



EPSSL | **EDUCATION POLICY STUDIES LABORATORY**
Education Policy Research Unit

SCHOOL REFORM PROPOSALS: THE RESEARCH EVIDENCE

TEACHER CHARACTERISTICS

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Research Quality

Micro-studies of individual teachers use correlational data to examine characteristics that predict a teacher's ability to improve achievement. *Macro-studies* compare school districts according to the qualities of their teaching staff using statistical controls to inform policy at high levels, but offer little guidance for individual personnel selection.

Research Findings

Micro-Studies: Two major reviews of research find no important correlation between teachers' measured intelligence and their students' achievement. There is a modest relationship between teachers' college course work in subjects they later teach and their students' achievement. Reviews of the National Teacher Examinations, developed by the Educational Testing Service, have found only modest correlations with test-takers' performance on other written tests of academic ability. The same research found low correlations between NTE scores and teachers' grade-point averages or principals' ratings of teachers' qualities, and negative correlations with grades for practice teaching.

Certification and Licensure: Teachers with state certification receive higher supervisor ratings and student achievement. Research seeking to control for variation among students found that students taught by certified teachers consistently outscored those taught by uncertified teachers.

Successful Teachers of Poor Students: Researchers have largely ignored the characteristics of teachers who are successful in teaching poor children. One recent investigation of this question found that years of teaching experience was correlated with student achievement, in contrast to other characteristics. Research by Martin Haberman (*Star Teachers of Children in Poverty*) suggests candidates should be selected for tolerance, openness, understanding, and similar characteristics rather than on the basis of good grades and high test scores, but his research has been criticized as methodologically weak.

Macro-Studies: Several studies find no strong relationship between student achievement and teacher characteristics: years of experience, highest degree attained, vocabulary test performance, ethnic group, parents' educational attainment, whether the teachers grew up where they were teaching, and attitudes toward teaching middle-class students.

Teacher Ability, Experience, and Student Achievement: Some researchers find that teacher ability, education, and experience are related to student achievement; others don't. Research that finds no relationship between achievement and teacher experience, however, suffers from interpretive errors; reexamined data show a positive relationship between teacher experience and student achievement. After controlling for poverty, teacher experience and preparation significantly predicted test scores in a study of California high school math teachers' skills. Measures of teacher preparation and certification correlate with student achievement in reading and mathematics, even after controlling for student poverty, suggesting that state policies on teacher education, licensing, hiring, and professional development affect teachers' qualifications and capacities, and therefore student achievement.

Implications of Research: Low correlations of beginning teacher characteristics and their students' eventual achievement suggests that relying on indicators such as GPA to select teacher candidates will likely yield a large number of "false negatives" – decisions rejecting candidates who would be highly likely to have been successful if hired.

Recommendations

- Paper-and-pencil tests are not useful predictors of teaching candidates' potential to teach successfully, and accordingly should not be used for that purpose.
- A teaching candidate's academic record (e.g., GPA) is not a useful predictor of his or her eventual success as a teacher. A candidate's record of success in pre-service technical courses (undergraduate mathematics and science, for example) may contain useful information about that candidate's success in teaching secondary school mathematics and science.
- Other things equal, 1) students of regularly licensed teachers achieve at higher levels than students of emergency certified teachers; and 2) more experienced teachers produce higher student achievement than less experienced teachers. Teacher selection policies should reflect these facts.
- The selection of teachers who will best contribute to students' academic achievement should focus on peer and supervisor evaluation of interns, student teachers, substitute teachers and teachers during their probationary period.

The foregoing is a summary of a chapter in the book *School Reform Proposals: The Research Evidence* (Information Age Publishing, 2002), edited by Alex Molnar. The full chapter can be viewed at:

http://www.asu.edu/educ/epsI/EPRU/documents/EPRU_2002-101/Chapter_08-Glass-Final.pdf