



The Distribution of Teacher Quality in Illinois

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When the Illinois Education Research Council was founded in 2000, one of the first challenges it was given was to “find out who our teachers are.” We also heard that “there is a lot of data out there that are not being used.” So we connected the dots, obtained a copy of the Teacher Service Record file from the Illinois State Board of Education through a shared data agreement, and began the task of examining the measurable characteristics of Illinois public school teachers that have been shown in other national studies to be associated with student outcomes. In this study, we look at the distribution of all 140,000 teachers in 2002-2003 among Illinois’ public schools using five teacher attributes that have been shown in previous research to be related to student performance and for which we were able to obtain data - college competitiveness, years of experience, type of credential, performance on the Basic Skills test and ACT score.

We created a composite measure of school teacher quality that we named the *Teacher Quality Index (TQI)* using a statistical procedure called principal components analysis to combine these teacher quality characteristics plus ACT English scores into a standardized index. We use a school’s TQI as an indicator of average teacher quality at that school.

We found that teacher quality is distributed unevenly across schools in Illinois. However, *most of the variation is found among schools within districts*, suggesting that differences in the attractiveness of schools as workplaces are largely responsible for the systematic sorting of teachers that we see. Because of the size of the Chicago Public School District, we looked at it separately in this study. We found that CPS schools generally had much lower TQIs than schools in other urban areas, but that there was still wide variation of school TQI among the schools.¹

More generally, we found that *students in high minority and high low-income schools throughout the state typically face teachers with lower quality attributes than their peers in other schools*. But we also found substantial variation in school TQI within these school-type categories, again indicating that *other characteristics of schools also affect teachers’ decisions about where to work*. More research is needed to determine why schools that appear similar, at least in terms of the demographics of their students, attract qualitatively different teaching staffs. One-size-fits-all policies aimed at improving overall teacher quality, such as raising teacher salary levels for all teachers, will fail to address the systematic sorting of teachers among schools that exists within districts in Illinois. Rather, policies must be targeted to attract the highest quality teachers in a district or region to the neediest schools.

We recognize that the measures we are using in this study are input characteristics – not measures of individual teacher success. However, past research that informed our research design, and the results we present in this report, show that the teacher attributes we include are related to student performance. Additional research is underway at the IERC to examine in greater depth the relationship between school TQI, student demographics and student performance. In the meantime, although this research report falls short of establishing a causal link between the measurable quality attributes of teachers that we used in this study and student performance, it provides strong evidence that they are associated. Thus it would seem prudent for districts and schools to place more weight on these attributes during their consideration of prospective teachers.

¹ In another forthcoming policy research report, we will show that elementary/middle schools in four additional high-minority districts with enrollments of 10,000 or more students (East St. Louis, Cicero, Aurora East and Waukegan) had average school TQIs similar to or lower than CPS.

Highlights of Findings

Simple statewide averages of teacher quality attributes paint an inaccurate picture of teacher quality in different schools in Illinois. Some schools in the state employ a greater proportion of teachers with desirable attributes than other schools. This is true at both the elementary/middle and high school levels, as well as across and within geographic regions in the state.

The majority of the variation in schools' average teacher attributes in Illinois occurs among schools within districts in the state. This suggests that while a district hires teachers with a range of quality attributes, some schools within the district over time employ teachers with more similar attributes, thereby creating differences among schools in the district in the average quality of their teachers.

An additional 20 to 30 percent or so of the variation in most of the attributes occurs among districts within regions, indicating that some districts within a geographic region are able to attract higher quality teachers than other districts in that region.

In general, only a small percentage of the variation in teachers' attributes occurs among regions in the state. This signals that the average characteristics of teachers tend to be fairly similar across different geographic regions in Illinois.

The fact that much of the variation in the measured quality attributes of teachers occurs among schools within districts suggests that differences in the attractiveness of schools as workplaces, rather than differences in teachers' salaries, are likely driving the sorting of teachers among schools within a district. This does not mean, however, that salaries are unimportant. In fact, salary differentials and other characteristics that tend to differ across districts, such as locale, hiring practices, and policies that impact teachers' working conditions, are likely responsible for the proportion of variance that occurs among districts within region.

Schools in Chicago stand out even among most other urban schools in the state in terms of the low average quality of their teachers as measured by the Teacher Quality Index. Urban schools at the low end of the school TQI range in the Northeast, Northwest, and Southwest regions are also disadvantaged relative to suburban and rural schools in those regions.

Available indicators of the characteristics of schools, such as school locale, percent minority and low-income students, and percent high-performing students, show that schools with relatively high concentrations of minority, low-income, and low-performing students generally do not employ teachers with high quality attributes. Students in such schools typically face lower quality teachers than their peers in schools with higher percentages of non-minority, higher-income, and high-performing students. The fact that substantial variation in teacher quality also exists within these school-type categories, however, indicates that other characteristics of schools also affect teachers' decisions about where to work.

More research is needed to determine why schools that appear similar, at least in terms of the characteristics of their students, attract qualitatively different teaching staffs.

The full report is available at <http://ierc.siue.edu/iercpublication.asp>
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