Improving Teacher Effectiveness: Selection Versus Development

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Background

- Teachers are the most important school-based factor in student learning:
  - Both short- and long-term student outcomes
  - Both cognitive and noncognitive outcomes
  - Large variability of teacher productivity across the workforce

- Improving teacher effectiveness \textit{and} its distribution is at the center of education policy proposals and initiatives:
  - Overall versus distribution
  - Selection versus development
American Institutes for Research’s National Center for Analysis of Longitudinal Data in Education Research (CALDER) has produced more than 100 research studies on the teacher labor market and other related issues.

This presentation draws on a small subset of CALDER studies on the issues of teacher selection and development.

More information can be found at: http://www.caldercenter.org/publications
Overall Teacher Quality

Teacher academic proficiency matters in general:
- From 1960 to 1995, teacher academic credentials declined
- From 1996 to the present, there has been a strong policy push toward getting smarter people into the teacher workforce during the past 20 years

Teacher applicants and new teachers in recent years have:
- Significantly higher SAT scores than those in the mid-1990s and early 2000s
- Slightly higher average SAT scores than peers entering other occupations

Caveat: The underlying cause is unclear—is it a temporary response to the economic downturn or a more permanent shift?

Source: Goldhaber & Walch, 2014
Teacher Quality Distribution

- Teachers in high-poverty schools are generally less effective:
  - Within schools, low-income students get lower quality teachers.
  - The average teacher quality gap is small.
  - Driven by differences between worst teachers in high- and low-poverty schools

- The teacher quality gap can be explained mostly by lower payoffs to experience in high-poverty schools.

- Is there selective sorting among experienced teachers? Is there a slower rate of development among teachers in high-poverty schools?

Sources: Goldhaber, Lavery, & Theobald, 2014; Sass, Hannaway, Xu, Figlio, & Feng, 2012
Selection—Alternative Routes

- Teach For America
  - The program recruits/selects top college students to teach.
  - Members are not trained in college education programs.
  - Members are intentionally placed in high-need schools, and they make a two-year commitment.
  - Since 1990, the program has served more than 3 million students.

- High school students of Teach For America’s teachers outperformed students of traditional teachers by at least 0.07 SD, equivalent to three months of learning—likely to compensate for Teach For America’s short tenure.

- Most of the Teach For America “advantage” can be explained by PRAXIS scores and college selectivity.

Source: Xu, Hannaway, & Taylor, 2011
Selection—“Deselection”

First study to use teacher layoff data (Washington and New York City)

- Seniority is the major determinant.
- A system of effectiveness-based layoffs would have meaningful effects on student achievement and the distribution of layoffs across subgroups of students.

Student achievement difference as a result of effectiveness-based layoff simulation versus actual layoff:

- 0.20 $SD$ in mathematics, 0.19 $SD$ in reading
- Equivalent to student achievement differential between the 16th percentile and the 50th percentile

Sources: Boyd, Lankford, Loeb, & Wyckoff, 2011; Goldhaber & Theobald, 2013
Teacher growth trajectories are unrelated to school poverty context:

- Working in high-poverty schools does not necessarily slow down teacher productivity growth.
- A large variation in growth rate exists in both school contexts.

Better new teachers also grow faster:

- Despite “regression to the mean,” initially low-performing teachers fail to catch up with the average and remain low-performing on average five years later.

*Source: Xu, Ozek, & Hansen, 2014*
Development—Preservice

- Small cross-program differences exist in teacher attrition or effectiveness:
  - A large within-program variation exists.
  - Cross-program variation in teacher effectiveness is attenuated by differential attrition or turnover rates.

- Student teaching and training specialization
  - Large differences exist in the probability and timing of employment based on the area of endorsement (e.g., STEM training is more likely to result in public school employment than elementary endorsement).
  - Few characteristics of internship schools or cooperating teachers appear to predict workforce entry.

Sources: Goldhaber & Cowan, 2014; Goldhaber, Krieg, & Theobald, 2014
There are hints that preservice training could be improved:

- Preparation directly linked to practice appears to benefit teachers in their first year.
- A study of the teacher selection process in Spokane, Washington, shows that judgments about prospective teachers’ abilities (e.g., classroom management) predict their in-service value-added and attrition.

Sources: Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2009; Goldhaber, Grout, & Huntington-Klein, 2014
Discussion

- Selection is important, but there are limitations of highly selective routes to teaching:
  - Teach For America “clustering” strategy in Miami-Dade County
  - “Critical mass” does not lead to spillover effect
  - Expansion accompanied by perceived lowering of quality and support

- Better preservice training is important for broad workforce improvements:
  - Sidesteps much of the controversy associated with in-service pay and selection policies
  - Unlocking what works for preservice teachers also likely to inform professional development strategies

Source: Hansen, Backes, Brady, & Xu, 2014
References


More CALDER studies can be found at: http://www.caldercenter.org/publications