

What does certification tell us about teacher effectiveness? Evidence from New York City

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Abstract

We use six years of panel data on students and teachers to evaluate the effectiveness of recently hired teachers in the New York City public schools. On average, the initial certification status of a teacher has small impacts on student test performance. However, among those with the same experience and certification status, there are large and persistent differences in teacher effectiveness. Such evidence suggests that classroom performance during the first two years is a more reliable indicator of a teacher's future effectiveness. We also evaluate turnover among teachers by initial certification status, and the implied impact on student achievement of hiring teachers with predictably high turnover. Given modest estimates of the payoff to experience, even high turnover groups (such as Teach for America participants) would have to be only slightly more effective in each year to offset the negative effects of their high exit rates (I2, J24).

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1. Introduction

Traditionally, federal and state governments have regulated teacher quality with *ex ante* certification requirements. To gain legal permission to teach, prospective teachers have been required to study full-time for one or two years in an approved education program. However, recruiting difficulties have forced many districts to hire large numbers of uncertified or alternatively certified teachers. Despite the ubiquity of alternative teacher certification

(AC) programs, there is little research on the impacts on student achievement. We examine the relationship between teachers' certification status and student achievement in New York City (NYC), using students' test scores in math and reading in grades four through eight.

Besides having the largest enrollment in the United States, NYC is a major employer of certified, uncertified, and alternatively certified teachers. During the school years 1999–2000 to 2004–2005, New York hired more than 50,000 teachers, of which 46% were certified, 34% uncertified, and 20% AC teachers. The vast majority of AC teachers in New York are recruited through the NYC Teaching Fellows program, while the

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remainder comes primarily from international recruitment and the Teach for America (TFA) program (a non-profit entity that recruits and sends AC teachers to districts throughout the nation).

When studying their impacts on math achievement, we find no difference between Teaching Fellows and certified teachers or between uncertified and certified teachers. Classrooms of students assigned to internationally recruited teachers scored 0.02 standard deviations lower in math than similar classrooms assigned to certified teachers, while classrooms of students assigned to TFA corps members scored 0.02 standard deviations higher relative to certified teachers. (We measure teacher effectiveness in terms of test scores among NYC students, where test scores have been normalized by year and grade level to have a mean of zero and standard deviation of one.) In reading, students assigned to Teaching Fellows underperformed students assigned to certified teachers by 0.01 standard deviations. All of the above reflect average differences in student impacts between groups of teachers, controlling for years of teaching experience. These are the only instances in which we find that a teacher's initial certification status has statistically significant implications for student achievement.

Consistent with other studies, we also find that both certified and AC teachers' effectiveness improves with the first few years of experience. We examine teacher turnover and its implications for student achievement. Critics of alternative certification programs argue that such programs actually harm student achievement by bringing in candidates with less commitment to teaching as a career and, as a result, have higher turnover rates (Darling-Hammond, 2007). However, while turnover was indeed high among TFA corps members—reflecting their two-year commitment—our results suggest that Teaching Fellows and traditionally certified teachers had very similar retention rates. Moreover, even the higher prevalence of novice teachers among TFA participants has only a small negative effect on student achievement—about 0.02 standard deviations of achievement in math and reading. On net, the modest negative impact of higher turnover is roughly offset by the slightly higher initial effectiveness of TFA participants.

Although initial certification status provides little predictive power, there are large differences in teacher effectiveness within all of these groups. We estimate that the average value-added among the

top quartile of elementary school math teachers is 0.33 standard deviations greater than that generated by the bottom 25%—almost 10 times the magnitude of any difference associated with initial certification status! Thus, although shifting the mix of teachers with different types of certification does not appear to be a useful tool for improving student achievement, selectively retaining only the most effective teachers appears to be a much more promising strategy (Gordon, Kane, & Staiger, 2006).

There exist only a few high-quality studies of AC teachers, most notably Decker, Mayer, and Glazerman (2004), who conducted a randomized evaluation of the TFA program. They find that teachers recruited through TFA are significantly more effective than both uncertified and certified teachers at math instruction and statistically indistinguishable in reading instruction.¹ Although this is an extraordinarily important study for evaluating the impact of TFA corps members in the districts and schools where they are operating, it offers few conclusions that can be generalized to other AC programs. TFA is unique among AC programs in that it is highly selective, draws from a national pool of applicants, assigns teachers to schools nationwide, and recruits individuals with an explicit two year teaching commitment. Moreover, TFA corps members are typically placed in a small number of high needs schools.

Although our study does not have the benefit of being able to randomly assign teachers to classrooms, our results allow us to compare impacts for those entering teaching from a number of different routes and for teachers working in a large number of schools. Boyd, Grossman, Lankford, Loeb, and Wyckoff (2005a, 2005b) also use data from NYC to evaluate differences in teacher effectiveness by initial certification status. Our work differs from theirs in several ways. We use an additional year of testing data; we incorporate application data from the Teaching Fellow program to study how the fellows are selected; and we estimate the signal variance in teacher effectiveness within each certification group. We view the last distinction as important, since we interpret between-group differences in effectiveness in light of these within-group differences. Although there are statistically significant differences between groups, such differences

¹Raymond, Fletcher, and Luque (2001) and Darling-Hammond, Holtzman, Gatlin, and Heilig (2005) also report on the impact of TFA corps members on student achievement.

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