Teacher Data Framework References

This framework references document provides additional guidance on indicators for the big-picture, distribution, and flow lenses. Data sources for these indicators will vary by community. The best place to start looking for data is in the district central office. Knowing what data the district collects—and how it maintains it—is a critical first step in gathering information on teachers. The information may reside in different divisions such as human resources or information management. In many cases, the data will be maintained at the state level in the department of education or at other state agencies such as a commission of higher education.

The following table offers notes on specific teacher quality indicators as well as on resources for the *Teacher Data Framework*.

INDICATOR	NOTES	RESOURCES
Verbal ability test scores	Teacher scores on verbal ability tests are one of the few indicators that most experts agree have a direct, positive correlation with teaching effectiveness. Not all districts administer or require a test of verbal ability for incoming teachers; few districts have gathered this data consistently over the years. Your district may have test scores on some percentage of its teachers.	Ferguson, R. and H. Ladd. "How and Why Money Matters: An Analysis of Alabama Schools," in Helen Ladd (ed.), *Holding Schools Accountable.* Washington, DC: Brookings Institution, 1996, 265–298. Walsh, K. *Teacher Certification Reconsidered: Stumbling for Quality.* Abell Foundation, November 2001. www.abell.org
State licensing exam scores	Licensing examinations vary greatly from state to state in content, the meaning of scores, and their role in admission to the teaching profession. Find out whether your state administers a licensing exam, what it covers—content knowledge, pedagogical knowledge, verbal/mathematical aptitude—and what the scores mean.	NASDTEC Manual, National Association of State Directors of Teacher Education and Certification. www.nasdtec.org/manual.tpl Title II Technical Assistance web page: www.title2.org
A major in a primary subject or other class assignment	Much discussion of teacher quality centers on out-of-field teaching, especially at the secondary level, where teachers instruct students in subjects such as mathematics or science. How many teachers in your district teach classes in subjects in which they majored in college or graduate school? This indicator is rife with definitional complications: If a teacher who majored in math teaches three math courses and three history courses, is he or she an out-of-field teacher?	Ingersoll, R. "Out-of-Field Teaching, Educational Inequality, and the Organization of Schools: An Exploratory Analysis." January 2002. www.ctpweb.org Jerald, C. "Critical questions about out-of-field teaching data," Education Trust, July 2000.

INDICATOR	NOTES	RESOURCES
A master's degree or higher	Currently, there is not enough evidence to suggest that having a master's degree has much effect on student outcomes, except possibly for secondary teachers with graduate degrees in the subjects they teach. Still, many community members may be interested in this statistic. Most districts track whether teachers have master's or doctoral degrees. It may also be possible to determine what *kind* of higher degree teachers possess: ■ Those related to content areas such as mathematics ■ Those related to pedagogical specialties such as mathematics education ■ Those related to other aspects of education such as administration or counseling ■ Those unrelated to the content area such as an English teacher with a master's in engineering	Ferguson, R. and H. Ladd. "How and Why Money Matters: An Analysis of Alabama Schools," in Helen Ladd (ed.), *Holding Schools Accountable.* Washington, DC: Brookings Institution, 1996, 265–298. Walsh, K. *Teacher Certification Reconsidered: Stumbling for Quality.* Abell Foundation, November 2001. www.abell.org
NBPTS certification	More and more teachers are becoming certified by the National Board of Professional Teaching Standards. Though research does not yet confirm a direct link between NBPTS certification and student achievement, many experts believe the rigor required to achieve NBPTS certification is a good indicator of teacher quality.	A number of research studies are under way by the National Board of Professional Teaching Standards linking student achievement to possession of NBPTS certification by teachers. www.nbpts.org/research/currentres_2.cfm?catid=1
Teacher certification	The importance of certification to effective teaching is an open issue. Titles and qualifications vary by state. Since each state's certification system is different, it is critical to cut through semantic issues and determine what different classifications mean. In some states, a "provisional" certification may be the license all teachers possess when they first begin teaching, even if they meet all requirements for entry to the profession. Their certification is "provisional" in the sense that though their paper credentials are in order, their continued certification depends upon actual service in the classroom, continued exposure to professional development, and the like. In other states, a "provisional" license may be one that allows highly qualified people who lack certain formal requirements to obtain certification. These individuals may have "provisional" licenses but possess appropriate certification as required by their	NASDTEC Manual, National Association of State Directors of Teacher Education and Certification. www.nasdtec.org/manual.tpl Title II Technical Assistance web page: www.title2.org Darling-Hammond, L. "The Research and Rhetoric on Teacher Certification: A Response to Teacher Certification Reconsidered," www.nctaf.org/publications/abell_response.pdf Darling-Hammond, L., B. Berry, and A. Torenson. "Does Teaching Certification Matter?: Evaluating the Evidence," 2000, www.nctaf.org/resourcestates/certify.pdf Walsh, K., *Teacher Certification Reconsidered: Stumbling for Quality.* Abell Foundation, November 2001. www.abell.org

INDICATOR	NOTES	RESOURCES
Teacher certification	state. In yet other states, a "provisional" license may mean a license granted to an unqualified person, and thus would not signify appropriate certification.	The US Department of Education's website has state reports on certification, teacher standards, the assessment results of teacher preparation programs, and other important information. www.ed.gov/index.jsp
Value-added teacher contribution to student achievement	Some states are trying to measure the contributions of individual teachers to student academic gains by using sophisticated statistical techniques. If your state conducts such analyses, include this information in your data gathering. If there is no formal mechanism for collecting value-added data, find out if you can work with your district to construct this information. You will need access to student-level, year-over-year scores, disaggregated by teacher.	"The Measure of Education: A Review of the Tennessee Value Added Assessment System." (Tennessee) Office of Educational Accountability, April 1995. Stone, J. E., "Value-Added Assessment: An Accountability Revolution," Thomas B. Fordham Foundation. www.edexcellence.net

Comments on Data Collection and Analysis

Sampling. Much of the data will be available from your district. In some cases, however, you may find data collection to be quite laborious. In such cases, it may make sense to gather information about a subset of area teachers. If you need to sample, focus on a data sample relevant to analysis required by the distribution lens. For example, gather data only on teachers in the highest and lowest categories of school performance so that you can compare teacher characteristics in the top- and bottom-performing schools.

Surveys. Sampling is one way to cope with hard-to-find data. Another way is to survey teachers directly for the needed information. There are several online survey software programs that automatically tabulate responses.

Comparison. Indicators such as scores on state licensing exams or the percentage of teachers with NBPTS certification will not have meaning for the public without points of comparison. Make an effort to gather comparable statewide statistics and data on neighboring school districts wherever possible.

Presentation. Some indicators, like those having to do with credentials, are measured through categorical variables—each teacher will fall into one or another category: "licensed," "provisionally licensed," or "not licensed." With these variables, presentation is relatively straightforward—simply report the percentage of district teachers in each category.

Other indicators, however, are continuous variables. For example, test scores may range from 0 to 800. In these cases, deciding how to present the data is more challenging. At the very least, compute district or relevant area-wide averages. But averages may not tell the whole story. For example, if a district has many inexperienced teachers, many experienced teachers with long tenure, and a few teachers in between, that district could have the same average years of experience as another district with more even distribution. Averages would not tell the important underlying story. In such cases, transform continuous variables into categorical variables for the purposes of presentation. For example, you may want to report the percentage of teachers with less than three years of experience or those scoring in the top and bottom quintiles of the state licensing examination.

Disaggregating Data by Subgroup

By distribution

Use the distribution lens to examine how teacher characteristics are spread across types of schools or programs—for example, teachers at schools with different student performance levels on official assessments.

States and districts have various category schemes, but you should be able to examine teacher characteristics across categories in your jurisdiction. For example, if your district divides schools into high, adequate, and low performing categories, compute each indicator within each category.

SCHOOL PERFORMANCE LEVEL CATEGORY	AVERAGE VERBAL TEST SCORES	AVERAGE LICENSING EXAM SCORES	PERCENTAGE WITH MAJOR IN PRIMARY ASSIGNMENT	OTHER INDICATORS
High	600	92	95%	
Adequate	540	76	84%	
Low	460	42	71%	
Districtwide	*530*	*79*	*82%*	

By flow

The flow lens lets you examine the way teacher characteristics are changing over time by looking at the movement of teachers into, out of, and within the system. Begin by determining the size of each group—those accepting teaching jobs, those leaving the district to teach elsewhere, those teaching in other district schools—for the district as a whole for the most recent year for which data is available. Then, push the analysis further by disaggregating by *teacher type* and by *school/type of school.*

By teacher type

What are the characteristics of newly hired teachers? What are the characteristics of those leaving the district to teach elsewhere? Use available data to construct the following table:

CATEGORY	AVERAGE VERBAL TEST SCORES	AVERAGE LICENSING EXAM SCORES	PERCENTAGE WITH MAJOR IN PRIMARY ASSIGNMENT	OTHER INDICATORS
New hires	675	92	95%	
Leaving the district	610	76	84%	
Moving from one district to another	480	42	71%	
Districtwide	*600*	*79*	*82%*	

You may also want to look at how those characteristics have changed over time, which would require constructing another table using data from several years.

By school/type of school

Are some schools experiencing higher turnover levels than others? Are some *types* of schools experiencing higher turnover levels than others? Have the turnover rates changed over time? Use available data to construct the following table:

AVERAGE ANNUAL TURNOVER RATES	HIGH PERFORMING SCHOOL	ADEQUATELY PERFORMING SCHOOL	LOW PERFORMING SCHOOL	OTHER INDICATORS
1985	15%	20%	33%	
1995	13%	23%	40%	
2000	14%	27%	45%	
Trend	*Stable*	*Increasing*	*Increasing*	

The flow lens can also help you determine *why* teachers leave or move within the district. This is vital information that can point to potential avenues of change. Teacher surveys, focus groups, and exit surveys are good sources of this qualitative data.