

Educator Supply and Demand in Washington State

2006 Report



Dr. Terry Bergeson
State Superintendent of
Public Instruction

Spring 2007

Office of Superintendent of Public Instruction
Old Capitol Building
P.O. Box 47200
Olympia, WA 98504-7200

For more information about the contents
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Professional Education and Certification, OSPI
E-mail: Prof.Educ@k12.wa.us
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2006 Report

Prepared by

Larry Lashway, Program Specialist, Professional Education and Certification, Office of
Superintendent of Public Instruction

In Collaboration With

Chris Burton, J.D., Interim Executive Director, Washington School Personnel Association
BJ Bryant, Executive Director, American Association for Employment in Education with
assistance from The Ohio State University Research and Data Analysis Consultation Service

**Professional Education and Certification
Office of Superintendent of Public Instruction
Arlene Hett, Ed.D., Director**

Dr. Terry Bergeson
Superintendent of Public Instruction

Dr. Corrine McGuigan
Assistant Superintendent for Research & Educator Development

Dr. Andrew Griffin
Assistant Superintendent
Higher Education and Certification

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Executive Summary

This Educator Supply and Demand Research Study is the fourth in a biennial series of reports aimed at monitoring and understanding patterns of educator supply and demand in Washington's public schools. Jointly designed and conducted by the Office of the Superintendent of Public Instruction (OSPI), the Washington School Personnel Association (WSPA), and the American Association for Employment in Education (AAEE), the report is based on a survey of school district administrators that analyzed employment patterns in the 2005-06 school year, with supplementary data provided from OSPI certification data.

The intent of these Washington studies is to provide data to inform and shape decisions and activities in the following ways:

- Guide policymaking by the Professional Educator Standards Board.
- Assist the Office of Superintendent of Public Instruction in planning actions and initiatives appropriate to ESEA.
- Guide the Higher Education Coordinating Board in degree program approval and location of programs.
- Influence legislative funding.
- Inform the media and general public relative to issues in educator supply and demand.
- Influence federal grant proposal design.
- Create dialogue among educator stakeholder groups and community-based organizations to solve supply challenges in their respective counties.
- Increase the knowledge of Washington supply and demand by adding the 2006 data to the 2000, 2002 and 2004 data. By repeating the same survey instrument (with only minor changes) the survey team is creating longitudinal information, comparative statistics across the years, thereby expanding the knowledge of trends in educator supply and demand in Washington.

Key findings

Data from this year's survey show that:

- 36 out of 49 fields (73.5%) show some degree of shortage.
- Fourteen educator roles show high degrees of shortage:
 - Early Childhood Special Education
 - Mathematics
 - Middle Level Math/Science

- Occupational Therapist
 - Physical Therapist
 - School Nurse
 - School Psychologist
 - Science
 - Science–Biology
 - Science–Chemistry
 - Science–Earth
 - Science–Physics
 - Special Education
 - Speech Language Pathologist
- In many of these fields, the number of new educators earning certification each year is significantly less than the number of openings.
 - The areas in which there appears to be a surplus are elementary education and social studies.
 - Overall, the need for educators has increased since 2004, although the longer-range trend (2000-2006) shows a modest lessening of need in many areas.
 - The high-need areas tend to be the same across the state, although districts in some regions (particularly the central part of the state) show higher degrees of shortage.

Findings of the 2006 Statewide Study

In 2000, amid predictions of a national shortage of teachers, the Office of the Superintendent of Public Instruction, in collaboration with the Washington School Personnel Association and the American Association for Employment in Education, developed and administered the first statewide survey of educator supply and demand in Washington. Since then, the survey has been done biennially, making the current version the fourth in the series.

Although the original fears of severe, across-the-board shortages have not come true, these surveys continue to provide useful information. The demand for educators is always fluid, capable of shifting quickly in response to changes in programs, enrollments, or state/federal regulations. Within the past two years, for example, school district hiring practices have been strongly influenced by imposition of federal requirements for “highly-qualified teachers.”

The current survey shows increased demand—and difficulty in finding qualified candidates—in a majority of teaching subject areas. Areas of particular need include special education, mathematics, and the sciences. The survey also shows continued very strong need for many educational staff associate roles, such as school psychologists, speech language pathologists, occupational therapists, and physical therapists.

While the concept of “shortage” is easy to understand, measuring it is not a simple matter, and there is no single indicator that tells the whole story. Instead, this report examines a number of key variables:

1. Vacancies. The survey asks districts to report the number of positions they sought to fill during the 2005-06 school year.
2. District perceptions. The survey asks district officials to estimate the available supply relative to demand. In essence, this assesses the perceived difficulty of hiring educators in particular roles.
3. Potential retirements. The survey asks district officials to indicate the number of educators who are eligible to retire within the next five years. While those *eligible* to retire will not necessarily do so, possible retirements are a significant “at-risk” factor in predicting shortages.
4. Forecasted need. The survey asks district officials to predict future needs based on anticipated retirements and local conditions (such as growth in programs or changing enrollments).

In addition to these survey questions, we also provide information about teacher supply in terms of the numbers of certified educators being produced by Washington programs or moving here from out-of-state.

Methodology

The statistics were generated by the Research and Data Analysis Consultation Service at The Ohio State University, the researchers who assist with the national supply and demand studies conducted by AAEE, which has conducted 30 consecutive annual studies of national educator supply and demand, as well as three regional correlation studies. Since the first survey in 2000, the format and content has changed only minimally, allowing a longitudinal perspective by comparing results between and among years.

During September 2006, the survey was mailed to all 296 school districts in Washington. Followup reminders were sent by the Washington School Personnel Association until responses were received from 234 districts (80% response rate).

Similar to 2000, 2002, and 2004, data were aggregated for:

1. Number of Vacancies with the state, by field, during 2006
2. Administrators' perceived difficulty (demand) in filling positions in each field: supply (availability of qualified candidates) versus demand (number of district openings).
3. The number of retirees anticipated, by field, between 2006 and 2011, giving a five-year forecast of teaching, administrative and support personnel (special services).
4. Forecasted need for replacement educators: the level to which each field's positions will be filled by the districts experiencing retirements/attrition: expansion of the field's staffing, keeping the staffing the same, and diminishing of the field/program.
5. Administrators' perception of factors affecting the supply of or the demand for educators.

As in 2004, the Professional Education and Certification Office supplemented survey data with statistics related to certification. This year's report also provides some data on out-of-endorsement teaching and highly qualified teachers.

Number of Education Openings in Washington in the 2005-2006 Academic Year

Respondents were asked to enter the number of openings they had in their districts by field during the academic year of 2005-2006. If they had 0 openings, they were to indicate so. They could also enter portions of positions as well as fulltime vacancies. If they did not have a particular field, they indicated NA for not applicable.

Table 1 below, in survey order, indicates each field, the number of respondents who entered a numeral and the total number of openings in the districts that participated. Table 2 has the same information, but in relative order from the highest number of openings to the least.

Table 1. Number of Openings for 2005-2006 Academic Year (in survey order)			
	N	Sum	Sum = Total Number of
		No. of Openings	Openings (FTE)
Arts–Dance	73	5.6	N = number of districts reporting openings
Arts–Music-Choral	140	60.0	
Arts–Music-General	158	86.6	
Arts–Music-Instrumental.	155	87.0	
Arts–Theatre Arts	112	23.5	
Arts–Visual Arts	140	82.2	
Bilingual	108	56.5	
CTE–Agriculture Education	124	26.0	
CTE–Business Education	143	52.7	
CTE–Family Consumer Science Education	132	60.6	
CTE–Marketing Education	119	20.0	
CTE–Technology Education	137	68.0	
Early Childhood Education	128	61.0	
Early Childhood Special Education.	141	72.0	
Elementary Education	197	1,910.5	
English as a Second Language	132	130.5	
English Language Arts	186	439.1	
Health/Fitness	171	196.5	
History	161	53.5	
Library Media	156	110.5	
Mathematics	186	551.3	
Middle Level–Humanities	139	140.0	
Middle Level–Math/Science.	170	209.5	
Reading	163	139.5	
Science	171	267.0	
Science–Biology	140	61.5	
Science–Chemistry	141	40.0	
Science–Earth Science.	138	25.5	
Science–Physics	141	20.0	
Social Studies	161	200.0	

Table 1. Number of Openings for 2005-2006 Academic Year (in survey order) <i>continued</i>			
	N	Sum	Sum = Total Number of
		No. of Openings	Openings (FTE)
Special Education	182	848.4	N = number of districts reporting openings
Traffic Safety	97	15.0	
World Language–French	92	30.2	
World Language–German	75	11.0	
World Language–Japanese	66	23.0	
World Language–Spanish	140	95.5	
School Counselor	166	220.5	
School Psychologist	155	158.0	
Speech Language Pathologist	157	178.2	
School Nurse	150	92.5	
Occupational Therapist	137	89.3	
Physical Therapist	124	24.3	
School Social Worker	85	11.0	
Principal–Elementary	166	108.5	
Principal–High School	149	81.0	
Principal–Middle School	147	46.0	
Human Resources	126	18.0	
Business Manager	160	22.0	
Superintendent	168	20.0	

Table 2. Number of Openings for 2005-2006 Academic Year (by field in relative order)			
	N	No. of Openings	Sum = Total Number of
		Sum	Openings
Elementary Education	197	1,910.5	N = number of responses
Special Education	182	848.4	
Mathematics	186	551.3	
English Language Arts	186	439.1	
Science	171	267.0	
School Counselor	166	220.5	
Middle Level–Math/Science.	170	209.5	
Social Studies	161	200.0	
Health/Fitness	171	196.5	
Speech Language Pathologist	157	178.2	
School Psychologist	155	158.0	
Middle Level–Humanities	139	140.0	
Reading	163	139.5	
English as a Second Language	132	130.5	
Library Media	156	110.5	
Principal–Elementary	166	108.5	
World Language–Spanish	140	95.5	
School Nurse	150	92.5	
Occupational Therapist	137	89.3	

**Table 2. Number of Openings for 2005-2006 Academic Year (by field in relative order)
continued**

	N	No. of Openings	Sum = Total Number of Openings
		Sum	N = number of responses
Arts–Music–Instrumental.	155	87.0	
Arts–Music–General	158	86.6	
Arts–Visual Arts	140	82.2	
Principal–High School	149	81.0	
Early Childhood Special Education	141	72.0	
CTE–Technology Education	137	68.0	
Science–Biology	140	61.5	
Early Childhood Education	128	61.0	
CTE–Family Consumer Science Education	132	60.6	
Arts–Music–Choral	140	60.0	
Bilingual	108	56.5	
History	161	53.5	
CTE–Business Education	143	52.7	
Principal–Middle School	147	46.0	
Science–Chemistry	141	40.0	
World Language–French	92	30.2	
CTE–Agriculture Education	124	26.0	
Science—Earth Science.	138	25.5	
Physical Therapist	124	24.3	
Arts–Theatre Arts	112	23.5	
World Language–Japanese	66	23.0	
Business Manager	160	22.0	
CTE–Marketing Educ	119	20.0	
Science–Physics	141	20.0	
Superintendent	168	20.0	
Human Resources	126	18.0	
Traffic Safety	97	15.0	
World Language–German	75	11.0	
School Social Worker	85	11.0	
Arts–Dance	73	5.6	

Another way of looking at vacancies is shown in Table 3, which compares the number of openings over time

Table 3. Vacancies by Field, 2000-2006					
	2000	2002	2004	2006	Since '04
Number of districts responding	272	255	269	234	
Agriculture Education	40	28	32	26	-6
Bilingual Education	71	103	98	57	-41
Business Education	111	147	80	53	-33
Dance Education	10	10	9	6	-3
Family and Consumer Sciences	77	83	64	61	-3
Marketing Education	34	42	31	20	-11

Table 3. Vacancies by Field, 2000-2006 <i>continued</i>					
	2000	2002	2004	2006	Since '04
Number of districts responding	272	255	269	234	
Technology Education	112	91	98	68	-30
Early Childhood Education	69	76	40	61	+21
Early Childhood Special Education	93	169	88	72	-16
Elementary Education	2039	3059	1874	1911	+37
English/Language Arts	284	328	439	439	0
English as a Second Language	126	177	146	131	-15
Health/Fitness	NA	NA	183	197	+14
History	104	92	87	54	-33
Library	111	151	102	111	+9
Mathematics	422	570	470	551	+81
Middle Level Humanities	NA	NA	295	140	-155
Middle Level Math/Science	NA	NA	306	209	-97
Music–Choral	69	111	76	60	-16
Music–General	126	141	106	87	-19
Music–Instrumental	88	118	85	87	+2
Reading	165	254	194	140	-54
Science–General Science	227	236	195	267	+72
Science–Biology	68	81	67	62	-5
Science–Chemistry	33	49	51	40	-11
Science–Earth Science	30	48	27	26	-1
Science–Physics	26	35	34	20	-14
Social Studies	263	282	221	200	-21
Special Education	941	983	977	848	-129
Traffic Safety	39	22	13	15	+2
Theatre Arts (Drama)	24	36	16	24	+8
Visual Arts	56	76	71	82	+11
World Language–French	41	30	34	30	-4
World Language–German	18	15	7	11	+4
World Language–Japanese	13	20	20	23	+3
World Language–Spanish	122	132	139	96	-43
School Counselor	238	264	217	221	+4
School Psychologist	157	190	161	158	-3
School Social Worker	16	16	15	11	-4
Occupational Therapist	84	71	111	89	-22
Physical Therapist	50	40	54	24	-30
Speech Pathologist	171	182	187	178	-9
School Nurse	87	94	80	93	+13
Principal–Elementary	130	149	152	109	-43
Principal–Middle School	61	81	77	46	-31
Principal–High School	68	88	86	46	-40
Human Resources	NA	NA	29	18	-9
Business Manager	NA	NA	25	22	-3
Superintendent	46	50	43	20	23

Note: Data in Table 3 should be treated cautiously. The number of districts responding to the survey varies from year to year; as responses go up, so do the number of reported vacancies. In addition, changes in the state endorsement system since 2000 make accurate comparisons

difficult in several areas. For example, the sizable decrease in demand for elementary teachers since 2002 may in part reflect the addition of middle level endorsements to the list. That is, vacancies reported under middle level on this year's report may have been reported as elementary (K-8) vacancies on some previous reports.

Discussion

Counting the number of vacancies in a given area provides useful insights into relative demand for educators, but this information also has several limitations that should be noted. For example, elementary education tops the list, even though all other survey data indicate there is actually a *surplus* of elementary teachers. The large number of openings is simply a reflection of the size of the teaching force in grades K-8.

Second, the number of reported vacancies depends on the number of districts responding to the survey. This year's survey represents around 80% of Washington school districts. Therefore, it is likely that the figures cited here understate the number of actual openings across the state. In addition, comparisons from one survey to the next may be affected by the differences in the number of respondents. That appears to have affected this year's results: most areas show a drop in the number of openings, even though other data from the survey show increasing shortages. Much of this apparent decrease may actually reflect a decrease in the number of districts responding, from 269 to 234.

Third, vacancies are reported as full-time equivalency (FTE) positions. That is, districts frequently need to fill partial positions—one or two sections of a subject rather than a full teaching load. For that reason, the number of reported FTE positions probably tends to understate the hiring challenges faced by Washington schools. For example, Table 1 shows a need for just 25.5 FTE Earth Science teachers, but 138 districts were in the market for teachers with this endorsement. Because most teachers prefer to work full-time, districts need to find individuals capable of filling needs in more than one endorsement area. This problem can be especially challenging in rural and remote districts in which small staff size limits flexibility.

Despite these limitations, the information on vacancies reinforces findings from other parts of the survey. The recent statewide concern over math and science teaching clearly shows up here; even with the decrease in the number of districts reporting, the demand for teachers with secondary math and science endorsements has risen significantly. What we can't determine from the survey are the specific decisions that are driving the increased need. One possibility is that districts are expanding math and science offerings at the high school level. Another is that they are seeking teachers with more in-depth subject knowledge for the middle grades. (State assignment rules allow teachers with elementary endorsements to teach any subject through the 8th grade, but the advent of more stringent federal rules means that many of these teachers would not be considered highly-qualified at the 7th and 8th grade level.) Districts may also be expanding efforts to provide focused assistance for students experiencing difficulty on state tests.

One anomaly in the data on math and science is the apparent decline in the number of openings for teachers with Middle Level Math Science endorsements. The reason is unknown, although it is possible that districts filling middle level positions find that secondary teachers (who are authorized to teach their subject from grades 5-12) give the district more assignment flexibility

than Middle Level Math Science teachers (who are authorized to teach those subjects in grades 4-9).

Special education, although showing a surprisingly large drop in the number of openings, still remains high on the list. What is also notable about the special education total is how unevenly distributed the need is. More detailed data (not shown here) reveal that 372 vacancies occurred in just 10 districts—*thus, 44% of the reported statewide need for special education teachers is concentrated in just 3% of the districts.*

District Perceptions of Shortage in the 2005-2006 Academic Year

School district officials responsible for hiring teachers and other certificated educators have a unique perspective on supply and demand issues. Not only do they see first-hand the numbers of candidates for various positions, they can make judgments about the quality of the talent pool. For that reason, one of the key survey questions asks administrators to characterize the difficulty they have experienced in hiring qualified educators.

Specifically, the survey asks district officials to indicate shortages on a scale from 1 (considerable surplus) to 5 (considerable shortage).

Table 4 shows the mean score assigned to each educational role by survey respondents.

Table 4. Mean Score Assigned to Educational Role by Survey Respondents			
	Mean		Mean
Arts–Dance	3.36	Science–Biology	4.08
Arts–Music-Choral	3.73	Science–Chemistry	4.25
Arts– Music-General	3.86	Science–Earth	4.00
Arts–Music-Instrumental	3.95	Science–Physics	4.26
Arts–Theatre Arts	3.46	Social Studies	2.70
Arts–Visual Arts	3.33	Special Education	4.52
Bilingual Education	4.03	Traffic Safety	3.19
CTE–Agricultural Education	3.84	French	3.55
CTE–Business Education	3.72	German	3.61
CTE–Family Consumer Science	3.65	Japanese	4.05
CTE–Marketing Education	3.38	Spanish	3.84
CTE–Technology Education	3.79	School Counselor	3.51
Early Childhood Education	3.21	School Psychologist	4.42
Early Childhood Special Education	4.11	Speech Language Pathologist	4.63
Elementary Education	2.37	School Nurse	4.24
English as a Second Language	4.02	Occupational Therapist	4.53
English/Language Arts	3.08	Physical Therapist	4.46
Health/Fitness	2.67	School Social Worker	3.51
History	2.51	Principal–Elementary	3.19
Library Media	3.47	Principal–High School	3.85
Mathematics	4.51	Principal–Middle School	3.46
Middle-Level: Humanities	3.08	Human Resources	3.43
Middle-Level: Math/Science	4.19	Business Manager	3.91
Reading	3.30	Superintendent	3.63
Science	4.20		

Table 5 categorizes each educational role by degree of shortage, using the following scale:

- 5.00-4.21 = Considerable Shortage
- 4.20-3.41 = Some Shortage
- 3.40-2.61 = Balance
- 2.60-1.81 = Some Surplus
- 1.80-1.00 = Considerable Surplus

Table 5. Relative Demand by Field 2006-2007 Research		Mean
Considerable Shortage (5.00-4.21)	Speech Language Pathologist	4.63
	Occupational Therapist	4.53
	Special Education	4.52
	Mathematics	4.51
	Physical Therapist	4.46
	School Psychologist	4.42
	Science–Physics	4.26
	Science–Chemistry	4.25
	School Nurse	4.24
Some Shortage (4.20-3.41)	Science	4.20
	Middle Level–Math/Science	4.19
	Early Childhood Special Education	4.11
	Science–Biology	4.08
	Japanese	4.05
	Bilingual Education.	4.03
	English as a Second Language	4.02
	Science–Earth	4.00
	Arts–Music-Instrumental	3.95
	Business Manager	3.91
	Arts–Music-General	3.86
	Principal–High School	3.85
	CTE–Agricultural Education	3.84
	Spanish	3.84
	CTE–Technology Education	3.79
	Arts–Music-Choral	3.73
	CTE–Business Education	3.72
	CTE–Family Consumer Sciences	3.65
	Superintendent	3.63
	German	3.61
	French	3.55
	School Social Worker	3.51
	School Counselor	3.51
	Library Media	3.47
	Arts–Theatre Arts	3.46
	Principal–Middle School	3.46
	Human Resources	3.43

Table 5. Relative Demand by Field 2006-2007 Research continued		Mean
Balanced Supply and Demand (3.40-2.61)	CTE–Marketing Education	3.38
	Arts–Dance	3.36
	Arts–Visual Arts	3.33
	Reading	3.30
	Early Childhood Education	3.21
	Principal–Elementary	3.19
	Traffic Safety	3.19
	Middle Level–Humanities	3.08
	English/Language Arts	3.08
	Social Studies	2.70
	Health/Fitness	2.67
Some Surplus (2.60-1.81)	History	2.51
	Elementary Education	2.37
Considerable Surplus (1.80-1.00)	No Fields in this category	

The most striking finding shown on this table is that 36 of the 49 roles are showing at least some degree of shortage. Among teaching areas, the major shortages occur in special education, mathematics, and science. However, a majority of the roles showing considerable shortages are educational staff associate positions.

In general, these results are similar to those of previous years. Table 6 takes a longitudinal look at the data. It shows mean ratings for 2002, 2004, and 2006, and also describes trends since 2002.

Table 6. District Perceptions of Shortage, 2002-2006						
Field	2002	2004	2006	Since '04	Since '02	
Arts–Dance	3.27	3.03	3.36	↑ .33	↑ .09	
Arts–Music-Choral	4.10	3.72	3.73	↓ .01	↓ -.37.	
Arts–Music-General	3.89	3.59	3.86	↑ .27	↓ -.03	
Arts–Music-Instrumental	4.17	3.74	3.95	↑ .22	↓ -.21	
Arts–Theatre Arts	3.25	3.15	3.46	↑ .31	↑ .21	
Arts–Visual Arts	3.37	3.27	3.33	↑ .06	↓ -.04	
Bilingual Education	4.00	4.04	4.03	↓ -.01	↑ .03	
CTE–Agricultural Ed.	3.86	3.77	3.84	↑ .07	↓ -.02	
CTE–Business Education	3.91	3.63	3.72	↑ .09	↓ -.19	
CTE–Family Consumer Science	3.85	3.60	3.65	↑ .05	↓ -.20	
CTE–Marketing Education	3.71	3.36	3.38	↑ .02	↓ -.33	
CTE–Technology Ed.	3.90	3.61	3.79	↑ .18	↓ -.11	
Early Childhood Education	3.15	3.00	3.21	↑ .21	↓ -.06	
Early Childhood Special Ed.	4.02	4.05	4.11	↑ .06	↑ .09	
Elementary Education	2.75	2.25	2.37	↑ .12	↓ -.38	
English as a Second Lang.	4.04	3.85	4.02	↑ .17	↓ -.02	
English/Language Arts	3.24	2.96	3.08	↑ .12	↓ -.16	
Health/Fitness	NA	2.57	2.67	↑ .10	NA NA	
Library Media	3.78	3.45	3.47	↓ -.02	↓ -.31	

Field	2002	2004	2006	Since '04	Since '02
Mathematics	4.24	3.98	4.51	↑ .53	↑ .27
Middle Level–Humanities	NA	3.02	3.08	↑ .06	NA NA
Middle Level–Math/ Science	NA	3.78	4.19	↑ .41	NA NA
Reading	3.30	3.33	3.30	↓ -.03	↔ 0
Science	3.85	3.80	4.20	↑ .40	↑ .35
Science–Biology	4.01	3.73	4.08	↑ .35	↑ .07
Science–Chemistry	4.17	4.01	4.25	↑ .24	↑ .08
Science–Earth	3.97	3.77	4.00	↑ .23	↑ .03
Science–Physics	4.22	4.12	4.26	↑ .14	↑ .04
Social Studies	2.75	2.40	2.70	↑ .30	↓ -.05
Special Education	4.62	4.57	4.52	↓ -.05	↓ -.10
Traffic Safety	3.41	2.97	3.19	↑ .22	↓ -.22
French	3.78	3.45	3.55	↑ .10	↓ -.23
German	3.81	3.33	3.61	↑ .28	↓ -.20
Japanese	4.04	3.85	4.05	↑ .20	↑ .01
Spanish	3.90	3.85	3.84	↓ -.01	↓ -.06
School Counselor	3.69	3.56	3.51	↓ -.05	↓ -.18
School Psychologist	4.42	4.38	4.42	↑ .04	↔ 0
Speech Lang. Pathologist	4.54	4.54	4.63	↑ .09	↑ .09
School Nurse	4.03	4.14	4.24	↑ .10	↑ .21
Occupational Therapist	4.48	4.46	4.53	↑ .07	↑ .05
Physical Therapist	4.51	4.41	4.46	↑ .05	↓ -.05
School Social Worker	3.58	3.47	3.51	↑ .04	↓ -.07
Principal–Elementary	3.39	3.13	3.19	↑ .06	↓ -.20
Principal–High School	3.88	3.78	3.85	↑ .07	↓ -.03
Principal–Middle School	3.68	3.41	3.46	↑ .05	↓ -.22
Human Resources	NA	3.32	3.43	↑ .11	NA NA
Business Manager	NA	3.53	3.91	↑ .38	NA NA
Superintendent	3.71	3.46	3.63	↑ .17	↓ -.08

Overall, results from the current survey show increased shortage in 43 of 49 educational roles, although the changes in many cases are not large. However, perceived shortages in mathematics, middle level math science, and science are up sharply from 2004—possibly a result of widespread concern over student achievement in those areas, as well as federal highly-qualified rules. Special education, although remaining the highest-ranked teaching area, has actually declined a bit since 2004.

Interestingly, the trend since 2002 is more moderate, with less than a third of the roles showing increased demand over that span. Math (.27) and science (.35) show the greatest growth over that time, while special education reveals a minor decline. Overall, the pattern seems to show that the extent of shortage dropped from 2002 to 2004, but now has rebounded, although not in most cases to the 2002 level.

Discussion

The degree of perceived shortage is one of the most meaningful measures of supply and demand, as it relies on the experiences of district officials who have had to fill vacant positions in their schools. For that reason, Washington uses it as the main means of determining roles that are officially in shortage.

This year's survey shows that shortages of educators, while not yet reaching the heights that had been predicted in 2000, remains a significant challenge for the educational community. Overall, 36 out of 49 (73.5%) fields show some degree of shortage. The major concerns center around special education, math, and science. For these fields, employers will find the most difficulty filling positions with highly qualified employees. For candidates, this means that they can be selective as they pursue employment.

Although supply and demand questions often focus on classroom teaching, this year's survey shows a continuation of a persistent shortage of educational staff associates, especially speech language pathologists, occupational therapists, physical therapists, school psychologists, and school nurses. The shortages in these roles are especially challenging for schools, since these positions all require Master's degrees or other advanced training that is not widely available. In addition, specialists with these particular skills have employment options beyond schools, requiring districts to compete with other organizations and agencies.

The 27 fields categorized as "Some Shortage" cover a myriad of fields including the sciences, foreign languages, school administration, and many more. For fields in this category, districts will have some difficulty finding highly qualified educators to fill vacant positions. In AAEE's national supply and demand research, suburban districts have the least problem filling positions, followed by the urban districts. Rural districts often have the most difficulty recruiting in the shortage areas.

Only two fields are in Some Surplus (history and elementary education); however, their scores are closer to the Balanced category (above Some Surplus) than to the category that follows: Considerable Surplus. No fields are rated as being in Considerable Surplus.

Number of Retirements Expected in the Next Five Years

As on past surveys, respondents were asked to predict how many of their staff members would likely retire within the next five years. Table 7 indicates the number of respondents who answered the question (N) and the total number of retirements expected in that field (Sum). Because a minority of Washington districts responded to this question, the numbers understate the actual numbers across the state.

Table 7. Number of Eligible Retirees for 2006-2011 (by field)

N = number of respondents to this question

Sum = Total number of expected retirements

	N	Sum
Arts–Dance	46	11.0
Arts–Music-Choral	78	47.5
Arts–Music-General	97	113.0
Arts–Music-Instrumental	90	67.5
Arts–Theatre Arts	63	14.0
Arts–Visual Arts	89	88.0
Bilingual Education	58	20.0
CTE–Agricultural Education	70	25.0
CTE–Business Education	96	83.0
CTE–Family Consumer Science	89	83.0
CTE–Marketing Education	62	16.0
CTE–Technology Education	85	65.0
Early Childhood Education	58	84.0
Early Childhood Special Ed.	70	55.0
Elementary Education	185	2,038.0
English as a Second Language	75	46.0
English/Language Arts	134	370.3
Health/Fitness	118	256.5
History	102	150.5
Library Media	117	229.0
Mathematics	127	306.5
Middle Level–Humanities	78	131.0
Middle Level–Math/Science	93	123.0
Reading	85	126.0
Science	90	145.0
Science–Biology	67	31.0
Science–Chemistry	66	27.0
Science–Earth	62	25.0
Science–Physics	64	23.0
Social Studies	91	203.5
Special Education	124	410.0
Traffic Safety	53	27.0
French	54	31.0
German	48	12.3

	N	Sum
Japanese	36	7.0
Spanish	82	69.7
School Counselor	112	237.0
School Psychologist	95	116.0
Speech Language Pathologist	95	122.0
School Nurse	76	59.0
Occupational Therapist	74	46.0
Physical Therapist	62	19.0
School Social Worker	43	12.0
Principal–Elementary	102	156.5
Principal–High School	99	74.5
Principal–Middle School	87	57.0
Human Resources	69	26.0
Business Manager	92	46.0
Superintendent	114	73.0

Table 8 ranks the same data from highest to lowest, and also provides a longitudinal perspective, comparing the most recent results with the 2002 and 2004 survey results.

Table 8. Educators Who Will be Eligible to Retire in 2006-11				
Ranked by 2006-2007 data				
Fields	'02-'07	'04-'09	'06-11	Difference 04-09 vs 06-11
Elementary Education	2460	2572	2038	-534 ↓
Special Education	358	490	410	-80 ↓
English/Language Arts	279	361	370	9 ↑
Mathematics	406	320	306	-14 ↓
Health/Fitness	NA	341	256	-85 ↓
Library	228	253	229	-24 ↓
History	166	163	150	-13 ↓
Science-General Science	168	155	145	-10 ↓
Middle Level-Humanities	NA	177	131	-46 ↓
Reading	111	142	126	-16 ↓
Middle Level-Math/Science	NA	193	123	-70 ↓
Music-General	49	76	113	37 ↑
Social Studies	298	275	91	-184 ↓
Visual Arts	NA	101	88	-13 ↓
Early Childhood Education	27	59	84	25 ↑
Business Education	91	104	83	21 ↑
Family and Consumer Sciences	82	94	83	-11 ↓
World Language-Spanish	77	104	70	-34 ↓
Music-Instrumental	89	84	68	-18 ↓
Technology Education	97	93	65	-28 ↓
Early Childhood Special Education	69	61	55	-6 ↓
Music-Choral	68	57	48	-9 ↓
English as a Second Language	41	64	46	-18 ↓
Science-Biology	58	67	31	36 ↑
World Language-French	31	39	31	8 ↑
Science-Chemistry	44	59	27	-32 ↓
Traffic Safety	NA	24	27	3 ↑
Agriculture Education	38	40	25	-15 ↓
Science-Earth Science	22	39	25	-14 ↓
Science-Physics	33	51	23	-28 ↓
Bilingual Education	31	26	20	-6 ↓
Marketing Education	28	24	16	-8 ↓
Theatre Arts	18	14	14	0 ↔
World Language-German	24	19	12	-7 ↓
Dance Education	0	5	11	6 ↑
World Language-Japanese	9	6	7	1 ↑
School Counselor	307	276	237	-39 ↓
Speech Pathologist	72	116	122	6 ↑
School Psychologist	104	148	116	-32 ↓
School Nurse	41	64	59	-5 ↓
Occupational Therapist	28	46	46	0 ↔
Physical Therapist	17	22	19	-3 ↓
School Social Worker	5	9	12	3 ↓
Principal-Elementary	209	218	157	-61 ↓
Principal-High School	102	113	75	-38 ↓
Superintendent	91	97	73	-24 ↓
Principal-Middle School	86	83	57	-26 ↓
Business Manager	NA	41	46	5 ↑
Human Resources	NA	33	26	-7 ↓

Discussion

In the past decade, worries about teacher shortages have been fueled by awareness of the “demographic bulge” associated with the baby boom. The many young educators who entered the profession in a time of rapid expansion are now in the last years of their careers, creating the prospect of a mass exodus of experienced educators in a short period of time.

As in past surveys, district officials were asked to indicate the number of employees eligible to retire in the next five years. Because many districts did not respond to this question, the resulting figures understate the number of educators who will retire in that period. In addition, because the state does not currently track teacher assignment data, we are unable to determine the *proportion* of teachers in each role who are eligible to retire.

Viewed longitudinally, there appears to be a modest decline in potential retirements. In this year’s survey, some 38 of the 49 fields show fewer educators eligible for retirement. Does this mean that baby boom retirements have peaked? It is probably too early to tell. The differences from the previous survey are not large, and may simply reflect the smaller return rate on this year’s survey. However, there are no indications of major increases compared with recent years.

Although this survey does not track actual retirements, recent research on teacher retention from the Center for Strengthening the Teaching Profession at the University of Washington provides a helpful perspective¹. They determined that in 2004, 5.5% of public school teachers were aged 55 or older and had 30 years of experience; in 1996, the number of teachers in that category constituted just 2.6% of the workforce.

Of course, these figures portray *eligibility* for retirement, which is not a perfect predictor of when teachers *will* retire. The UW study found that in the five year period from 2000-01 to 2004-05, about 36% of teachers aged 56 or older left the public education system. Presumably, most left due to retirement. Interestingly, this research also found that although the proportion of teachers aged 56 or over increased between 1998-99 and 2004-05, the percentage of those teachers leaving the system actually declined from 40% to 36%. Retirement may be accelerated or deferred for a variety of reasons, many of them economic. For example, many of those who were eligible for retirement after 2000 may have been dissuaded from doing so by the sharp decline in investment portfolios that occurred in that time period.

¹ Plecki, M.I.; Elfers, A.M.; and Knapp, M.S. (2007). *Who’s Preparing Washington’s School Children? A 2006 Update*. Seattle, WA: University of Washington.

District Forecast of Staffing Needs Following Retirements

As the school district respondents answered the survey question: “Number of Eligible Retirees for 2006-2011,” they were also asked to rank each field regarding the replacement levels for those retirees:

Based on your anticipated staff retirements/changes during 2006-2011, enter your forecasted need for replacement educators currently teaching/working in the fields listed. (Note: Factors influencing your response include projected student enrollment, changes in program offerings, changes in community demographics, program funding, etc.)

Increasing need (3) means that you will increase staffing in that field beyond the number of staff who leave (i.e., growth in programs).

Considerable need (2) means that you will need to replace all who leave.

Slight need (1) indicates that you will need to replace only a portion of those who leave.

No need (0) indicates that you will not be replacing those in that field who leave (program discontinuation, downsizing, etc.).

In this way, districts are identifying what they will do as current educators retire—will they “grow” a program by hiring more than those who retire, keep it the same by replacing the retiree, diminish the program, or discontinue the program?

As an example, there is a severe national shortage of technology education (industrial arts) teachers. Thus, when there is a retirement in that field, the employing district may not be able to find a replacement. Since it is neither a field state-mandated nor one that is involved in competency testing, the school district may have to make a decision to discontinue or downsize the program. All of a sudden then, a field that was a considerable shortage to the point of not being able to find a person becomes a field of no demand since that district is downsizing or eliminating the program because they could not hire a replacement.

Table 9 indicates the extent to which the districts foresee replacing staff member retirements by field (in the order of the survey) on a scale of 0 to 3.

Table 9. District Forecast of Needs by Field

3 = increasing need (will increase staffing more than the number who retire)
2 = considerable need (replace all who leave)

1 = slight need (replace only a portion of retirements)
0 = no need (discontinuation)

Descriptive Statistics

	No. of Districts Responding to question	Avg.		No. of Districts Responding to question	Avg.
Arts–Dance	57	0.49	CTE–Agricultural Education	86	1.08
Arts–Music-Choral	87	1.24	CTE–Business Education	99	1.40
Arts–Music-General	101	1.40	CTE–Family Consumer Science	100	1.34
Arts–Music-Instrumental	94	1.34	CTE–Marketing Education	72	1.11
Arts–Theatre Arts	70	0.83	CTE–Technology Education	92	1.58
Arts–Visual Arts	95	1.14	Early Childhood Education	77	1.12
Bilingual Education	74	1.41	Early Childhood Special Ed.	83	1.67

Table 9. District Forecast of Needs by Field *continued*

3 = increasing need (will increase staffing more than the number who retire)
 2 = considerable need (replace all who leave)

1 = slight need (replace only a portion of retirements)
 0 = no need (discontinuation)

Descriptive Statistics

	No. of Districts Responding to question	Avg.
Elementary Education	180	1.69
English as a Second Language	88	1.74
English/Language Arts	129	1.59
Health/Fitness	119	1.19
History	107	1.16
Library Media	120	1.29
Mathematics	131	2.29
Middle Level–Humanities	85	1.35
Middle Level–Math/Science	113	2.11
Reading	96	1.60
Science	101	1.97
Science–Biology	86	1.94
Science–Chemistry	86	1.98
Science–Earth	79	1.81
Science–Physics	84	1.86
Social Studies	101	1.46
Special Education	139	2.40
Traffic Safety	64	0.88

	No. of Districts Responding to question	Avg.
French	67	1.13
German	59	0.92
Japanese	50	1.10
Spanish	95	1.66
School Counselor	120	1.69
School Psychologist	106	2.07
Speech Language Pathologist	107	2.29
School Nurse	91	1.88
Occupational Therapist	87	2.10
Physical Therapist	79	1.99
School Social Worker	55	1.20
Principal–Elementary	108	1.56
Principal–High School	103	1.79
Principal–Middle School	96	1.58
Human Resources	78	1.22
Business Manager	97	1.42
Superintendent	114	1.67

In table 10, the fields were put in relative order from the highest number to the lowest. In this way, it is easier to visualize which fields the districts think are the most important for filling at the same level, at a higher level, or at a lower level. With four categories between 0 and 3, a distance of .75 was applied to the categories in order to classify the fields. In addition, table 10 provides longitudinal data from 2002 and 2004. (Note: the ranking is by 2006 results)

Table 10. District Forecast of Needs by Field in Relative Order

3 = increasing need (will increase staffing more than the number who retire) 2.26–3.00, 2 = considerable need (will replace all who leave) 1.51–2.25, 1 = slight need (will replace only a portion of retirements) 0.76–1.50, 0 = no need (will discontinue some or all positions) 0.00–0.75

Rank order in 2006 survey	2002	2004	2006
Increasing Need 2.26–3.00			
Special Education	2.31	2.24	2.40
Mathematics	2.12	1.99	2.29
Speech Language Pathologist	1.84	1.94	2.29
Considerable Need 1.51–2.25			
Middle Level–Math/Science	NA	1.77	2.11
Occupational Therapist	1.81	1.85	2.10
School Psychologist	2.02	1.83	2.07
Physical Therapist	1.84	1.69	1.99
Science–Chemistry	1.75	1.58	1.98
Science	1.77	1.52	1.97
Science–Biology	1.67	1.50	1.94
School Nurse	1.62	1.49	1.88
Science–Physics	1.68	1.54	1.86

Rank order in 2006 survey	2002	2004	2006
Science–Earth	1.57	1.37	1.81
Principal–High School	1.67	1.72	1.79
English as a Second Language	1.59	1.46	1.74
School Counselor	1.73	1.61	1.69
Elementary Education	1.66	1.51	1.69
Early Childhood Special Ed.	1.71	1.60	1.67
Superintendent	1.60	1.48	1.67
Spanish	1.50	1.58	1.66
Reading	1.49	1.42	1.60
English/Language Arts	1.52	1.43	1.59
Principal–Middle School	1.67	1.45	1.58
CTE–Technology Education	1.79	1.58	1.58
Principal–Elementary	1.60	1.54	1.56

Table 10. District Forecast of Needs by Field in Relative Order *continued*

3 = increasing need (will increase staffing more than the number who retire) 2.26–3.00, 2 = considerable need (will replace all who leave) 1.51–2.25, 1 = slight need (will replace only a portion of retirements) 0.76–1.50, 0 = no need (will discontinue some or all positions) 0.00–0.75

Rank order in 2006 survey	2002	2004	2006	Rank order in 2006 survey	2002	2004	2006
Slight Need .76–1.50				Health/Fitness	NA	1.09	1.19
Social Studies	1.36	1.13	1.46	History	1.10	1.01	1.16
Business Manager	NA	1.39	1.42	Arts–Visual Arts	1.24	1.00	1.14
Bilingual Education	1.25	1.32	1.41	French	1.08	0.94	1.13
CTE–Business Education	1.50	1.19	1.40	Early Childhood Education	1.19	1.09	1.12
Arts–Music-General	1.40	1.23	1.40	CTE–Marketing Education	1.23	0.93	1.11
Middle Level–Humanities	NA	1.21	1.35	Japanese	0.93	0.75	1.10
Arts–Music-Instrumental	1.67	1.35	1.34	CTE–Agricultural Education	1.04	0.93	1.08
CTE–Family Consumer Science	1.39	1.24	1.34	German	0.84	0.72	0.92
Library Media	1.55	1.39	1.29	Traffic Safety	0.96	0.77	0.88
Arts–Music-Choral	1.56	1.16	1.24	Arts–Theatre Arts	0.87	0.76	0.83
Human Resources	NA	1.23	1.22	No Need .00–.75			
School Social Worker	NA	0.83	1.20	Arts–Dance	0.31	0.35	0.49

The category of Increasing Need includes the fields of special education, mathematics, and speech pathology—fields that school districts would be filling at a higher rate than retirements in the same field. Given the high needs in special education, it is not a surprise that this field would be ranked so highly. However, given the shortage of special education teachers to begin with, it may be increasingly difficult for districts to fill their positions “as is,” let alone at a higher rate than people leaving the district.

The next 22 fields are in Considerable Need: fields which districts would fill at the same level that they are before any retirements occur. At the highest end of this list are three fields above 2.0 and 10 fields above a 1.80. This would indicate a high level of importance in filling positions at or above the current level. The teaching fields in this group are all in special education, science and middle school math/science. Educational staff associate positions also show continuing high need.

The next set of 23 fields represents those that would be filled at a level that would replace only a portion of retirements. Although the survey does not directly provide evidence on what factors drive district forecasts of future need, it is noteworthy that many of the teaching fields in this category are those in which there is currently no mandated state testing or which are not subject to federal highly-qualified teacher rules. Districts may perceive a need to focus resources on certain high-profile areas such as math and science.

Only one field appears in the area of No Need, meaning that the field might be downsized or discontinued if retirements occur in that field: Arts–Dance.

Longitudinally, the results show a clear pattern: the projected needs in almost all areas declined from 2002 to 2004, and then rebounded in almost all areas in 2006. In a majority of cases, the 2006 numbers are higher than they were in 2002. From these results, it seems clear that district officials anticipate even greater pressures in finding the personnel they need.

Factors Affecting the Supply of and the Demand for Educators

The study of educator supply and demand is more complicated than merely counting the number of new graduates versus the number of school district openings. In each of the four years of this research (covering 1999-2000 to the present), the survey has collected information on the factors that have affected the supply of and the demand for educators.

The following sets of questions were used to gather information from the Washington respondents:

What is your perception regarding how the following factors impacted the number of new educators hired in 2005-2006?

Circle: 5 = a significant, positive influence 4 = a moderate, positive influence 3 = no influence 2 = a moderate, negative influence 1 = a significant, negative influence						
Finance	Federal Funding	5	4	3	2	1
	State Funding	5	4	3	2	1
Retirement	Postponed Retirement	5	4	3	2	1
	Routine Retirement	5	4	3	2	1
	Early Retirement	5	4	3	2	1
Legislative Mandates	State	5	4	3	2	1
	Federal	5	4	3	2	1
Demographic Shifts in Population	Limited English-Proficient Students	5	4	3	2	1
	Rural/Suburban/Urban Shifts	5	4	3	2	1
	of Teachers	5	4	3	2	1
	of Students	5	4	3	2	1
	Student Enrollment	5	4	3	2	1
	Private Schools/Home Schooling	5	4	3	2	1
	Class Size	5	4	3	2	1
Military Demobilization	5	4	3	2	1	
Changing Teacher Education Enrollments in Colleges		5	4	3	2	1
Mobility of New Graduates		5	4	3	2	1
Mobility of Experienced Educators		5	4	3	2	1

Table 11 indicates the ratings for 2006 in relative order from positive to negative:

Table 11. Factors That Impacted the Number of New Educators Hired in 2005-2006		
Factor	Number of districts responding	Average
Routine Retirement	196	3.39
Class Size	193	3.07
Early Retirement	187	3.05
		3.00 = midpoint
Rural/Urban/Suburban Shifts of Teachers	191	2.98
Postponed Retirement	185	2.97
Lim. English Proficient. Students	192	2.95
Student Enrollment	196	2.92
Military Demobilization	189	2.92
Mobility of New Graduates	189	2.91
Rural/Urban/Suburban Shifts of Students	190	2.87
Mobility of Experienced Educators	189	2.87
Changing Teacher Education Enrollments	188	2.81
Private/Home School	192	2.76
State Funding	191	2.72
State Mandates	188	2.62
Federal Funding	190	2.62
Federal Mandates	188	2.48

The table above shows that only three factors are perceived as being positive as they relate to the hiring of new educators, as compared to 14 factors that are perceived to be negative. Retirements are impacting the hiring of new educators more than any other factors. Class size is also seen as a positive factor, perhaps meaning that adjustments in class sizes have facilitated the hiring of additional educators. Caution should be exercised in merely looking at positive and negative numbers however, as 9 of the 14 negative factors are clustered relatively close to the mid-point of 3.00.

On the other hand, the four factors occupying the bottom four places are state and federal mandates and finances. Clearly, school district employment of new educators is hamstrung in a variety of ways by mandates and budgets. As in 2004, federal mandates are viewed as the most negative factor affecting supply and demand. Although the survey did not ask respondents to identify specific mandates, it seems likely that the highly-qualified requirements of No Child Left Behind are seen as a significant barrier.

The following table compares the 2006 averages with those of 2004, followed by the difference between those two years. Seven of the seventeen factors had differences larger than .10. In three of those cases, the factor was having a more positive effect than in 2004. The other four were having a more negative impact than in 2004.

Table 12. Comparison of 2006 with 2004, Factors That Impacted the Number of New Educators Hired				
Factors	2006 number of respondents	2006 Mean	2004 Mean	Difference of 2006 versus 2004
Routine Retirement	196	3.39	3.21	↑ 0.18
Class size	193	3.07	3.07	↔ 0.00
Early Retirement	187	3.05	3.00	↑ 0.05
Shifts of teachers (urban/sub/rural)	191	2.98	2.96	↑ 0.02
Postponed Retirement	185	2.97	2.91	↑ 0.06
Limited English proficient students	192	2.95	2.96	↓ -0.01
Student enrollment	196	2.92	2.94	↓ -0.02
Military demobilization	189	2.92	2.90	↑ 0.02
Mobility of new graduates	189	2.91	3.06	↓ -0.15
Shifts of students (urban/sub/rural)	190	2.87	2.92	↓ -0.05
Mobility of experienced educators	189	2.87	3.04	↓ -0.17
Changing Teacher education enrollments	188	2.81	2.93	↓ -0.12
Private/Home school	192	2.76	2.76	↔ 0.00
State Funding	191	2.72	2.59	↑ 0.13
State mandates	188	2.62	2.49	↑ 0.13
Federal Funding	190	2.62	2.76	↓ -0.14
Federal mandates	188	2.48	2.42	↑ 0.06

One positive factor—routine retirement—increased its positive rating by .18, the largest difference in the analysis of factors. Obviously, retirements are having a positive effect on hiring new educators in Washington school districts. Routine Retirement is the highest factor in both studies, but increased by another .18 points in the 2006 study.

Two of the negative changes from 2004-2006 were in the mobility of new graduates and the mobility of experienced educators. Both were positive factors in 2004 and both moved downward into the numbers below the midpoint. Federal funding and changing teacher education enrollments were additional negative changes, implying that federal funding is not forthcoming to support mandates and perhaps declining enrollments (either real or perceived) in teacher education programs are diminishing the pool of available candidates.

Both state mandates and state funding improved by .13; however they are still two of the bottom four factors affecting the hiring of educators. The ten other factors (moving less than .10 in either direction) were very stable from 2004 to 2006.

Regional Variations

Patterns of supply and demand are not always uniform across the state. The data gathered by the survey can also be used to identify regional variations. To provide this perspective, we have sorted survey results to show how district officials in each Educational Service District (ESD) perceive demand in each field. Determinations of shortage are assessed by the following scale:

Table 13 shows a summary of ESD variations; the remaining tables in this section portray the situation in each ESD.

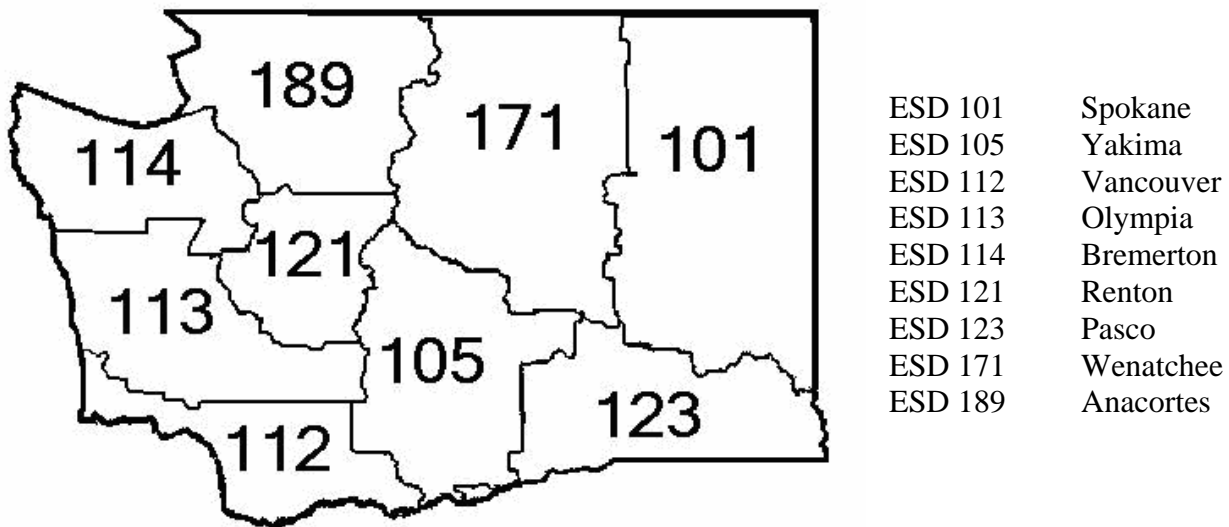


Table 13		Perceived Shortage Areas by Educational Service District							
ESD	101	105	112	113	114	121	123	171	189
Teaching Endorsements									
Agricultural Education	4.00	3.80	4.20	3.69	3.33	3.57	4.00	3.33	4.00
Bilingual Education	4.00	4.86	3.20	4.10	3.25	4.00	4.71	4.00	3.70
Business Education	3.77	3.86	3.83	3.76	3.25	3.83	4.75	2.57	3.75
Dance	3.80	3.50	3.50	3.38	2.67	3.00	3.00	4.00	3.50
Family & Consumer Science Ed.	3.80	3.50	3.40	3.69	3.20	4.00	3.25	3.00	3.71
Marketing Education	3.40	3.40	3.50	3.54	3.00	3.40	3.67	3.00	3.20
Technology Education	3.55	3.25	4.00	3.79	3.75	4.08	4.25	3.17	3.88
Early Childhood Education	3.14	3.40	3.20	3.50	2.50	3.00	3.00	2.71	3.17
Early Childhood Special Ed.	4.11	4.71	3.80	4.00	3.67	4.17	4.50	3.67	4.22
Elementary Education	2.57	2.50	2.29	2.38	1.90	2.14	2.64	2.54	2.00
English/Language Arts	3.05	3.44	2.93	2.79	3.00	3.15	3.63	3.25	2.80
English as a Second Language	3.57	4.27	3.86	4.07	3.75	4.00	4.40	3.80	3.93
Health/Fitness	2.83	2.88	2.70	2.53	2.86	2.73	2.00	3.17	2.40
History	2.86	3.00	2.50	2.47	2.00	2.47	2.00	2.83	2.13
Library Media	3.62	3.50	3.45	3.07	3.60	3.87	3.33	3.17	3.36

5.00-4.21	Considerable Shortage	3.40-2.61	Balanced	1.80-1.00	Considerable Surplus
4.20-3.41	Some Shortage	2.60-1.81	Some Surplus		

Table 13 continued	Perceived Shortage Areas by Educational Service District								
ESD	101	105	112	113	114	121	123	171	189
Teaching Endorsements									
Mathematics	4.19	4.73	4.44	4.45	4.11	4.76	4.40	4.33	4.71
Middle Level–Humanities	3.00	3.60	2.75	3.00	3.13	2.92	3.67	3.20	3.18
Middle Level–Math/Science	3.62	4.31	3.69	4.33	3.80	4.50	4.67	4.00	4.40
Music–Choral	3.85	4.00	3.64	3.88	3.20	3.47	4.00	3.83	3.70
Music–General	4.07	4.00	3.90	3.94	3.00	3.46	3.50	4.14	3.92
Music–Instrumental	4.00	4.00	3.90	4.00	3.50	3.71	4.00	4.00	4.08
Reading	3.23	3.17	3.25	2.93	3.17	3.60	3.67	3.29	3.50
Science–General	3.92	4.45	3.93	4.18	4.40	4.39	4.43	3.75	4.27
Science–Biology	3.64	4.75	3.40	4.54	4.00	4.07	4.20	4.00	4.38
Science–Chemistry	3.64	5.00	3.78	4.54	4.33	4.50	3.67	4.20	4.50
Science–Earth	3.64	5.00	3.56	4.29	3.71	4.00	4.00	4.20	4.29
Science–Physics	3.64	4.75	3.43	4.54	4.60	4.58	4.00	4.25	4.40
Social Studies	3.00	2.83	2.92	2.76	3.00	2.47	2.50	3.00	1.89
Special Education	4.12	4.77	4.27	4.59	4.64	4.70	4.50	4.18	4.60
Traffic Safety	4.00	3.60	3.33	2.90	3.00	2.20	---	3.40	3.00
Theatre Arts (Drama)	3.43	4.00	3.40	3.45	3.50	3.38	4.50	3.00	3.13
Visual Arts	3.22	4.11	3.22	3.43	3.20	3.00	3.33	3.50	3.30
French	3.00	3.67	4.00	3.50	3.50	3.55	3.67	3.50	3.43
German	3.00	4.00	3.67	3.50	3.50	3.40	4.50	3.50	3.80
Japanese	4.33	4.00	3.67	3.89	4.00	4.20	----	3.50	4.00
Spanish	3.90	4.00	3.89	3.50	3.50	3.94	5.00	4.00	3.44
Educational Support Roles									
School Counselor	4.09	3.58	3.40	3.50	3.33	3.11	3.67	3.89	3.25
School Psychologist	4.29	4.90	4.10	4.11	4.80	4.50	3.50	4.43	4.64
School Social Worker	3.75	3.67	3.50	3.44	4.00	3.50	3.00	3.00	3.33
Occupational Therapist	4.17	5.00	4.25	4.27	4.86	4.60	5.00	4.20	4.79
Physical Therapist	4.20	5.00	4.00	4.50	4.57	4.42	5.00	4.33	4.86
Speech Pathologist	4.14	5.00	4.13	4.13	4.89	4.83	4.33	4.22	4.88
School Nurse	4.33	3.83	4.22	4.05	4.60	4.50	4.33	4.00	4.25
Administrative Roles									
Principal–Elementary	3.29	3.50	2.89	3.00	3.71	3.25	3.14	3.00	3.20
Principal–Middle School	3.09	4.00	3.10	3.40	4.40	3.57	3.67	3.29	3.40
Principal–High School	3.33	4.00	3.11	3.94	4.17	4.19	4.33	3.75	3.91
Human Resources	3.44	3.44	3.00	3.55	3.00	3.70	3.50	3.50	3.29
Business Manager	3.50	4.57	3.50	4.20	3.50	4.18	4.00	3.20	4.22
Superintendent	3.63	3.17	3.50	3.53	3.80	3.56	4.00	3.88	3.43

5.00-4.21 Considerable Shortage 3.40-2.61 Balanced 1.80-1.00 Considerable Surplus
4.20-3.41 Some Shortage 2.60-1.81 Some Surplus

ESD 101–Spokane Relative Demand

	No. of Districts	Mean
5.00-4.21 = Considerable Shortage		
School Nurse	15	4.33
Japanese	3	4.33
School Psychologist	14	4.29
4.20-3.41 = Some Shortage		
Physical Therapist	10	4.20
Mathematics	16	4.19
Occupational Therapist	12	4.17
Speech Language Pathologist	14	4.14
Special Education	17	4.12
Early Childhood Special Education	9	4.11
School Counselor	11	4.09
Arts–Music-General	14	4.07
Arts–Music-Instrumental	12	4.00
Bilingual Education	2	4.00
CTE–Agricultural Education	9	4.00
Traffic Safety	7	4.00
Science	13	3.92
Spanish	10	3.90
Arts–Music-Choral	13	3.85
Arts–Dance	5	3.80
CTE–Family Consumer Science	10	3.80
CTE–Business Education	13	3.77
School Social Worker	4	3.75
Science–Biology	11	3.64
Science–Chemistry	11	3.64
Science–Earth	11	3.64
Science–Physics	11	3.64
Superintendent	16	3.63
Middle Level–Math/Science	13	3.62
Library Media	13	3.62
English as a Second Language	7	3.57
CTE–Technology Education	11	3.55
Business Manager	14	3.50
Human Resources	9	3.44
Arts–Theatre Arts	7	3.43

	No. of Districts	Mean
3.40-2.61 = Balanced Supply and Demand		
CTE–Marketing Education	5	3.40
Principal–High School	12	3.33
Principal–Elementary	14	3.29
Reading	13	3.23
Arts–Visual Arts	9	3.22
Early Childhood Education	7	3.14
Principal–Middle School	11	3.09
English/Language Arts	19	3.05
Middle Level–Humanities	8	3.00
Social Studies	16	3.00
French	3	3.00
German	3	3.00
History	14	2.86
Health/Fitness	12	2.83
2.60-1.81 = Some Surplus		
Elementary Education	23	2.57
1.80-1.00 = Considerable Surplus		
No fields in this category		

ESD 105–Yakima Relative Demand

	No. of Districts	Mean
5.00-4.21 = Considerable Shortage		
Science–Chemistry	3	5.00
Science–Earth	2	5.00
Speech Language Pathologist	12	5.00
Occupational Therapist	7	5.00
Physical Therapist	3	5.00
School Psychologist	10	4.90
Bilingual Education	7	4.86
Special Education	13	4.77
Science–Biology	4	4.75
Science–Physics	4	4.75
Mathematics	15	4.73
Early Childhood Special Education	7	4.71
Business Manager	7	4.57
Science	11	4.45
Middle Level–Math/Science	13	4.31
English as a Second Language	11	4.27
4.20-3.41 = Some Shortage		
Arts–Visual Arts	9	4.11
Arts–Music-Choral	6	4.00
Arts–Music-General	9	4.00
Arts–Music-Instrumental	7	4.00
Arts–Theatre Arts	6	4.00
German	2	4.00
Japanese	2	4.00
Spanish	3	4.00
Principal–High School	5	4.00
Principal–Middle School	4	4.00
Human Resources	3	4.00
CTE–Business Education	7	3.86
School Nurse	12	3.83
CTE–Agricultural Education	5	3.80
French	3	3.67
School Social Worker	3	3.67
Superintendent	6	3.67
Middle Level–Humanities	5	3.60
Traffic Safety	5	3.60
School Counselor	12	3.58
Arts–Dance	2	3.50
CTE–Family Consumer Sci.	6	3.50
Library Media	6	3.50
Principal–Elementary	4	3.50
English/Language Arts	9	3.44

	No. of Districts	Mean
3.40-2.61 = Balanced Supply and Demand		
CTE–Marketing Education	5	3.40
Early Childhood Education	5	3.40
CTE–Technology Education	4	3.25
Reading	6	3.17
History	9	3.00
Health/Fitness	8	2.88
Social Studies	6	2.83
2.60-1.81 = Some Surplus		
Elementary Education	16	2.56
1.80-1.00 = Considerable Surplus		
No fields in this category		

ESD 112–Vancouver Relative Demand

	No. of Districts	Mean
5.00-4.21 = Considerable Shortage		
Mathematics	18	4.44
Special Education	11	4.27
Occupational Therapist	8	4.25
School Nurse	9	4.22
4.20-3.41 = Some Shortage		
CTE–Agricultural Education	5	4.20
Speech Language Pathologist	8	4.13
School Psychologist	10	4.10
CTE–Technology Education	6	4.00
French	5	4.00
Physical Therapist	6	4.00
Science	14	3.93
Arts–Music-General	10	3.90
Arts–Music-Instrumental	10	3.90
Spanish	9	3.89
English as a Second Language	7	3.86
CTE–Business Education	6	3.83
Early Childhood Special Ed.	5	3.80
Science–Chemistry	9	3.78
Middle Level–Math/Science	13	3.69
German	3	3.67
Japanese	3	3.67
Arts–Music-Choral	11	3.64
Science–Earth	9	3.56
Arts–Dance	4	3.50
CTE–Marketing Education	4	3.50
School Social Worker	4	3.50
Business Manager	8	3.50
Superintendent	10	3.50
Library Media	11	3.45
Science–Physics	7	3.43

	No. of Districts	Mean
3.40-2.61 = Balanced Supply and Demand		
Arts–Theatre Arts	5	3.40
CTE–Family Consumer Science	5	3.40
Science–Biology	10	3.40
School Counselor	10	3.40
Traffic Safety	15	3.33
Reading	6	3.25
Arts–Visual Arts	12	3.22
Bilingual Education	9	3.20
Early Childhood Education	5	3.20
Principal–High School	9	3.11
Principal–Middle School	10	3.10
Human Resources	7	3.00
English/Language Arts	15	2.93
Social Studies	13	2.92
Principal–Elementary	9	2.89
Middle Level–Humanities	8	2.75
Health/Fitness	10	2.70
2.60-1.81 = Some Surplus		
History	10	2.50
Elementary Education	17	2.29
1.80-1.00 = Considerable Surplus		
No fields in this category		

ESD 113–Olympia Relative Demand

	No. of Districts	Mean
5.00-4.21 = Considerable Shortage		
Speech Language Pathologist	16	4.63
Special Education	22	4.59
Science–Biology	13	4.54
Science–Chemistry	13	4.54
Science–Physics	13	4.54
Physical Therapist	14	4.50
Mathematics	20	4.45
Middle Level–Math/Science	18	4.33
Science–Earth	14	4.29
Occupational Therapist	15	4.27
4.20-3.41 = Some Shortage		
Business Manager	15	4.20
Science	17	4.18
School Psychologist	18	4.11
Bilingual Education	10	4.10
English as a Second Language	15	4.07
School Nurse	21	4.05
Arts–Music-Instrumental	17	4.00
Early Childhood Special Education	16	4.00
Arts–Music-General	17	3.94
Principal–High School	17	3.94
Japanese	9	3.89
Arts–Music-Choral	16	3.88
CTE–Technology Education	14	3.79
CTE–Business Education	17	3.76
CTE–Family Consumer Science	13	3.69
CTE–Agricultural Education	13	3.69
Human Resources	11	3.55
CTE–Marketing Education	13	3.54
Superintendent	15	3.53
Early Childhood Education	12	3.50
French	8	3.50
German	8	3.50
Spanish	12	3.50
School Counselor	18	3.50
Arts–Theatre Arts	11	3.45
School Social Worker	9	3.44
Arts–Visual Arts	14	3.43

	No. of Districts	Mean
3.40-2.61 = Balanced Supply and Demand		
Principal–Middle School	15	3.40
Arts–Dance	8	3.38
Library Media	15	3.07
Middle Level–Humanities	14	3.00
Principal–Elementary	18	3.00
Reading	14	2.93
Traffic Safety	10	2.90
English/Language Arts	19	2.79
Social Studies	17	2.76
2.60-1.81 = Some Surplus		
Health/Fitness	19	2.53
History	17	2.47
Elementary Education	24	2.38
1.80-1.00 = Considerable Surplus		
No fields in this category		

ESD 114–Bremerton Relative Demand

	No. of Districts	Mean
5.00-4.21 = Considerable Shortage		
Speech Language Pathologist	9	4.89
Occupational Therapist	7	4.86
School Psychologist	10	4.80
Special Education	11	4.64
Science–Physics	5	4.60
School Nurse	5	4.60
Physical Therapist	7	4.57
Science	5	4.40
Principal–Middle School	5	4.40
Science–Chemistry	6	4.33
4.20-3.41 = Some Shortage		
Principal–High School	6	4.17
Mathematics	9	4.11
Science–Biology	7	4.00
Japanese	3	4.00
School Social Worker	3	4.00
Middle Level–Math/Science	5	3.80
Superintendent	5	3.80
CTE–Technology Education	4	3.75
English as a Second Language	4	3.75
Science–Earth	7	3.71
Principal–Elementary	7	3.71
Early Childhood Special Ed.	6	3.67
Library Media	5	3.60
Arts–Music-Instrumental	6	3.50
Arts–Theatre Arts	4	3.50
French	4	3.50
German	4	3.50
Spanish	6	3.50
Business Manager	6	3.50

	No. of Districts	Mean
3.40-2.61 = Balanced Supply and Demand		
CTE–Agricultural Education	3	3.33
School Counselor	6	3.33
Bilingual Education	4	3.25
CTE–Business Education	4	3.25
Arts–Music-Choral	5	3.20
Arts–Visual Arts	5	3.20
CTE–Family Consumer Sci.	5	3.20
Reading	6	3.17
Middle Level–Humanities	8	3.13
Arts–Music-General	4	3.00
CTE–Marketing Education	3	3.00
English/Language Arts	8	3.00
Social Studies	7	3.00
Traffic Safety	3	3.00
Human Resources	6	3.00
Health/Fitness	7	2.86
Arts–Dance	3	2.67
2.60-1.81 = Some Surplus		
Early Childhood Education	4	2.50
History	6	2.00
Elementary Education	10	1.90
1.80-1.00 = Considerable Surplus		
No fields in this category		

ESD 121–Renton Relative Demand

	No. of Districts	Mean
5.00-4.21 = Considerable Shortage		
Speech Language Pathologist	18	4.83
Mathematics	21	4.76
Special Education	23	4.70
Occupational Therapist	15	4.60
Science–Physics	12	4.58
Middle Level–Math/Science	18	4.50
Science–Chemistry	14	4.50
School Psychologist	18	4.50
School Nurse	14	4.50
Physical Therapist	12	4.42
Science	18	4.39
4.20-3.41 = Some Shortage		
Japanese	10	4.20
Principal–High School	16	4.19
Business Manager	11	4.18
Early Childhood Special Ed.	12	4.17
CTE–Technology Education	13	4.08
Science–Biology	14	4.07
Bilingual Education	8	4.00
CTE–Family Consumer Sci.	14	4.00
English as a Second Language	15	4.00
Science–Earth	9	4.00
Spanish	16	3.94
Library Media	15	3.87
CTE–Business Education	12	3.83
Arts–Music-Instrumental	14	3.71
Human Resources	10	3.70
Reading	14	3.64
CTE–Agricultural Education	7	3.57
Principal–Middle School	14	3.57
Superintendent	9	3.56
French	11	3.55
School Social Worker	8	3.50
Arts–Music–Choral	15	3.47
Arts–Music-General	13	3.46

	No. of Districts	Mean
3.40-2.61 = Balanced Supply and Demand		
CTE–Marketing Education	10	3.40
German	10	3.40
Arts–Theatre Arts	13	3.38
Principal–Elementary	16	3.25
English/Language Arts	20	3.15
School Counselor	18	3.11
Arts–Dance	8	3.00
Arts–Visual Arts	17	3.00
Early Childhood Education	8	3.00
Middle Level–Humanities	13	2.92
Health/Fitness	15	2.73
2.60-1.81 = Some Surplus		
Social Studies	17	2.47
History	15	2.47
Traffic Safety	5	2.20
Elementary Education	21	2.14
1.80-1.00 = Considerable Surplus		
No fields in this category		

ESD 123–Pasco Relative Demand

	No. of Districts	Mean
5.00-4.21 = Considerable Shortage		
Spanish	3	5.00
Occupational Therapist	3	5.00
Physical Therapist	2	5.00
CTE–Business Education	4	4.75
Bilingual Education	7	4.71
Middle Level–Math/Science	6	4.67
Arts–Theatre Arts	2	4.50
Early Childhood Special Ed.	4	4.50
Special Education	8	4.50
German	2	4.50
Science	7	4.43
English as a Second Language	5	4.40
Mathematics	10	4.40
Speech Language Pathologist	6	4.33
Principal–High School	6	4.33
School Nurse	3	4.33
CTE–Technology Education	4	4.25
4.20-3.41 = Some Shortage		
Science–Biology	5	4.20
Arts–Music-Choral	3	4.00
Arts–Music-Instrumental	5	4.00
CTE–Agricultural Education	2	4.00
Science–Earth	2	4.00
Science–Physics	3	4.00
Business Manager	3	4.00
Superintendent	3	4.00
Reading	6	3.67
School Counselor	6	3.67
CTE–Marketing Education	3	3.67
Middle Level–Humanities	3	3.67
Science–Chemistry	3	3.67
French	3	3.67
Principal–Middle School	3	3.67
English/Language Arts	8	3.63
Arts–Music-General	4	3.50
School Psychologist	4	3.50
Human Resources	2	3.50

	No. of Districts	Mean
3.40-2.61 = Balanced Supply and Demand		
Arts–Visual Arts	3	3.33
Library Media	6	3.33
CTE–Family Consumer Science	4	3.25
Principal–Elementary	7	3.14
Arts–Dance	1	3.00
Early Childhood Education	1	3.00
School Social Worker	2	3.00
Elementary Education	11	2.64
2.60-1.81 = Some Surplus		
Social Studies	4	2.50
Health/Fitness	4	2.00
History	3	2.00
1.80-1.00 = Considerable Surplus		
No fields in this category		
No Data		
Traffic Safety	0	
Japanese	0	

ESD 171–Wenatchee Relative Demand

	No. of Districts	Mean
5.00-4.21 = Considerable Shortage		
School Psychologist	7	4.43
Physical Therapist	6	4.33
Mathematics	12	4.33
Science–Physics	4	4.25
Speech Language Pathologist	9	4.22
4.20-3.41 = Some Shortage		
Science–Chemistry	5	4.20
Science–Earth	5	4.20
Occupational Therapist	5	4.20
Special Education	11	4.18
Arts–Music–General	7	4.14
Arts–Dance	3	4.00
Arts–Music–Instrumental	6	4.00
Bilingual Education	7	4.00
Middle Level–Math/Science	7	4.00
Science–Biology	4	4.00
Spanish	7	4.00
School Nurse	6	4.00
School Counselor	9	3.89
Superintendent	8	3.88
Arts–Music–Choral	6	3.83
English as a Second Language	5	3.80
Science	8	3.75
Principal–High School	8	3.75
Early Childhood Special Ed.	6	3.67
Arts–Visual Arts	4	3.50
French	4	3.50
German	2	3.50
Japanese	2	3.50
Human Resources	4	3.50

	No. of Districts	Mean
3.40-2.61 = Balanced Supply and Demand		
Traffic Safety	5	3.40
CTE–Agricultural Education	3	3.33
Reading	7	3.29
Principal–Middle School	7	3.29
English/Language Arts	12	3.25
Middle Level–Humanities	5	3.20
Business Manager	5	3.20
CTE–Technology Education	6	3.17
Health/Fitness	6	3.17
Library Media	6	3.17
Arts–Theatre Arts	4	3.00
CTE–Family Consumer Science	5	3.00
CTE–Marketing Education	4	3.00
Social Studies	6	3.00
School Social Worker	2	3.00
Principal–Elementary	6	3.00
History	6	2.83
Early Childhood Education	7	2.71
2.60-1.81 = Some Surplus		
CTE–Business Education	7	2.57
Elementary Education	13	2.54
1.80-1.00 = Considerable Surplus		
No fields in this category		

ESD 189–Anacortes Relative Demand

	No. of Districts	Mean
5.00-4.21 = Considerable Shortage		
Speech Language Pathologist	17	4.88
Physical Therapist	7	4.86
Occupational Therapist	14	4.79
Mathematics	17	4.71
School Psychologist	14	4.64
Special Education	20	4.60
Science–Chemistry	8	4.50
Middle Level–Math/Science	15	4.40
Science–Physics	5	4.40
Science–Biology	8	4.38
Science–Earth	7	4.29
Science	11	4.27
School Nurse	8	4.25
Early Childhood Special Ed.	9	4.22
Business Manager	9	4.22
4.20-3.41 = Some Shortage		
Arts–Music-Instrumental	13	4.08
CTE–Agricultural Education	12	4.00
Japanese	4	4.00
English as a Second Language	15	3.93
Arts–Music-General	13	3.92
Principal–High School	11	3.91
CTE–Technology Education	8	3.88
German	5	3.80
CTE–Business Education	8	3.75
CTE–Family Consumer Science	7	3.71
Arts–Music-Choral	10	3.70
Bilingual Education	10	3.70
Arts–Dance	4	3.50
Reading	10	3.50
Spanish	9	3.44
French	7	3.43
Superintendent	7	3.43

	No. of Districts	Mean
3.40-2.61 = Balanced Supply and Demand		
Principal–Middle School	10	3.40
Library Media	11	3.36
School Social Worker	3	3.33
Arts–Visual Arts	10	3.30
Human Resources	7	3.29
School Counselor	12	3.25
CTE–Marketing Education	5	3.20
Principal–Elementary	10	3.20
Middle Level–Humanities	11	3.18
Early Childhood Education	6	3.17
Arts–Theatre Arts	8	3.13
Traffic Safety	5	3.00
English/Language Arts	15	2.80
2.60-1.81 = Some Surplus		
Health/Fitness	10	2.40
History	8	2.13
Elementary Education	17	2.00
Social Studies	9	1.89
1.80-1.00 = Considerable Surplus		
No fields in this category		

Discussion

While the individual ESD results generally mirror the statewide results, with increased demand in most categories, we do see some interesting variations across ESDs. Most notably, ESD 123 (Pasco) has 17 areas of “considerable shortage;” on the other extreme, ESD 101 (Spokane) has just three. The relatively lower levels of demand in ESD 101 compared to ESD 123 also existed in 2004. If this is, in fact, a persistent pattern, it would take more research to determine the reasons. One possibility is that ESD 101 benefits from proximity to no fewer than four educator preparation programs, while ESD 123 hosts only one university campus with a limited offering of preparation programs. Thus, ESD 101 benefits from a substantial supply of teacher candidates who are already in the region.

Related Supply and Demand Data

In addition to the data collected from districts on the biennial survey, OSPI maintains certification and related data that sheds additional light on supply and demand. This section reviews some of that information.

Indicators of Supply

OSPI annually publishes a report (*Certificates Issued and Certificated Personnel Placement Statistics*) that includes the number of endorsements granted in various teaching areas. Table 14 shows the number of endorsements issued in each area since the 2001-02 school year, as well as the five-year average. (These statistics reflect only those endorsements granted as part of a first-issue certificate, and do not include “add-on” endorsements that are earned by experienced teachers.)

Table 14. Teaching Endorsements Issued, 2001-2002 to 2005-2006							
<i>(Note: "WA" represents endorsements earned through Washington-approved preparation programs; "OS" represents endorsements earned out-of-state.)</i>							
Field		01-02	20-03	03-04	04-05	05-06	Annual Avg.
Agriculture	WA	18	17	8	12	7	19
	OS	7	4	3	11	7	
Bilingual	WA	18	20	16	68	23	38
	OS	18	4	8	13	4	
Biology	WA	160	135	146	137	109	219
	OS	119	69	61	94	66	
Business Education	WA	39	33	31	34	19	52
	OS	26	17	13	26	24	
Chemistry	WA	63	47	52	50	42	80
	OS	42	20	22	34	26	
Chinese	WA	1	0	1	0	0	1
	OS	2	0	0	1	1	
Choral music	WA	52	29	63	81	60	67
	OS	22	0	6	11	12	
Dance	WA	4	1	0	15	3	6
	OS	1	1	0	1	2	
Early Childhood Education	WA	288	230	202	230	180	375
	OS	145	143	150	181	128	
Early Childhood Special Ed.	WA	31	16	15	14	17	35
	OS	22	6	7	23	25	
Earth Science	WA	32	43	40	29	27	43
	OS	13	5	8	5	10	
K-8 Elementary	WA	2185	2220	2372	2580	2319	3159
	OS	1132	709	613	950	715	
English*	WA	404	365	308	262	170	401
	OS	275	166	53	4	0	
English/Language Arts	WA	103	102	135	180	237	283
	OS	57	33	103	272	195	

*This endorsement has been phased out.

Table 14. Teaching Endorsements Issued, 2001-2002 to 2005-2006 continued
*(Note: "WA" represents endorsements earned through Washington-approved preparation programs;
 "OS" represents endorsements earned out-of-state.)*

Field		01-02	20-03	03-04	04-05	05-06	Annual Avg.
English as a Second Lang.	WA	103	100	116	219	115	199
	OS	57	39	56	88	104	
Family/Consumer Sciences	WA	33	19	23	27	12	36
	OS	26	10	9	8	12	
French	WA	28	23	16	18	18	43
	OS	31	25	19	15	21	
General Music	WA	50	50	86	98	80	115
	OS	55	57	39	43	17	
German	WA	18	14	13	6	12	22
	OS	11	8	11	12	7	
Health*	WA	96	42	12	0	3	45
	OS	41	6	7	2	12	
Health/Fitness	WA	22	74	141	151	152	144
	OS	49	35	28	48	29	
History	WA	389	313	274	273	200	350
	OS	118	48	38	63	34	
Instrumental Music	WA	47	31	60	71	66	5
	OS	1	12	11	14	14	
Japanese	WA	2	3	4	2	7	6
	OS	4	3	2	2	2	
Library Media	WA	0	2	5	14	0	16
	OS	16	12	11	13	8	
Marketing Education	WA	30	16	5	12	7	16
	OS	1	1	2	3	4	
Mathematics	WA	156	138	175	199	181	295
	OS	162	105	85	142	131	
Middle Level*	WA	20	63	111	76	36	94
	OS	85	42	32	3	0	
Middle Level–Humanities	WA	NA	0	1	21	44	33
	OS	NA	0	10	48	40	
Middle Level–Math/Science	WA	NA	0	22	22	41	33
	OS	NA	0	9	32	38	
Physical Education*	WA	130	57	17	3	3	80
	OS	119	43	28	0	0	
Physics	WA	27	33	28	37	33	48
	OS	20	13	15	21	11	
Reading	WA	320	299	262	374	303	349
	OS	49	32	32	37	38	
Science	WA	112	102	124	116	98	167
	OS	71	48	41	68	55	
Social Studies	WA	293	298	284	268	304	398
	OS	159	87	74	127	95	
Spanish	WA	126	113	83	121	80	148
	OS	65	41	28	56	29	

*This endorsement has been phased out.

Table 14. Teaching Endorsements Issued, 2001-2002 to 2005-2006 continued
*(Note: "WA" represents endorsements earned through Washington-approved preparation programs;
 "OS" represents endorsements earned out-of-state.)*

Field		01-02	20-03	03-04	04-05	05-06	Annual Avg.
Special Education	WA	322	232	230	265	298	465
	OS	284	157	147	212	179	
Technology Education	WA	7	4	5	13	4	14
	OS	10	10	3	9	6	
Theatre Arts	WA	37	30	23	26	25	37
	OS	13	6	8	7	8	
Traffic Safety	WA	11	8	7	4	0	8
	OS	2	2	2	0	2	
Visual Arts	WA	95	73	86	63	86	129
	OS	73	37	38	47	46	

Table 15 shows similar data for administrators and Educational Staff Associates.

Table 15. Non-Teaching Certificates Issued, 2001-2002 to 2005-2006								
Field		01-02	02-03	03-04	04-05	05-06	Annual avg.	
Principal	WA	374	420	444	408	284	1930	471
	OS	113	95	78	50	91	427	
Superintendent	WA	27	41	40	44	44	196	52
	OS	16	19	10	12	9	66	
School Counselor	WA	188	184	175	211	176	934	250
	OS	76	79	54	58	51	318	
School Psychologist	WA	37	54	43	65	63	262	81
	OS	56	6	7	47	26	142	
Speech Language Pathologist	WA	37	57	35	48	44	221	78
	OS	80	3	4	43	40	170	
School Nurse	WA	29	39	39	37	49	193	48
	OS	37	3	6	3	0	49	
Occupational therapist	WA	35	12	12	37	29	125	31
	OS	11	1	2	9	6	29	
Physical Therapist	WA	16	38	39	15	12	120	40
	OS	7	36	34	1	0	78	
School Social Worker	WA	36	24	53	37	35	185	48
	OS	6	0	44	6	1	57	

Table 16 maps the number of endorsements issued in 2005-06 against the number of vacancies reported by school districts in 2005-06.

Table 16. Endorsements and Non-Teaching Certificates

Role	Openings	Endorsements/ certificates	Role	Openings	Endorsements/ certificates
Elementary Education	1,910.5	3034	English Lang. Arts	439.1	602
Special Education	848.4	477	Science	267.0	153
Mathematics	551.3	312	School Counselor	220.5	227

Table 16. Endorsements and Non-Teaching Certificates *continued*

Role	Openings	Endorsements/ certificates
Mid. Level: Math/Science	209.5	79
Social Studies	200.0	399
Health/Fitness	196.5	181
Speech Language Path.	178.2	84
School Psychologist	158.0	89
Mid. Level: Humanities	140.0	84
Reading	139.5	341
English as a Sec. Lang.	130.5	219
Library Media	110.5	8
Principal–Elem. 108.5 Principal–MS 46.0 Principal–HS 81.0	235.5	375*
World Lang.–Spanish	95.5	109
School Nurse	92.5	49
Occupational Therapist	89.3	35
Arts–Music–Instrumental	87.0	80
Arts–Music–General	86.6	97
Arts–Visual Arts	82.2	132
Early Childhood Special Education	72.0	42
CTE–Technology Ed.	68.0	10
Science–Biology	61.5	175
Early Childhood Ed.	61.0	308
CTE–Family Consumer Science Education	60.6	24
Arts–Music–Choral	60.0	72
Bilingual	56.5	27
History	53.5	234
CTE–Business Ed.	52.7	43
Science–Chemistry	40.0	68
World Lang.–French	30.2	39
CTE–Agriculture Ed..	26.0	14
Science–Earth Science.	25.5	37
Physical Therapist	24.3	12
Arts–Theatre Arts	23.5	33
World Lang.–Japanese	23.0	9

Role	Openings	Endorsements/ certificates
Business Manager	22.0	NA
CTE–Marketing Ed.	20.0	11
Science–Physics	20.0	44
Superintendent	20.0	53
Human Resources	18.0	NA
Traffic Safety	15.0	2
World Lang.–German	11.0	19
School Social Worker	11.0	36
Arts–Dance	5.6	5

*Washington no longer differentiates grade levels on principal certificates.

Discussion

In viewing these figures, it's always tempting to compare openings with endorsements and to use the difference as the measure of shortage or surplus. However, both sets of numbers should be used with care. As noted in an earlier part of this report, because not all districts respond to the survey, the number of openings understates actual vacancies. On the other hand, the total number of openings reported by districts may *overstate* the need for new teachers. For example, if District A loses a math teacher to retirement, it might hire an experienced teacher from District B, which in turn might hire a teacher from District C, which then hires a beginning teacher. In this case, three openings are reported, but only one new teacher is added to the system.

On the endorsement side of the equation, not everyone receiving an endorsement is willing or able to take a job in Washington public schools. Some move out-of-state; some defer employment for a variety of reasons; and others seek employment only within a certain distance of their home. In addition, some teachers earn multiple endorsements. If a teacher holds biology and chemistry endorsements, and is hired to teach only biology, her chemistry endorsement is effectively off the market.

Nonetheless, we see here dramatic confirmation of some district perceptions. For example, the perception of surplus in elementary and history/social studies is strongly supported by these data. In 2005-06, the state acquired over a thousand elementary endorsements *beyond the number needed to fill reported vacancies*. There were double the number of social studies endorsements needed, and almost five times the needed history endorsements.

Similarly, the areas reported as having “considerable shortage” show significant deficits. Special education gained 477 endorsements compared to 848 teachers needed; mathematics gained 312 compared to 551 needed, and science gained 153 compared to 267 needed. Sizable deficits also exist in the educational staff associate roles of school psychologist, occupational therapist, speech language pathologist, physical therapist, and school nurse—all of which were found by districts to be in shortage. It seems clear that in a number of critical areas Washington is not producing or importing enough educators to meet the needs of districts.

Indicators of Demand: Limited Certificates Issued

The following information about conditional and emergency certificates is extracted from OSPI's *Annual Report, 2005-2006 Certificates Issued and Personnel Placement Statistics*. It provides another perspective on demand, because these limited certificates are only issued when a district affirms that fully qualified candidates are not available

Conditional certificates, issued to individuals who may have unusual expertise or competence in an endorsement area but do not meet all qualifications for a regular certificate, must be requested by the employer, who must verify that conditions warrant its issuance. Conditional certificates issued in 2004-05 and 2005-06 are shown in Table 17.

Endorsement	'04-05	'05-06	Endorsement	'04-05	'05-06
Art	7	3	Instrumental Music	1	0
Bilingual Education	5	1	Japanese	7	7

Endorsement	'04-05	'05-06	Endorsement	'04-05	'05-06
Biology	1	0	Latin	1	0
Business Education	1	2	Library Media	1	2
Chemistry	1	1	Mathematics	12	15
Chinese	3	3	Music (General)	13	6
Choral Music	3	1	Physics	1	1
Dance	6	0	Reading	3	3
Early Childhood Education	3	4	School Nurse	17	12
Early Child Spec Ed.	4	2	SLP/Audiologist	8	19
Elementary Education	8	11	Science	5	4
English/Language Arts	1	2	Social Studies	2	1
English as a Sec. Lang.	4	6	Spanish	7	12
Family Consumer Science	1	0	Special Education	29	29
French	1	1	Technology Ed	3	1
German	1	0	Theatre Arts	5	0
Health/fitness	1	2	Traffic Safety Education	9	6
History	2	1			

Endorsements on emergency certificates issued in 2004-05 and 2005-06 are shown in Table 18. Educational service districts, school districts, or private schools may request that an emergency certificate be issued to individuals who hold the appropriate degree and have substantially met certification requirements (nearly completed a preparation program, awaiting testing, etc.) provided that a qualified person who holds regular certification is not available.

Table 18. Endorsements on Emergency Certificates 2003-04

Emergency Teacher Certificates	2004-05	2005-06
Agriculture Education	0	1
Bilingual Education	1	1
Chemistry	0	1
Early Childhood Education	2	0
Early Childhood Special Education	3	2
English as a Second Language	1	3
English Language Arts	4	7
Elementary Education	10	11
German	1	2
Health/Fitness	0	1
Mathematics	6	5
Middle Level–Humanities	1	0
Middle Level–Math Science	0	2
Music–General	1	1
Physics	2	1
Science	3	5
Social Studies	3	3
Spanish	4	1
Special Education	18	12
Theatre Arts	1	1
Visual Arts	1	1
Emergency ESA Certificates		
School Counselor	16	11
School Psychologist	18	27
School Social Worker	2	0
Emergency Administrator Certificates		
Principal	8	6

Discussion

Compared with the size of the teaching force in Washington public schools (more than 57,000), the proportion of teachers with limited certificates is quite small. Whatever stresses are being placed on schools by shortages, the overwhelming majority of Washington teachers possess full certification. Nonetheless, we see here additional confirmation of survey data in that the roles with the largest numbers of limited certificates are among the shortage areas reported by districts: special education, mathematics, school psychologist, school nurse, and speech language pathologist. One surprise is the number of elementary teachers with limited certificates—since elementary is one of the few teaching surplus areas, it is unclear why districts would need to fill those positions with teachers lacking full certification.

Indicators of Demand—Personnel Placement

Employment data can provide another indicator of supply and demand, since the relative ease or difficulty of obtaining employment is a reflection of the existing supply and demand in the particular endorsement(s) held by the teacher.

Table 19, which is extracted from OSPI's *Annual Report, 2005-2006 Certificates Issued and Personnel Placement Statistics*, shows data for new teachers who completed Washington college/university programs in the 2004-2005 academic year; it reflects employment during the 2005-2006 school year. It indicates the percentage of teachers in each endorsement area who were actually hired to teach that endorsement. A teacher with math and history endorsements who accepts a position in math is counted as employed only in math. Teachers hired/assigned in two or more endorsements are counted in each area of assignment.

Note: Caution should be used in making inferences from these data. This information is reported by colleges and universities based on surveys of teachers who have completed their programs. Because program completers are often geographically mobile, institutions do not always succeed in getting a response from each graduate. Therefore, the figures reported here may understate the percentages of those employed. In addition, the numbers reported here include several hundred teachers employed out-of-state or in Washington private schools. Finally, the data here do not include teachers prepared out-of-state.

Table 19. Percent of Persons Employed in the Endorsement Area, 2005-06

Endorsement Area	Endors. Reported	# Employed in Endorsement	% Employed in Endorsement
CTE–Technology Ed	5	4	80.0%
Special Education	280	216	77.1%
Mathematics	183	141	77.0%
CTE–Business Ed	24	17	70.8%
Science	89	58	65.2%
Middle Level–Math/Science	25	14	56.0%
CTE–Agriculture Ed	9	5	55.6%
English Language Arts	359	181	50.4%
Early Childhood Special Ed	10	5	50.0%
Arts–Dance	6	3	50.0%
Health/Fitness	156	68	43.6%
Science–Earth Science	23	10	43.5%
Science–Chemistry	43	18	41.9%

Table 19. Percent of Persons Employed in the Endorsement Area, 2005-06 *continued*

Endorsement Area	Endors. Reported	# Employed in Endorsement	% Employed in Endorsement
Arts–Musi-General	55	23	41.8%
Elementary Education	2263	936	41.4%
Middle Level–Humanities	30	12	40.0%
World Language–Spanish	74	29	39.2%
CTE–Family/Cons Science Ed.	18	7	38.9%
Science–Physics	29	11	37.9%
World Language–French	16	6	37.5%
Arts–Theatre Arts	23	8	34.8%
World Lang.–Puget Sound Salish	15	5	33.3%
Science–Biology	107	35	32.7%
Social Studies	248	79	31.9%
Arts–Visual Arts	87	27	31.0%
Early Childhood Education	171	53	31.0%
Middle Level	64	19	29.7%
Arts–Music-Instrumental	45	11	24.4%
English as a Second Language	134	32	23.9%
Arts–Music-Choral	53	12	22.6%
World Language–Japanese	5	1	20.0%
World Language–German	10	2	20.0%
Bilingual Education	37	7	18.9%
History	215	40	18.6%
CTE–Marketing Ed	9	1	11.1%
Reading	331	26	7.9%
	5255	2122	40.4%

Discussion

Despite the limitations of the data, these figures tend to reinforce the shortage information provided by districts in that holders of special education, math, and science endorsements have higher placement rates than most other areas. It does seem surprising that 23% of teachers with special education endorsements were not employed in that area. The most likely explanation is that these individuals had multiple endorsements and were teaching in the other area. It may be to a district's advantage to hire someone with a special education endorsement even if it does not have an immediate opening in special education. Should an opening occur later, the teacher is already in the district and can be reassigned. The same may be true of physics, where only 11 out of 29 graduates with a physics endorsement were reported as teaching in that area. Here again, teachers with physics endorsements may hold other endorsements and be hired to teach another subject.

Indicators of Demand—Out-of-Endorsement Assignments

Yet another lens for viewing supply and demand is the number of teachers who are assigned outside their areas of endorsement. Under certain conditions, Washington districts may assign certified teachers to areas for which they have not been endorsed. These out-of-endorsement assignments are reported annually to the Professional Educator Standards Board. Table 20 shows the number of teachers who were assigned to teach a subject without having the appropriate endorsement. (Note: Because not all districts, including some large ones, have provided data, these figures very likely understate the actual number of out-of-endorsement assignments.)

Table 20. Endorsements by Total Number

Endorsement Area	Total Number of Educators	Endorsement Area	Total Number of Educators
Reading/Literacy	91	Music-General	4
English/Language Arts	82	CTE	3
Special Education	79	Chinese	2
Mathematics	76	Early Childhood Ed.	2
Social Studies	56	Earth Science	2
Science	55	French	2
Health & Fitness	48	Japanese	2
History	33	German	1
Spanish	20	Music-Choral	1
Theatre Arts	19	Music-Instrumental	1
Visual Arts	17	Physics	1
English as a Second Language	10	Russian	1
Biology	9	Technology Education	1
Early Childhood Special Education	9	Agriculture	0
Elementary Education	9	Bilingual	0
Library Media	8	Family/Consumer Science	0
Unknown	8	Middle Level-Humanities	0
Business Education	5	Middle Level-Math/ Sci.	0
Dance	5	Marketing	0
Chemistry	4	Traffic Safety	0

Discussion

As expected, these numbers show math, science, and special education to be high on the list. However, several low-need areas, such as history, social studies, and health/fitness, show fairly high numbers as well, suggesting that shortages are not the only factor in out-of-endorsement teaching.

Indicators of Demand—Highly-Qualified Teachers

In the past several years, the federal No Child Left Behind legislation has imposed new requirements for teachers to be considered qualified for their work. The federal rules call for teachers to (a) have at least a bachelor’s degree, (b) be fully certified, and (c) possess demonstrated knowledge of the content, which can be shown by having a major in the subject or by taking a rigorous test of content knowledge. These rules do not completely match Washington endorsement requirements, which means that districts essentially have *two* sets of standards to meet. A teacher may be highly-qualified under federal rules but not meet Washington endorsement requirements, or vice-versa. The overwhelming majority of Washington teachers meet the first two federal requirements, but the demonstrated knowledge of content has been more challenging.

Table 21 shows data collected by OSPI on the number of Washington teachers in the 2005-06 school year who were reported as not meeting the federal highly-qualified requirements.

**Table 21. Washington Teachers in 2005-06
Reported as Not Meeting Highly Qualified Requirements**

Middle School Teachers					
	General Education	Alternative Education Programs*	Juvenile Institution Programs *	Special Education Programs **	Bilingual Education Programs **
Count includes all subject areas				380	39
Civics/Government	49		1		
Economics	41		1		
History	208	8	1		
Geography	96	2			
English Lang Arts	163	3			
Mathematics	186	8			
Reading	241	1	2		
Science	122	5	2		
World Languages	21				
Dance	1				
Theatre	6				
Music	6				
Visual Arts	19				
	1159				
High School Teachers					
	General Education	Alternative Education Programs*	Juvenile Institution Programs *	Special Education Programs**	ESL/Bilingual Education Programs**
Count includes all subject areas				436	51
Civics/Government	38	10			
Economics	22	11			
History	60	32	8		
Geography	31	6			
English Lang Arts	53	26	7		
Mathematics	74	31	14		
Reading	40	8	2		
Science	33	23	7		

**Table 21. Number of Washington Teachers in 2005-06
Reported as Not Meeting Highly Qualified Requirements**

High School Teachers <i>continued</i>					
	General Education	Alternative Education Programs*	Juvenile Institution Programs *	Special Education Programs **	Bilingual Education Programs **
World Languages	23	1			
Dance	2	0			
Theatre	14	3			
Music	5	3			
Visual Arts	18	12			
	413				

*Designates teachers in programs that teach multiple subjects

**Designates teachers in programs that are required to teach multiple subjects (special education) or in the case of ESL/bilingual education—teach multiple subject areas within the ESL/bilingual education program rather than a program focused on acquisition of English language within context of subject area instruction with subject area teacher.

Discussion

The numbers of non-highly-qualified teachers show the pressures being placed on teacher recruitment and assignment by federal rules. Although the majority of these teachers are fully certified and appropriately endorsed under Washington standards, district officials are under pressure to recruit and assign teachers who *do* meet the federal expectations.

Special education, which is already a major shortage area, illustrates the situation clearly. The data show that 816 special education teachers in middle school and high school are considered not highly-qualified. Although the majority of these teachers are certified and appropriately endorsed under Washington rules, they teach one or more academic subjects to their students. Under federal rules, they must have the equivalent of a major or must have passed a rigorous test of content knowledge in each subject they teach. Thus, on top of the serious shortfall of teachers prepared for special education, districts must contend with the need to find teachers who meet these additional expectations.

These figures also show that middle school is a particularly challenging area for recruitment and assignment. In the regular academic subjects (“general education”), 1159 middle level teachers were considered not highly-qualified in 2005-06, compared to just 413 in high school. The reason is that Washington endorsement rules have historically authorized teachers with elementary endorsements to teach any subject through the 8th grade. Elementary-prepared teachers are less likely to have the equivalent of a major (or comparable test), as required by the federal rules for middle school teachers.

The highly-qualified statistics also point out that despite the general surplus of social studies teachers, districts do not necessarily find it easy to find teachers who fit the highly-qualified rules. The reason is that many of these teachers have a broad-field social studies endorsement that authorizes the teaching of history, civics, economics, and geography. However, federal rules require a major or the equivalent (or a comparable test) in *each* of these four subjects.

Conclusions

Because of all the variables that affect educator supply and demand, accurate projections of need are always difficult to make since circumstances can change quickly. Nonetheless, the data in this report provide a timely and valuable perspective on the current situation in Washington. From one perspective, considering the widespread fear of a recruitment crisis that was prevalent seven years ago, Washington has fared reasonably well. The data continue to suggest that for most educational roles, qualified candidates can be found, even if they are not as plentiful as recruiters might want.

However, the current survey leaves little room for complacency, in that the degree of shortage in most areas has *increased* since 2004. The survey does not tell us why, but abundant anecdotal evidence suggests that at least some of the increase has come from full implementation of the federal “highly-qualified teacher” rules in No Child Left Behind. The federal rules and state endorsement rules are not identical; a teacher may be highly-qualified in a subject but not endorsed to teach it, or vice-versa. Thus, district officials now have to meet *two* sets of standards when hiring candidates.

Moreover, Washington continues to experience severe shortfalls of candidates in a number of fields. Topping the list are the roles that district officials across the state found to be in “considerable shortage:”

- Speech Language Pathologist
- Occupational Therapist
- Special Education
- Mathematics
- Physical Therapist
- School Psychologist
- Science–Physics
- Science–Chemistry
- School Nurse

These roles are in demand throughout the state—whether a district is urban or rural, large or small, east side or west side, it can anticipate difficulty finding qualified individuals. However, merely looking at statewide data would understate the degree of shortage. When regional data are considered, the number of affected areas increases. Specifically, if we consider fields in which the statewide numbers at or above the midrange of the “some shortage” category *and* that appear as “considerable shortage” in at least three ESDs, the following roles are added to the list:

- Early Childhood Special Education
- Middle Level–Math/Science
- Science
- Biology
- Earth Science

The combined list of 14 areas is double the number of fields identified by the 2004 survey as having serious shortages.

Although the roles in the serious shortage list have varied somewhat from survey to survey, we can identify three clusters of roles in which the need has been both deep and persistent since 2000:

- Special Education
- Math and Science
- Educational Staff Associates

There is also every reason to believe that the need in these areas will continue, and possibly become even greater, as the shortages that already exist are being compounded by the federal highly-qualified rules. In addition, the current statewide concern about student achievement in math and science may lead to expanded instruction and a consequent need for even more teachers in those areas.

Given these trends, can the state develop policies that will reduce or eliminate the shortages? The data in this survey do not provide sufficient information for a substantive answer, but we can identify a few issues that may affect those efforts.

Designing policy to alleviate shortages is never easy, as supply and demand are affected by many variables (see pages 56-57 for a summary). In particular, it may be helpful to recognize three major types of shortage.

A recruitment/retention shortage occurs when too few candidates are attracted to a particular subject area or role or too many leave in a short period of time (often because it is seen as too stressful or difficult). This appears to be the case with special education, where the number of individuals entering the field has decreased over time and annually falls far below the number of openings. This shortage persists even though 18 of Washington's 21 approved teacher preparation programs offer preparation in Special Education. The implication is that policy initiatives in this area should probably focus on the incentives and disincentives that affect entry into the field.

A training shortage occurs when there are not enough accessible preparation programs to produce the number of educators needed for a particular role. This may be the case for some of the Educational Staff Associate positions. For example, certification as a speech language pathologist requires a Master's degree in that field, but there are only two such programs in Washington, both of which have a highly competitive admission process. Thus, there are capable individuals who want to become certified in this area, but are unable to find a pathway. Where this is the case, policy options may need to focus on adding programs or improving delivery systems for existing programs.

A distribution shortage occurs when too few certified educators are willing to work in or relocate to the districts having the greatest need. This is frequently a problem for districts in specific regions, or for those that are rural and remote. An example in the current survey is the difference between ESD 123, with 17 areas of "considerable shortage," compared with only three such areas in ESD 101. Distribution shortages tend to occur because graduates of preparation programs (which are predominantly in urban areas) are often placebound—unwilling or unable to move because of spousal employment, family connections, or similar reasons.

Others may choose to stay put because they prefer an urban lifestyle. Distribution shortages can be difficult to address, although one policy option might be “grow your own” programs that deliver preparation programs to prospective teachers who already live in non-urban areas. These individuals would be more likely to remain in the area once they had completed their program.

What the survey results make it clear that shortages in these areas are deeply rooted, and not easy to remedy. Ultimately, it will probably require a diverse menu of policy options to begin making progress (see pages 58-59 for some possibilities). But eight years after the first report in this series, the need is undeniable.

Persistent Issues in Supply & Demand

Educator supply and demand is a complicated issue, not simply the number of graduates per field versus the number of openings per field. Some of the factors to understand are:

- ✓ **Personal career choice** – students in education may see the job market statistics for their fields and yet choose majors not on the basis of supply and demand data, but on the basis of what they love to study and want to teach. For example, students may understand that there are shortages in special education and surpluses in social studies, but if they enjoy studying history and related subjects, they will still choose to major in that field.
- ✓ **Certification/licensure areas available** – depending upon the college or the program that the student is attending, a particular field may not be available to them.
- ✓ **Preparation programs** – size; majors; even if they program or major is available, it may have enrollment caps or criteria that the student does not meet.
- ✓ **Geographic preferences** – shortages may exist in one part of the state or one part of the country, but unless candidates are willing to locate or relocate to that area, the supply for those shortages will not exist. For example, a study at Ohio State University showed that, after 1 ½ years after graduation, 77% of the teacher education graduates were teaching within 50 miles of their high school, their college, or both. Only 23% were beyond 51 miles from their previous places of residence. This has a dramatic influence on supply and demand. In the case of Washington, some candidates will move out of state, and other candidates will move into the state. Therefore, merely looking at the number of candidates prepared in the state versus the number of openings in the state will overlook this factor that can directly impact a state's supply of educators.
- ✓ **Number of teachers** – the number of teachers in the workforce or forecasted to be needed in the workforce
- ✓ **Number of P-12 students** – the numbers of students matriculating through the PK-12 system and specific school districts: growing through changes in birth rates, immigration, etc. or declining due to parents leaving a city or town, ending a birth rate bubble, etc.
- ✓ **Retirement and attrition** – the rate at which teachers retire or leave their positions or profession; the ages of teachers currently in the workforce and forecasts of how many will retire at any particular point in time
- ✓ **Salaries & benefits** – as compared between career fields or between school systems as a teacher education student prepares to job hunt; economic comparisons
- ✓ **Working conditions & environment** – class sizes, facilities, safety, resources, and administrative support are all factors that candidates look for when interviewing for and selecting positions

- ✓ **Reserve pool** – the number of candidates who are qualified and could be available at any point in time but are currently out of the teaching workforce: in other careers, staying home for parenting, in graduate school, etc.
- ✓ **Education reform** (e.g., class size) – changes in mandates regarding class sizes or qualifications of educators can affect the demand for or the supply of candidates
- ✓ **Local policies and funding** – specific school systems may have policies, procedures, or funding priorities that affect the demand for certain fields (e.g., maintaining the tradition of a strong music program; eliminating a foreign language)
- ✓ **State mandates and funding** – both obviously affect the demand for educators (e.g., when California mandated a maximum of 20 students per teacher at the primary level, a shortage of elementary candidates was created immediately)
- ✓ **National mandates and funding** --- most evident is the impact of No Child Left Behind regulations and the requirements for Highly Qualified Teachers
- ✓ **Demographics of students** – numbers of students needing special services such as special education, physical or occupational therapy, bilingual or ESL services, etc.
- ✓ **Demographics of teachers** – ages of teachers within districts; the diversity of educators (gender, ethnicity) available
- ✓ **Urban, suburban, rural shifts** – the movement of teachers and/or students among rural, urban and suburban locations

Before trying to understand supply and demand data, it is important to acknowledge the complexity of the issue: no single action will magically correct the balance of supply versus demand.

Implications for Agencies, Boards, and Legislators Involved in Policy Decisions

- Examine preparation program capacity.
- Provide incentives for institutional collaboration to address personnel needs of rural and remote districts.
- Consider strategies for statewide recruitment and retention of educators.
- Secure legislative funding to support WATeach.
- Consider compensation strategies and incentives to increase the supply of educators in considerable need areas.
- Consider geographic access to preparation programs.
- Support and expand alternative routes to teacher certification.
- Evaluate the overall impact of retire/rehire legislation.

Implications for Colleges and Universities

- Reallocate resources from programs in areas of surplus to programs in areas of high shortages.
- Initiate preparation programs in counties with educator needs and little access to current programs.
- Form partnerships with districts, educational service districts, and businesses to provide performance-based preparation options for para-educators and career changers.
- Expand recruitment efforts targeted toward retired military personnel, state and federal employees.
- Advise program applicants and community college and high school students about educator high need areas.
- Expand the number of articulated community college-four year institution programs in mathematics, sciences, and music.
- Redesign all preparation programs to include assessment of prior learning and experience of applicants.
- Establish performance based criteria for early exit from all preparation programs.
- Consider supply and demand data when making decisions about enrollment targets and adding or deleting programs.

Implications for Personnel and Human Resources Administrators in School Systems

- Gather retention data.
- Develop strategies to retain educators.
- Develop systems to forecast educator personnel needs for five years.
- Engage in dialog with legislators and key stakeholder groups to develop solutions to address the challenge of supply.

Implications for the Media and General Public

- Develop a broader understanding of the complex issues associated with educator supply and demand.
- Promote the need for high quality educators in relationship to success for all students.
- Engage in dialog with legislators and key stakeholder groups to develop solutions to address the challenge of supply.
- For these fields, employers will find the most difficulty filling positions with highly qualified employees.
- For employers, this means great difficulty finding educators who are fully qualified for the fields listed. For candidates, this means that they can be selective as they pursue employment.

Appendix



DATE: September 25, 2006

TO: All Washington School Districts

FROM: Arlene Hett, Director of Professional Education and Certification Office of the Superintendent of Public Instruction (OSPI)

B.J. Bryant, Executive Director
American Association for Employment in Education (AAEE)

Bruce Zahradnik, President
Washington School Personnel Association (WSPA)

RE: Survey of Supply and Demand for Educators in Washington State

In 2000, 2002 and 2004, OSPI, AAEE, and WSPA joined together to conduct a supply and demand survey of all school districts in Washington regarding availability and need for certificated educators. The response was overwhelming with more than ninety-five percent return. Each year, these valuable data were shared with the governor's office, state legislature, state board of education, all school districts, colleges/universities, the news media, and the public in general.

To keep looking at trends in Washington, your vital assistance is again needed in helping to determine the actual supply of, and demand for, qualified educators for the children of our state. Enclosed you will find a survey regarding a research study undertaken collaboratively by the three groups listed above. The survey questions inquire about the supply and demand for educators, based upon your own district's data and perspectives. This survey is extremely important in that the report of the data will be utilized in several ways.

- It will assist the Office of the Superintendent of Public Instruction in planning appropriate actions to be taken in response to what districts are experiencing and what they perceive they will need in the future.
- It will be shared with legislators making decisions about education funding in Washington.
- It will be shared with all survey respondents so that districts will have an understanding of statewide needs and concerns.
- It will impact decisions made about college and university teacher education programs.
- It will be used as a correlation study with the national educator supply and demand research conducted annually by the American Association for Employment in Education.

As the need for educators changes in Washington, we must be vigilant in collecting definitive data and using those data to make wise decisions. We need input from every school district in Washington so that our data are accurate and can assist in making decisions. Questions regarding the survey should be directed to Chris Burton, WSPA Executive Director, at 253-333-WSPA (9772) or cburtonlaw@hotmail.com.

Please complete the survey and return it in the enclosed, pre-addressed and postage paid envelope, to WSPA, 329 East Main Street, Auburn, WA 98002 as soon as possible, but no later than **October 18, 2006**.

Thank you for your information and assistance!

Supply and Demand of Educators

Survey for 2005-2006 and 2006-2011

Directions:

1. **Column #1:** For each of the fields listed below, enter the number of openings you had for the 2005-2006 academic year. If no openings occurred, enter 0. If your district does not employ individuals in a particular field, enter NA for **Not Applicable**.
2. **Column #2:** Enter your perception of supply (availability of candidates) compared to demand (number of openings in your district) in 2005-2006 using the scale 1-5 below by circling the appropriate number. If this field is not applicable to your district, leave it blank.
3. **Column #3:** List the number of eligible retirees in your district in the fields listed below during the academic years 2006-2011.
4. **Column #4:** Based on your anticipated staff retirements/changes during 2006-2011, enter your forecasted need for replacement educators currently teaching/working in the fields listed. (Note: Factors influencing your response include projected student enrollment, changes in program offerings, changes in community demographics, program funding, etc.) **Increasing need** means that you will increase staffing in that field beyond the number of staff who leave (i.e., growth in programs). **Considerable need** means that you will need to replace all who leave. **Slight need** indicates that you will need to replace only a portion of those who leave. **No need** indicates that you will not be replacing those in that field who leave (program discontinuation, downsizing, etc.).

Fields	#1. Number of Openings for 2005- 2006 Academic Year	#2. Supply/Demand Circle: 5=Considerable shortage 4=Slight shortage 3=Balanced 2=Slight surplus 1=Considerable surplus	#3. Number of Eligible Retirees for 2006- 2011	#4. District Forecast of Needs by Field Circle: 3=Increasing need 2=Considerable need 1=Slight need 0=No need
Teachers:				
Arts–Dance		5 4 3 2 1		3 2 1 0
Arts–Music-Choral		5 4 3 2 1		3 2 1 0
Arts–Music-General		5 4 3 2 1		3 2 1 0
Arts–Music-Instrumental		5 4 3 2 1		3 2 1 0
Arts–Theatre Arts		5 4 3 2 1		3 2 1 0
Arts–Visual Arts		5 4 3 2 1		3 2 1 0
Bilingual		5 4 3 2 1		3 2 1 0
CTE–Agriculture Ed.		5 4 3 2 1		3 2 1 0
CTE–Business Education		5 4 3 2 1		3 2 1 0
CTE–Family Cons Sci. Ed.		5 4 3 2 1		3 2 1 0
CTE–Marketing Ed.		5 4 3 2 1		3 2 1 0
CTE–Technology Ed.		5 4 3 2 1		3 2 1 0
Early Childhood Ed.		5 4 3 2 1		3 2 1 0
Early Childhood Sp. Ed.		5 4 3 2 1		3 2 1 0
Elementary Education		5 4 3 2 1		3 2 1 0
English as a Second Lang.		5 4 3 2 1		3 2 1 0

Fields	#1. Number of Openings for 2005- 2006 Academic Year	#2. Supply/Demand Circle: 5=Considerable shortage 4=Slight shortage 3=Balanced 2=Slight surplus 1=Considerable surplus					#3. Number of Eligible Retirees for 2006- 2011	#4. District Forecast of Needs by Field Circle: 3=Increasing need 2=Considerable need 1=Slight need 0=No need			
		5	4	3	2	1		3	2	1	0
Teachers: (continued)											
English Language Arts		5	4	3	2	1		3	2	1	0
Health/Fitness		5	4	3	2	1		3	2	1	0
History		5	4	3	2	1		3	2	1	0
Library Media		5	4	3	2	1		3	2	1	0
Mathematics		5	4	3	2	1		3	2	1	0
Middle Level–Humanities		5	4	3	2	1		3	2	1	0
Middle Level–Math/ Sci.		5	4	3	2	1		3	2	1	0
Reading		5	4	3	2	1		3	2	1	0
Science		5	4	3	2	1		3	2	1	0
Science–Biology		5	4	3	2	1		3	2	1	0
Science–Chemistry		5	4	3	2	1		3	2	1	0
Science–Earth Science.		5	4	3	2	1		3	2	1	0
Science–Physics		5	4	3	2	1		3	2	1	0
Social Studies		5	4	3	2	1		3	2	1	0
Special Education		5	4	3	2	1		3	2	1	0
Traffic Safety		5	4	3	2	1		3	2	1	0
World Language–French		5	4	3	2	1		3	2	1	0
World Language–German		5	4	3	2	1		3	2	1	0
World Language–Japanese		5	4	3	2	1		3	2	1	0
World Language–Spanish		5	4	3	2	1		3	2	1	0
Ed. Staff Associates:											
School Counselor		5	4	3	2	1		3	2	1	0
School Psychologist		5	4	3	2	1		3	2	1	0
Speech Language Path.		5	4	3	2	1		3	2	1	0
School Nurse		5	4	3	2	1		3	2	1	0
Occupational Therapist		5	4	3	2	1		3	2	1	0
Physical Therapist		5	4	3	2	1		3	2	1	0
School Social Worker		5	4	3	2	1		3	2	1	0
Administrators:											
Principal–Elementary		5	4	3	2	1		3	2	1	0
Principal–High School		5	4	3	2	1		3	2	1	0
Principal–Middle School		5	4	3	2	1		3	2	1	0
Human Resources		5	4	3	2	1		3	2	1	0
Business Manager		5	4	3	2	1		3	2	1	0
Superintendent		5	4	3	2	1		3	2	1	0
Add other fields pertinent to your district											
		5	4	3	2	1		3	2	1	0
		5	4	3	2	1		3	2	1	0
		5	4	3	2	1		3	2	1	0
		5	4	3	2	1		3	2	1	0

5. In general terms, as compared to 2005-2006, what do you expect employment opportunities to be like for elementary, secondary and special education teachers for the approaching academic year (2006-2007)? (Please place a checkmark in the appropriate box.)

Elementary	<input type="checkbox"/> Much better	<input type="checkbox"/> Better	<input type="checkbox"/> Same	<input type="checkbox"/> Worse	<input type="checkbox"/> Much worse
Secondary	<input type="checkbox"/> Much better	<input type="checkbox"/> Better	<input type="checkbox"/> Same	<input type="checkbox"/> Worse	<input type="checkbox"/> Much worse
Special Education	<input type="checkbox"/> Much better	<input type="checkbox"/> Better	<input type="checkbox"/> Same	<input type="checkbox"/> Worse	<input type="checkbox"/> Much worse

6. What is your perception regarding how the following factors impacted the number of new educators hired in 2005-2006?

Circle: 5 = a significant, positive influence 4 = a moderate, positive influence 3 = no influence 2 = a moderate, negative influence 1 = a significant, negative influence						
Finance	Federal Funding	5	4	3	2	1
	State Funding	5	4	3	2	1
Retirement	Postponed Retirement	5	4	3	2	1
	Routine Retirement	5	4	3	2	1
	Early Retirement	5	4	3	2	1
Legislative Mandates	State	5	4	3	2	1
	Federal	5	4	3	2	1
Demographic Shifts in Population	Limited English-proficient Students	5	4	3	2	1
	Rural/Suburban/Urban Shifts	5	4	3	2	1
	Of Teachers	5	4	3	2	1
	Of Students	5	4	3	2	1
	Student Enrollment	5	4	3	2	1
	Private Schools/Home Schooling	5	4	3	2	1
	Class Size	5	4	3	2	1
	Military Demobilization	5	4	3	2	1
	Changing Teacher Education Enrollments in Colleges	5	4	3	2	1
	Mobility of New Graduates	5	4	3	2	1
	Mobility of Experienced Educators	5	4	3	2	1

7. Please add comments on these or other factors influencing the supply and demand of educators.

School District: _____

Person Completing Survey: _____

Telephone: () _____

E-Mail: _____

Thank you!