



INFORMATION CAPSULE

Research Services

Vol. 0911
January 2010

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RESEARCH UPDATE: PERFORMANCE PAY FOR TEACHERS

At a Glance

Although there is a growing recognition that the traditional teacher salary schedule does not reward the most effective teachers, most U.S. school districts don't offer teacher incentives for improving student performance and the vast majority of teachers actually oppose such a plan. This Information Capsule reviewed recent studies conducted on the impact of performance pay programs on students' academic achievement and found that they have produced mixed results. Most researchers have concluded therefore that higher levels of student achievement cannot be directly attributed to performance pay programs. The multitude of factors involved in human learning lessens the impact of market-based strategies, on which performance pay is based. A summary of elements of successful performance pay programs is also provided.

Most teachers are still paid according to a single salary schedule in which earnings increase as teachers acquire more educational credits and years of experience. Yet there is a growing awareness that this method of compensation does not reward the most effective teachers or help to attract or retain talented candidates to the profession, particularly in lower-performing schools (Chait & Miller, 2009a; Honawar, 2009).

President Barack Obama and Secretary of Education Arne Duncan advocate reforms to the way teachers are paid and are encouraging experimentation and innovation with compensation plans that recognize and reward excellence in teaching. The President has proposed an increase in funding from \$97 million in fiscal year 2009 to \$487.3 million in fiscal year 2010 for the Teacher Incentive Fund (TIF), a program that supports performance-based teacher and principal compensation systems in high need schools. The administration and Congress also provided an additional \$200 million to the TIF in the American Recovery and Reinvestment Act (Chait & Miller, 2009a; Sager, 2009).

In addition, President Obama's Race to the Top is a competitive grant fund that will award \$5 billion in federal grants. States will be awarded grants for advancing reforms in four specific areas, one of which is "recruiting, developing, rewarding, and retaining effective teachers and principals, especially where they are needed most" (U.S. Department of Education, 2009). States with laws that ban linking test scores to teacher pay are rushing to lift them in order to qualify for some of the Race to the Top grant money. On November 9, 2009, for example, the state of Wisconsin overturned its ban and now allows student test results to be considered in teacher evaluations (Associated Press, 2009; State of Wisconsin, 2009).

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Most performance pay programs in the U.S. reward teachers with differential compensation based on a combination of measures, such as standardized test scores and other assessments of students' work, and evaluations of teacher performance. Awards are provided as bonuses over and above a base salary tied to the traditional pay schedule. Bonuses may reflect individual teacher performance, the collective performance of a group of teachers, or a combination of individual and group performance. Some programs reward all staff in a school, while others reward only certified teachers (Chait & Miller, 2009b).

A March 2006 Information Capsule, *Performance Pay for Teachers* (available at <http://drs.dadeschools.net>), summarized the characteristics of effective performance pay systems and explored issues surrounding the design of alternative compensation systems. This Information Capsule provides an update on the current status of performance pay programs in the United States and reviews recent research conducted on their effectiveness.

The basis of the reward and the weight given to each measure vary by program. For example, the Teacher Advancement Program in South Carolina based 40 percent of performance bonuses on teacher evaluations, 30 percent on classroom achievement growth, and 30 percent on school-wide achievement. In Denver's Pro Comp schools, measures of teachers' knowledge and skills, professional evaluations, labor market incentives, and student growth are all used to determine teacher bonuses (Chait & Miller, 2009b).

Prevalence of Teacher Incentive Programs in U.S. Public Schools

Education Week's *Quality Counts 2009: Portrait of a Population* reported that seven states and a much larger number of individual districts offer performance-based pay programs (Education Week, 2009). Podgursky (2008) calculated that 5 percent of districts implemented performance pay programs based on student achievement, while the majority of districts (55 percent) did not offer any incentives to their teachers.

Table 1 provides additional data on the prevalence of U.S. school districts offering incentives to teachers, based on the 2003-04 and 2007-08 administrations of the Schools and Staffing Survey (SASS). The SASS is administered by the U.S. Department of Education to a nationally representative sample of approximately 8,000 public schools and 43,000 public school teachers. As can be seen in Table 1, the largest increase from 2003-04 to 2007-08 was in the percent of districts providing incentives for National Board of Professional Teaching Standards certification (from 18 percent in 2003-04 to 25 percent in 2007-08) (Aritomi et al., 2009; Strizek et al., 2007).

Basis for Teacher Incentive	Percent of Districts Providing Incentives	
	2003-04 ¹	2007-08 ²
Teaching in a less desirable location	5%	6%
Excellence in teaching	8%	10%
Teaching in shortage fields	12%	15%
National Board for Professional Teaching Standards Certification	18%	25%
Professional development	24%	N/A*

Note: These data were not collected for the 2007-08 SASS.

Source: ¹ Strizek et al., 2007

² Aritomi et al., 2009

Teacher Perceptions of Performance Pay

A national survey of 641 first-year teachers conducted by Public Agenda and the National Comprehensive Center for Teacher Quality found that only 13 percent of teachers believed tying teacher rewards to their students' performance would be a "very effective" way to improve teacher quality. Only 15 percent of teachers believed tying salary increases to principal and colleague assessments would be a "very effective" way to improve teacher quality (Rochkind et al., 2007).

Teachers appear to be more supportive of performance pay programs that reward criteria over which they perceive as having some control, such as work location or subject area, than pay reforms linked to student performance. An Education Sector survey of a national sample of public school teachers found that 80 percent of respondents favored incentives "for teachers who work in tough neighborhoods with low-performing schools," 53 percent favored incentives for "teachers who specialize in hard-to-fill subjects such as science or mathematics," and 42 percent favored incentives for "teachers whose students routinely score higher than similar students on standardized tests" (Chait & Miller, 2009b). Similarly, Goldhaber and colleagues (2007) analyzed data from administrations of the Washington State Teacher Compensation Survey (WSTCS) that was administered to a random sample of 3,120 of the state's public school teachers. Almost three-quarters of respondents (72 percent) stated that they favored incentives to work in difficult-to-staff schools and 41 percent favored earning extra pay for teaching in difficult-to-staff subject areas; however, only 17 percent favored increased pay based on students' academic performance.

The polls conducted by Education Sector and Goldhaber and colleagues both found that novice and younger teachers were more receptive to performance pay programs than veteran teachers. Goldhaber and associates also reported that secondary teachers were more supportive of performance pay than elementary school teachers. In addition, support for performance pay was found to be higher among teachers who had positive opinions of their principals, suggesting that teachers are more receptive to incentive programs when they have strong relationships with and confidence in their principals (Chait & Miller, 2009b; Goldhaber et al., 2007).

Jacob and Springer (2007) surveyed teachers in Hillsborough County, Florida, on their attitudes toward performance pay. The county participates in Florida's statewide performance pay program, the Merit Award Program (MAP), which awards 5 percent bonuses to individual teachers who deliver "outstanding learning gains." Over half of the respondents (57 percent) did not believe MAP would distinguish effective from ineffective teachers in their school, and 50 percent did not think MAP would have beneficial effects on teaching and learning. Only 50 percent of teachers agreed that incentive pay based on student performance would be a positive change in teacher compensation policy. Similar to the survey results reported above, Jacob and Springer found that teachers with one to three years of experience were more supportive of MAP than teachers with more than 20 years of experience and that elementary school teachers were less supportive of incentive pay than teachers working in middle or high schools. In addition, teachers who reported having a positive opinion of their principal's leadership ability and more confidence in their own teaching ability were more supportive of performance pay.

Does Salary Really Matter?

Euphemisms such as "teachers are in it for the children, not the money" or "it's a calling" may imply that salary is not a strong motivator in teachers' career decisions. However, teachers can only sacrifice so much. Goldhaber (2009) noted: "One might imagine . . . that all things being equal, would-be teachers will accept \$5,000 or \$6,000 less than what they could make in the next best non-teaching job, but will they accept \$8,000 or \$9,000 less? At some point, there is a salary differential where the answer is most certainly no."

Teachers responding to the Washington State Teacher Compensation Survey (WSTCS) were asked what constituted a “fair” incentive (Goldhaber et al., 2007). Respondents assigned the highest mean value to teaching in difficult-to-staff schools (\$4,280) and the lowest mean value to performance pay (\$1,195). The mean values assigned to teaching in hard-to-staff subject areas and National Board for Professional Teaching Standards certification were \$2,317 and \$2,136, respectively. Most teachers also indicated that pay was more important than working conditions. When given a choice between a \$5,000 increase in pay and three potential changes to working conditions, the majority of survey respondents favored an increase in pay:

- 82.7 percent of teachers preferred a \$5,000 pay increase to two fewer students in all of their classes;
- 88.0 percent of teachers preferred a \$5,000 pay increase to a full-time teacher aide who splits his or her time between five teachers at the school; and
- 69.4 percent of teachers preferred a \$5,000 pay increase to three and one-half extra hours of preparation time each week.

In contrast to Goldhaber and colleagues (2007) findings, the national survey conducted by Public Agenda and the National Comprehensive Center for Teacher Quality found that 83 percent of elementary and secondary school teachers reported they would choose to work at a school with better student behavior and more parental support instead of a school that paid a significantly higher salary. The majority of teachers (81 percent of elementary school teachers and 76 percent of secondary school teachers) also indicated they would choose to work at a school where they received strong administrative support over a school that paid a significantly higher salary (Rochkind et al., 2007). Clearly, salary is important to teachers, but is only one of many factors they consider when indicating a preference for certain schools.

Research Conducted on Performance Pay Programs

There have been few rigorous evaluations of performance pay programs in the United States. The majority of studies, conducted mostly in other countries, have produced inconsistent results. The overall conclusion that emerges from studies is that performance pay programs have met with only limited success and have failed to produce substantial gains in student achievement (Chait & Miller, 2009b; Goldhaber, 2009; Honawar, 2009; Springer & Winters, 2009; National Mathematics Advisory Panel, 2008; Winters et al., 2008; Buddin et al., 2007; Heneman et al., 2007).

Researchers have suggested several reasons why studies on performance pay programs have not produced stronger results. First, many studies have been methodologically flawed. This has made it difficult to sort out the effects of incentive pay versus other school or district reforms; generalize findings to other U.S. schools; or determine whether performance pay programs improved test scores or if higher performing schools were simply more likely to adopt performance pay programs. Second, most school districts have not been able to offer pay increases large enough to compensate teachers for the extra effort and risk involved. Third, most performance pay programs have been short-lived. For example, one study found that 75 percent of the performance pay programs studied by researchers in 1983 were no longer operational in 1993 (Hatry et al., 1994). Finally, student performance is contingent on a wide range of factors, including student attributes and background characteristics, the efforts of fellow teachers, and school and classroom environment. The complexity of the educational process may serve to lessen the impact of incentive pay programs (Sager, 2009; Springer & Winters, 2009; Eberts et al., 2000). In fact, the field of education actually embodies few of the attributes inherent in the fields where performance pay has been successfully implemented, such as insurance, real estate, and sales (Bracey, 2009).

A review of recent studies conducted on performance pay programs in U.S. schools is provided below. Overall, results of these studies have been decidedly mixed. Some evaluations of performance pay programs found that they had a positive impact of students’ test scores, while others found no evidence of a relationship between performance pay programs and students’ levels of academic achievement. Goldhaber (2009) concluded: “Research has clearly demonstrated that it is no simple task to isolate teachers’ contributions

toward student achievement or to know how much student and teacher data is necessary in order to make strong inferences about the differences in performance between teachers.” Analyses have also been unable to determine conclusively if implementation of performance pay programs leads to reduced teacher turnover rates.

National Sample of U.S. Schools

Figlio and Kenny (2007) analyzed data from a national sample of 502 U.S. K-12 schools. They compared the academic performance in reading, math, science, and history of students in schools with various types of incentive programs to the performance of students in schools without incentive programs. The researchers merged data from the National Education Longitudinal Survey (NELS) of 1988, their own survey on performance pay, and the 1993-94 Schools and Staffing Survey. They found that teacher salary incentives were associated with a 1.3 to 2.1 point rise in test scores. The effects of pay incentives were strongest in schools with students from the lowest income families. In addition, performance pay plans that targeted only a few teachers for bonuses were more effective than programs in which a large number of teachers received a reward. Findings did not reveal a significant association between the proposed maximum bonus and student test score gains.

Several methodological concerns warrant mention. First, the response rate to Figlio and Kenny’s survey was only approximately 40 percent. Second, there was an eight-year lag between student test scores reported in NELS and the administration of the survey. If there was a differential loss of participants from either one of the two types of schools during this lengthy period of time, the test score differences could be the result of this differential attrition, and not the implementation of performance pay programs. Finally, there was no way to determine if the schools that implemented performance pay plans were initially of higher quality than schools that did not implement such plans.

Little Rock, Arkansas

The Achievement Challenge Pilot Project (ACPP) was a teacher and staff performance pay program that operated within the Little Rock School District from 2004-05 to 2006-07. Schools were selected to participate in ACPP based on their high percentage of low-performing and economically disadvantaged students. The program used student improvement on nationally normed standardized tests as the only basis for financial rewards. Bonuses ranged from \$50 to \$400 per student, depending on the average test score gain. Evaluation of the impact of the program on student achievement focused on three elementary schools and a set of schools that did not implement the ACPP. Researchers found higher student test score gains in reading and mathematics for students in schools that implemented the ACPP than for the control schools. Most importantly, performance pay appeared to have the greatest effect on teachers who had previously been the least effective at producing learning gains for students (Winters et al., 2008).

It should be noted that the What Works Clearinghouse (2008) did not categorize the results of this evaluation as conclusive since the treatment and control schools were not initially equivalent in terms of their average test scores and student characteristics. In addition, schools may have implemented other reforms during this time period that resulted in improved test scores. For these reasons, the Clearinghouse concluded that differences in test score gains based on this study could not be attributed with confidence to the effect of the performance pay program.

Texas

Texas made the largest single state investment in performance pay programs in the country when it developed a group of three performance pay programs: the Governor’s Educator Excellence Grants (GEEG), the Texas Educator Excellence Grants (TEEG), and the District Awards for Teacher Excellence (DATE). The TEEG and GEEG programs were similar in design. Both programs targeted schools that enrolled high percentages of economically disadvantaged students (the GEEG targeted the top third,

while the TEEG targeted the top half). Schools were also required to be high-performing, based on their state accountability ratings or student test score gains. The TEEG provided \$100 million per year in funding for annual grants that ranged from \$40,000 to \$295,000 to all eligible schools. The GEEG program provided \$10 million in non-competitive three-year grants to 99 schools, ranging from \$60,000 to \$220,000 per year. Both the GEEG and the TEEG programs separated funding into two parts. Part I funding, which comprised 75 percent or more of a school's award, was used to provide incentives to classroom teachers. Incentives were based on improved student performance using objective, quantifiable measures, as well as collaboration with faculty and staff, initiative, commitment, and professionalism. Part II funding, which comprised 25 percent or less of a school's award, was used for bonuses for other school staff, professional development, and other purposes. Participating schools were required to develop their own performance pay plans (Springer et al., 2009a; Springer et al., 2009b).

- **Governor's Educator Excellence Grants (GEEG).** The GEEG provided three-year grants to design and implement performance pay plans in 99 Texas schools from the 2005-06 to 2007-08 school years. An evaluation of third year findings indicated that the GEEG had a weakly positive, negative, or negligible effect on student test score gains, depending on the statistical model used for analysis. Teacher turnover was consistently lower in GEEG schools than in non-GEEG schools during the first year of program implementation, but there was little evidence that this difference persisted in subsequent years. The size of the bonus received had a strong impact on teacher turnover in GEEG schools, with the probability of turnover falling as the size of the bonus award increased. It should be noted that most schools awarded individual bonuses that were less than the \$3,000 minimum recommended by the Texas Education Agency. Schools paid an average of \$1,982 the first year of the program and \$2,094 the second year of the program, indicating that they decided to spread the money around rather than give it to a smaller group of teachers (Springer et al., 2009a).

A survey of school personnel revealed that most staff in GEEG schools supported the principle of performance pay and there was no decline in that support during the three years of the GEEG program. In addition, staff reported that they did not believe the GEEG program undermined collaboration or workplace collegiality (Springer et al., 2009a).

- **Texas Educator Excellence Grants (TEEG).** The TEEG was implemented in approximately 1,000 high-poverty, high-performing Texas public schools and was discontinued after the 2008-09 school year. The implementation of the TEEG program met with controversy because of the unpredictability surrounding which schools would be eligible to participate each year. For example, because more schools applied for TEEG grants in 2007-08, only 501 of the approximately 1,150 schools that participated in TEEG in 2006-07 were also eligible to participate in 2007-08. That meant that more than 600 schools had to terminate bonus payments to teachers in 2007-08 because their schools did not meet the eligibility criteria (Springer et al., 2009b; Honawar & Keller, 2008).

An evaluation of the TEEG program found no systematic evidence that the program had an impact on student achievement gains. Nor was any evidence found suggesting that schools in the TEEG program experienced a reduction in teacher turnover. The probability of turnover fell as the size of the bonus increased, but most TEEG teachers received such small bonus awards that the researchers concluded the program had a negligible impact on teacher turnover. As with the GEEG program, the majority of schools awarded individual bonuses that were less than the \$3,000 minimum recommended by the state (Springer et al., 2009b).

A survey of school personnel found that most staff supported the principle of performance pay, with less experienced staff tending to be more supportive than their more experienced counterparts. Furthermore, staff did not believe the TEEG program undermined collaboration or workplace collegiality. Teachers receiving bonus awards indicated more frequent use of data-driven instructional practices than teachers who did not receive bonus awards (Springer et al., 2009b).

- **District Awards for Teacher Excellence (DATE).** In 2008, state lawmakers provided \$200 million a year for another performance pay program. All Texas public schools are eligible to participate in the program, although districts are required to match state funds. Under the DATE plan, at least 60 percent of the funds must be used for bonuses based on student performance. Remaining funds can be used as stipends for teachers at hard-to-staff schools or in high-demand subjects such as math and science; professional development; or stipends for teacher mentors. The state recommends a minimum \$3,000 bonus per teacher and is designed to provide enough money to reward as many as 50,000 teachers, or about one of every six Texas public school teachers. DATE has not yet been evaluated (Springer et al., 2009a; Honawar & Keller, 2008).

Michigan

Eberts, Hollenbeck, and Stone (2000) compared student outcomes at an alternative high school in Michigan that implemented a performance pay program to those at an alternative high school in the same county that used a traditional compensation system. Both schools were characterized by students who had not succeeded in traditional school settings and who had attendance problems and high dropout rates. Therefore, the performance-based incentives targeted student retention. Teachers received a retention bonus of approximately 12 percent if 80 percent or more of their students were still enrolled and attending class at the end of the quarter. A second supplement was based on student evaluations of the teacher and his or her class. Teachers who received high ratings earned a performance bonus that increased their base pay by approximately 5 percent and increased their retention bonus by 10 percent. Teachers who received both the performance bonus and retention bonus for all of their classes could earn almost \$5,000 extra per school year.

Ebert and colleagues (2000) obtained data on the two high schools for a five-year period and found that students' average grade point average in both schools declined, but the decline at the performance pay school was greater than the decline at the traditional pay school. This was consistent with the hypothesis that the performance pay incentive resulted in higher rates of retention for lower-achieving students. Similarly, the percentage of students passing courses declined over the five-year period at both schools. Again, the decline was larger at the performance pay school than at the traditional pay school, consistent with the hypothesis that the performance pay school retained more low-achieving students. While the dropout rate decreased at both schools over the five-year period, the decrease was more dramatic at the performance pay school. Prior to implementation of the performance pay plan, approximately half of the students completed their courses; after implementation of the performance pay program, almost 75 percent of students completed their courses. The performance pay program appeared to have little effect on student attendance. The performance pay school's attendance rates remained stable and the traditional pay school's rate actually increased. This study had several limitations, including its small sample size and its focus on alternative schools that reduces the extent to which findings can be generalized to traditional K-12 schools.

Denver

Denver's Professional Compensation System for Teachers (ProComp) ties incentives to increased knowledge and skills; satisfactory evaluations; working in hard-to-staff schools and high-demand subject areas; and improved student achievement. Within each of these categories, there are a number of elements that influence teachers' salary. For example, in the category of knowledge and skills, teachers can earn incentives for completing professional development and advanced degrees. In the category of student growth, teachers whose students' scores on the Colorado Student Assessment Program exceed district expectations for growth receive a 6.4 percent bonus and teachers in schools designated as "Top Performing," based on the district's Performance Framework, receive a 6.4 percent bonus as well. Opt-in to ProComp is voluntary for veteran teachers and mandatory for new teachers (Chait & Miller, 2009b).

Wiley and colleagues (2008) conducted an evaluation of ProComp that included an analysis of student achievement trends using value-added methodology and a survey of teacher and principal attitudes toward the program. With regard to student achievement, the researchers found that students whose teachers participated in ProComp received slightly higher test scores in reading and math. The researchers were not able to attribute the higher test scores directly to ProComp because it is possible that teachers opting into the program were more likely to earn the incentives than teachers who chose not to participate in the program. Wiley and associates found, in fact, that teachers new to the district and therefore required to join ProComp consistently demonstrated lower effects than veteran ProComp teachers. The authors concluded that it is too early to attribute any improvement in student achievement to ProComp.

Administrations of teacher and principal surveys revealed mixed perceptions of the program. One-half of the ProComp teachers responding to the survey agreed that the program motivated teachers to improve teaching practices, but only 39 percent agreed that ProComp would “ultimately improve student achievement.” Only 34 percent of teachers agreed that ProComp distributed incentives appropriately. Similarly, only 34 percent of principals agreed that ProComp motivated participants to improve their teaching and 39 percent of principals agreed that ProComp would “ultimately improve student achievement.” Less than one-half (46 percent) of principals agreed that ProComp distributed incentives appropriately (Wiley et al., 2008).

North Carolina

The Mission Possible program is a teacher incentive program in the Guilford County School System in Greensboro, North Carolina. The program began in 20 schools in the 2006-07 school year and added eight more schools in the 2007-08 school year with a Teacher Incentive Fund grant from the U.S. Department of Education. Teachers are offered recruitment or retention bonuses to work at difficult-to-staff schools or in high-demand subjects. Bonuses range from \$2,500 to \$10,000, depending on the grade level and subject area taught. The program also rewards teachers for student growth, using a value added model to produce measures of student achievement for individual teachers. Teachers whose mean student growth is one standard error above the district mean receive a \$2,500 performance bonus and those whose students' mean growth is 1.5 standard errors above the district mean receive a \$4,000 incentive. Teachers in untested subjects are not eligible for performance bonuses through the district's Mission Possible Program, but are eligible to receive school-wide bonuses through the state's ABC Bonus Program. Evaluation of the impact of the teacher incentives consisted of comparisons between Mission Possible schools and a set of control schools. After one year of implementation, researchers found that Mission Possible schools had greater reductions in teacher and principal turnover and greater increases in the percentage of students passing the state assessment (Chait & Miller, 2009b).

The state's ABC Bonus Program pays bonuses to all teachers in a school based on their students' growth on state assessments. All certified teachers in schools that achieve “high growth” receive up to \$1,500, while teacher assistants receive up to \$500. All certified teachers in schools that achieve “expected growth” receive up to \$750, while teacher assistants receive up to \$375. Vidgor's (2008) evaluation of the ABC Bonus Program found some evidence of increased test scores. Specifically, math proficiency rates increased on both the state assessment and the National Assessment of Educational Progress. Reading proficiency rates improved only on the state assessment. Vidgor did not find evidence that the program closed achievement gaps because it appeared that many teachers transferred out of lower-performing schools where they perceived less likelihood of earning bonuses.

New York City

The School-Wide Performance Bonus Program (SPBP) is a performance pay program that began in approximately 200 New York City Public Schools midway through the 2007-08 school year. Participating schools can earn bonus awards of up to \$3,000 per full-time teacher if the school meets performance

targets, as defined by the city's accountability program. Springer and Winters (2009) compared 186 SPBP schools and 137 control schools over a two-year period and found that the math test scores of students enrolled in SPBP schools were not significantly different than the scores of students enrolled in schools assigned to the control group. The researchers found some evidence to suggest that the math scores of students in smaller SPBP schools remained stable, while the scores of students in SPBP schools with larger enrollments actually decreased. Surveys administered to students, teachers, and parents regarding their perceptions of the school learning environment found no significant differences between SPBP and control schools. The authors noted that future evaluations, conducted after the program has been operating for a longer period of time, may provide more meaningful results about the impact of the SPBP on student achievement and stakeholder perceptions.

Tennessee

Project STAR (Student Teacher Achievement Ratio) was a large-scale class size reduction experiment in Tennessee that began with kindergarten students in the fall of 1985 and lasted three additional years, following students through the third grade. Students and teachers in the 79 schools participating in Project STAR were randomly assigned to one of three class types: small classes; regular-sized classes; or regular-sized classes with teacher aides. At approximately the same time, the state of Tennessee began the Career Ladder Evaluation System, a performance pay program for teachers. The Career Ladder Evaluation System lasted 13 years and included multi-dimensional evaluations and a hierarchy of professional development that was coordinated with significant financial and professional rewards (Dee & Keys, 2005).

Dee and Keys (2005) used the random assignments in Project STAR to compare the performance of students assigned to career ladder teachers with the performance of students in the same school and grade level who were assigned to teachers not participating in the career ladder program. Their analyses controlled for students' age, gender, ethnicity, and eligibility for free or reduced price lunch; whether students had been assigned to a small class; and teacher education and experience. Their study found that students with career ladder teachers scored significantly higher (almost three percentile points) on the SAT math than students with non-participating teachers. SAT reading scores were almost two percentile points higher for students with career ladder teachers, though the difference in reading scores between the two groups was not significant.

A second analysis considered not only teachers' participation in the career ladder program, but also teachers' status within the program. Findings suggested that teachers who were on the highest rungs of the career ladder (and received the largest pay increases) were not consistently better at promoting students' math achievement. Students with teachers at the lowest levels of the career ladder had greater math score gains than students with teachers at higher levels of the career ladder. In contrast, only students with teachers at the highest levels of the career ladder made significant gains in reading. The authors concluded that the career ladder was not very effective at distinguishing superior math teachers from those who were merely competent, but that the career ladder was more effective in identifying the most outstanding reading teachers (Dee & Keys, 2005).

Two limitations of this study should be noted. First, 91 percent of the student observations came from classrooms with teachers participating in the career ladder program, so the control group consisted of only a small group of students whose teachers did not apply for the program or who were unsuccessful in their application. Second, the findings could have been the result of differences between teachers who were selected to participate in the career ladder program and those who were denied entry into the program, rather than the distribution of incentives.

Rewarding Select Groups of Teachers versus All Teachers in a School

Only one study compared the effectiveness of rewarding a select group of teachers versus all teachers in a school. Figlio and Kenny's (2007) analysis of data from the National Education Longitudinal Study, their own survey on performance pay, and the U.S. Department of Education's School and Staffing Survey concluded that programs targeting only a few teachers for bonuses were more effective in raising student achievement than programs that gave bonuses to a large number of teachers. However, several researchers believe that programs providing bonuses to entire schools, rather than selected individuals, have a greater impact on test scores. In addition, they point out that teachers have incentives to collaborate with their peers and are more likely to cooperate by sharing strategies and experiences when school-wide performance is rewarded. Whole-school performance pay plans are also less controversial and usually more acceptable to teachers, which gives them a greater chance of long-term survival (Chait & Miller, 2009b; Goldhaber, 2009; Neal, 2008; Winters et al., 2008). Clearly, more research is needed before any policy recommendations can be made.

Elements of Performance Pay Initiatives that Increase Program Effectiveness

While there is insufficient research to conclusively identify the elements of successful performance pay programs, there is evidence from research and practice about program elements that can increase their effectiveness.

- **Consider the local context.** States and districts should decide which type of incentive program or combination of programs best suits their unique context. Specific goals, the incentives most likely to motivate teachers, and existing technical capacity must all be considered (Harris, 2007).
- **Involve teachers in the development and implementation of the program.** Performance pay initiatives that involve teachers in their development and adoption tend to be the most successful. Teachers must recognize and understand the connection between their performance and their pay and the link between effort and performance. Teachers' belief in the fairness of awards distribution and their support for the program ultimately determine its success and longevity (Honawar, 2009; Chait, 2007; Heneman et al., 2007).
- **Start with a pilot program.** Districts should begin by pilot testing performance pay initiatives. The lessons learned from the pilot program can help districts transition to full implementation and gain the teacher acceptance needed for the plan's survival (Chait, 2007; Heneman et al., 2007).
- **Allow experienced teachers to opt-in to the program.** Participation in performance pay programs should not be forced on veteran teachers. Several experts have suggested that participation in incentive programs be voluntary for experienced teachers but mandatory for teachers new to the district (Chait, 2007; Goldhaber et al., 2007).
- **Develop challenging but attainable goals.** Performance goals should be challenging yet attainable and policymakers should ensure that teachers have a reasonable chance of reaching the targeted goals within an acceptable time frame. If rewards are tied to long-term goals or too difficult to obtain, teachers may become discouraged before they earn any rewards (Harris, 2007; Heneman et al., 2007).
- **Base rewards on multiple measures.** Performance pay programs should not rely exclusively on test scores. Rewards should be based in part on objective measures of student achievement, such as state standardized assessments and other local or national assessments in subjects for which there are no state assessments. But incentive programs should also include other criteria, such as evaluations of teachers conducted by principals or teacher leaders, acquired knowledge and skills,

participation in professional development activities, and collaboration with colleagues (Honawar, 2009; Buddin et al., 2007; Chait, 2007).

Programs that have relied exclusively on standardized test scores have faced a great deal of opposition. Florida's E-Comp program and Houston's Teacher Performance Plan, for example, were very unpopular and were revised in response to intense opposition. Both programs awarded bonuses to teachers based solely on their students' performance on standardized assessments and did not include teachers in the development of their performance pay programs (Chait & Miller, 2009b).

When the results of teacher evaluations are used as part of performance pay programs, evaluation systems should be correlated with student achievement data. That is, students whose teachers are rated higher on their evaluations should demonstrate greater achievement gains than students whose teachers receive lower ratings on their evaluations. Existing research has generally found a small positive relationship between evaluation ratings and student achievement as measured by test scores, but little is known about what specific classroom practices and strategies translate into better test score outcomes. However, studies have concluded that principals are relatively adept at identifying above- and below-average teachers (Chait & Miller, 2009b; Buddin et al., 2007; Podgursky & Springer, 2007).

- **Base rewards on multiple years of data.** Performance measures should be based on multiple years of student and teacher data. Single-year measures of teacher performance are highly volatile, given the relatively small number of students taught by each teacher in a given year and the disparity in student assignments (Buddin et al., 2007).
- **Base rewards on student growth.** Teacher performance should be judged on students' academic growth, not on their absolute proficiency levels. One of the most contentious issues in any performance pay program is whether teachers should be held accountable for factors considered outside of their control, such as student motivation and home and social environments. When performance pay is based on absolute standards of student performance (such as having a certain percentage of students at a proficient knowledge level), then these external factors have a greater impact on the likelihood of a teacher receiving an award (Buddin et al., 2007; Wisconsin Policy Research Institute, 2001).
- **Provide reward provisions for all teachers.** Performance pay programs should ensure that all teachers, including specialists such as music and art teachers, are eligible for rewards (Neal, 2008; Winters et al., 2008; Chait, 2007). Chait and Miller (2009b) estimated that 69 percent of teachers can't be tied directly to state assessments of student achievement. Therefore, they urged that performance pay initiatives adopt an inclusive approach to measuring performance.
- **Include administrators in the program.** Everyone responsible for improving student performance, including principals and other school site administrators, should be included in performance pay programs. Their exclusion sends the message to teachers that administrators are exempt from responsibility for student improvement (Heneman et al., 2007).
- **Determine the size of incentives to be awarded.** The size of awards should be large enough to motivate teachers to change their instructional practices and behaviors. Conversely, if awards are too large, the program will not be affordable. Other decisions regarding award amounts include: whether to make them larger for teachers in low-performing schools; if there should be multiple levels of awards based on varying degrees of success; which school staff will be eligible to receive awards; and if the size of the awards will be contingent upon how many teachers earn awards (Wisconsin Policy Research Institute, 2001). Heneman and colleagues (2007) cautioned that awards should make up a relatively small percentage of teachers' total compensation. Performance bonuses should not be used to bring teachers' salary and benefits package up to a competitive level.

- **Ensure stable funding for the program.** The state educational agency or local school district administering the performance pay program should ensure there is stable and adequate funding for teacher awards. Many teachers are skeptical of performance pay because they are uncertain there will be sufficient funds to finance the program on a long-term basis (Heneman et al., 2007).
- **Build a strong data infrastructure.** Performance pay programs need reliable databases that link teachers to their students, subjects taught, evaluation results, and professional development accomplishments (Goldhaber, 2009; Heneman et al., 2007).
- **Involve human resources departments.** Human resources departments play an important role in the development and implementation of performance pay programs (Smydo, 2009; Heneman et al., 2007). Pittsburgh Public Schools reorganized its human resources department as part of the district's proposed teacher-effectiveness program. The district divided its human resources department into two parts (performance management and talent management) to improve the evaluation, recruitment, and hiring of teachers. The program, estimated to cost more than \$85 million over five to seven years, will include performance pay, special pay for special duties, a more rigorous evaluation system, a teacher academy, and new recruitment techniques (Smydo, 2009).

Summary

Most teachers in the U.S. are still paid according to a single salary schedule, but President Barack Obama's administration is providing increased funding and grant opportunities for states and districts that develop compensation programs rewarding excellence in teaching.

School district and teacher surveys have revealed that the majority of districts do not provide teachers with performance-based awards and that most teachers actually oppose such programs. Salary is important to teachers, however, and is one of many factors they consider when indicating a preference for certain schools.

A review of recent studies conducted on performance pay programs found that they have produced very inconsistent results. While some programs have had a small positive effect on student achievement, more research is needed before improvements in student achievement can be definitively attributed to performance pay programs. The multitude of factors involved in human learning lessens the impact of market-based strategies, on which performance pay is based. Analyses were also unable to determine conclusively if performance pay programs led to reduced teacher turnover rates.

This report also provided a summary of elements of successful performance pay initiatives. For example, performance pay programs are most likely to be effective when states or districts start with a small pilot program; rewards are based on multiple criteria; rewards are available to all teachers, not just those in the core subject areas; and stable and adequate long-term funding for awards is available.

A March 2006 Information Capsule, *Performance Pay for Teachers* (available at <http://drs.dadeschools.net>), summarized the characteristics of effective performance pay systems and explored issues surrounding the design of alternative compensation systems. This Information Capsule provides an update on the current status of performance pay programs in the United States and reviews recent research conducted on their effectiveness.

All reports distributed by Research Services can be accessed at <http://drs.dadeschools.net>.

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