED LRNG | 34    | 1.4834  |
| LIBRARY MEDIA SPECIALIST            | 32    | 1.3962  |
| KEYBOARDING FOR COMPUTER APPL       | 30    | 1.3089  |
| PHYSICAL EDUCATION                  | 29    | 1.2653  |
| SOCIAL STUDIES -ALL-                | 29    | 1.2653  |
| LIFE SCIENCES                       | 24    | 1.0471  |
| SPEECH-LANGUAGE PATHOLOGIST         | 24    | 1.0471  |
| AMERICAN SIGN LANGUAGE              | 22    | 0.9599  |
| THEATRE ARTS                        | 22    | 0.9599  |
| VOCAL AND CLASSROOM MUSIC           | 21    | 0.9162  |
| BUSINESS                            | 20    | 0.8726  |

| <b>SUBJECT AREA</b>                  | <b>COUNT</b> | <b>PERCENT</b> |
|--------------------------------------|--------------|----------------|
| FAMILY AND CONSUMER SCIENCES         | 19           | 0.829          |
| VISUAL ARTS                          | 19           | 0.829          |
| MEDICAL CAREERS                      | 17           | 0.7417         |
| TRANSPORTATION CAREERS               | 17           | 0.7417         |
| DANCE                                | 16           | 0.6981         |
| COMMUNICATIONS TECHNOLOGY CAREERS    | 15           | 0.6545         |
| CONSTRUCTION CAREERS                 | 15           | 0.6545         |
| EARTH AND SPACE SCIENCE              | 15           | 0.6545         |
| PRE-PRIMARY                          | 15           | 0.6545         |
| EARLY CHILDHOOD EDUCATION            | 14           | 0.6108         |
| PHYSICAL AND HEALTH DISABILITIES     | 13           | 0.5672         |
| TECHNOLOGY                           | 13           | 0.5672         |
| MANUFACTURING CAREERS                | 12           | 0.5236         |
| AGRICULTURAL EDUCATION               | 9            | 0.3927         |
| AGRICULTURE PRODUCTION/FARM MGMT     | 9            | 0.3927         |
| BLIND OR VISUALLY IMPAIRED           | 8            | 0.349          |
| DEAF OR HARD OF HEARING              | 8            | 0.349          |
| INSTR(BAND/ORCH) AND CLASSROOM MUSIC | 8            | 0.349          |
| CHINESE                              | 7            | 0.3054         |
| BILINGUAL/BICULTURAL EDUCATION       | 6            | 0.2618         |
| COUNSELOR OR TEACHING INTERN         | 6            | 0.2618         |
| SCHOOL COUNSELOR                     | 6            | 0.2618         |
| JAPANESE                             | 5            | 0.2182         |
| ORAL/AURAL DEAF EDUCATION            | 5            | 0.2182         |
| FRENCH                               | 3            | 0.1309         |
| CLASSROOM MUSIC                      | 2            | 0.0873         |
| COMPUTER KEYBOARDING AND TECHNOLOGY  | 2            | 0.0873         |
| DANCE AND THEATRE                    | 2            | 0.0873         |
| HOSPITALITY SERVICE CAREERS          | 2            | 0.0873         |
| KINDERGARTEN                         | 2            | 0.0873         |
| LATIN                                | 2            | 0.0873         |
| ADULT BASIC EDUCATION                | 1            | 0.0436         |
| CAREER ACCOMMODATION SPECIALIST      | 1            | 0.0436         |
| CREATIVE DESIGN CAREERS              | 1            | 0.0436         |
| EARLY CHILDHOOD CAREERS              | 1            | 0.0436         |
| SCHOOL SOCIAL WORKER                 | 1            | 0.0436         |

**2010**

| <b>SUBJECT AREA</b>          | <b>COUNT</b> | <b>PERCENT</b> |
|------------------------------|--------------|----------------|
| LEARNING DISABILITIES        | 287          | 12.2076        |
| EMOTIONAL BEHAVIOR DISORDERS | 271          | 11.527         |

| SUBJECT AREA                         | COUNT | PERCENT |
|--------------------------------------|-------|---------|
| ELEMENTARY EDUCATION                 | 175   | 7.4436  |
| DEVELOPMENTAL DISABILITIES           | 173   | 7.3586  |
| MATHEMATICS                          | 115   | 4.8915  |
| READING                              | 97    | 4.1259  |
| EARLY CHILDHOOD SPECIAL EDUCATION    | 95    | 4.0408  |
| SPANISH                              | 86    | 3.658   |
| COMMUNICATION ARTS/LITERATURE        | 70    | 2.9775  |
| ENGLISH AS A SECOND LANGUAGE         | 66    | 2.8073  |
| SCIENCE 5-8                          | 62    | 2.6372  |
| HEALTH EDUCATION                     | 49    | 2.0842  |
| DEVELOPMENTAL/ADAPTED PHYSICAL ED.   | 48    | 2.0417  |
| CHEMISTRY                            | 45    | 1.9141  |
| SCHOOL PSYCHOLOGIST                  | 44    | 1.8715  |
| KEYBOARDING FOR COMPUTER APPL        | 43    | 1.829   |
| PHYSICS                              | 39    | 1.6589  |
| PARENT AND FAMILY EDUCATION          | 38    | 1.6163  |
| LIFE SCIENCES                        | 33    | 1.4037  |
| SOCIAL STUDIES -ALL-                 | 33    | 1.4037  |
| LIBRARY MEDIA SPECIALIST             | 31    | 1.3186  |
| SPEECH-LANGUAGE PATHOLOGIST          | 31    | 1.3186  |
| BUSINESS                             | 26    | 1.1059  |
| TEACHER/COORDINATOR WORK BASED LRNG  | 24    | 1.0208  |
| AMERICAN SIGN LANGUAGE               | 22    | 0.9358  |
| COMMUNICATIONS TECHNOLOGY CAREERS    | 22    | 0.9358  |
| VISUAL ARTS                          | 21    | 0.8932  |
| PHYSICAL EDUCATION                   | 20    | 0.8507  |
| MEDICAL CAREERS                      | 19    | 0.8082  |
| EARLY CHILDHOOD EDUCATION            | 18    | 0.7656  |
| EARTH AND SPACE SCIENCE              | 18    | 0.7656  |
| FAMILY AND CONSUMER SCIENCES         | 18    | 0.7656  |
| THEATRE ARTS                         | 16    | 0.6806  |
| TRANSPORTATION CAREERS               | 16    | 0.6806  |
| VOCAL AND CLASSROOM MUSIC            | 14    | 0.5955  |
| CONSTRUCTION CAREERS                 | 13    | 0.553   |
| CHINESE                              | 12    | 0.5104  |
| INSTR(BAND/ORCH) AND CLASSROOM MUSIC | 12    | 0.5104  |
| COUNSELOR OR TEACHING INTERN         | 11    | 0.4679  |
| DANCE                                | 11    | 0.4679  |
| DEAF OR HARD OF HEARING              | 11    | 0.4679  |
| PHYSICAL AND HEALTH DISABILITIES     | 11    | 0.4679  |
| PRE-PRIMARY                          | 11    | 0.4679  |
| TECHNOLOGY                           | 11    | 0.4679  |

| SUBJECT AREA                     | COUNT | PERCENT |
|----------------------------------|-------|---------|
| BLIND OR VISUALLY IMPAIRED       | 10    | 0.4254  |
| MANUFACTURING CAREERS            | 9     | 0.3828  |
| FRENCH                           | 6     | 0.2552  |
| GERMAN                           | 5     | 0.2127  |
| SCHOOL COUNSELOR                 | 5     | 0.2127  |
| ORAL/AURAL DEAF EDUCATION        | 4     | 0.1701  |
| BILINGUAL/BICULTURAL EDUCATION   | 3     | 0.1276  |
| AGRICULTURAL EDUCATION           | 2     | 0.0851  |
| AGRICULTURE PRODUCTION/FARM MGMT | 2     | 0.0851  |
| ARABIC                           | 2     | 0.0851  |
| CAREER ACCOMMODATION SPECIALIST  | 2     | 0.0851  |
| DANCE AND THEATRE                | 2     | 0.0851  |
| HOSPITALITY SERVICE CAREERS      | 2     | 0.0851  |
| JAPANESE                         | 2     | 0.0851  |
| LATIN                            | 2     | 0.0851  |
| SCHOOL SOCIAL WORKER             | 2     | 0.0851  |
| BUSINESS EDUCATION -ALL-         | 1     | 0.0425  |
| CLASSROOM MUSIC                  | 1     | 0.0425  |
| EARLY CHILDHOOD CAREERS          | 1     | 0.0425  |

**2009**

| SUBJECT AREA                       | COUNT | PERCENT |
|------------------------------------|-------|---------|
| EMOTIONAL BEHAVIOR DISORDERS       | 323   | 12.3565 |
| LEARNING DISABILITIES              | 291   | 11.1324 |
| DEVELOPMENTAL DISABILITIES         | 189   | 7.2303  |
| MATHEMATICS                        | 131   | 5.0115  |
| ELEMENTARY EDUCATION               | 129   | 4.935   |
| EARLY CHILDHOOD SPECIAL EDUCATION  | 126   | 4.8202  |
| ENGLISH AS A SECOND LANGUAGE       | 94    | 3.596   |
| SPANISH                            | 87    | 3.3282  |
| SCIENCE 5-8                        | 80    | 3.0604  |
| COMMUNICATION ARTS/LITERATURE      | 71    | 2.7161  |
| READING                            | 65    | 2.4866  |
| CHEMISTRY                          | 58    | 2.2188  |
| KEYBOARDING FOR COMPUTER APPL      | 58    | 2.2188  |
| HEALTH EDUCATION                   | 57    | 2.1806  |
| SCHOOL PSYCHOLOGIST                | 52    | 1.9893  |
| DEVELOPMENTAL/ADAPTED PHYSICAL ED. | 50    | 1.9128  |
| PARENT AND FAMILY EDUCATION        | 48    | 1.8363  |
| LIBRARY MEDIA SPECIALIST           | 46    | 1.7598  |
| SOCIAL STUDIES -ALL-               | 46    | 1.7598  |



| SUBJECT AREA                         | COUNT | PERCENT |
|--------------------------------------|-------|---------|
| PHYSICS                              | 43    | 1.645   |
| TEACHER/COORDINATOR WORK BASED LRNG  | 40    | 1.5302  |
| LIFE SCIENCES                        | 38    | 1.4537  |
| BUSINESS                             | 34    | 1.3007  |
| COMMUNICATIONS TECHNOLOGY CAREERS    | 34    | 1.3007  |
| VISUAL ARTS                          | 33    | 1.2624  |
| PHYSICAL EDUCATION                   | 31    | 1.1859  |
| FAMILY AND CONSUMER SCIENCES         | 28    | 1.0712  |
| SPEECH-LANGUAGE PATHOLOGIST          | 26    | 0.9946  |
| AMERICAN SIGN LANGUAGE               | 24    | 0.9181  |
| EARTH AND SPACE SCIENCE              | 21    | 0.8034  |
| TRANSPORTATION CAREERS               | 21    | 0.8034  |
| MANUFACTURING CAREERS                | 19    | 0.7269  |
| VOCAL AND CLASSROOM MUSIC            | 18    | 0.6886  |
| MEDICAL CAREERS                      | 17    | 0.6503  |
| PHYSICAL AND HEALTH DISABILITIES     | 17    | 0.6503  |
| EARLY CHILDHOOD EDUCATION            | 16    | 0.6121  |
| ORAL/AURAL DEAF EDUCATION            | 16    | 0.6121  |
| THEATRE ARTS                         | 14    | 0.5356  |
| CONSTRUCTION CAREERS                 | 13    | 0.4973  |
| TECHNOLOGY                           | 13    | 0.4973  |
| BLIND OR VISUALLY IMPAIRED           | 11    | 0.4208  |
| INSTR(BAND/ORCH) AND CLASSROOM MUSIC | 10    | 0.3826  |
| DANCE                                | 9     | 0.3443  |
| DEAF OR HARD OF HEARING              | 9     | 0.3443  |
| CHINESE                              | 8     | 0.306   |
| COUNSELOR OR TEACHING INTERN         | 6     | 0.2295  |
| GERMAN                               | 6     | 0.2295  |
| PRE-PRIMARY                          | 6     | 0.2295  |
| BILINGUAL/BICULTURAL EDUCATION       | 4     | 0.153   |
| FRENCH                               | 4     | 0.153   |
| HOSPITALITY SERVICE CAREERS          | 4     | 0.153   |
| LATIN                                | 4     | 0.153   |
| CLASSROOM MUSIC                      | 2     | 0.0765  |
| DRIVER EDUCATION                     | 2     | 0.0765  |
| SCHOOL COUNSELOR                     | 2     | 0.0765  |
| ADULT BASIC EDUCATION                | 1     | 0.0383  |
| AGRICULTURAL EDUCATION               | 1     | 0.0383  |
| AGRICULTURE PRODUCTION/FARM MGMT     | 1     | 0.0383  |
| ARABIC                               | 1     | 0.0383  |
| CAREER ACCOMMODATION SPECIALIST      | 1     | 0.0383  |
| CREATIVE DESIGN CAREERS              | 1     | 0.0383  |

| <b>SUBJECT AREA</b>              | <b>COUNT</b> | <b>PERCENT</b> |
|----------------------------------|--------------|----------------|
| DANCE AND THEATRE                | 1            | 0.0383         |
| EARLY CHILDHOOD CAREERS          | 1            | 0.0383         |
| ELEMENTARY GUIDANCE & COUNSELING | 1            | 0.0383         |
| JAPANESE                         | 1            | 0.0383         |