Research Brief

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What Teacher Characteristics Affect Student Achievement?

Findings from Los Angeles Public Schools

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Abstract

Teacher effectiveness is typically measured by traditional teacher qualification standards, such as experience, education, and scores on licensure examinations. RAND researchers found no evidence that these standards have a substantial effect on student achievement in Los Angeles public elementary, middle, and high schools. Alternative measures of teacher qualifications and different kinds of reward systems might be more effective at improving teacher quality.

Urban school districts face special challenges in educating youth. Urban schools serve a large number of low-income, at-risk students and tend to employ teachers with qualifications and credentials lower than their peers in more affluent suburban schools. As a result, urban schools are at risk of providing weak instruction for those students who are most in need of opportunities for academic success.

To break this cycle, parents, educators, and policymakers have sought to improve teacher quality in urban schools. However, it has been difficult to understand how to raise the overall quality of classroom teaching. Past studies have been unable to account for why some teachers are more successful than others in raising achievement, and they have not identified any direct links between student achievement scores and specific teacher characteristics, such as experience, level of professional development, and higher-level educational degrees.

RAND researchers examined the relationship between teacher quality and student achievement by analyzing five years of math and reading standards tests and other records from students in elementary, middle, and high schools in the Los Angeles Unified School District (LAUSD). LAUSD is the second-largest public school district in the United States, with K–12 enrollments reaching 730,000 students per year in more than 800 schools. The data linked individual students to their classroom teachers each year, allowing the researchers to examine student progress from year to year and across classrooms led by different teachers. The RAND researchers then compared these data with teacher-specific information, such as LAUSD teacher licensure test scores for new teachers and other measures traditionally assumed to indicate teacher effectiveness, such as degrees obtained and years of experience.

The results of the study, which were similar for elementary, middle, and high schools, suggest that, while the teacher is an important determinant of a student's achievement, there was no direct connection between the traditionally assumed measures of teacher effectiveness and student achievement over time. While this finding poses a problem for educators and policymakers seeking to enhance teacher quality, it also encourages them to develop other ways to improve teaching in low-performing urban areas.

Efforts to Improve Teaching Cannot Rely Entirely on Traditional Measures of Teacher Quality

There is little evidence to suggest that the teachers who can increase student achievement are concentrated in a few high-performing schools. Some education reform efforts focus on improving low-performing schools' repertoires of high-quality, effective teachers by redistributing teachers among schools. Using the multilevel data gathered, the researchers assessed whether teachers who are effective at raising test scores are indeed unevenly distributed.

They found that the teachers who were effective at raising achievement were in fact evenly

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distributed across schools in LAUSD and that the teacher effectiveness gap between low- and high-performing schools is only about 1 percentage point. This suggests that simply reshuffling teachers from one school to another is unlikely to produce substantial improvement in student achievement in low-performing schools.

Traditional teacher qualifications have little influence on classroom achievement. Teacher pay is typically based on teacher experience and education level, and these characteristics are commonly assumed to correlate with greater teacher effectiveness. Therefore, it is important to assess whether these qualities positively affect student achievement scores to ensure that the reward system is in fact helping school districts attract and retain the teachers who will achieve the desired effects.

However, when the researchers analyzed student achievement data along with teacher qualifications, they found that a five-year increase in teaching experience affected student achievement very little—less than 1 percentage point. Similarly, the level of education held by a teacher proved to have no effect on student achievement in the classroom. These findings have implications for the way in which teacher quality and effectiveness should be assessed and valued by a school district.

Student achievement is unaffected by teacher licensure scores. Licensure tests restrict entry into the teaching profession. Moreover, considerable resources are expended on these exams. The State of California requires new elementary teachers to pass general aptitude, subject-matter, and reading instruction competency tests. If a candidate fails one or all of these examinations on the first attempt, he or she may opt to retake one or all of the examinations in order to obtain licensure.

When the researchers compared teacher licensure test results with teacher performance in terms of student test scores, they found no relationship between student achievement and teachers' test scores. The researchers also analyzed whether failing the exam before later passing it was related to student achievement and found no statistically significant link. These findings suggest that the measured basic skills, subject-matter knowledge, and reading pedagogy scores of elementary teachers do not contribute to improved student achievement, implying that new methods of teacher assessment might be needed.

Policymakers Should Consider Other Measures to Predict Performance

The study offers several policy implications. First, while it is evident that some teachers are much more effective than others in improving student academic achievement, the study's findings suggest that traditional measures of teacher quality do not predict classroom performance. Education experts might wish to rethink the current knowledge requirements of new teachers and develop alternative measures that will more accurately predict classroom performance. Second, it might be promising to reward teachers for their performance rather than for qualifications that are not associated with their ability to improve student achievement. Currently, most compensation systems reward teachers for their years of experience and education. The study's findings suggest, however, that these factors do not accurately predict a teacher's effect on student achievement. The traditional compensation system might provide too little incentive for the more effective teachers to deliver their best performance, and it provides incentives for further education that does not appear to contribute to student performance. While such characteristics as experience and education should remain valued, other incentives, such as pay-for-performance programs, might help further motivate teachers in the classroom. ■

This research brief describes work done for RAND Education documented in "Teacher Qualifications and Student Achievement in Urban Elementary Schools," by Richard Buddin and Gema Zamarro (in *Journal of Urban Economics*, Vol. 66, No. 2, September 2009, pp. 103–115; available as RP-1410 at http://www.rand.org/pubs/reprints/RP1410/). This research brief was written by Kate Giglio. The RAND Corporation is a nonprofit institution that helps improve policy and decisionmaking through research and analysis. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. **RAND**® is a registered trademark.

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