Development and Deployment of a "Fast Response" Survey System in Washington State:

Methodological Notes

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by

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Development of a Fast Response Survey System for Washington State

This report describes the technical aspects of the establishment of a "Fast Response Survey System" for the state of Washington. The system, supported by the Stuart Foundation and the newly created Center for Strengthening the Teaching Profession (CSTP), is being designed to offer timely and useful information to the state's policy community concerning K-12 teaching, the teacher workforce, and teaching conditions.

In 2002, a research team from the University of Washington embarked on an effort to determine what can be known—and what we need to know—about the state's teacher workforce,[1] their teaching, and the conditions that support their work. The goal was to provide relevant information to policy makers and others which could be used to inform decision making, in an effort to improve the quality of instruction and student learning. The team began to examine current information about the teacher workforce by exploring the data already collected by the state. This effort yielded a general portrait of the state's teaching force, but we quickly realized that the state's existing databases could only take us so far. The information was useful in answering certain kinds of questions, but there remained many issues that simply could not be addressed using existing data sources. For example, the databases could not tell us what teachers teach or how well teachers' degrees and endorsements match their current teaching assignments. In attempting to dig deeper into these issues, we also felt it was important to hear teachers' voices regarding who they teach, how they teach, and how they are supported in the profession. One way to explore some of these issues in a timely and cost-effective manner was to administer a series of questionnaires to a sample of Washington classroom teachers.

The Fast Response Survey System

Based on a survey system designed by the National Center for Education Statistics (NCES), Fast Response surveys are relatively short (less than 30 minutes), and sent to a "standing" sample of teachers who have agreed in advance to participate, in this case, in multiple surveys. The high response rates and quick turn-around of questionnaires makes this kind of system especially useful for attempts to inform policy debate. Our goal has been to design and test such a system for the state of Washington, while yielding findings about pertinent issues on the teaching quality agenda.

In its first iteration during the 2003-04 school year, the Fast Response Survey System served three purposes:

- Collect information about the teacher workforce that is not contained in existing state databases.
- Pilot and assess the feasibility of the system using a modest (n = 400) standing sample of Washington classroom teachers.

[1] This effort resulted in the publication, *Who's Teaching Washington's Children: What We Know – and Need to Know – About Teachers and the Quality of Teaching in the State*. The full report can be accessed at the following website: http://www.cstp-wa.org/

- Collect descriptive, low-inference baseline data in a first survey and build on that information in the two succeeding surveys aimed at important, policy relevant topics.

In June 2003, the research team began to explore the feasibility of this system to meet these research priorities. A separate report will accompany each pilot survey and a final summary report will provide a comprehensive analysis of the results of all three surveys in this series.

Research Methods

We approached this research by developing and administering three surveys to a randomly selected representative sample of Washington teachers. The three brief questionnaires, sent in the fall, winter, and spring of the 2003-04 school year, sought information about:

- Teaching assignments and preparation (Fall, 2003)
- Working conditions (Winter, 2004)
- Professional development support (Spring, 2004)

Instrument Development

After decisions were made regarding the topics in the survey series, we began the development of the survey instruments. An item bank of specific questions was created using items from existing national, state, and local surveys. We also designed items specifically for the Washington state context. In September 2003, a small pilot version was administered prior to the release of the first survey with elementary, middle and high school teachers, to test out and review the survey items and format. Similar pilots were done prior to the second and third surveys.

Instruments were developed in two formats: paper and web-based. The online survey was facilitated by SurveyWave through a licensing agreement, and UW staff were trained to use the technology. This survey program was chosen because the design enables branching of questions, ease of data compilation and technical support. Recognizing that web-based surveys offer faster turn-around times, branch logic, and less data entry, we wanted to test this format as an efficient means for gathering information from teachers. However, acknowledging not only that people differ in their comfort levels with web-based applications, but also that access to technology may be a problem for some teachers, we allowed teachers to opt for a paper version (with identical items to the online version). In our sample, 56 percent chose web-based surveys; 44 percent chose paper-based surveys.

Sample Selection

Teachers were selected based on a stratified random sample of all Washington classroom teachers by region of the state, experience level of the teacher and poverty level of the school in which they teach. The sampling frame was generated by pulling a

stratified random sample of the state's teachers using the state's personnel database (S-275) for the 2002-03 school year. The personnel database includes all teachers in the state of Washington. From the database, we identified 57,247 classroom teachers based on duty root (31, 32 or 33), of which we were able to include 54,807 or 95.7% in the sampling frame.

In order to identify teachers by region of the state, teachers were linked to their district's Educational Service District and then grouped in one of three broad regions. The Central Puget Sound is represented by ESD 121. The districts in Western Washington outside of the Central Puget Sound ESD 121 are represented as a group (ESDs 112, 113, 114 and 189). Eastern Washington is represented by the four ESDs which roughly correspond to the eastern side of the state (ESDs 101, 105, 123 and 171) (see Table 1).

Table 1: Characteristics of the Teacher Sample (Stratification Variables)

Demographic	Category
Region*	• Western Washington (outside of the Central Puget Sound) • Central Puget Sound • Eastern Washington
Teacher Experience	• 0-4 years • 5-14 years • 15 or more years
School Poverty Indicator	• 0 to 20 % Enrolled in Free or Reduced Price Lunch program • 21 to 50 % Enrolled in Free or Reduced Price Lunch program • 51 to 100 % Enrolled in Free or Reduced Price Lunch program

* Region as represented by Educational Service Districts. Puget Sound region is represented by ESD 121. Western WA (not including ESD 121) is represented by ESDs 112, 113, 114 and 189. Eastern Washington is represented by ESDs 101, 105, 123 and 171.

Teachers were grouped according to three experience levels: 0-4 years of experience, 5-14 years of experience, and 15 or more years of experience. Additionally, each teacher was linked to his or her school building by a school code. By tagging each school code to the percentage of students enrolled in the Free or Reduced Price Lunch program for the school, a rough indicator of school poverty could be identified. In this way, teachers were grouped into three categories according to school poverty level: low poverty (0-20% students receiving Free or Reduced Price Lunch), moderate poverty (21-50% of students receiving Free or Reduced Price Lunch) or high poverty (51-100% of students receiving Free or Reduced Price Lunch).

A sampling grid containing 27 cells (the total possible combinations of teachers in each of these categories) was generated by the three stratification variables (region, experience level and school poverty level). In order to generate an initial sample of 400 teachers, we randomly selected teachers who fit the appropriate criteria to fill each cell in the sampling grid.

Sample Recruitment

The state's personnel database (S-275) for 2002-03 was the most current source of information on the state's teachers. However, because the database contained information from the prior school year, some teacher turnover was anticipated (estimated at 7%). This required an extra step to confirm that the teacher was still teaching at the same school in the 2003-04 year. A phone call to the school was made to confirm whether or not the teacher was currently teaching at the school. If the teacher was no longer teaching at the school, was unwilling to commit to the three surveys or was unreachable, a replacement was selected from the randomly drawn pool within the corresponding cell of the sampling grid. In addition, because the database contained information from the prior school year, it was not possible to include first year teachers in the sample for the 2003-04 school year.

Effort was made to represent teachers from different schools by recruiting only one teacher per school, if possible. Recruitment in Eastern Washington was complicated in this regard because there are so few schools whose poverty levels are between 0 and 20 percent of the students enrolled in the Free or Reduced Price Lunch program. Consequently, the sample includes nine Eastern Washington schools in which there are two teachers located at the same school.

A letter of invitation was sent to potential teachers soliciting their participation. Participants were compensated with an honorarium ($25 gift certificate to Amazon.com) for their involvement in the three surveys. Survey participants had the option of completing either a paper or a secure online version of the survey questionnaire.

The survey participants include teachers from 35 of 39 counties,[2] teachers from 149 school districts (50% of the districts in the state), and 369 schools (see Tables 2 and 3). Sampling along the selected criteria by region of the state slightly over-represents rural areas and slightly under-represents urban areas.[3]

[2] The four counties not included in the sample are all very small and represent less than 0.7% of the state's classroom teachers.

[3] For example, classroom teachers in King and Spokane counties are slightly under-represented given the percentage of the state's teachers in those counties. King County represents 25% of the state's classroom teachers, but only 20.2% of the sample, while Spokane represents 10.6% of the state's classroom teachers, but only 7.3% of the sample. Alternatively, Skagit County represents 1.9% of the state's classroom teachers, but 3.2% of the sample. Benton County represents 2.9% of the state's teachers, but 5.3% of the sample's teachers.

Table 2: Percent of Classroom Teachers Represented in Washington Counties and Standing Sample (2002-03 year)		
County Name	*% of State*	% of Sample
Adams	0.4%	0.3%
Asotin	0.3%	0.5%
Benton	2.9%	5.3%
Chelan	1.2%	1.6%
Clallam	1.0%	1.3%
Clark	6.5%	5.8%
Columbia	0.1%	0
Cowlitz	1.6%	1.9%
Douglas	0.7%	0.8%
Ferry	0.1%	0.3%
Franklin	1.3%	0.5%
Garfield	0*	0
Grant	1.7%	1.3%
Grays Harbor	1.3%	2.6%
Island	0.9%	0.5%
Jefferson	0.4%	0.5%
King	25.0%	20.1%
Kitsap	4.2%	3.7%
Kittitas	0.5%	1.3%
Klickitat	0.4%	0.8%
Lewis	1.3%	1.1%
Lincoln	0.3%	0.5%
Mason	0.9%	0.5%
Okanogan	0.7%	0.8%
Pacific	0.4%	0
Pend Oreille	0.2%	0.3%
Pierce	12.7%	9.3%
San Juan	0.2%	0
Skagit	1.9%	3.2%
Skamania	0.2%	0.3%
Snohomish	9.9%	9.3%
Spokane	7.3%	10.6%
Stevens	0.7%	1.6%
Thurston	3.9%	2.9%
Wahkiakum	0*	0.3%
Walla Walla	1.0%	1.3%
Whatcom	2.6%	2.6%
Whitman	0.5%	1.3%
Yakima	4.7%	5.0%
Total	100.0%	100.0%
*Rounds to less than a tenth of a percent.		

Table 3: Districts Represented by Teachers in the Sample (n=149)

Aberdeen	Highline	Peninsula
Anacortes	Hockinson	Port Angeles
Arlington	Hood Canal	Port Townsend
Asotin-Anatone	Hoquiam	Prosser
Auburn	Issaquah	Pullman
Battle Ground	Kalama	Puyallup
Bellevue	Kelso	Quinault
Bellingham	Kennewick	Quincy
Bethel	Kent	Renton
Blaine	Kettle Falls	Richland
Bremerton	Kiona-Benton	Riverside
Burglinton-Edison	Kittitas	Riverview
Camas	La Center	Rochester
Cape Flattery	Lake Chelan	Royal
Carbonado	Lake Stevens	Seattle
Cashmere	Lake Washington	Sedro-Woolley
Central Kitsap	Lakewood	Selah
Central Valley	Longview	Selkirk
Chehalis	Lyle	Sequim
Cheney	Lynden	Shoreline
Chewelah	Mary M. Knight	Snohomish
Chimacum	Mary Walker	Snoqualmie Valley
Clarkston	Marysville	South Kitsap
Cle Elum-Roslyn	Mead	South Whidbey
Clover Park	Medical Lake	Spokane
Colfax	Mercer Island	Stanwood-Camano
College Place	Mill A	Steilacom Historical
Colton	Monroe	Sumner
Colville	Montesano	Sunnyside
Crescent	Moses Lake	Tacoma
Curlew	Mossyrock	Tahoma
Davenport	Mount Adams	Tenino
Eastmont	Mount Baker	Toppenish
Edmonds	Mount Vernon	Tukwila
Ellensburg	Mukilteo	Tumwater
Elma	Naches Valley	University Place
Enumclaw	Nespelm	Vader
Ephrata	Nine Mile Falls	Vancouver
Everett	North Beach	Vashon Island
Evergreen	North Kitsap	Wahkiakum
Federal Way	North Thurston	Walla Walla
Ferndale	Northshore	Wapato
Fife	Oak Harbor	Wenatchee
Finley	Oakville	West Valley (Spokane)
Franklin Pierce	Okanogan	West Valley (Yakima)
Freeman	Olympia	White Salmon
Garfield	Onalaska	Yakima
Goldendale	Orting	Yelm
Granger	Othello	Zillah
Harrington	Pasco	

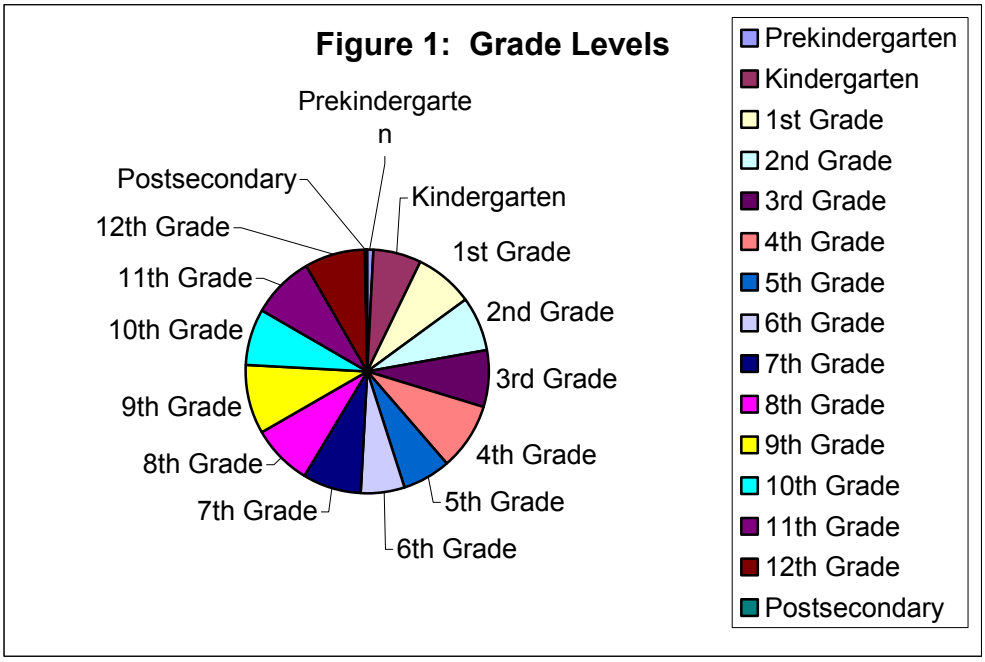
The ethnicity, years of experience, and age of the survey participants generally mirror state averages. The majority of teachers in the sample, as in the state, are white (94.4 percent), with slightly over 5 percent of the sample representing ethnic and racial minorities. Years of experience and age of participants also closely correspond to the state's general population. For selected teacher characteristics of the sample compared to the state population, see Table 4.

Table 4: Selected Teacher Characteristics for the State and the Sample (2002-03)

	State	Sample
Region*		
Western WA (not 121)	37.0%	37.0%
Central Puget Sound (ESD 121)	38.1%	29.4%
Eastern WA	24.9%	33.6%
Ethnicity		
Asian/Pacific Islander	2.4%	3.2%
African American	1.5%	1.9%
Hispanic	2.1%	0.3%
Native American	0.7%	0.3%
White	93.3%	94.4%
Experience		
0-4 years	23.4%	32.5%
5-14 years	35.7%	33.1%
15-24 years	24.5%	21.4%
25 yrs or more	16.4%	13.0%
Age		
21-30	13.2%	16.7%
31-40	23.2%	22.5%
41-50	27.6%	31.7%
51-60	32.0%	26.5%
61+	4.0%	2.6%

* Region as represented by Educational Service Districts.

Using a randomly generated sample also provided an appropriate representation of teachers at each grade level (see Figure 1).



Survey Deployments and Response Rates

Survey 1 was launched in late November 2003, and focused on teacher assignment, preparation and certification. The completion rate was 90.0 percent with a 94.8 percent return for the paper survey, and a 86.6 percent return for the online version of the survey. Reminder phone calls were made to those completing paper surveys and email messages were sent to those using the online system for those who had not completed the survey by the return date.

Survey 2, which highlights teachers' working conditions, was launched in February 2004 and was sent to those participants who had completed the first survey. Survey 2 had a completion rate of 94.5 percent. The final survey in the series, focusing on teacher professional development was deployed in April 2004, and as of this writing is still underway.

Survey Analysis

As of this writing, we have done an initial analysis of Survey 1 and are completing the same for Survey 2. We examined summary results from the overall sample and also conducted analyses with particular attention to difference in responses by region, experience level, school poverty, and school instructional level. Further analyses are planned that link responses from one survey to the next and that explore associations between various variables of interest. A full technical report from the first survey series is due in summer, 2004.

Why it is Possible to have Confidence in a Sample of 400 Teachers

Though created for pilot purposes, the initial sample for the current round of surveys can usefully represent the nature of the state's teaching force and the conditions under which they teach. For instance, the sample of teachers (n= 422) was randomly selected to represent all regions, extent of teaching experience, and school poverty levels in the state. Further, high response rates within all cells in the sampling grid (overall, 90 percent) guarantee that we represent the sample with reasonable certainty.

Various indicators confirm that the pilot sample of teachers accurately represents the state's teaching force of full-time classroom teachers:

- *The even distribution of grade-level teaching assignments.* The responding sample represents approximately the same number of teachers in each grade, as one would expect (see Figure 1).

- *The wide distribution of teachers in counties and districts across the state.* The responding sample includes teachers from 149 of the state's districts, in all but four of the state's counties (see Tables 2 and 3).

- *The ethnicity, experience, and age distributions of sample teachers.* These closely correspond to the state's general teaching population (see Table 4).

- *The proportion of teachers with Master's degrees*. Considering sample teachers from the three regions of the state, in comparison to population numbers, a similar proportion hold master's degrees.

The fact that the survey numbers closely approximate actual numbers from databases that include all classroom teachers in the state gives us confidence that what we are looking at is a good representation of the state's teaching force.