
CRS Report for Congress

Received through the CRS Web

Performance-Based Pay for Teachers

Updated January 11, 2001

James B. Stedman and Gail McCallion
Specialists in Social Legislation and Labor Economics
Domestic Social Policy Division

Performance-Based Pay for Teachers

Summary

Policymakers at all levels are considering and implementing policies that link elementary and secondary school teachers' salaries or financial awards to their performance or to the performance of their students. These performance-based pay plans include a broad array of different kinds of efforts, ranging from merit-pay plans for individual teachers to school-based performance award plans that may reward teachers for the overall performance of their schools. These plans are being implemented in an effort to improve the quality of elementary and secondary school teaching.

Among the key findings regarding performance-based pay plans for teachers are the following:

- ! Interest in performance-based pay for teachers arises, in part, from a basic dissatisfaction with the traditional salary schedule.
- ! There is no single model of performance-based pay plans. These plans can vary markedly.
- ! Successful implementation of performance-based pay plans depends on a host of factors, many of which may be complex and difficult to achieve. Many of these plans have been short-lived.
- ! There is little unequivocal evidence of enhanced teacher performance as a result of merit-pay plans, the most studied of performance-based pay plans for teachers.
- ! Performance-based pay for teachers is evolving. Policymakers are considering various alternative approaches that may address shortcomings of previous efforts. Increasing attention is being directed to school-based performance awards that reward groups of teachers for the increased academic performance of their students.

Initiatives to reform teacher compensation are emerging in federal legislation. For example, the Teacher Quality Enhancement Grants program, added to the Higher Education Act in 1998, authorizes participating states to provide financial awards to teachers and principals when their students make significant academic improvement; such awards may be part of "performance-based compensation systems." Efforts by federal policymakers to fashion legislative action to support performance-based pay plans for teachers may be complicated by the wide variety of such plans being considered and implemented at the state and local level, and by the evolution of these plans.

Contents

| | |
|--|----|
| Introduction | 1 |
| Federal Interest | 2 |
| Performance-Based Pay in General | 3 |
| What Is Pay-for-Performance? | 3 |
| Individual Incentive Pay Plans | 3 |
| Group Incentive Pay Plans | 6 |
| Performance-Based Pay Plans for Teachers | 7 |
| Traditional Pay Schedule | 8 |
| Types of Performance-Based Pay for Teachers | 9 |
| Teacher-Based Merit-Pay | 9 |
| School-Based Performance Awards | 9 |
| Implementation Issues for Performance-Based Pay in Education | 9 |
| Measuring Output or Performance | 10 |
| Generating Desired Teacher Behavior | 10 |
| Evidence of Success | 11 |
| Examples of Performance-Based Pay Plans | 12 |
| Seiling School District | 12 |
| Douglas County School District | 13 |
| Los Angeles Unified School District | 14 |
| Georgia Pay-for-Performance Program | 14 |
| Implications for Federal Policymaking | 15 |

Performance-Based Pay for Teachers

Introduction

Policymakers at the federal, state, and local levels are considering and often implementing policies that link elementary and secondary school teachers' salaries or financial awards to their performance or to the performance of their students. These performance-based pay plans include a broad array of different kinds of efforts, ranging from merit-pay plans for individual teachers to school-based performance award plans that may reward teachers for the overall performance of their schools.¹

This report is intended to provide background on performance-based pay that may be useful as legislative efforts in this area are considered by the Congress. It defines pay-for-performance plans and summarizes criteria that are important to the success of such plans. Implementation hurdles that may arise in merit-pay plans, one of the most widely-studied types of individual performance-based pay plans, are summarized. The relative strengths and weaknesses of individual pay-for-performance plans versus group incentive pay plans are also discussed. Throughout, the report emphasizes the experience of performance-based pay plans for teachers, by examining both the potential, and the limitations, of such plans in an educational setting. This is a background report and will not track legislative action in this area.

Based on a review of the research on performance-based pay in general and for teachers in particular, several key issues emerge:

- ! *Interest in performance-based pay for teachers arises, in part, from a basic dissatisfaction with the traditional salary schedule.* Many policymakers believe that the traditional salary schedule provides no incentive for teachers to demonstrate subject matter competence, improve teaching, or increase academic performance by students.
- ! *There is no single model of performance-based pay plans.* These plans can vary markedly in terms of such features as their measures of performance, the size of the financial awards provided, and the portion of the teaching force the plans might benefit.
- ! *Successful implementation of performance-based pay plans depends on a host of factors, many of which may be complex and difficult to achieve.* Among the most important of these factors is development of a process for evaluating performance that is considered fair and reliable, and that has desirable effects on the teaching force. Other important factors include ensuring that the

¹ In practice, terminology in this area is used loosely. Terms, such as *merit-pay*, are often used to describe a wide range of pay options with different characteristics. In this report, the term *performance-based pay* encompasses any pay that is linked to measures of performance.

portion of the teaching force that can receive the financial incentives, and the size of the financial incentives provided, are sufficient to provide appropriate incentives for teacher improvement. Many past plans appear to have been short-lived.

- ! *There is little unequivocal evidence of enhanced teacher performance as a result of merit-pay plans, the most studied of performance-based pay plans for teachers.*²
- ! *Performance-based pay for teachers is evolving.* Policymakers are considering various alternative approaches that may address shortcomings of previous efforts. In particular, districts and states are looking to performance-based pay plans that reward teachers for the overall performance of their schools.

Federal Interest

Interest by the Congress in changes to teacher compensation policies arises because of concern about the academic performance of this country's elementary and secondary school students, and a growing recognition that the quality of the teaching force is critical to the success of any educational reforms undertaken. This interest focuses on utilizing the salary schedule to improve teacher quality by leveraging changes in teachers' behavior, knowledge, and skills, and by making teaching more attractive financially to successful teachers and to highly able individuals outside of teaching.

Traditionally, federal involvement in precollege teaching has not addressed the nature of the compensation. Instead, it has focused on improving professional development or inservice training (training for current teachers), preservice training (training for prospective teachers), and teacher recruitment. Nevertheless, significant amounts of funding from several federal programs support the salaries of specific kinds of teachers, including teachers and paraprofessionals serving educationally disadvantaged students under the compensatory education program (Title I of the Elementary and Secondary Education Act), and newly hired teachers under the Class Size Reduction program (FY1999 omnibus appropriations legislation).

Reform of teacher compensation is emerging in federal legislation. The recently enacted (1998) Teacher Quality Enhancement Grants program (Title II of the Higher Education Act) authorizes participating states to provide financial awards to teachers and principals when their students make significant academic improvement; such awards may be part of "performance-based compensation systems." The 106th Congress actively considered legislation that would have supported merit-pay for teachers, but, as of the date of this report, had not enacted such legislation. Further, in 1999, the U.S. Secretary of Education Richard Riley called on school districts to

² Merit-pay provides compensation to individual teachers based on certain activities they undertake or on demonstrated results of teaching performance.

“take a serious look at a new and developing concept called knowledge and skills-based pay.”³

Performance-Based Pay in General

This section first considers performance-based pay as it is applied to employees in general, not just those in the teaching ranks. This helps set the context for the remainder of the report which address performance-based pay for teachers specifically.

What Is Pay-for-Performance?

Pay-for-performance plans attempt to correlate employee pay directly with employee output. Pay-for-performance plans may take the form of individual incentive plans or group incentive plans. Performance-based pay is consistent with widely held beliefs that employees should be rewarded based on effort and with theories of human motivation which contend that effective motivation is predicated on a close relationship between performance and rewards.

Individual Incentive Pay Plans. Most employers rely principally on time-based pay (paying employees on an hourly or salaried basis) but incorporate some form of performance-based pay on an adjunct basis. Implementation of performance-based pay requires supervisory time and consequently entails costs for employee monitoring (especially for merit-pay which also requires regular performance evaluations). However, it is presumed that because of the additional incentives to individual performance, less supervision will be required than under strictly time-based pay.

Merit-pay is an individual incentive plan that rewards productive workers with larger annual wage increases.⁴ The term merit-pay is also frequently used to describe incentive bonuses which are awarded to individuals on the basis of performance but are not added to base pay. Because merit-pay may be used in workplaces where output is not readily measurable (unlike individual incentive plans such as piece-work pay and commission pay which are generally only used when output is readily measurable), and because it can entail more supervisory time for performance evaluation than other individual incentive pay plans, it may be the most complex of the individual incentive pay plans to administer. Merit-pay (or some variation thereof, such as merit bonuses) is widely used throughout the private and public sector. For these reasons this section focuses on merit-pay to illustrate the potential conceptual

³ Riley, Richard W. *New Challenges, A New Resolve: Moving American Education in the 21st Century*. The Sixth Annual State of American Education Speech. February 16, 1999. Remarks as prepared for delivery. Online: [www.edgov/speeches]. For this report, knowledge and skills-based pay is considered to be a kind of performance-based pay. It is provided to teachers when they have successfully acquired specific knowledge and skills, often aligned with district educational standards or objectives.

⁴ Other types of individual incentive plans include: (1) piece rate pay — the employee receives a fixed amount for each item produced; (2) commission pay — the employee receives a percentage of the value of the output sold.

and implementation problems that may arise with individual performance-based pay plans.

Much of the literature on merit-pay has focused on whether it serves as an effective inducement to greater employee productivity, and whether one can accurately measure employee performance, a central component of all merit-pay plans. In a survey of the empirical evidence on merit-pay plans, Robert Heneman found that merit-pay can increase employee motivation and performance. However, Heneman contends that in order for a merit-pay plan to be successful, all of the following criteria must be met:

employees value merit-pay, performance can be measured accurately, employees trust management, and the merit-pay budget is adequate. ... even if these conditions are present, a merit-pay plan may fail when it is not properly administered. Careful attention must be given to the introduction of the program, the total compensation package, the performance-appraisal system, the formulas used to determine merit, the method by which merit-pay decisions are communicated to employees, and the monitoring of the outcomes associated with merit-pay.⁵

Accurately assessing employee performance in jobs where individual output is not readily measurable is quite difficult in practice. This is because a large number of variables affect the relationship between pay and performance.⁶ The issue of appropriately evaluating individual performance is also complicated by the fact that so much performance is affected by factors outside a worker's control, for example, whether or not necessary equipment is in good working order. An employer may decide to award merit-pay based on relative performance among employees who face similar external constraints. However, this may discourage group cooperation and might even lead to undercutting others or politicking instead of producing, in order to improve one's apparent relative performance, to the detriment of the employer. In addition, accurate measurement of individual performance is frequently limited by the practical difficulty of apportioning the "output" among the workers who contributed to it. Thus, from the employer's perspective, finding good measures of individual output and setting rates are difficult.

One solution is compensating workers for output that can be measured objectively. However, this de-emphasizes aspects of the job that cannot be measured, or less easily lend themselves to measurement. For example, some argue that measuring teacher performance on the basis of pupil test scores encourages teachers to exclusively focus on 'teaching the test' to the detriment of students in other areas.⁷

⁵ Heneman, Robert. *Pay for Performance: Exploring the Merit System*. 1984. p. 21.

⁶ Heneman, Robert. *Merit Pay: Linking Pay Increases to Performance Ratings*. 1992. Examples of these variables include: the overall environment in which the employer operates, such as whether or not there is a union (unions typically oppose merit-pay measures, instead arguing for objective measure for pay increases like seniority); the characteristics and culture of the firm; as well as of the characteristics and background of the evaluator and the employee.

⁷ Output is more easily measured in some occupations such as manufacturing or sales, but
(continued...)

Addressing these issues, and ensuring fairness in the performance evaluation process itself, are critical to the employer's success in convincing employees that a merit-pay plan is fair. In order for a merit-pay plan to be effective, an employer must be able to provide answers to the following two questions that arise among employees:

- (1) Why does worker X get merit-pay and I don't?
- (2) What can I do to get merit-pay?⁸

Murnane and Cohen conclude that most plans that are truly merit-pay plans fail to provide good answers to these questions. Other authors argue that these questions can be answered satisfactorily by a well-designed plan. Cohn, for example, uses the illustration of a specific merit-based bonus plan for teachers to argue that a merit-pay plan that: (1) provides explicit criteria that a teacher must meet in order to receive merit-pay (including attendance, performance evaluation, self-improvement and student achievement); and, (2) that is administered by a committee composed mainly by teachers, can adequately address Murnane and Cohen's two questions.

The answer to question (1) is: Worker X got the award because she met the criteria and you didn't. And the answer to question (2) is: if you, too, will work to meet the criteria, e.g., attendance or self-improvement, then you, too, will receive an award.⁹

Furthermore, Cohn argues that a merit-pay plan need not influence all employees to be effective, so long as it influences the behavior of many employees.¹⁰

Some authors have suggested adaptations to traditional merit-pay plans that would counter some of their shortcomings. Traditional merit-pay plans are based on an annual pay increase that is incorporated into an employee's base pay. Because the increase is then a permanent part of base pay, and because employee pay is rarely reduced for subsequent low performance, merit-pay raises effectively create: "an annuity that can be an expensive fixed cost to an organization during economic downturns."¹¹

⁷(...continued)

workers paid on a piece rate or on a commission basis have an incentive to emphasize quantity over quality, and to put their own interests ahead of other workers in the firm (to the potential detriment of the firm).

⁸ Murnane, Richard, and David Cohen. Merit Pay and the Evaluation Problem: Why Most Merit Pay Plans Fail and a Few Survive. *Harvard Education Review*, v. 56, no. 1, February, 1996.

⁹ Cohn, Elchanan. Methods of Teacher Remuneration: Merit Pay and Career Ladders. *Assessing Education Practices: The Contribution of Economics*. Edited by William Becker and William Baumol. 1996.

¹⁰ *Ibid.*, p. 221.

¹¹ Fisher, Cynthia, Lyle Schoenfeldt, and James Shaw. *Human Resource Management*. 1996.

Most organizations employ merit-pay raises in an overall compensation context that includes pay ranges for specific jobs. As a consequence, it can be difficult for merit-pay to achieve both goals of rewarding and retaining high performing employees. New employees are usually hired near the bottom of their pay range. Even with merit-pay increases that are in the high range, new hires who are excellent performers may feel underpaid and seek other employment. Senior employees, who are excellent performers, on the other hand, may receive virtually no merit-pay increases because they have bumped up against the ceiling of their pay range. In both instances, merit-pay increases will not have the intended effect: “The result is a lose-lose situation — an expensive annuity for the organization and a top-performing employee who does not feel rewarded.”¹²

Furthermore, it is *significant changes* in pay (in the context of adequate overall compensation), rather than total compensation, that have been found to motivate current employee performance. Consequently, one method employers have adopted, in lieu of traditional merit-pay plans is to reward excellent performers with lump-sum bonuses rather than with a permanent salary increase. Because employees respond to changes in pay, a 5% one time bonus of \$1,000 to an employee earning \$20,000 a year, may be more motivating than the same 5% increase incorporated into salary at \$19.25 a week. Bonuses also give employers more flexibility to be generous in good years, because they are not incurring a permanent annuity. However, if employers choose to adopt merit bonuses rather than merit-based salary increases, they must first assure that current base salaries are equitable based on employee performance.¹³

Group Incentive Pay Plans. Group incentive plans reward organization-wide effort. Because group incentive plans ideally foster cooperation and teamwork rather than competition among coworkers, they overcome one of the potential limitations of individual incentive plans. Group incentive plans, in contrast, are sometimes criticized for not sufficiently recognizing individual effort. In practice, many employers rely on both group and individual incentives to try and enhance individual performance and teamwork.

Gainsharing plans, which tie part of pay to some measure of group effort, combine some components of individual performance plans in addition to potentially enhancing group effort.¹⁴ Gainsharing rewards are tied to improvements in organizational performance attributable to factors controllable by employees. Thus, gainsharing plans affect performance by influencing employee motivation and organizational culture. Gainsharing plans do not, however, eliminate the difficulty of appropriately measuring performance. For example, gainsharing rewards may be tied

¹² *Ibid.*

¹³ Dessler, Gary. *Human Resource Management*. 1997. p. 481.

¹⁴ In addition to gainsharing, other group incentive pay plans are profit-sharing and ESOPS. The most often employed group incentive plan is profit-sharing, used in a least one-third of U.S. organizations, see: Lawler, Edward. *Strategic Pay*. 1990. For more on ESOPS see: CRS Report RL30038, *Employee Stock Ownership Plans (ESOPS): A Description and Economic Analysis*, by Gerald Mayer.

to easily measurable costs, like labor costs, but if labor costs are not the only significant factor in organizational performance, then the success of the gainsharing plan will be thwarted. Employees may speed up their work (pushing labor costs down) by being more careless with supplies and machinery (pushing supply costs up). Gainsharing is more difficult to successfully implement in situations where adequately measuring performance is complicated.

Performance-Based Pay Plans for Teachers

Performance-based pay for teachers has a long history, particularly in the form of merit-pay which has fallen into and out of favor in public schools repeatedly throughout the 20th century.¹⁵ This ebb and flow is reflected in the fact that merit-pay programs in school districts typically have a life span of less than 5 years.¹⁶ Relatively few teachers currently report receiving any form of performance-based pay. A 1996 survey found that only slightly more than 5% of all public school teachers received some form of performance-based pay.¹⁷ The average amount of such compensation for those who did receive it was \$1,335. The extent to which teachers currently have the opportunity to participate in such plans is not known. Over the long term, interest in performance-based pay plans has been sparked by dissatisfaction with the traditional pay schedule for teachers.

This section begins with consideration of the traditional pay schedule. Following that are a description of different kinds of performance-based pay plans, a delineation of several implementation issues that arise with these plans, and a review of several specific examples of these plans implemented by different states and districts.

Traditional Pay Schedule

Teacher salary schedules are primarily determined at the level of the individual school district.¹⁸ They are often the subject of negotiation between local school boards and teacher unions where applicable. For much of the 20th century, most

¹⁵ Murnane, Richard J., and David K. Cohen. *Merit Pay and the Evaluation Problem: Understanding Why Most Merit Pay Plans Fail and a Few Survive*. Institute for Research on Educational Finance and Governance. Stanford University. November 1985. (Hereafter cited as Murnane and Cohn, *Merit Pay and the Evaluation Problem*.)

¹⁶ There is a significant amount of literature on the history of merit-pay programs among teachers and the difficulties many of these plans have encountered. The discussion below highlights a number of problems that have arisen with merit-pay.

¹⁷ National Education Association. *Status of the American Public School Teacher 1995-1996*. 1997. p. 70. These data are derived from a sample survey. Respondents were asked to identify “sources of additional income.” “Performance-based or incentive pay” was one of the choices offered.

¹⁸ Nearly half (23) of all states have a statewide salary schedule that generally sets **minimum** salary levels. Usually, local districts can exceed these minimum levels when fashioning salary schedules for their teachers. (Education Commission of the States. *Teacher Salary Schedules*. ECS Information Clearinghouse. September 1997.)

elementary and secondary school teachers have worked under the so-called single salary schedule.¹⁹ This schedule bases a teacher's salary on two factors — the number of years of teaching experience the individual has and the number of educational credits and degrees the individual has earned. Increases in both teaching experience and credits/degrees lead to increases in salary, up to absolute limits imposed by the applicable pay schedule. The single salary schedule emerged as a response to equity concerns about previous pay systems that often based salary on such factors as a teacher's gender, race, level (elementary or secondary), or marital and family situation.

Although starting salaries for teachers have become more competitive with salaries for other college graduates, the dispersion of teachers' salaries are not commensurate with those available to other college graduates.²⁰ The relatively low maximum potential salary for teachers, in combination with the single salary schedule which is currently used in the vast majority of districts, is argued by some to fail to: draw the highest caliber of potential teachers into the field; reward teachers who are exceptionally productive; or allocate the supply of teachers to fields where they are most needed (like math and science). Criticism of the single salary schedule has undergirded efforts to implement performance-based pay plans in elementary and secondary education.

Disenchantment with the single salary schedule focuses on the two central factors it uses to allocate wages — more years of experience and higher levels of education. Critics view it as largely rewarding longevity and the accumulation of college credits, not classroom effectiveness. Some researchers have found that these two factors — experience and level of education — have relatively little beneficial impact on classroom effectiveness as measured by the achievement of a teacher's students. Eric A. Hanushek has concluded: "The results [of a review of the available research] are startlingly consistent in finding no strong evidence that teacher-student ratios, teacher education, or teacher experience have an expected positive effect on student achievement."²¹ Nevertheless, these conclusions about the relationship of experience and levels of education are debated. For example, based on their analysis of the literature, Rob Greenwald, et al, concluded: "[R]esource variables that attempt to describe the quality of teachers (teacher ability, teacher education, and teacher experience) show very strong relations with student achievement."²²

¹⁹ Protsik, Jean. History of Teacher Pay and Incentive Reforms. *Journal of School Leadership*. May 1996. (Hereafter cited as Protsik, *History of Teacher Pay*); English, Fenwick, History and Critical Issues of Educational Compensation Systems. *Teacher Compensation and Motivation*. Edited by Larry E. Frase. 1992.

²⁰ Cohn, *Methods of Teacher Remuneration*.

²¹ Hanushek, Eric A. The Economics of Schooling. *Journal of Economic Literature*. September 1986. p. 1162. See, also: Hanushek, Eric. A. Assessing the Effects of School Resources on Student Performance: An Update. *Educational Evaluation and Policy Analysis*. Summer 1997.

²² Greenwald, Rob, et al. The Effect of School Resources on Student Achievement. *Review of Educational Research*. Fall 1996. p. 384. See also: Ferguson, Ronald F. Paying for (continued...)

Types of Performance-Based Pay for Teachers

Performance-based pay plans for teachers may have features that fall into at least two broad categories — teacher-based merit-pay and school-based performance awards. These correspond to the individual and group incentive pay plans described earlier in this report. As illustrated below, individual plans may draw from both of these categories.

Teacher-Based Merit-Pay. This kind of pay is based on an individual teacher's performance inside and/or outside of the classroom. That performance can be defined and measured in myriad ways. Teachers may be rewarded for their perceived impact on various outcomes of their particular students, such as achievement levels. They may also be rewarded on the basis of such factors as evaluators' assessments of their performance in the classroom, completion of targeted activities that increase their subject matter knowledge or specific skills,²³ the range of duties assumed, or the extent and quality of their interaction with other teachers.

School-Based Performance Awards. These awards are based on the aggregate performance of schools that may include a wide range of possible measures. Student-related measures may include achievement levels, attendance rates, dropout rates (for secondary schools), participation rates in advanced placement courses (for secondary schools), college going rates (for secondary schools), etc. Measures of school performance need not be student-based. For example, they may include the extent of parental and community involvement in school activities, or whether the schools have developed and implemented new curricula. The awards are made to individual schools for use at the school level. Some, but not all, of the initiatives being implemented that include school-based performance awards call for distribution of these awards to individual teachers as additional compensation or permit such use of the awards.

Implementation Issues for Performance-Based Pay in Education

The difficulties encountered in implementing performance-based pay plans in general, discussed above, can also arise in attempts to implement performance-based pay for teachers. These difficulties primarily involve:

- ! measures of teacher output or performance,
- ! impact on desired behavior by teachers.

²²(...continued)

Public Education: New Evidence on How and Why Money Matters. *Harvard Journal on Legislation*. 1991; and National Commission on Teaching and America's Future. *Doing What Matters Most: Investing in Quality Teaching*. November, 1997.

²³ Knowledge- and skills-based pay plans specifically identify skills and knowledge that are considered necessary for achievement of education reform objectives. Financial awards are provided to teachers who demonstrate that they have achieved such skills and knowledge. See: Odden, Allan, and Carolyn Kelley. *Paying Teachers for What They Know and Do: New and Smarter Compensation Strategies to Improve Schools*. 1997. (Hereafter cited as Odden and Kelley, *Paying Teachers for What They Know and Do*.)

Measuring Output or Performance. Measuring teacher output is quite difficult. Many highly valued activities by teachers are qualitative, and as a consequence, hard to measure:

One key problem in predicting teacher quality is that managers using the criteria demand quantitative measurements, while the factors that actually relate to classroom performance are typically qualitative and vague. Even if the factors important in producing a good teacher were known, specifying true quality and implementation standards would still be exceedingly difficult.²⁴

Merit-pay plans founder frequently on the evaluation portion of the plans which often have required assessment of teacher performance by principals, teachers, or others. In many instances, teachers have considered the process to be ill-defined, overly subjective, or basically biased.

Students' test scores are often suggested and sometimes used as a measure of teacher effectiveness. To many advocates, performance-based pay provides an opportunity to interject into teacher pay a measure of accountability for a highly desired outcome — changes in student achievement scores. Test scores may be viewed as a more quantitative and less subjective way of gauging teacher performance than traditional evaluation procedures. Debate over this use of student test scores focuses on the attribution of changes in student test scores to the effectiveness of an individual teacher, given the multitude of other factors, including family background and the quality of previous teachers, that are known to influence achievement. In addition, issues arise concerning the validity and reliability of the testing instruments, and whether such assessment instruments measure the full range of student outcomes that policymakers and others desire teachers to achieve with their students.²⁵

Generating Desired Teacher Behavior. As noted, if evaluations are not to be subjective in nature, quantitative measures of output are helpful. However, if quantitative measures, like student test scores, are used to measure teacher performance, then teachers will be encouraged to emphasize teaching that will improve test scores, potentially at the expense of other teaching tasks, and at the expense of cooperation with other teachers. For example, if teachers are rewarded for a rise in student reading scores, in economic terms there is effectively a zero price for student improvements in other areas. Teachers would have an incentive to neglect

²⁴ Hanushek, Eric. *Making Schools Work*. Washington. The Brookings Institution, 1994. p. 79.

²⁵ Cohn, *Methods of Teacher Remuneration*; Glass, Gene V. Using Student Test Scores to Evaluate Teachers. *The New Handbook of Teacher Evaluation: Assessing Elementary and Secondary School Teachers*. Edited by Jason Millman and Linda Darling-Hammond. 1990; Conely, Sharon C. and Samuel B. Bacharach. Performance Appraisal in Education: A Strategic Consideration. *Teacher Compensation and Motivation*. Edited by Larry E. Frase. 1992.

other subjects, and to focus on students who are likeliest to bring up their reading scores the most with the least amount of teacher attention.²⁶

In addition to difficulties encountered in finding accurate measures of teacher performance, merit-pay may encourage opportunistic behavior, like minimizing group related activities. This would potentially be detrimental because much of the work of schools involves significant cooperation and teamwork among teachers. For example, some teachers monitor halls so others can teach; all teachers work together to encourage good citizenship, and to discourage drugs and violence.

Evidence of Success

Compounding the implementation issues considered above is the absence of evidence from previous research that financial incentives provided through performance-based pay, in general, or merit-pay, in particular, change teacher behavior in ways that lead to increased student achievement. In her history of teacher compensation, Protsik concluded:

Many individual merit-pay plans were adopted as a means to increase teacher accountability and improve classroom performance. For the most part, these plans not only failed to improve student achievement, but also destroyed teachers' collaboration with each other and teachers' trust in the administrators in charge of evaluating their performance.²⁷

Morrow found in her analysis of several states and districts with performance-based pay plans that, although all showed some degree of improvement in student performance, “[t]here was no evidence in this study to support the position that it was pay-for-performance which improved student achievement.”²⁸

Given the complexity, diversity, and short-term nature of most of the performance-based pay plans that have been implemented, such findings may be expected. This research does not suggest that performance-based pay plans are never associated with improved student performance and that more of them could not be fashioned that would be successful in this way. Further, much of the available research is dated, focused largely on merit-pay plans, and not necessarily applicable to different approaches to performance-based pay plans that appear to be increasingly popular, particularly school-based performance awards.

²⁶ Murnane and Cohn, *Merit Pay and the Evaluation Problem*.

²⁷ Protsik, *History of Teacher Pay*, p. 285-286.

²⁸ Morrow, Sharon Yvonne. *A Study of Student Achievement Results Using Selected Teacher Pay-For-Performance Models (Teacher Performance)*. Dissertation, Baylor University. 1992. p. 229. (Hereafter cited as Morrow, *A Study of Student Achievement Results*).

Examples of Performance-Based Pay Plans

Several examples of performance-based pay plans are described below. This is not a representative sample of plans.²⁹ Rather, it is intended to show that performance-based pay plans for teachers can be structured in many different ways. The factors that can trigger a financial reward for a teacher may range from certification by the National Board for Professional Teaching Standards,³⁰ to completion of a skill- or knowledge-building activity, to improved academic performance of students. Individual teachers may receive financial compensation for their individual performance, or they may share in a group award. Particular grades or subjects may be targeted. Academic or non-academic activities of teachers may be eligible for additional pay. These plans may be established by districts or states. Despite these and other differences in the programs, the performance-based pay in each case above was an extension or adjunct to the single salary schedule, not a replacement for that schedule. Examples of wholly performance-based pay plans were not located in the available literature. Where some information is available, the impact of these plans is noted.

Seiling School District. A merit-pay program frequently cited in the research was initiated in the Seiling (Oklahoma) school district in 1980 and continued through 1986, when it was terminated for budgetary reasons.³¹ This program included both teacher-based merit-pay as well as school-based performance awards. During the program's existence, awards to teachers (in addition to salary) were based on student achievement outcomes in reading at the elementary and secondary school level; mathematics at the elementary school level; and various other subjects at the secondary school level. Those teachers agreeing to participate entered into a separate contract acknowledging that the merit award was not part of their salary and would not carry forward into subsequent years. In other words, the payment had to be earned each year and was not covered by any cost-of-living adjustment applied to base salary. The district set objectives for gains in achievement tests in reading, math, and other subjects. Participating elementary teachers received a \$500 bonus if their

²⁹ There are numerous recent examples, not described in this report, that may also be of interest. Among them are the pilot program underway in the Denver (Colorado) public school district in which bonus payments are made to voluntarily participating teachers on the basis of improvements in classroom test scores, and the new plan being implemented in the Cincinnati (Ohio) public school system which replaces the traditional salary schedule with one basing compensation increases and career mobility on teacher evaluations. It might also be noted that Oregon voters rejected a 2000 ballot measure that would have tied each individual public school teacher's base salary and salary increases, other than cost of living increases, to growth in the "appropriate knowledge" of his or her students.

³⁰ The Board, a non-profit organization, is creating and implementing an assessment process to certify on a voluntary basis teachers across the country who meet high standards. Nearly 9,500 teachers have already achieved National Board Certification.

³¹ See, for example: Hatry, Harry P., and John M. Greiner. *Issues and Case Studies in Teacher Incentive Plans*. The Urban Institute, 1985. p. 181-186. (Hereafter cited as Hatry and Greiner, *Issues and Case Studies in Teacher Incentive Plans*); Morrow, *A Study of Student Achievement Results*, p. 158-164. There were approximately 44 teachers working in this district of 550 students.

schools achieved the district's reading objective and an additional \$250 bonus if their individual classes met the reading goal and another \$250 if the classes met the math objective. Secondary teachers received a \$300 bonus if their school reached the reading objective and \$140 bonuses for each of their five classes that reached their subjects' objectives. The total that could be earned by an individual teacher was \$1,000.³²

Douglas County School District. In 1994, the Board of Education of the Douglas County (Colorado) school district and the Douglas County Federation of Teachers agreed to a performance-based pay plan.³³ Under this plan, teachers in the district have a pay schedule that determines base salary levels on length of service and education level, but increases in salary are dependent upon teachers being evaluated as "proficient." Teachers also are eligible for bonus pay under six different components of the district's compensation framework:

- ! Outstanding teacher bonuses — four types of bonuses, worth \$1,250 a year to a teacher, are available: Type A bonuses go to individual teachers in recognition of their classroom performance determined on basis of portfolios documenting teaching practices with review and selection made by the teachers' principals (the criteria evaluated include instructional skills, content knowledge, and collaboration with other teachers); Type B bonuses are tied to teachers' demonstration, through portfolios, that their instructional practice is standards-based; Type C bonuses are for teachers pursuing National Board certification; and Type D bonuses (being piloted for 2000-2001) are tied directly to achievement increases in each teacher's students.
- ! Group incentive bonuses — bonuses to teachers who are involved in an approved schoolwide activity focused on student performance with measurable outcomes; bonuses made on basis of the teachers having implemented the proposed activity, not necessarily having improved student performance; the size of the bonus to each teacher depends upon the number of schools and teachers successfully implementing proposed activities.
- ! Site responsibility bonuses — school-based bonuses used to pay teachers for activities beyond those normally arising from classroom instruction (e.g., chairing a school committee, doing special activities with students, etc.); a fixed amount is distributed to each school in the district; a committee of teachers at the building level determines how the school-level award is to be

³² The plan was intended to improve teacher retention and increase student test scores. For neither of these objectives did the district have substantive data that predated the implementation of the plan. Available data appear inconclusive concerning the impact of the plan on overall test scores in the district. See: Hatry and Greiner, *Issues and Case Studies in Teacher Incentive Plans*; Morrow, *A Study of Student Achievement Results*.

³³ Odden and Kelley, *Paying Teachers for What They Know and Do*; Consortium for Policy Research in Education. Skill-Based Pay and Performance-Based Pay in Douglas County, Colorado. Online: [www.wcer.wisc.edu/teachercomp]; and Hartman, Douglas B., and Rob Weil. *Developing a Performance Pay Plan for Teachers: A Process, Not an Event*. Submitted to American Federation of Teachers Research Department, January 30, 1997. Online: [<http://www.aft.org/research/models/dougco>]. (Hereafter cited as Hartman and Weil, *Developing a Performance Pay Plan for Teachers*.)

distributed; bonuses to selected teachers have ranged from \$35 to \$200 a year per teacher.

- ! District responsibility bonuses — bonuses provided to teachers for participating in districtwide professional activities that primarily involve serving on districtwide committees or taskforces.
- ! Skill block bonuses — bonuses provided to teachers who take district-provided training in particular skills and demonstrate mastery of those skills; in the past, these bonuses have ranged from \$250 to \$500 per teacher depending upon the skill block studied.
- ! Master teacher — the district and union are continuing to develop the master teacher designation for teachers whose students demonstrate achievement growth; master teachers must also be National Board certified or designated as Outstanding Teachers for two years; awards will be for five years and worth \$2,500 a year.³⁴

Los Angeles Unified School District. The Los Angeles Unified School District has a traditional single salary schedule.³⁵ Teachers move up the salary schedule primarily on the basis of longevity and credits earned. Nevertheless, teachers who hold certification from the National Board for Professional Teaching Standards receive an additional 15% salary supplement. Half of that additional compensation is provided solely on the basis of the receipt of the certification; the other half is to compensate Board certified teachers for additional professional duties they perform.

Georgia Pay-for-Performance Program. The state of Georgia administers a program that awards funds to schools that meet school-set performance objectives in four categories.³⁶ These categories include: student achievement (at least 40% of the school's overall score in the program is measured by a high level of performance on standardized tests, higher than expected performance, or educationally significant gains); parental and student involvement; educational programming (for example, implementation of a new program); and resource development (evidence of an increase in teachers' knowledge and skills, school reorganization, or restructuring that lead to achievement gains).

Schools submit initial applications for participation by the March prior to the applicable school year. These applications are reviewed by a statewide panel of

³⁴ Evaluations of the Douglas County pay plan appear to have centered largely on how well teachers understand the plan, how they have reacted to it, and what impact they believe it has had. For example, teachers believed that the group incentive bonuses positively affected student performance. Teachers and administrators report that the skill block bonuses are contributing to changes in classroom practice. See: Douglas County School District. *Executive Summary: Third Year Implementation Assessment of the Performance Pay Plan for Teachers*. Presented to the Board of Education, May 5, 1998. Online: [<http://www.dcsd.k12.co.us/district/hr/Third.year.assess.98.html>]; Hartman and Weil, *Developing a Performance Pay Plan for Teachers*.

³⁵ Los Angeles Unified School District. *Teachers' Salary Table for 1999-2000*. Online: [<http://www.lausd.k12.ca.us>].

³⁶ Georgia Department of Education. *Guidelines for the Pay for Performance Program*. 1999. Online: [<http://www.doe.k12.ga.us>].

readers to ensure that the objectives meet the statutory requirements of the program. Participating schools submit end-of-year performance reports which are used to evaluate whether schools' performance objectives have been met. The size of the award per school depends upon the number of certified personnel at the recipient schools and the amount of funding appropriated for the program. The uses of funds at individual schools, which can include teacher bonuses or spending on instructionally related activities, are determined by a consensus of certified personnel at those schools. For 1999-2000, awards in the amount of \$12.5 million were made to 110 of the 165 schools that submitted acceptable plans (\$2,000 provided per certified staff member in successful schools).³⁷

Implications for Federal Policymaking

Several findings from the preceding analysis appear to be important for federal policymakers as they consider legislative efforts to make some portion of the compensation of elementary and secondary school teachers sensitive to performance, either of the teacher or of the teacher's students. The discussion below identifies some of these findings and their importance for policymaking in this area.

In the development of, and debate over, federal initiatives to support performance-based pay plans, it is important to recognize that there is no single model for such pay plans. The illustrative examples demonstrate that the plans can differ markedly. Among the characteristics upon which they differ are their measures of performance, the size of the financial awards provided, and the portion of the teaching force the plans might benefit.

As a consequence, federal legislation in this area may apply to plans with many different features. At issue, then, are the characteristics of the plans that are **intended** to be supported through federal initiatives. The terms used in legislation may be ambiguous in application. For example, Title II of the HEA authorizes states to use Teacher Quality Enhancement Grants to support *performance-based compensation systems* (HEA II Section 202(d)(5)) without further definition. Are these plans to be teacher-based or school-based? Whose performance is to be measured, the teacher's or that of the teacher's students? How should that performance be measured? Similar kinds of questions would be triggered by other terms that have been considered in legislative action, such as *merit-pay* or *performance pay*.

³⁷ An evaluation provided by the Georgia Department of Education (*The Pay for Performance Program: Evidence of Program Impact*, August 2000. Online: [<http://www.doe.k12.ga.us>]) concluded that math and reading test scores were higher in participating schools than in other schools, including comparable schools in terms of students' free lunch eligibility (135% of the poverty threshold). Participating schools reported that the program helped to improve student achievement, faculty collaboration, and attention to school goals, among other positive outcomes. Nevertheless, the evaluation did **not** attempt to measure the impact, if any, that participation might have had on participating schools' test scores in comparison to these schools' pre-participation scores.

At the same time, a precise definition of performance-based pay plans in legislation may inappropriately narrow the range of plans that could be supported under a federal initiative. Available research suggests that successful implementation of performance-based pay plans has been the exception rather than the rule, particularly if a measure of success is longevity of the program or evidence of a positive impact on student achievement. Nevertheless, researchers and policymakers in districts and states are exploring and implementing performance-based pay plans that are intended to address the shortcomings of previous efforts, such as basing financial awards on school-based performance or on the acquisition of skills and content knowledge closely aligned to academic standards and goals. Still others call for direct links between teacher salaries and student test scores. However, as of yet, there is no consensus on what works best and which direction to go. Many analysts therefore support including diversity and experimentation in any future federal initiatives in this area.