THE VALUE OF RELIABLE DATA:

Interactive Data Tools From the
National Comprehensive Center for Teacher Quality

Moving Policy Into Practice

In an ongoing effort to build the capacity of our regional comprehensive center and state education agency colleagues regarding the content and potential uses of our resources, the National Comprehensive Center for Teacher Quality (TQ Center) is developing a number of Policy-to-Practice and Research-to-Practice Briefs. A variety of tools and resources can be found on the TQ Center website (www.tqsource. org)—one of the nation's most comprehensive online resources on teacher and leadership quality. Other tools and resources on the TQ Center website include state policy databases; a publications database; and a TQ Tips and Tools page, which offers examples and strategies that can improve teacher and leadership quality.

In This Brief

This brief introduces the Interactive Data Tools from the TQ Center. These tools enable users to extract valuable, customized information on teacher preparation, recruitment and retention, and certification and licensure. The Interactive Data Tools can be used to find information about individual states, regions, or the nation as a whole. The data are derived from the U.S. Department of Education's Schools and Staffing Survey (SASS) and Common Core of Data (CCD).

The Teacher Preparation Data Tool and Teacher Recruitment and Retention Data Tool were recently updated with the 2003–04 SASS data. The Certification and Licensure Data Tool will be updated with 2003–04 SASS data in 2009. In addition, the Interactive Data Tools webpage (www.tqsource.org/dataTools. php) includes brief summaries of a number of public opinion surveys on topics related to teacher quality.

Education leaders, policymakers, and educators recognize the valuable role that reliable data can play in revealing the effect of various practices and policies on the way education is delivered. Although attention is often focused on student achievement data, especially when student achievement is perceived to be unsatisfactory, it is important to look at other kinds of data in an effort to understand what might be contributing to the problem. A solid body of research (e.g., Nye, Konstantopolous, & Hedges, 2004; Rivkin, Hanushek, & Kain, 2002; Rockoff, 2004; Sanders & Rivers, 1998) indicates that teachers play a significant role in the achievement of students, and thus, data about teachers are important for what they might reveal about key teacher-related factors that contribute to student successes or difficulties. In its requirement that all teachers be highly qualified, the No Child Left Behind Act focuses on some important kinds of teacher data, namely, certification status and subject knowledge (Learning Point Associates, 2007).

These are only rough indicators of a teacher's likely success in a classroom, however, and other kinds of data can provide additional indicators of a teacher's potential or actual effectiveness (Goe & Stickler, 2008). Classroom performance-based data, such as a teacher's ability to manage a classroom or to respond to the needs of students with diverse backgrounds and skills, can indicate important teacher strengths and weaknesses. Policy-related data are also revealing. Because there is reliable evidence, for example, that induction and mentoring can not only augment a teacher's knowledge and skill but also prolong a teacher's career in the classroom—especially in challenging schools (National Comprehensive Center for Teacher Quality, 2005a)—the extent of teachers' participation in induction and mentoring activities in a given state or district is a prima facie indication of the state's or district's commitment to continued teacher development. Likewise, the adequacy of teachers' compensation in a given state or district—especially in comparison to the pay offered by other districts or states that may compete for the same teachers in the labor market—is also an indication of the state's or district's commitment to attracting and retaining good teachers (National Comprehensive Center for Teacher Quality, 2005b).

The TQ Center Interactive Data Tools

The TQ Center designed the Interactive Data Tools to provide users with access to state and national data that can be helpful in assessing the qualifications of teachers in the states and the extent to which a state's teacher policy climate generally supports teacher quality. The Interactive Data Tools also allow users to understand how other states or regions address important policy issues. The Teacher Recruitment and Retention Data Tool and the Teacher Certification and Licensure Data Tool show not only statewide data but also data specific to disticts with varying levels of poverty; urban, rural, and suburban districts; and districts of different sizes. The Teacher Preparation Data Tool shows data disaggregated by gender and ethnicity. The Interactive Data Tools generate user-customized graphs and tables that provide more information about data reliability.

To exemplify the Interactive Data Tools, this brief presents several illustrations that reflect real questions the TQ Center has received from its constituents.

Teacher Preparation Data Tool

One important issue covered in the Teacher Preparation Data Tool (www2.tqsource.org/prep/data/index.asp) is how first-year teachers feel about the adequacy of their preparation. Drawing on data from the U.S. Department of Education's 2003–04 Schools and Staffing Survey, which involves a large random sample of teachers in all 50 states and the District of Columbia, the data tool permits a number of different queries. Suppose, for example, that a user wants to determine whether there is any difference in the self-perceived readiness of new teachers from two different states in the same region that might be competing for new teachers. The data tool indicates that there is some appreciable difference that could point to disparities in the overall quality of teacher preparation in these two states (See Figures 1 and 2).

The Teacher Preparation Data Tool also can be used to explore the extent to which a state's teachers participate in induction and mentoring programs. For example, see Figures 3 and 4 for data on State C and how State C's induction and mentoring participation rate compares with that of the nation as a whole. Data in Figure 3 and 4 are grouped by ethnicity.

Figure 1. **First-Year Teachers' Perceptions of Their Preparation to Manage Classrooms in State A**

In their first year of teaching, how well prepared were teachers to handle a range of classroom management or discipline situations?
Location: State A
Gender: Both

Very well prepared	19.4
Well prepared	46.3
Somewhat prepared	23.4
Not at all prepared	7.4
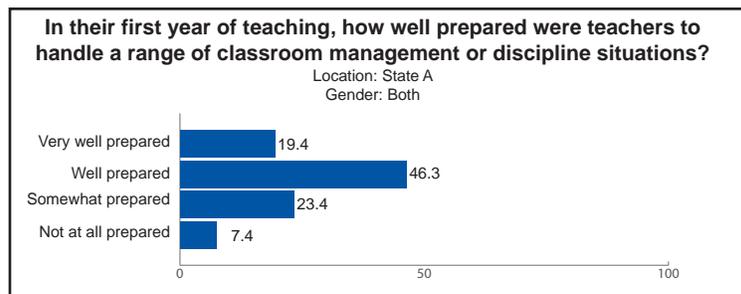
Figure 2. First-Year Teachers' Perceptions of Their Preparation to Manage Classrooms in State B

In their first year of teaching, how well prepared were teachers to handle a range of classroom management or discipline situations?
Location: State B
Gender: Both

Very well prepared	20.4
Well prepared	31.5
Somewhat prepared	39.7
Not at all prepared	7.1
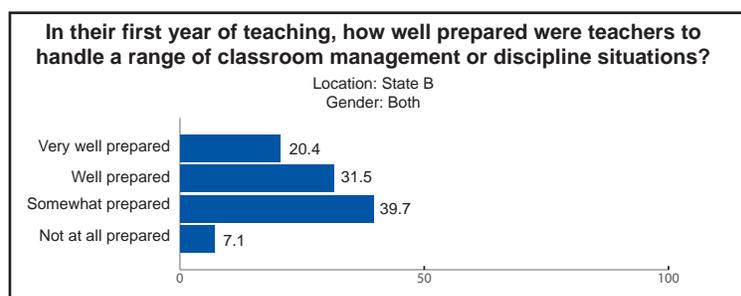
Figure 3. First-Year Teacher Induction Program Participation in State C

In their first year of teaching, how many teachers participated in a teacher induction program?
Location: State C
Gender: Both

All	42.7
White, non-Hispanic	41.4
Black, non-Hispanic	
Hispanic	49.5
Other, non-Hispanic	55.0
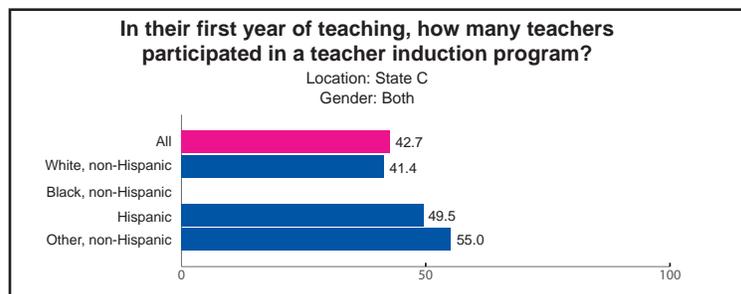
Figure 4. National First-Year Teacher Induction Program Participation

In their first year of teaching, how many teachers participated in a teacher induction program?
Location: Nation
Gender: Both

All	68.8
White, non-Hispanic	69.7
Black, non-Hispanic	64.8
Hispanic	66.5
Other, non-Hispanic	67.9
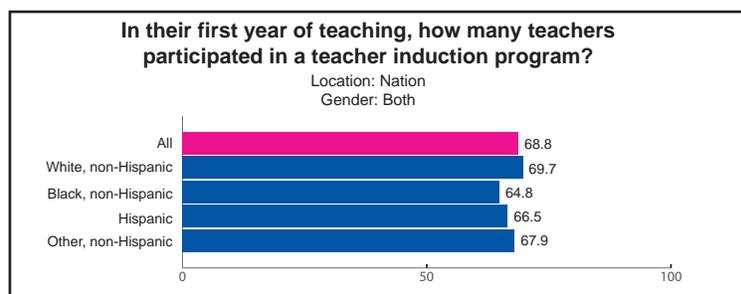
Figures 3 and 4 indicate the following:

- On the whole, State C appears to have a smaller percentage of teachers participating in induction and mentoring than the nation as a whole—a potential cause for concern.

- The disparities in the rate of participation in induction and mentoring between teachers of different ethnicities appear to be rather small for the nation as a whole.

- Although those disparities appear to be somewhat greater in State C, a look at the actual data (see Table 1) indicates that when the rates of participation in induction are disaggregated by ethnicity, the samples of teachers are too small to provide reliable estimates, as illustrated by the lack of data for teachers who are black and the large range between the upper and lower bounds of the estimates for Hispanic and "Other" teachers.

Table 1. Induction Participation Rates for State C

Location: State C   Gender: Both

	Lower Bound	Estimated %	Upper Bound	Estimated N
All	30.9	42.7	55.4	1.59K
White, non-Hispanic	29.5	41.4	54.5	1.34K
Black, non-Hispanic	—	—	—	—
Hispanic	13.5	49.5	86.0	166
Other, non-Hispanic	13.8	55.0	90.3	78

Note. — represents too few observations to report a result.

Teacher Recruitment and Retention Data Tool

Teacher compensation is another important issue raised frequently by TQ Center constituents. The Teacher Recruitment and Retention Data Tool (www2.tqsource.org/randr/data/index.asp) can be a powerful source of information about teacher pay in individual states, regions, and the nation as a whole. It can reveal disparities in teacher pay, perhaps between neighboring states that might compete for teachers or between urban, suburban, and rural districts within the same state. When using this data tool to generate a comparison between new teacher pay in State D and State E, there are sizable interstate disparities and a sizable difference within State D between teacher pay in rural and other districts (see Figures 5 and 6).

Figure 5. Salaries for Teachers With Bachelor's Degrees but No Teaching Experience in State D


What is the typical salary that districts offer teachers who have a bachelor's degree but no teaching experience?
Disaggregate By: Locale
Location: State D
Free Lunch: All
District Size: All schools

Urban locale — 32200
Suburban locale — 30700
Rural locale — 27900
All locale — 30100

Figure 6. Salaries for Teachers With Bachelor's Degrees but No Teaching Experience in State E

What is the typical salary that districts offer teachers who have a bachelor's degree but no teaching experience?
Disaggregate By: Locale
Location: State E
Free Lunch: All
District Size: All schools

Urban locale — 26800
Suburban locale — 28300
Rural locale — 27300
All locale — 28100
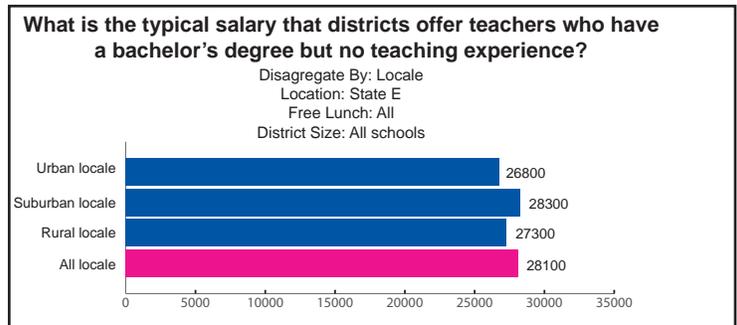
Policy-to-Practice Scenario

Suppose an official in State E generates a salary comparison with State D as in the example provided. The first step should be to verify that the salary figures in the data tool sample are consistent with the complete salary data collected in both states. If the two sets of data are not consistent, the state-generated data should be given preference unless there is reason to believe it is unreliable. Assuming that the state-generated data reflect a similar salary pattern between the two states, the official can try to obtain further information in an effort to answer several important questions:

- Does State E have a shortage of teachers, either in particular subjects statewide, in particular parts of the state, or in particular kinds of schools?

- Does State E have a disparity in the quality of teachers (perhaps in specific subjects) between particular parts of the states or between various kinds of schools?

- Is there any indication that newly graduated teachers leave State E to teach either in State D or other states in the region that offer higher salaries?

- Is there any indication that augmented compensation could successfully address the shortages, the out-migration of teachers, or the disparity in teacher quality?

- If salary differences do not appear to play a role in any teacher shortages in the state, what are the likely factors involved, and how might they be addressed?

Value and Limitations of the Interactive Data Tools

The Interactive Data Tools should not be considered a definitive source of information on the questions they address. As in the State C example, there are limitations inherent in the national data set the Interactive Data Tools use, including small sample sizes when some state data are disaggregated. Also, the data only reflect realities and are not diagnostic. Nevertheless, the data tools can be valuable aids to educators and policymakers in several ways:

- They encourage users to focus their attention on factors that many education experts believe are important determinants of the quality and effectiveness of teachers.

- They enable users to understand how other states or regions address important policy issues related to teacher quality.

- Most importantly, any concerns that are raised by the data presented in the Interactive Data Tools should encourage users to undertake further investigation, both to verify that the data from the Interactive Data Tools are consistent with data from other reliable sources and to determine whether the data point to teacher quality issues that need to be addressed in the state or region.

Used appropriately, the Interactive Data Tools can provide preliminary answers to important questions and concerns of policymakers and educators, stimulate additional questions, and motivate further inquiry. The Interactive Data Tools can serve as a first assessment of the effect of various policies and practices on a state's students, teachers, and schools. The Interactive Data Tools can thus be a catalyst in helping to identify the need for changes in policy and practice, and the direction of those changes can be further clarified by additional data and information contained in other resources that are available from the TQ Center.

Ultimately, the purpose of all TQ Center resources is to serve the intended audience—national, regional, and state policymakers and education decision makers. The TQ Center welcomes any comments about your experience using the resources or any suggestions you might have for improving them. Please share your ideas via the TQ Center website (www.tqsource.org/contact.php).

References

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