

C. Questions specific to performance pay

What do we know about the relationship between teacher compensation and teacher quality? Does evidence suggest that higher salaries would attract more highly skilled individuals to the teaching profession?

Race to the Top, Teacher Incentive Fund (TIF), and *American Recovery and Reinvestment Act (ARRA)* grants have provided an impetus for state and local education agencies to improve the quality of their public school teachers. Increasing teacher salaries is frequently cited as the best mechanism for reaching this goal. However, in contrast to the prevailing sentiment, teacher salaries have steadily declined relative to salaries in the non-teacher labor market since the early 1980s (see Bacolod, 2007; Goldhaber, 2001; Loeb and Page, 2000). Although the relationship may not be causal, Hanushek and Rivkin (2007) found that teacher quality, as measured by teachers' scores on standardized tests and the selectivity of their undergraduate institutions, also declined during the same time period. Thus, the renewed emphasis on teacher quality forces policymakers, researchers, and school administrators to focus on whether increasing teacher wages improves teacher quality and student performance.

A great deal of research explores the effect that increasing teacher salaries has on recruiting high quality novice teachers; however, the evidence the research provides is mixed. Some research suggests that offering higher salaries increases the size of the teacher applicant pool

(see Goldhaber, 2001; Langford, Loeb, and Wyckoff, 2002), but does not necessarily result in more highly skilled teachers entering the classroom (see Goldhaber, 2001; Hanushek, Kain, and Rivkin, 1999). Hanushek, Kain, and Rivkin (1999) speculate that, although the teacher applicant pool may be larger, principals are not able to identify the best teachers, and therefore average teacher quality does not improve. The researchers contend that the practice of hiring based on objective measures, such as years of experience and level of education, may be responsible for this trend because these characteristics are not highly correlated with teacher quality.

In contrast, other studies have found that higher wages, relative to wages in the non-teacher labor market, entice teachers who scored highly on standardized tests like the SAT or ACT to enter the teaching profession. Some researchers contend that standardized test scores are a better indicator of teacher quality than years of experience or level of education (Hanushek and Rivkin, 2007). In her study on the effect of female labor markets on teacher quality, Bacolod (2007) found that higher relative salaries increase the probability that women in the top quintile of the IQ distribution enter the teaching profession. This is similar to Ferguson and Gilpin's

(2009) finding that higher relative salaries attract teachers who scored in the top quintile on their SAT or ACT. Thus, if standardized test scores are a good proxy for quality, then higher relative salaries could improve teacher efficacy.

Several studies have focused on the effect that higher salaries—relative to the wages in the non-teacher labor market—have on the recruitment of teachers from highly selective universities. Some research has shown that, similar to a teacher’s standardized test scores, the selectivity of a teacher’s college or university is a better proxy for teacher quality than years of experience or level of education (Ferguson and Gilpin, 2009; Hanushek and Rivkin, 2007; Hoxby and Leigh, 2004). The evidence suggests that fewer teachers from highly selective universities enter the teaching profession when relative wages are low (Bacolod, 2007; Corcoran, Evans, and Schwab, 2004; Figlio, 1997; Hoxby and Leigh, 2004; Lazear, 2003). Research also suggests that low relative wages actually increase the probability that individuals from less selective universities enter the teaching profession (Bacolod, 2007; Corcoran, Evans, and Schwab, 2004; Ferguson and Gilpin, 2009; Hoxby and Leigh, 2004). This research implies that higher relative wages may increase teacher quality by persuading more highly skilled individuals to enter the teaching profession.

Researchers have given a great deal of attention to determining the effect that higher salaries have on existing teachers. Most of the research on this topic uses value-added models to determine if higher salaries result in increased student achievement. Similar to evidence on novice teachers, the results of the research are often contradictory, making it difficult to definitively determine the impact that higher

salaries have on teacher quality. Some research suggests that increasing teacher pay, whether it is through salary increases, performance bonuses, or recruitment incentives, results in better student achievement on end-of-grade tests (Ferguson and Gilpin, 2009; Hanushek, Kain, and Rivkin, 1999; Lazear, 2003). In addition, Loeb and Page (2000) find that increasing wages reduces the dropout rate. Hanushek, Kain, and Rivkin (1999) hypothesize that higher pay may improve student achievement by encouraging teachers to exert more effort in an attempt to compensate for their higher salaries.

Despite the evidence that higher salaries have a positive impact on student achievement, some researchers contend that increasing teacher salaries may not be worth the investment. For example, there is some evidence that the impact of salary changes is nominal compared to the impact of non-pecuniary factors—e.g., teacher working conditions or the percentage of students who receive free or reduced-price lunches (see Ferguson and Gilpin, 2009; Hanushek, Kain, and Rivkin, 1999). In addition, Goldhaber (2001) argues that, since teachers sort themselves based on non-pecuniary factors, increasing salaries will not have an effect on the distribution of teachers and, therefore, will leave some students without access to high quality teachers. Using this research as a basis, some contend that it may be better for policymakers, state officials, and school administrators to concentrate on changing non-pecuniary factors rather than increasing teacher salaries.

Research suggests that higher wages may positively affect the quality of both novice and experienced teachers. However, there is also evidence that other factors—e.g., a principal’s ability to identify quality teachers or the effect

of poor working conditions—may prevent state and local education agencies from fully capturing the benefits of increasing teacher wages. With this research in mind, when states and/or districts implement pay-for-performance systems, the evidence indicates that they should not rely solely on higher salaries to improve teacher quality. They should also be cognizant of the non-pecuniary factors that influence teacher quality and integrate measures to address these factors into their pay-for-performance systems.

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