

Washington Teachers and their K12 Public Schools

This study is one of five funded by Washington's ARRA Statewide Longitudinal Data Systems Grant as a mechanism to explore the use of P20W data in collaboration with Washington's P20W partners.

To provide evidence-based information for education policymakers and educators, it oftentimes requires rich data describing the education system and student learning. Prior to the creation of the Education Research & Data Center (ERDC), it was challenging to analyze statewide education issues because of the need to link data from various state agencies; and across institutional sectors.

This first-look research brief describes the changes in Washington states' teacher workforce over time. This brief was developed in collaboration with representatives from the Office of Superintendent of Public Instruction (OSPI), the Professional Educator Standards Board (PESB), the Teacher Compensation Workgroup, and education researchers at the University of Washington.

Who teaches in Washington public schools and what workforce environment is present for those teachers has been an important issue for this teacher workforce study¹. Several teacher characteristics, such as teacher qualifications, teaching experiences², and teacher mobility are identified to be correlated with students' learning outcomes. Teachers' retention and mobility are also associated with several school characteristics, especially for beginning teachers³.

The aim of this research brief is twofold: first, to examine teachers' background characteristics as well as retention and mobility patterns; and second, to analyze the relationship between teachers' backgrounds/movements and the characteristics of schools they worked for. Through this study, teacher characteristics, including demographics, teaching experiences, and movements are tracked over a nine-year period. School characteristics are also analyzed to identify the significant factors associated with teacher workforce changes.

¹ Plecki, M., Elfers, A., and M. Knapp. 2003. "Who's teaching Washington's Children? What we know-and need to know-about teachers and the quality of teaching in the state." A report commissioned by the Center for Strengthening the Teaching Profession, College of Education, University of Washington.

- 2007. "Who's Teaching Washington's Children? A 2006 Update." A report commissioned by the Center for Strengthening the Teaching Profession, College of Education, University of Washington.

² Wayne, A. and P. Youngs. 2003. "Teacher Characteristics and Student Achievement Gains: A Review" *Review of Educational Research* 73(1): 89-122.

³ Scafidi, B., Sjoquist, D., and T. Stinebrickner. 2007. "Race, poverty, and teacher mobility." *Economics of Education Review* 26(2): 145-159.

This study makes use of P20W data and demonstrates how P20W data can be used to provide baseline analysis for similar research and policy questions. All findings are reported at the state level.

STUDY COHORT

ERDC analyzed teacher records for four cohorts (groups) of teachers – defined by the school year they were employed in any Washington public K12 schools between the 2004-05 to 2007-08 school years. The follow-up periods range from nine years for the 2004-05 cohort (2005-2013) to six years for the 2007-08 cohort.

DATA

The following data sources were used to examine teacher and school characteristics for public school teachers from the 2004-05 school year through the 2012-13 school year:

1. The Statewide Longitudinal Data System (SLDS) staff files from the Office of Superintendent of Public Instruction (OSPI) were used to provide information about school staff. This file identifies the duty, FTE status, district, school and salary for school personnel. This is also a major data source to identify teacher mobility.
2. School characteristics data compiled from the OSPI SLDS and OSPI state report card are merged with teacher level records to describe the school environment in which teachers worked.

FINDINGS

1. What are the characteristics of Washington State's teacher workforce?

Table 1 shows the demographic composition of the Washington teacher workforce from 2004-05 to 2007-08 by school year. The headcounts of full-time, certified teachers working for Washington public schools have been increasing over time, from 57,447 to 59,083. The demographic characteristics of teachers remain stable over time. The majority of teachers are white (about 92%) and female (about 71%).

Looking at the trend in the age composition of teachers, the proportion of younger teachers increased from 2004-05 to 2007-08. In 2004-05, 2.5% of teachers were younger than age 25; whereas in 2007-08, 5.8% of teachers were less than 25 years old. The proportion of teachers age 25-34 slightly increased. Relatively, the proportion of teachers aged 55 or older declined, from 18.4% to 12.6% in the same period.

Table 1. Teacher demographics across cohorts

	Cohort of teachers			
	2004-05	2005-06	2006-07	2007-08
Total	57,447	58,100	58,547	59,083
Race/ethnicity				
American Indian/Alaskan Native	437 0.8%	457 0.8%	452 0.8%	456 0.8%
Asian	1,423 2.5%	1,457 2.5%	1,493 2.6%	1,535 2.6%
African American	855 1.5%	866 1.5%	855 1.5%	851 1.4%
Hispanic	1,369 2.4%	1,429 2.5%	1,498 2.6%	1,560 2.6%
White	53,268 92.7%	53,758 92.5%	54,114 92.4%	54,554 92.3%
N/A	95 0.2%	133 0.2%	135 0.2%	127 0.2%
Gender				
Female	40,700 70.9%	41,180 70.9%	41,512 70.9%	42,033 71.1%
Male	16,747 29.2%	16,920 29.1%	17,035 29.1%	17,048 28.9%
Age				
< 25	1,398 2.5%	2,131 3.7%	2,792 4.8%	3,435 5.8%
25 – 34	13,654 23.9%	14,503 25.1%	15,189 26.1%	15,926 27.1%
35 – 44	13,441 23.5%	13,842 23.9%	14,222 24.4%	14,644 24.9%
45 – 54	18,127 31.7%	17,904 30.9%	17,636 30.3%	17,392 29.6%
55 +	10,529 18.4%	9,454 16.4%	8,423 14.5%	7,410 12.6%

Table 2. Teachers' teaching experiences and qualification

	Cohort of teachers			
	2004-05	2005-06	2006-07	2007-08
Total	57,447	58,100	58,547	59,083
<i>Employment status</i>				
New	313	294	226	161
	0.5%	0.5%	0.4%	0.3%
Beginning	1,909	2,062	1,955	1,971
	3.3%	3.6%	3.3%	3.3%
Continuing	51,813	52,074	52,530	53,024
	90.2%	89.6%	89.7%	89.7%
Others	3,409	3,665	3,836	3,923
	5.9%	6.3%	6.6%	6.7%
<i>Highest educational attainment</i>				
Bachelor	20,405	20,020	19,750	19,648
	36.1%	34.9%	34.1%	33.5%
Master	33,088	34,568	35,646	36,669
	58.7%	60.4%	61.6%	62.6%
Doctorate	369	375	385	375
	0.7%	0.7%	0.7%	0.6%
Others	2,536	2,282	2,077	1,889
	4.5%	4.0%	3.6%	3.2%
<i>Years of teaching</i>				
< 1	3,696	3,714	3,480	3,219
	6.4%	6.4%	5.9%	5.5%
1 – 4	8,992	8,773	8,888	9,282
	15.7%	15.1%	15.1%	15.7%
5 – 14	21,109	21,726	22,127	22,479
	36.8%	37.4%	37.8%	38.1%
15 – 24	13,968	14,212	14,413	14,593
	24.3%	24.5%	24.6%	24.7%
25 +	9,682	9,675	9,639	9,510
	16.8%	16.6%	16.5%	16.1%
<i>Teaching assignment</i>				
Elementary Teacher	27,246	27,453	27,675	27,977
	47.6%	47.4%	47.5%	47.6%
Secondary Teacher	23,836	24,230	24,422	24,656
	41.7%	41.9%	41.9%	41.9%
Other Teacher	6,067	6,151	6,165	6,174
	10.6%	10.6%	10.6%	10.5%

(Note: Other employment status includes teachers who transferred in or reentering teaching in the observed school year; other educational attainment includes grandfathered, held harmless, special circumstances, and vocational/CTE certificate.)

2. What are the employment and education experiences of teachers?

In each study year, about 90 percent are continuing teachers from the previous year, 3 percent are beginners with less than one year experience, and 0.5 percent were newly hired (Table 2). Meanwhile, approximately 60 percent of teachers hold master degrees, and less than one percent have an earned doctorate. For the four cohorts of the study, the proportion of teachers with bachelor's degree declined from 36 percent to 33 percent, while the proportion with a master's degree slightly increased. The majority of teachers have 5 or more years of teaching experience (about 85%) and there was a small drop in teachers with less than one year of teaching. The proportions of teacher assignment did not change much over time - about 48 percent for elementary, 42 percent for secondary teachers, and 10 percent for other teaching assignment (e.g., special education program).

In general, there is not much variation in teacher characteristics across the four cohorts. Thus, the rest of the analyses are not presented by cohort, but show the overall results.

3. What are the patterns of teacher retention and mobility in Washington?

Teachers are not retained in the same school district or school across time. This section of study describes the patterns of Washington teachers' movement across districts and schools over the observation period (9 years for the 2004-05 cohort, 8 years for 2005-06 cohort, 7 years for 2006-07 cohort, and 6 years for the 2007-08 cohort).

Movement across districts

Table 3 shows that 90 percent of teachers stay in the same school district, while 8.7 percent taught in two districts in their teaching career by moving once and 1.1 percent moved districts twice. There were 103 teachers (out of total headcount of 69,690 teachers) who taught in 4 or more districts.

Compared across race/ethnicity, Asian and African American teachers tend to be more likely to stay in one district (90.4% and 91.7%, respectively). Male teachers are slightly more mobile than females. New and beginning teachers were less likely to stay in the same district (about 82%), and teachers who ever transferred in were also relatively more mobile (77.8%).

Teachers who hold master and other degrees are more likely to stay in the same districts, compared to teachers with doctorate and bachelor degrees. Teachers with a bachelor's degree tend to be more mobile among the teacher cohorts.

Movements across schools

Teachers may stay in the same districts but move across various schools within the same districts. Table 4 shows that about 31 percent of teachers move schools. About 23 percent worked in two schools, 6 percent worked in three schools, and about 1.5 percent worked in four or more schools.

Female teachers are slightly more likely than males to change schools (32% versus 30%). Teachers who continuously stay in the teaching workforce are more likely to stay in the same schools, compared to teachers who were new, beginning or transferred in/re-entering. Teachers with bachelor's degree are more mobile than those with other types of degrees.

Table 3. The association between teacher mobility across *districts* and characteristics

	Number of districts ever stayed				
	1	2	3	4+	Total
Total	62,736	6,092	759	103	69,690
	90.0%	8.7%	1.1%	0.0%	
<i>Race/ethnicity</i>					
American Indian/Alaskan Native	462	48	4	2	516
	89.5%	9.3%	0.8%	0.4%	
Asian	1,649	156	18	1	1,824
	90.4%	8.6%	1.0%	0.1%	
African American	951	80	5	0	1,036
	91.7%	7.7%	0.5%	0.0%	
Hispanic	1,556	186	21	1	1,764
	88.2%	10.5%	1.2%	0.1%	
White	57,981	5,599	709	99	64,388
	89.9%	8.7%	1.1%	0.2%	
N/A	137	23	2	0	162
	84.6%	14.2%	1.2%	0.0%	
<i>Gender</i>					
Female	45,102	4,192	513	74	49,881
	90.3%	8.4%	1.0%	0.1%	
Male	17,632	1,900	246	29	19,807
	88.9%	9.6%	1.2%	0.2%	
<i>Employment status</i>					
New	359	68	9	1	437
	81.6%	15.5%	2.1%	0.2%	
Beginning	4,487	870	117	13	5,487
	81.5%	15.0%	2.1%	0.2%	
Continuing	51,623	3,687	457	52	55,819
	92.4%	6.6%	0.8%	0.1%	
Others	6,264	1,466	174	151	8,055
	77.8%	18.2%	2.2%	1.9%	
<i>Highest education attainment</i>					
Bachelor's Degree	23,339	2,571	333	40	26,283
	88.7%	9.8%	1.3%	0.2%	
Master's Degree	35,581	3,218	386	60	39,245
	90.5%	8.2%	1.0%	0.2%	
Doctorate Degree	401	50	2	1	454
	87.9%	11.0%	0.4%	0.2%	
Others	2,555	105	19	2	2,681
	95.3%	3.9%	0.7%	0.0%	

Table 4. The association between teacher mobility across schools and characteristics

	Number of schools ever stayed				
	1	2	3	4+	Total
Total	48,044	15,882	4,113	1,043	69,082
	68.8%	22.8%	5.9%	1.5%	
Race/ethnicity					
American Indian/Alaskan Native	323	132	47	13	515
	62.6%	25.6%	9.1%	2.5%	
Asian	1,239	403	125	41	1,808
	67.9%	22.1%	6.9%	2.2%	
African American	691	242	80	16	1,029
	66.6%	23.3%	7.7%	1.6%	
Hispanic	1,158	434	121	39	1,752
	65.6%	24.6%	6.9%	2.2%	
White	44,527	14,631	3,729	931	63,818
	69.0%	22.7%	5.8%	1.4%	
N/A	106	40	11	3	160
	65.4%	24.7%	6.8%	1.9%	
Gender					
Female	34,158	11,471	3,032	772	49,433
	68.4%	23.0%	6.1%	1.6%	
Male	13,884	4,411	1,081	271	19,647
	70.0%	22.2%	5.5%	1.4%	
Employment status					
New	264	117	43	9	433
	60.0%	26.6%	9.8%	2.0%	
Beginning	3,275	1,593	470	110	5,448
	59.5%	28.9%	8.5%	2.0%	
Continuing	39,865	11,817	2,940	709	55,331
	71.3%	21.1%	5.3%	1.3%	
Others	4,639	2,353	659	214	7,865
	59.0%	29.9%	8.4%	2.7%	
Highest education attainment					
Bachelor's Degree	17,676	6,311	1,700	417	26,104
	67.1%	23.9%	6.5%	1.6%	
Master's Degree	27,196	8,854	2,235	583	38,868
	69.2%	22.5%	5.7%	1.5%	
Doctorate Degree	313	100	21	6	440
	68.6%	21.9%	4.6%	1.3%	
Others	2,225	338	70	18	2,651
	83.0%	12.7%	2.6%	0.7%	

4. What are the school characteristics in last decade?

This section of the study reports the school characteristics for teacher cohorts in the past nine years. Table 5 presents the summary statistics of the five school characteristics retrieved from OSPI report cards across years. On average, the pupil-teacher ratio is 17 students to one teacher per classroom. The average years of teaching in Washington public schools is 12.5 years. Schools are composed of approximately 36 percent minority students, 41 percent low-income students (measured by percent of students eligible for free- or reduced-price lunch, FRPL), and 13 percent enrolled in the special education program. About 64 percent of teachers hold a master's degree.

Table 5. School characteristics for full-time certified teachers

Variable	N	Mean	StD	Min	Max
Pupil-teacher ratio	448,185	17.2	5.7	1.0	52.6
Average years of teaching	449,172	12.5	2.4	0.1	33.5
Percent minority	450,273	35.8	18.9	0.1	100.0
Percent FRPL	450,172	41.3	22.9	0.0	100.0
Percent teacher with master degree	448,918	64.1	12.3	2.7	85.0
Percent special education	397,420	12.5	5.9	0.0	100.0

School characteristics vary by school types. High schools have higher pupil-teacher ratios. Schools that combine elementary and secondary grades tend to have fewer minority students. Elementary schools have higher proportions of students from low-income households, while high schools have lower proportions. Secondary schools tend to have fewer students in special education, compared to schools with elementary grades. Teachers in the schools that combine elementary and secondary grades tend to be more likely to retain teachers. On average, 8 teachers left a school of this type (combined elementary and secondary), while about 24 teachers left a high school in the same period of time.

Table 6. The mean of school characteristics by school types

School characteristics	School type					
	Elementary + secondary	Elementary + middle	Elementary	Secondary	Middle	High
Pupil-teacher ratio	17.9	16.6	16.6	14.5	17.3	18.5
Average years of teaching	12.6	12.4	12.6	13.3	11.9	12.7
Percent minority	24.6%	31.2%	38.3%	28.7%	35.6%	32.6%
Percent FRPL	36.0%	42.3%	45.3%	41.3%	41.4%	34.1%
Percent teacher with master degree	63.2%	64.2%	63.0%	64.4%	65.7%	65.3%
Percent special education	14.4%	13.2%	14.2%	10.5%	11.6%	10.3%
Number of teachers leaving	7.8	12.5	13.2	10.9	18.2	23.5

School characteristics differ by their locations. Schools in urban areas have larger class sizes, higher proportions of minority and low-income students, and slightly less experienced teachers. Schools located in mid-size cities and suburbs adjacent to large cities are more likely to experience higher

teacher mobility. Teachers in rural areas outside of Core Based Statistical Areas (CBSA) tend to be more stable in terms of teacher retention.

Table 7. The mean of school characteristics by school types

<u>School characteristics</u>	<u>School location</u>							
	<u>Large city</u>	<u>Mid-size city</u>	<u>Urban fringe of large city</u>	<u>Urban fringe of mid-size city</u>	<u>large town</u>	<u>Small town</u>	<u>Rural, inside CBSA</u>	<u>Rural, outside CBSA</u>
Pupil-teacher ratio	17.3	17.5	17.9	16.9	17.5	16.5	16.9	13.9
Average years of teaching	11.6%	12.4%	12.1%	13.1%	12.4%	12.9%	13.0%	13.5%
Percent minority	58.8%	41.2%	35.4%	31.0%	55.7%	34.1%	22.6%	26.7%
Percent FRPL	43.2%	49.4%	32.0%	42.5%	65.0%	50.6%	34.7%	49.6%
Percent teacher with master degree	62.3%	64.2%	63.7%	65.7%	66.0%	63.1%	66.4%	62.1%
Percent special education	13.0%	12.6%	12.1%	12.9%	11.9%	13.1%	12.5%	13.1%
Number of teachers left	12.9	20.6	19.1	13.9	14.8	12.9	13.2	8.9

5. What are the associations between teacher and school characteristics?

This study examines the association between teacher and school characteristics by focusing on teacher's employment experiences and educational attainment in different types of schools by school poverty level. School poverty is measured by the percent of students' FRPL eligibility. The level of school poverty is divided into two categories: lower-income school refers to percent FRPL equal to or higher than 50 percent; higher-income school refers to percent FRPL less than 50 percent.

Teacher employment status in higher- or lower-income schools

Teacher characteristics may vary in different types of schools and by school poverty level. Table 8 shows the distribution of teachers' employment status across school types by dividing teachers into lower- or higher-income schools.

Among teachers in schools that combine elementary and secondary grades, there are slightly more teachers who were transferred-in or re-entered the teacher workforce in higher-income schools. For secondary schools, there is higher proportion of beginning teachers (about 4.8%) in lower-income schools than in higher-income schools (about 2.9%).

Table 8. The distribution of teacher employment status by school types and student income composition

Schools with percent FRPL less than 50% (higher-income)

	Elementary + secondary	Elementary + middle	Elementary	Secondary	Middle	High
Total	1,927	4,523	67,985	3,747	29,766	47,577
Employment status						
New	4 0.2%	14 0.3%	35 0.1%	9 0.2%	21 0.1%	57 0.1%
Beginning	67 3.5%	139 3.1%	2,040 3.0%	110 2.9%	1,006 3.4%	1,741 3.7%
Continuing	1,712 88.8%	4,100 90.7%	62,171 91.5%	3,348 89.4%	26,896 90.4%	42,404 89.1%
Others	144 7.5%	270 6.0%	3,739 5.5%	280 7.4%	1,843 6.2%	3,375 7.1%

Schools with percent FRPL equal to or larger than 50% (lower-income)

	Elementary + secondary	Elementary + middle	Elementary	Secondary	Middle	High
Total	942	1,602	35,912	7,802	10,907	1,392
Employment status						
New	2 0.2%	1 0.1%	17 0.1%	13 0.2%	10 0.1%	4 0.3%
Beginning	30 3.2%	53 3.3%	1,280 3.6%	374 4.8%	401 3.7%	56 4.0%
Continuing	850 90.2%	1,422 88.8%	32,668 91.0%	6,807 87.3%	9,776 89.6%	1,229 88.3%
Others	60 6.4%	126 7.9%	1,947 5.4%	608 7.8%	720 6.6%	103 7.4%

Teachers' years of teaching by school types and income level

Regardless of school types, Table 9 shows a pattern that teachers in lower-income schools tend to have fewer years of teaching (less than or equal to 4 years of teaching) in the Washington public school system.

Table 9. The distribution of teachers' years of teaching by school types and income composition

	Elementary + secondary	Elementary + middle	Elementary	Secondary	Middle	High
Total	1,927	4,523	67,985	3,747	29,766	47,579
Years of teaching						
< 1	106 5.5%	218 4.8%	3,020 4.4%	170 4.5%	1,444 4.9%	2,491 5.2%
1 – 4	284 14.7%	665 14.7%	10,279 15.1%	520 13.9%	4,906 16.5%	7,139 15.0%
5 – 14	696 36.1%	1,696 37.5%	25,076 36.9%	1,347 36.0%	11,817 39.7%	18,060 37.9%
15 – 24	495 25.7%	1,249 27.6%	18,039 26.5%	1,026 27.4%	6,971 23.4%	11,186 23.5%
25 +	346 17.9%	695 15.4%	11,571 17.0%	684 18.3%	4,628 15.6%	8,703 18.3%
<i>Schools of percent FRPL equal to or larger than 50% (lower-income)</i>						
	Elementary + secondary	Elementary + middle	Elementary	Secondary	Middle	High
Total	942	1,602	35,912	7,803	10,907	1,392
Years of teaching						
< 1	41 4.4%	83 5.2%	1,876 5.2%	78 5.6%	573 5.3%	507 6.5%
1 – 4	161 17.1%	269 16.8%	5,849 16.3%	232 16.7%	2,190 20.1%	1,498 19.2%
5 – 14	336 35.7%	657 41.0%	13,594 37.9%	501 36.0%	4,328 39.7%	2,934 37.6%
15 – 24	229 24.3%	373 23.3%	9,029 25.1%	326 23.4%	2,296 21.1%	1,648 21.1%
25 +	175 18.6%	220 13.7%	5,564 15.5%	255 18.3%	1,520 13.9%	1,216 15.6%

Teachers' education degree for teachers by school types and income level

There is high association between teacher' educational attainment and school income level. Teachers in higher-income schools are more likely to hold graduate degrees than in lower-income schools. The largest disparity in teachers' education degree lies among secondary school teachers. The proportion of bachelor's degree teachers in higher-income schools is about 10% (31.4% versus 41.6%) lower than in lower-income schools; whereas, the proportion with a graduate degree (master's and doctorate) in higher-income schools is about 11% (63.1% versus 51.2%) higher than in lower-income schools.

Table 10. The distribution of teachers' education degree by school types and income composition*Schools of percent FRPL less than 50% (higher-income)*

	Elementary + secondary	Elementary + middle	Elementary	Secondary	Middle	High
Total	1,925	4,513	67,944	3,737	29,706	47,474
Teacher education degree						
Bachelor's Degree	672 34.9%	1,542 34.1%	24,642 36.2%	1,172 31.4%	10,055 33.8%	14,818 31.2%
Master's Degree	1,168 60.7%	2,850 63.2%	40,907 60.2%	2,356 63.1%	18,613 62.7%	29,459 62.1%
Doctorate Degree	23 1.2%	18 0.4%	195 0.3%	47 1.3%	151 0.5%	609 1.3%
Others	62 3.2%	103 2.3%	2,200 3.2%	162 4.3%	887 2.9%	2,588 5.5%

Schools of percent FRPL equal to or larger than 50% (lower-income)

	Elementary + secondary	Elementary + middle	Elementary	Secondary	Middle	High
Total	940	1,595	35,880	1,388	10,882	7,786
Teacher education degree						
Bachelor's Degree	387 41.2%	620 38.9%	13,749 38.3%	577 41.6%	4,048 37.2%	2,958 38.0%
Master's Degree	519 55.2%	928 58.2%	20,936 58.4%	711 51.2%	6,552 60.2%	4,267 54.8%
Doctorate Degree	3 0.3%	0 0.0%	104 0.3%	23 1.7%	43 0.4%	100 1.3%
Others	31 3.3%	47 3.0%	1,091 3.0%	77 5.6%	239 2.2%	461 5.9%

Teacher mobility of a school by school types and income level

Across school types, Table 11 shows that schools with elementary and secondary grades have the lowest level of teacher mobility. In general, lower-income schools have higher levels of teacher mobility than higher-income schools, except for schools with elementary and secondary grades. The largest disparity in teacher mobility is shown in high schools, where the average number of teachers leaving a school is 29 for lower-income schools and 22 for higher-income schools.

Table 11. Average number of teachers left by school types and income

	Percent FRPL	N	Mean	StD	Min	Max
Elementary + secondary	0 - <50 (higher income)	3,494	8.5	11.0	1	42
	50 – 100 (lower income)	1,757	6.0	7.3	1	32
Elementary + middle	0 - <50 (higher income)	8,847	12.7	10.9	1	60
	50 – 100 (lower income)	4,544	12.0	8.1	1	42
Elementary	0 - <50 (higher income)	128,671	12.6	7.7	1	65
	50 – 100 (lower income)	88,323	14.1	8.5	1	65
High school	0 - <50 (higher income)	95,235	22.1	16.2	1	138
	50 – 100 (lower income)	22,506	29.3	24.6	1	113
Middle school	0 - <50 (higher income)	56,906	17.2	8.7	1	60
	50 – 100 (lower income)	27,168	20.4	9.7	1	49
Secondary school	0 - <50 (higher income)	6,439	10.6	8.1	1	36
	50 – 100 (lower income)	2,998	11.4	8.7	1	43

SUMMARY

Using Washington P20W data, this brief provides a first look at the characteristics of teachers and their schools in the Washington public K12 school system. The highlights of preliminary findings for the 2004-05 to 2007-08 cohorts of teachers are:

- The total number of full-time and certified teachers increased over time. However, the demographic distribution of teachers remains stable.
- The proportion of young teachers increased among the Washington teacher workforce across the four study cohorts.
- There is an increase in teachers with graduate degrees.

- Teacher retention and mobility:
 - Teachers who hold master's and other degrees are more likely to stay in the same districts, compared to teachers with doctorate and bachelor degrees. Teachers with bachelor's degree tend to be more mobile.
 - New and beginner teachers are more mobile than those who continuously stay in teaching workforce.
- Teachers in low-income schools tend to have fewer years of teaching (less than or equal to 4 years of teaching) in Washington public school system.
- There is a high association between a teacher's educational attainment and school income level: Teachers in high-income schools are more likely to hold graduate degrees than in low-income schools.
- The largest disparity in teachers' education degree is found among secondary school teachers.
- Schools with elementary and secondary grades have the lowest level of teacher mobility. In general, low-income schools have higher level of teacher mobility than high-income schools, except for schools with combined elementary and secondary grades.
- The largest disparity in teacher mobility is shown in high schools, where the average number of teachers leaving a school is 29 for low-income schools and 22 for high-income schools.

FUTURE STUDIES

This study briefly explores Washington teachers and their schools with few characteristics to demonstrate a first look of using P20 W data for teacher studies. Based on current data availability, several studies could be developed in the future:

1. A detailed investigation of teacher qualifications and the association with teacher mobility and school characteristics will provide a comprehensive insight into teacher workforce development.
2. By incorporating Unemployment Insurance (UI) wage data, future study may be extended to examine where the leavers went, as well as compare the employment outcomes between those who stayed and those who left.
3. Teacher retention and mobility could be highly associated with various school characteristics. Therefore, a detailed study about school characteristics and their effect on teacher retention/mobility will be valuable for developing teacher retention policies.
4. Whether schools with high proportions of low-income students are filled with quality teachers may affect students' achievement. A study that focused on school poverty and teacher qualifications will contribute to policies related to school resource allocation.
5. A study that analyzes teacher salary change over time, along with teacher mobility, could provide some insights about the impact of wage on teacher retention.