Certification, Teacher Effectiveness, and Student Learning in the United States

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Sector(s): Education

Location: Los Angeles, United States of America

Sample: 99 pairs of teachers

Target group: Teachers

Outcome of interest: Student learning

Intervention type: Certification

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Research Papers: Estimating Teacher Impacts on Student Achievement: An Experimental Evaluation , National Board Certification and Teacher Effectiveness: Evidence from a Random ...

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There is a great deal of debate about the best ways to identify effective teachers. Researchers studied the relationship between a nationally recognized teacher certification and student performance. Certified teachers were no more likely than non-applicants to be effective at improving students' test scores, but were more effective than unsuccessful applicants. Researchers found that estimates of teacher effectiveness based on test scores from previous years were a strong predictor of student achievement.

Policy issue

A growing body of evidence suggests that teacher quality can substantially affect students' academic achievement. However, it is unclear how to best identify effective teachers. One measure of teacher impact is a "value added estimate," the average improvement in students' test scores over time in a given teacher' s class, while taking into account measurable characteristics like previous years' test scores and family income. Critics claim that such measures are inaccurate because they do not take into account unobservable factors such as student motivation or parent engagement. An alternative method of assessing teacher performance is to rely on a certification board which observes and rates teachers' classroom practice, without reference to student achievement. However, there is little rigorous evidence on whether certified teachers are more effective at increasing student academic achievement than uncertified teachers.

Context of the evaluation

The National Board for Professional Teaching Standards (NBPTS) is an independent, nonprofit organization in the United States. NBPTS certifies teachers who apply based on a portfolio of their work and a series of written exercises. The portfolio includes video tapes of lessons and teachers' written commentaries on students' homework. The exercises test applicants' knowledge of curriculum content and teaching techniques. The portfolio and written tests are scored, weighted, and summed to generate a scaled score from 87 to 437. Candidates must achieve a 275 to receive certification. If they score below 275, they can re-take sections without re-taking the entire assessment.

In 2005, the Los Angeles Unified School District (LAUSD) enrolled over 727,000 K-12 students and employed over 37,000 regular teachers, making it the second largest school district in the nation. Los Angeles, like the rest of California, incentivizes National Board Certification through monetary awards and pay increases. In 2004, 1,129 LAUSD teachers had achieved the certification. At the time of the study, LAUSD had more NBPTS-certified teachers than any other district in the United States.

Details of the intervention

To test if certification status and scores correspond with teacher impacts on student achievement, researchers compared test scores of second to fifth graders taught by NBPTS applicants to test scores of students taught by non-applicant teachers. Over the 2003-04 and 2004-05 school years, researchers identified 99 pairs of teachers, each pair teaching in the same school, grade, and year. One of each pair was a teacher who had applied for certification by NBPTS while the other was a teacher with similar levels of experience who had never applied for certification. The applicants included teachers who successfully passed the certification as well as teachers who had failed the certification exam. Subsequently, researchers worked with the principal of each school to create two classroom rosters and randomly assign one roster to the NBPTS applicant and the other to the non-applicant comparison teacher. Researchers were able to use administrative data to track students' standardized test scores from 1999 to 2005. Researchers also used students' test scores data from the four years before the experiment to calculate "value-added estimates" as a measure of teacher performance.

Results and policy lessons

While there was no difference in students' learning outcomes between those taught by NBTPS-certified teachers and non-applicants, certified teachers had greater effects on students' test scores than teachers that failed the certification exam. Students assigned to certified teachers did not show significant improvement over one year in math or language arts, when compared to students assigned to teachers who had never applied for certification. There was also no detectable difference in student achievement in classrooms of unsuccessful applicants compared to classrooms of non-applicants. However, by examining across the comparisons, researchers concluded that certified teachers were more effective than unsuccessful applicants, with students scoring 0.22 standard deviations higher on math test scores and 0.19 standard deviations higher on language arts test scores.

"Value-added estimates" were helpful in predicting differences in test scores between pairs of classrooms. Classrooms assigned to teachers with higher "value-added estimates" scored higher on both math and English language arts at the end of the first school year following random assignment.

While many districts currently reward bonuses to teachers for achieving certification, results from this evaluation did not find any evidence that certified teachers outperformed non-applicants. Also, teachers tend to apply for certification late in their career so these bonuses seem unlikely to retain strong teachers. Hence, the current policies may not improve teacher quality and student performance. Researchers suggest that combining certification exam results with other measures such as "value-added estimates" might best identify effective teachers.