October 2015

DATA BULLETIN

Connecticut State Department of Education
Performance Office
Bureau of Data Collection, Research and Evaluation

PUBLIC SCHOOL HIRING TRENDS AND CERTIFICATION SUBJECT SHORTAGE AREAS FOR 2015–16

The Fall Hiring Survey and Certification Subject Shortage Areas

Each fall, the Connecticut State Department of Education (CSDE) surveys certified educational positions to ascertain:

- the number of teaching and administrative vacancies that existed prior to the start of the school year;
- the quantity and quality of applications received for those vacancies; and
- the vacancies that remained after the start of school.

In fall 2014, survey participants included:

- public school districts (166 local educational agencies; 22 charter schools; six regional educational service centers [RESCs]; three endowed and incorporated academies; the Connecticut Technical High School System; and the State Departments of Corrections and Children and Families); and
- 50 state-approved private special education programs.

Results from this survey were used to determine the certification subject shortage areas for the 2015–16 school year (see text box on the right). All of the 10 shortage areas for 2015–16 were also shortage areas in 2014–15.

Teachers and administrators in shortage areas may qualify for federal student loan deferral or forgiveness and may also be eligible for mortgage assistance through the Connecticut Housing Finance Authority (CHFA). School districts may use the shortage area designations to rehire retired teachers and administrators who are not subject to earnings limits.

Certification Subject Shortage Areas for the 2015–16 School Year:

- Bilingual Education, PK–12
- Comprehensive Special Education, K–12
- Intermediate Administrator
- Mathematics, 7–12
- School Library Media Specialist
- Science, 7–12
- Speech and Language Pathologist
- Technology Education, PK–12
- TESOL, PK–12
- World Languages, 7–12

Statewide Employment Trends — Public School Districts

Results of the Fall Hiring Survey for the 2014–15 school year illuminate continued growth following the most recent recession and the subsequent slow recovery. Specifically, the total number of certified positions and available certified positions (vacancies) that LEAs (Local Educational Agencies) sought to staff reached their highest levels in five years (table 1). With this recent growth, the total number of certified positions exceeded its pre-recession level (e.g., 53,129 positions in the 2007–08 school year) as did the number of available positions (e.g., 4,793 in 2007–08 and 4,894 in 2006-07). In addition, there were only six public LEAs in the 2014–15 school year without any available positions compared with 14 just three years ago.

While the number of available positions has increased by 57.8 percent since the end of the recession, much of this growth occurred in just the last three years. The growth in available positions over the last three years (26.1 percent) was far greater than the number of total positions (2 percent), suggesting that a significant amount of personnel turnover has occurred. The increase in available positions may be primarily due to the restructuring of districts and schools as part of the educational reforms which have been implemented over the last three years.

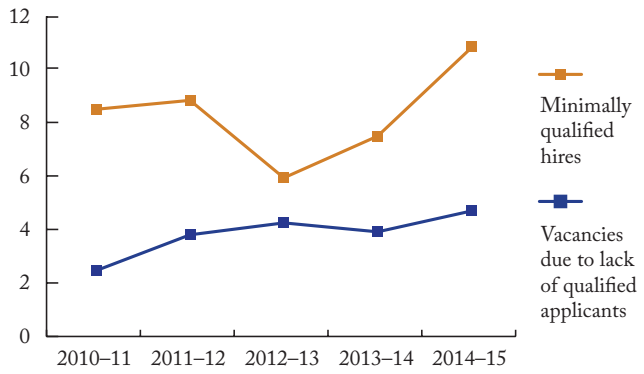
TABLE 1: Public School Hiring Trends, 2010–11 to 2014–15

School Year	Total Certified Positions*	Available Positions LEAs Sought to Fill	Percentage of Available Positions that were Part Time	Available Positions as Percentage of Total Positions	Percentage of Available Positions Filled by Oct. 1	Available Positions Not Filled by Oct. 1	Available Positions Not Filled by Oct.1 Due to Lack of Qualified Applicants	Median Applicants per Available Position
2014–15	53,461	5,145	6.6%	9.6%	92.0%	410	250	19
2013–14	52,872	5,095	7.4%	9.6%	93.1%	353	216	24
2012–13	52,404	4,080	9.0%	7.8%	92.8%	294	182	24
2011–12	52,181	3,267	10.4%	6.3%	92.1%	258	134	25
2010–11	52,208	3,260	10.4%	6.2%	92.6%	241	95	23
Change 2012–13 to 2014–15	2.0%	26.1%	–	–	–	39.5%	37.4%	-20.8%
Change 2010–11 to 2014–15	2.4%	57.8%	–	–	–	70.1%	163.2%	-17.4%

**Changes in data collection methods affect comparability of current total position and those from prior years.*

While the number of available positions reached its highest level in five years, the percentage of these that were filled by October 1 was the lowest during that period (92 percent). Furthermore, the percentage of positions that were not filled due to a lack of qualified applicants also increased to their highest levels during this period (figure 1: 4.9 percent). Similarly, there was an increase in the number and percentage of all hires that districts deemed "minimally qualified" — those selected from small applicant pools whose quality had been rated poorly by districts (from 255 or 8.4 percent in 2010–11 to 503 or 10.6 percent in 2014–15). With more certified administrative and teaching positions available, the median number of appropriately certified applicants per available position also declined. The median number of applicants was higher for positions that were subsequently filled (20) compared to those that were still vacant on October 1 (13). The median applicant pool rating by districts was also higher for positions that were ultimately staffed ("Many acceptable applicants") compared with those that remained vacant ("some acceptable applicants").

FIGURE 1:
Percentage of Vacancies Due to Lack of Qualified Applicants and Minimally Qualified Hires 2010–11 to 2014–15



Local Employment Trends — Public School Districts

To examine local employment trends, districts were grouped by the school reform categories (table 2): the Alliance Educational (ED) Reform Districts[1]; Alliance non-ED Reform Districts[2]; State School Districts[3]; RESCs; Public Charter Schools; and All Other LEAs.

Connecticut's public school system experienced a net increase of 1,057 total positions during the last three school years. The Alliance ED Reform Districts accounted for the largest number of new positions (433) followed by the RESCs (256) and Alliance non-ED Reform Districts (236). The rate of growth in total positions was highest among the Public Charter Schools with the addition of five new charter schools (table 2: 23 percent) and RESCs (16.4 percent).

From the 2012–13 to 2014–15 school year, Connecticut's public school system experienced a 26.1 percent increase in the number of available positions. Regardless of whether districts within a school reform category experienced significant growth (Public Charter Schools and RESCs), moderate growth (Alliance ED Reform and non-ED Reform Districts), and negligible growth (Other LEAs) or experienced a decline (State School Districts) in the number of total positions, they all still had increases in the number of available positions. This highlights the pervasiveness of personnel turnover over the last three years. For example, the RESCs had a 16.4 percent increase in total positions but available positions grew by 75.3 percent and Other LEAs had a 0.04 percent increase in total positions but an 8.1 percent increase in available positions. Available positions were the largest percentage of total positions in Public Charter Schools (37.2 percent), RESCS (18.3 percent) and the Alliance ED Reform Districts (13.3 percent).

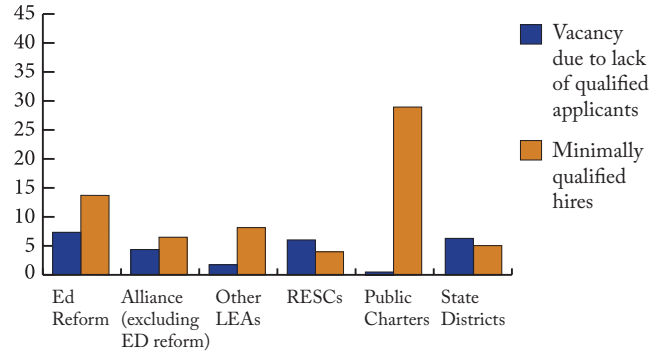
Public Charter Schools and Other LEAs filled the highest percentages of their available positions. They also had the lowest percentages of available positions that remained vacant due to the lack of qualified applicants (0.7 percent and 3.5 percent respectively) while the ED Reform Districts (7.7 percent) had

TABLE 2: Public School Districts Hiring Statistics by School Reform Categories, 2014–15

Districts	Total Certified Positions	Change in Total Positions, 2012–13 to 2014–15*	Available Positions LEAs Sought to Fill for 2014–15 School Year	Change in Available Positions, 2012–13 to 2014–15	Available Positions as Percentage of Total Positions	Percentage of Available Positions Filled by October 1	Available Positions Not Filled by October 1	Median Applications per Available Position
ED Reform	10,582	4.3%	1,404	48.6%	13.3%	91.0%	126	23
Alliance (excluding ED Reform)	9,192	2.6%	811	24.4%	8.8%	92.2%	63	23
Other LEAs	29,575	0.0%	2,182	8.1%	7.4%	94.3%	125	20
RESCs	1,819	16.4%	333	75.3%	18.3%	91.3%	29	27
Public Charters	728	23.0%	271	66.3%	37.2%	98.2%	5	6.5
State School Districts	1,565	-0.9%	144	29.7%	9.2%	56.9%	62	13

**Changes in data collection methods affect comparability of current total position and those from prior years.*

FIGURE 2:
Percentage of Available Positions Remaining Vacant Due to a Lack of Qualified Applicants and Minimally Qualified Hires as a Percentage of All Hires by Reform District Categories, 2014–15



the highest rate (figure 2). Public Charter Schools (28.9 percent) had the highest percentage of "minimally qualified" hires while RESCs (4.3 percent) and State Districts (4.9 percent) had the lowest.

State-Approved Private Special Education Programs

In the 2014–15 school year, the total number of positions in state-approved private special education programs (APSEPs) remained consistent with the prior school year, while the number of available positions reached their highest level in five years (table 3). Furthermore, fewer APSEPs (13) had no available positions than in prior years (e.g., 16 in 2013–14, 18 in 2012–13 and 22 in 2011–12). With the sharp increase in the number of available positions, APSEPS, however, staffed a significantly lower percentage of these positions than in the prior school year (59.3 percent versus 72.9 percent).

Consistent with the results of prior Fall Hiring Surveys, this percentage remained substantially below the rate at which public LEAs filled their vacancies (92 percent). A key contributing factor to their struggle to fill available positions, ASPEPs reported that 30.7 percent of available positions remained vacant due to the lack of qualified applicants, compared with 4.9 percent for public LEAs.

In comparison with public LEAs, APSEPs had more "minimally qualified" hires (18 percent versus 10.6 percent). For APSEPs, available positions were also a higher percentage of their total positions than in public LEAs (15.2 percent versus 9.6 percent). They also received fewer applications per available position than public LEAs in such significant areas as Comprehensive Special Education (10 versus 27); Intermediate Administrator (7 versus 26); English, 7–12 (12 versus 52); and Mathematics, 7–12 (4 versus 23.5).

TABLE 3: State-Approved Private Special Education Programs, 2010–11 to 2014–15

School Year	Total Certified Positions	Available Positions Programs Sought to Fill	Percentage of Available Positions that Were Part time	Available Positions as Percentage of Total Positions	Percentage of Available Positions Filled by Oct. 1	Available Positions Not Filled by Oct. 1	Available Positions Not Filled by Oct. 1 Due to Lack of Qualified Applicants	Median Applicants per Available Position
2014–15	985	150	4.7%	15.2%	59.3%	61	46	9
2013–14	984	107	6.5%	10.9%	72.9%	29	17	7
2012–13	954	112	8.0%	11.7%	66.1%	38	25	6
2011–12	962	94	13.8%	9.8%	84.0%	15	12	5
2010–11	900	108	7.4%	12.0%	82.4%	19	9	6

TABLE 4: Public School Noncertified Special Services, 2014–15

Service Area	Available Positions LEAs Sought to Fill for 2014–15 School Year	Available Positions Not Filled by October 1	Median Applicants per Available Position	Service Area	Available Positions LEAs Sought to Fill for 2014–15 School Year	Available Positions Not Filled by October 1	Median Applicants per Available Position
Licensed Physical Therapist	4	1	7	Regular Program Paraprofessional	74	3	44
Licensed Occupational Therapist	4	0	8	Special Education Paraprofessional	158	17	30
Licensed Occupational Therapist Assistant	3	0	14	English as a Second Language (ESL)/ Bilingual Paraprofessional	9	1	9
Pre-kindergarten Paraprofessional	5	0	66	Other Program Paraprofessional	17	3	11
Kindergarten Paraprofessional	16	0	10	TOTALS	**290**	**25**	**21.5**

Public School Noncertified Special Services

The number of available noncertified special services positions reached its highest level in five years. It grew by 9 percent from the prior year and this growth was largely driven by an increase in the number of Regular Program paraprofessionals (table 4: 29 in 2013–14 to 74 in 2014–15). Despite the current year's increase, the number of available licensed paraprofessional and therapist positions (290) remained considerably lower than the number that was typically available prior to the most recent recession (e.g., 355 in 2008–09). Unlike the certified teaching, administrative and special service positions, a much higher percentage of the noncertified service positions were part-time (21.7 percent versus 6.6 percent). Public LEAs filled 91.4 percent of available, noncertified special services positions.

FIGURE 3:
Factors Affecting the Size and Quality of Applicant Pools for Positions that Remained Vacant on October 1, 2012, and October 1, 2014

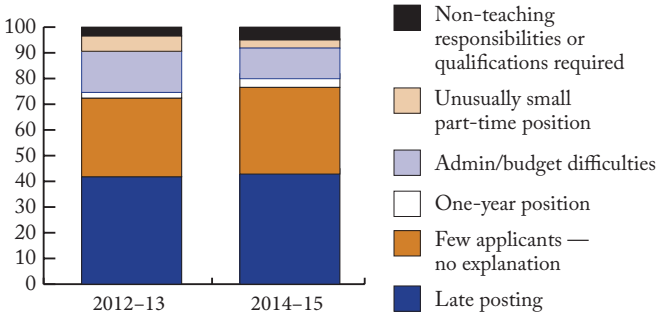
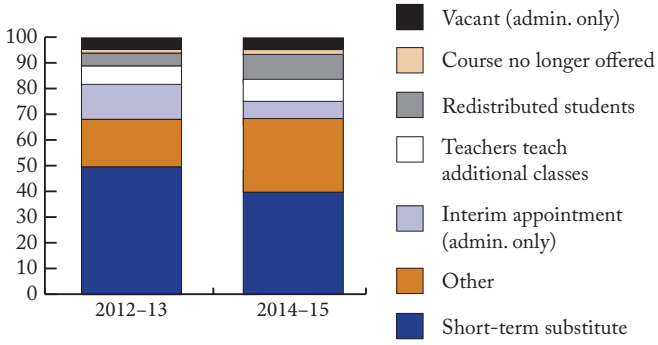


FIGURE 4:
LEA Responses to October Vacancies, 2012–13 and 2014–15



Accounting for October Vacancies

Public school LEAs reported that 61 percent of all positions that remained vacant on October 1 were due to the lack of qualified candidates, which is unchanged from the previous few years. Districts with October vacancies most frequently cited late postings as a key that affected the size and quality of their applicant pools (figure 3). Interestingly, fewer cited local administrative or budgetary difficulties than in the 2012–13 school year (11.5 percent versus 16 percent).

LEA Responses to October Vacancies

Public LEAs' most common response to vacancies continues to be hiring short-term substitutes (figure 4: 41.7 percent). Compared with the 2012–13 school year, they were also more likely to address staffing shortages by assigning extra classes to teachers (9.5 percent versus 7.2 percent), redistributing students (8.5 percent versus 5 percent) and even canceling courses (2 percent versus 1.4 percent).

TABLE 5: Designated Certification Subject Shortage Areas for the 2015–16 School Year Based on 2014 Fall Hiring Survey Results

Endorsement Type	Shortage Area Rank	Total Positions	Available Positions LEAs Sought to Fill for 2013–14 School Year	Change in Available Positions, 2012–13 to 2014–15	Percentage of Available Positions Filled by Oct. 1	Available Positions Not Filled Due to Lack of Qualified Applicants	Available Positions as a Percentage of Total Positions	Median Applications
World Languages, 7–12	1	1,935	252	13.5%	90.5%	7.9%	13.0%	6
Bilingual, PK–12	2	200	39	18.2%	64.1%	30.8%	19.5%	5.5
Science, 7–12	3	3,115	299	29.4%	92.3%	6.0%	9.6%	12
Comprehensive Special Education, K–12	4	5,748	701	31.8%	86.3%	10.0%	12.2%	21
Mathematics, 7–12	5	3,315	350	9.7%	87.1%	9.7%	10.6%	21
School Library Media Specialist	6	752	93	72.2%	78.5%	16.1%	12.4%	10
Technology Education, PK–12	7	522	64	52.4%	89.1%	10.9%	12.3%	6
Speech and Language Pathologist	8	1,153	122	4.3%	90.2%	7.4%	10.6%	10.5
Teacher of English to Speakers of Other Languages (TESOL), PK–12	9	511	62	106.7%	82.3%	12.9%	12.1%	8
Intermediate Administrator	10	3,038	364	11.3%	90.7%	3.8%	12.0%	24

Certification Subject Shortage Areas, 2015–16

The same 10 certifications were identified as subject area shortages for the 2014–15 and 2015–16 school years. World Languages, 7–12, and Bilingual Education, PK–12, remained the two most severe shortage areas. From 2012–13 to 2014–15, total positions for the 10 shortage areas collectively increased 0.9 percent. During this time, the number of available positions increased in each of the individual subject shortage areas, again highlighting the general trend of significant personnel turnover (table 5). For example, they were a large percentage of total positions in Bilingual Education, PK–12 (19.5 percent); World Languages, 7–12 (13 percent); and School Library Media Specialist (12.4 percent).

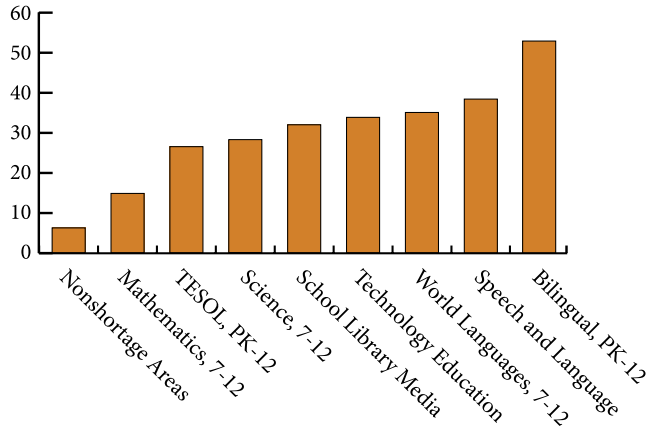
Although the shortage areas were only 43.4 percent of available positions that LEAs sought to fill, they accounted for 57.2 percent of all October 1 vacancies. They were also 65.1 percent of those vacancies due to the lack of qualified applicants, which is the most critical factor used to identify shortage areas (appendix). All the shortage areas except Intermediate Administrator (3.8 percent) had higher percentages of vacancies due to the lack of qualified applicants than that for the state as a whole (4.9 percent). These types of vacancies were particularly prevalent in Bilingual Education (30.8 percent); School Library Media Specialist (16.1 percent); TESOL, PK–12 (12.9 percent); Technology Education, PK–12 (10.9 percent); and Comprehensive Special Education, K–12 (10.0 percent).

A second important factor in the identification of shortage areas was the median number of appropriately certified applicants per available position. Collectively, the shortage areas had a median of 13 applicants per position compared with 26 for the nonshortage areas. In particular, Bilingual Education, PK–12 (5.5); World Languages, 7–12 (6); Technology Education, PK–12 (6); TESOL, PK–12 (8); School Library Media Specialist (10); and Speech and Language Pathologist (10.5) were well below the statewide median (23) and significantly lower than such nonshortage areas as Elementary, K–6 (112.5); History and Social Studies (84.5); and English, 7–12 (50.5).

A third factor for identifying shortage areas was the number of first or renewed Connecticut certificates per available position as fewer certificates issued means fewer potential applicants. The shortage areas accounted for 37.2 percent of total positions and 35.5 percent of all first certificate renewals. The median for all certification areas was 0.9 new certificates or renewals per available position. With the exception of Intermediate Administrators (1.4); TESOL (1.1); and Science, 7–12 (0.9); each of the shortage areas had fewer renewals or first certificates than the overall median. In fact Bilingual Education, PK–12; World Languages, 7–12; Technology Education, PK–12; and School Library Media Specialist had fewer than 0.5 renewals and new certificates per available position suggesting that there are very limited pools of potential candidates for positions in these fields.

The fourth factor used to identify shortage areas was the use of Durational Shortage Area Permits (DSAPs) during the 2013–14 school year. DSAPs allow LEAs to staff positions they could not fill with candidates who have credits in the subject matter but have not yet earned their certification. The shortage areas accounted for most of the positions that were staffed by DSAPs (75.5 percent). LEAs employed them most frequently in shortage areas such as Intermediate Administrator (31); Comprehensive Special Education, K–12 (24); Mathematics, 7–12 (17); and World Languages, 7–12 (10). In the 2013–14 school year, DSAPs issued by the CSDE equated to 14.9 percent of available positions for Bilingual Education, PK–12; 8 percent of those for School Library Media Specialist; 7.1 percent those for Intermediate Administrator; and 5.3 percent of available positions for Mathematics, 7–12.

FIGURE 5:
Minimally Qualified Hires as a Percentage of All Hires in Selected Shortage Areas, 2014–15



A final shortage area indicator was the prevalence of "minimally qualified hires." Although only 42 percent of all new hires occurred in the shortage areas, they accounted for 67.2 percent of minimally qualified hires. Minimally qualified hires were a higher percentage of all hires in the areas as a whole (17.3 percent) than for the nonshortage areas (6.1 percent). They were particularly prevalent in Bilingual Education, PK–12 (figure 5: 52 percent); Speech and Language Pathologist (39.1 percent); World Languages, 7–12 (35.5 percent); Technology Education, PK–12 (33.3 percent); and School Library Media Specialist (31.5 percent).

Endnotes

1. The 10 Alliance ED Reform Districts include Bridgeport, East Hartford, Hartford, Meriden, New Britain, New Haven, New London, Norwich, Waterbury and Windham. These districts had the lowest performance statewide on the CMT and CAPT.
2. In addition to the 10 Alliance ED Reform Districts, the 20 Alliance non-Ed Reform Districts include Ansonia, Bloomfield, Bristol, Danbury, Derby, East Haven, East Windsor, Hamden, Killingly, Manchester, Middletown, Naugatuck, Norwalk, Putnam, Stamford, Vernon, West Haven, Winchester, Windsor and Windsor Locks. These were the 30 lowest performing districts on the CMT and CAPT.
3. The State School Districts include the Connecticut Technical High School System, Unified District #1 (Department of Corrections), and Unified District #2 (Department of Children and Families).

TABLE 6: 2014–15 Hiring Statistics by Endorsement

Endorsement	Available Positions that LEAs Sought to Fill for 2014–15	October 1 Vacancies Due to Lack of Qualified Applicants	Durational Shortage Area Permits	Minimally Qualified Hires	Median Applicants	First CT Certificates and Renewals	Median Applicant Quality Rating	Shortage Rank
Agriculture, PK-12	2	0	0	0	12	4	2	43
Art, PK-12	128	3	2	5	19	71	3	25
Bilingual, PK-12	39	12	7	13	5.5	12	1	2
Blind, PK-12	1	0	0	1	2	5	1	37
Business, 7-12	25	1	3	10	13	31	2	30
Comprehensive Special Education, K-12	701	70	24	21	21	419	2	4
Department Chairperson	13	5	3	1	8	12	2	17
Elementary, K-6	1065	19	0	5	112.5	875	4	12
English, 7-12	326	7	0	6	50.5	294	3	18
English, Middle School	65	3	2	8	63	27	3	28
External Diploma Program/Noncredit Mandated Program	9	0	0	0	15	95	4	47
Health Occupations - Comprehensive High School	5	2	0	3	8	2	1	27
Health Occupations - VT Schools	6	0	0	0	1	2	1	35
Health, PK-12	56	1	0	2	28.5	120	4	40
Hearing Impaired, PK-12	11	4	0	4	1.5	10	1	16
High School Diploma Program	2	1	0	1	1	62	1	31
History and Social Studies, 7-12	174	2	1	0	84.5	243	4	36
History and Social Studies, Middle School	15	0	0	5	31	25	3	44
Home Economics, PK-12	26	3	3	14	8	7	1	15
Integrated Early Childhood/Spec. ED, Birth-K	25	0	3	0	30	16	3	45
Integrated Early Childhood/Spec. ED, Nursery-K-Elem. 1-3	100	2	2	2	31	112	2	33
Intermediate Administrator	364	14	31	17	24	494	3	10
Mathematics, 7-12	350	34	17	46	21	174	2	5
Mathematics, Middle School	50	3	4	10	13	33	2	22
Music, PK-12	135	4	0	9	24	110	3	24
Occupational Subject, VT School	36	0	1	0	115	37	4	48
Partially Sighted, PK-12	1	0	0	1	2	5	1	37
Physical Education, PK-12	133	2	0	7	32	137	3	32
Practical Nurse Education Instruction	3	0	0	0	7	1	2.5	40
Reading and Language Arts Consultant	28	4	0	6	12.5	15	2	22
Remedial Reading and Language Arts, 1-12	75	5	0	12	9	68	2	14
School Business Administrator	21	4	0	1	10	40	2	26
School Counselor	150	1	0	6	36	177	3.5	39
School Library Media Specialist	93	15	7	23	10	25	2	6
School Nurse Teacher	4	0	0	0	27	1	2.5	46
School Psychologist	140	16	0	9	14	101	2	13
School Social Worker	136	6	0	9	22	180	3	19
Science, 7-12	299	18	7	80	12	264	2	3
Science, Middle School	29	2	0	14	8	13	1.5	20
Speech and Language Pathologist	122	9	0	43	10.5	99	2	8
Superintendent	16	2	0	0	8.5	41	4	34
Technology Education, PK-12	64	7	2	19	6	25	2	7
TESOL, PK-12	62	8	3	14	8	71	1	9
Trade and Industrial Occupations - Comprehensive High School	10	2	0	4	10	16	1	29
Unique Subject Area Endorsement	21	4	9	13	3.5	46	1	11
Vocational Agriculture, 7-12	4	0	0	0	9.5	6	2	42
World Language Instructor, Elementary	17	3	2	6	7	34	2	21
World Languages, 7-12	252	20	10	81	6	107	2	1

Applicant pool ratings:
1) Few or minimally qualified applicants; 2) Some acceptable applicants; 3) Many acceptable applicants; 4) Some high-quality applicants; 5) Many high-quality applicants.

Appendix: Shortage Area Methodology

The Connecticut State Department of Education's (CSDE) Bureau of Data Collection, Research and Evaluation and the Bureau of Educator Standards and Certification collaborated to develop a methodology to identify teacher shortage areas that incorporate several significant factors (table 7). Data for this analysis are from the Bureau of Teacher Certification's Connecticut Educator Certification System and the Fall Hiring Survey, an annual employment survey covering the current school year. In 2014, Fall Hiring Survey participants included 166 public school districts, 22 charter schools, six regional educational service centers (RESCs), the three endowed and incorporated academies, 50 state-approved non-public special education programs, the Connecticut Technical High School System, and the Connecticut Departments of Correction and Children and Families.

Endorsements for which positions were available in the current school year are included in the shortage area analysis. An "available position" is one for which an LEA actively sought internal and external applicants in response to a public position announcement and/or reviewed applications from existing files in order to bring staffing to the level authorized by the local board of education. There are, however, four areas for which the individual endorsements are aggregated into general categories: World Languages, 7–12 (French, 7–12; German, 7–12; Italian, 7–12; Latin, 7–12; Russian, 7–12; Spanish, 7–12; and Other World Languages, 7–12); Science, 7–12 (Biology, 7–12; Chemistry, 7–12; Physics, 7–12; Earth Science, 7–12; and General Science, 7–12); Science, Middle School (Biology, Middle School; Chemistry, Middle School; Physics, Middle School; Earth Science, Middle School; General Science, Middle School; and Integrated Science, Middle School); and Intermediate Administrator (Principal, Assistant/Vice Principal; Subject Area Supervisor, District Level; Program Director/Curriculum Coordinator, School Level; and Assistant/Deputy/Associate Superintendent).

For the Fall Hiring Survey, LEAs may report up to two required endorsements per available position (e.g., Mathematics, 7–12, and Physics, 7–12). When there are multiple endorsements per position, each endorsement is counted as a separate position for calculating the shortage area scores (e.g., a position requiring Mathematics, 7–12, and Physics, 7–12, endorsements is treated as one Mathematics, 7–12, position and one Physics, 7–12, position). This is only done for calculating the shortage areas and not for any other analysis presented in this bulletin.

The first step in identifying shortage areas is assigning ranks to each endorsement, from least to most severe, for each of the following four factors: number of vacancies due to the lack of qualified candidates; median number of applicants per position; number of first Connecticut certificates and renewals divided by the number of available positions; and the sum of DSAPs, long-term substitutes and minimally qualified hires. These four ranks are placed in the CSDE's formula to produce a shortage score for each endorsement. Finally, these shortage scores are ranked to identify the top 10 shortage areas.

For further information, contact:

Federal Perkins Loan Deferment/Forgiveness
U.S. Department of Education
1-800-433-3243 and http://studentaid.ed.gov/repay-loans/forgiveness-cancellation/charts/teacher

Teachers' Mortgage Assistance Program
Connecticut Housing Finance Authority (CHFA)
860-721-9501 and http://www.chfa.org

Teacher Retirement/Rehiring of Retired Teachers
Teachers' Retirement Board
860-241-8400 and http://www.ct.gov/trb/site/default.asp

Teacher Certification
CSDE Bureau of Certification Helpline
860-713-6969 and http://www.sde.ct.gov/sde/site/default.asp

Fall Hiring Survey Data and Analysis
CSDE Bureau of Data Collection, Research and Evaluation
860-713-6856 or michael.sabados@ct.gov

TABLE 7: Factors Used for Calculation of Shortage Areas

Factor	Description
Durational Shortage Area Permits (DSAP)	Issued by the CSDE to LEAs so they may staff positions for which there was a shortage of available, qualified candidates. Teachers working under a DSAP must hold a bachelor's degree, have 12 semester hours in the subject area being taught and meet the state's basic skills testing requirement. DSAPs are issued for a year and may be conditionally reissued for an additional two years.
First issued or renewed Connecticut certificates per position	The number of people receiving or renewing Connecticut certificates between October 1, 2013, and September 30, 2014, divided by the total number of available positions in each endorsement area.
Long-term substitutes	Individuals serving in the employ of a board of education in the same assignment for more than 40 school days.
Median number of appropriately credentialed applicants per available position	Median is the middle number in a distribution (e.g., the number of applicants per position for which half of all available positions had more applicants and half had fewer applicants).
Minimally qualified hires	Those hired from an applicant pool of fewer than 20, which also received the lowest quality rating from the LEA ("Few or no minimally qualified applicants").
October vacancies due to the lack of qualified applicants	Positions that LEAs sought to fill for the 2014–15 school year but could not because they had no available qualified applicants.