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Can Pay Incentives Improve the Recruitment and Retention of Teachers in America's Hard-to- Staff Schools?

A Research Summary

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The No Child Left Behind Act of 2001 (NCLB) has increased concern about the staffing difficulties faced by schools that serve a high percentage of low-achieving students. NCLB requires each student be taught in all core academic subjects by a highly-qualified teacher by the 2005-06 school year. The law defines a highly-qualified teachers as those who have received a bachelor's degree, attained full state certification or licensure, and proved that they know the subject they teach.

By June 2006, not one state had achieved this goal. In July, each state was required to submit a plan to ensure all classrooms have a highly-qualified teacher and that these teachers are evenly divided between poor and rich schools.[1]

Given that some schools have difficulty attracting and retaining qualified teachers, state legislatures and local school districts have shown increased interest in offering non-performance-based financial incentives to attract and retain teachers in

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high-need schools and subject areas. These incentive programs take a variety of forms, the most direct and most controversial of which are salary bonuses. Some school systems also use performance-based bonuses to reward teachers for student performance.

This policy brief describes the scope and the effects of targeted salary incentives that are not based on student performance. Targeted financial incentives clearly influence teacher career choices although their impact varies with teacher gender, race, and age.

The Scope of Targeted Bonuses in the U.S.

New Teachers. Education Week's Quality Counts Survey (2003) provides comprehensive data on non-performance-based monetary incentives for teachers.[2] The survey shows that incentive programs take a variety of forms. Some bonus programs target new teachers, some target high-need schools, while others target high-need subjects. According to the survey, five states offered signing bonuses in 2003: California, Maryland, Massachusetts, Nevada, and New York. Of these, only California and Massachusetts target bonuses toward high-need schools. Only Massachusetts and New York offer bonuses targeted toward high-need subject areas.

All Teachers. Most monetary incentive plans are not restricted to new teachers. Thirty-five states provided monetary incentives to retain veteran teachers or teachers identified as highly-qualified. Of these only five targeted these bonuses at high-need schools (California, Maryland, New York, North Carolina, and Texas), while only four tailored them to retain teachers in high-need subject areas (Hawaii, North Carolina, Texas, and Utah).

Although some states, such as North Carolina and Massachusetts, have discontinued their targeted bonus programs; state and federal interest in these kinds of programs persists. Among more recent initiatives are a pilot incentive program launched in 2004 in two Virginia counties as part of

Governor Mark Warner's "Education for a Lifetime" initiative,[3] and a program establishing financial incentives for teachers working in distressed districts passed by the Arkansas legislature in 2004.[4] It is also noteworthy that in 2005 the United States House of Representatives Appropriations subcommittee recently approved President Bush's "Teacher Incentive Fund," which would provide state grants "to reward effective teachers and to offer incentives for highly-qualified teachers to teach in high-poverty schools."[5]

The 2003 "Quality Counts" survey indicated that the 30 largest urban districts in the country were much more likely than states to employ targeted non-performance-based bonuses. Over 25 percent of these urban districts had signing bonuses directed at high-need subject areas. One-third had recruitment bonuses, retention bonuses, or some combination available to teachers willing to work in high-need schools.

Teacher Recruitment Strategies throughout the U.S.

Anecdotal evidence from districts across the United States suggests bonus programs directed at high-need schools and subject areas can be effective in recruiting and retaining teachers. After Chattanooga, Tennessee used monetary incentives targeted toward attracting better teachers in nine low-achieving elementary schools, vacancies fell from 30 to two in a single year, even though the city removed 100 low-performing teachers. The portion of third graders reading at or above grade level increased in each of the nine schools, in some cases by as much as ten percent.[6] Likewise, attrition in Caroline County, Virginia, one of the two districts targeted by Governor Warner's plan, fell from 60 in 2004 to two in 2005.[7]

However, school management and teacher working conditions also influence the effectiveness of bonuses. The experience of Palm Beach County, Florida is illustrative. In the summer of 2002, the district offered $10,000 bonuses to qualified teachers willing to transfer to high-need schools. Of the 131 teachers offered bonuses, only ten switched schools.[8] The failure of a $10,000

bonus to attract teachers to high-need schools in the Florida county shows that bonuses, while generally effective, must be part of a larger strategy to have maximum impact.

Teacher Recruitment Strategies in North Carolina

A cursory examination of district recruitment policies across North Carolina suggests that while districts have different approaches in the way they structure teacher incentives, only a few direct monetary incentives toward high-need subjects and schools. Orange County offers not only a salary supplement that varies with tenure status and experience, but also $1,500 for math, science, foreign language, and "reading recovery" teachers who qualify as fully-licensed and highly-qualified under NCLB. It also offers as much as $1,000 for teachers in other shortage areas as determined by the district.[9]

The Charlotte-Mecklenburg district has a more elaborate incentive program whereby teachers who sign early in the contract cycle (with some additional leeway for teachers in high-need schools and subject areas) receive a $1,000 signing bonus, and experienced "master" teachers working in high-need schools receive an annual "retention incentive" of $1,500 to $2,000.[10] Under its Equity Plus program, the Winston-Salem/Forsyth district awards a bonus equal to 20 percent of a teacher's district salary supplement if he or she remains in a hard-to-staff school for the entire year.[11]

In 2006, Guilford County implemented a program to give bonuses to special education and math teachers. Special education teachers are paid one salary step above other teachers. Licensed math teachers in low income middle and high schools get an additional $9,000 and Algebra I teachers get an additional $10,000. Based on their student gains in performance, they could receive an additional bonus ranging from $2,500-$4,000. Funds come from foundations and the U.S. Department of Education.[12]

State Efforts to Recruit and Retain Qualified Teachers

Complete chart is available at http://counts.edweek.org/sreports/qc03/reports/17effort-t1c.cfm

RECRUITMENT AND RETENTION

State finances incentives to recruit and/or retain teachers:

STATE	Signing bonuses for new teachers		Retention bonuses for highly-qualified or veteran teachers	
	targeted toward subject-area shortages	targeted toward high-need schools*	targeted toward subject-area shortages	targeted toward high-need schools*
California		✓		✓
Massachusetts	✓	✓		
New York	✓			✓
North Carolina			✓	✓
Texas			✓	✓
Utah			✓	

* "High-need schools" refers to high-poverty, high-minority, or low-performing schools. The term does not refer to subject-area shortages or geographic-area shortages.

Summary of the Research

No experimental studies have used random assignment to examine the effect of targeted bonuses on teacher recruitment and retention. However, the preponderance of evidence shows that incentive pay can influence teachers' decisions to stay in the teaching profession, and suggests that targeted incentives could increase recruitment and retention in high-need schools and high-need subject areas.

In their review of the literature on teacher recruitment and retention, Guarino, et al. summarized eight studies about teachers' motivations for entering and remaining in the field. In all of these surveys, salary emerged as one of the primary

determinants of teachers' decisions to leave the profession. They also found 19 studies concluding that incentive pay reduced attrition. Four of these studies provided estimates of teacher responsiveness to bonuses, finding that a ten percent increase in salary was associated with a four to ten percent reduction in attrition.[13] Consistent with this finding, Clotfelter, et al. (2006) estimated that an $1,800 targeted bonus payment reduced turnover rates of targeted teachers by 12 percent.

Hounshell and Griffin (1989) surveyed 37 graduates from the University of North Carolina at Chapel Hill's science teacher education program from 1977 to 1983 who had left teaching. One-third of these former teachers indicated a willingness to return to teaching if offered a higher salary. Murnane and Olsen (1989) found that higher salaries were associated with longer teaching careers among North Carolina teachers. Murnane also confirmed that higher salaries were associated with lower attrition in a longitudinal analysis of high school teachers in North Carolina.

Effects on Incentives on Gender, Race and Age

According to the 2005 Digest of Education Statistics, in 1999-2000, 75 percent of all public school teachers in the United States were female, 84 percent were white, and 39 percent were younger than 40. Less is known about how the effect of incentives varies among these different groups of teachers. Results from studies on differences in gender, race and age are summarized below.

Gender. Research suggests that both men and women respond positively to monetary incentives in teaching, but the response among men is generally stronger.

In a study of Texas teachers, Hanushek, et al. (2004) found that the positive relationship between salary increases and teachers' decisions to switch schools was stronger among men than among women. Based on data from Indiana, Grissmer, and Kirby (1992) showed that a ten percent salary increase led

to a stronger reduction in attrition for men than for women. Gritz and Theobald (1996) found that male teachers in Washington state were likely to remain teaching longer in a district if their salaries were high relative to those in other occupations in the area, while women were more likely to remain teaching longer if their salaries were high relative to those in other districts. This suggests that men may be more likely to leave for other professions, while women are more likely to remain teaching in other districts.

In a study of New York teachers, Brewer (1996) found no difference in male and female teachers' responsiveness to teaching salaries outside of their own districts; for both men and women, higher alternative salaries were associated with higher attrition.

Race. Only one study reviewed by Guarino, et al. (2004) examined differences in teacher responsiveness to salary by race. Using longitudinal administrative data on Texas teachers from 1980 to 1995, Kirby, et al. (1999) found that the reduction in attrition associated with a $1,000 increase in salary was twice as large among Hispanic and black teachers (five to six percent) as among the full sample (nearly three percent).

Age. The studies reviewed by Guarino, et al. (2004) also suggest that salary incentives are likely to have a larger effect on the retention of younger teachers than on that of older teachers. In their study of teacher mobility in Texas, Hanushek, et al. (2004) found that the magnitude of the effect of higher salaries in reducing the probability of a teacher leaving rises over the first few years of teacher experience and then falls with additional experience. Murnane, Singer and Willet (1989) found the same trend. In their analysis, the effect of salary on retention disappeared after a teacher's eighth year. They posited that this reduced effect might be due to the fact that changing professions becomes more difficult over time. They also suggested that the teachers who are most sensitive to salary, such as those working in low-paying districts, are likely to leave the profession early. It may also be that a higher value of retirement income relative

to present salary diminishes the effect of salary on the retention of veteran teachers. Murnane, et al. (1991) surmised that teachers' satisfaction and sense of self-efficacy grow over time, making them less likely to leave the teaching profession. In general, the likelihood of a teacher leaving a school decreases the longer the teacher has been on the job.[14]

Exits versus Transfers

Imazeki (2005) pointed out that few studies of teacher attrition differentiate between teacher exit from the profession and teacher transfer to another school or district. Her results suggest that failing to differentiate between teachers who transfer from those who leave the profession obscures the behavior of teachers who transferred. Only Theobald and Gritz (1996), Hanushek, et al. (2004) and Imazeki (2005) consider the two types of attrition from a school or district separately. Hanushek's results indicate that teacher salary is much more strongly related to the probability of switching districts than to the probability of leaving the profession. Imazeki (2005) concluded that the impact of targeted monetary incentives is likely to be greater when the resulting total wage in the targeted school or district is higher than wages in surrounding districts.

Conclusion

The literature on teacher salary suggests that pay incentives can have a positive influence on teacher recruitment and retention, and that this effect varies slightly with gender, race and age. Furthermore, the magnitude of the effect is likely to depend on whether the outcome in question is exit from the teaching profession or transfer to another school or district. The more policymakers and school administrators understand about the impact of teacher incentives, the more they will be able to effectively use bonus programs to achieve No Child Left Behind's teacher quality goals by attracting and retaining qualified teachers in each classroom.

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