DOCUMENT RESUME

ED 270 841 EA 018 515

AUTHOR Murnane, Richard J.; Cohen, David K.
TITLE "Merit Pay" and the Nature of the Employment Relationship: Lessons from Public School Systems.
SPONS AGENCY National Inst. of Education (ED), Washington, DC.; Stanford Univ., Calif. Inst. for Research on Educational Finance and Governance.
PUB DATE Jun 85
NOTE 35p.; For related documents, see EA 018 516-517.
PUB TYPE Reports - Research/Technical (143) -- Information Analyses (070)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Contracts; Educational Economics; *Employer Employee Relationship; Incentives; *Merit Pay; Models; Productivity; Public Education; Success; Teacher Employment; Teacher Evaluation

ABSTRACT

Merit pay systems based on output may fail because establishing valid standards for productivity that account for educational goals, individual student needs, and the value of cooperative efforts is extremely difficult. Systems based on evaluations may fail if employees are not convinced that the systems lack bias. Research on the characteristics of successful merit pay systems was conducted in 6 public school districts that had used merit pay for at least 5 years and either used pay differentials of at least $1,000 or served over 10,000 students. Only 7 of 11,500 school districts originally surveyed in 1978 met these criteria in 1983, out of 47 that reported using merit pay. No urban districts met the criteria. The strategies used by the six districts to make merit pay acceptable included providing extra pay for extra work, making everyone feel special, keeping the program inconspicuous, and legitimizing the program through employee participation. The research findings suggest that the uses of merit pay in education may not differ significantly from those in other industries, that workers' responses to merit pay systems may be sensitive to factors other than the merit incentives themselves, and that workers' participation in system development and revision is critical. (PGD)

"MERIT PAY" AND THE NATURE OF THE EMPLOYMENT RELATIONSHIP: LESSONS FROM PUBLIC SCHOOL SYSTEMS

Richard J. Murnane* and David K. Cohen**

* Graduate School of Education, Harvard University

** Michigan State University

June 1985

The research on which this paper is based was supported by the Institute for Finance and Governance, School of Education, Stanford University.* We would like to thank Katherine Jamentz and Niall Nelson for able research assistance, and Chris Argyris, Estelle James, Charles Lindblom, Giandomenico Majone, Richard Nelson, Robert Pollak, David Stern and participants in workshops at Boston University, Harvard University, and the University of Pennsylvania for helpful comments on earlier drafts. We would especially like to thank Edward Pauly, who read several drafts of the paper, and provided many important ideas.

* NIE funding

I. INTRODUCTION

Recent theoretical work on the design of optimal employment contracts has increased our awareness of the wide range of explicit and implicit agreements that can influence the relationship between employers and employees. This work has also increased our understanding of the factors that influence the efficiency of particular contract forms. The gains from formal modelling of the employment relationship have not come without cost, however. In particular, this approach has led to neglect of a variety of factors that are treated in the industrial relations literature as influences on the nature of the employment relationship. These include the abilities and preferences of managers, the rules under which workers are hired and fired, and the process by which the employment contract is formulated (cf. Dunlop, 1984b).

The purpose of this paper is two fold. First, we demonstrate the value of economic models of the employment contract in answering the following real world question: Why have almost all performance-based compensation plans for public school teachers failed? Second, we show that it is necessary to consider elements of the employment relationship excluded from formal models to answer a second question: Why have a few performance-based compensation plans survived for an extended period of time in particular school districts?

At this point, many readers may ask: What general lessons about the employment relationship can be learned from studying public education? We think a great deal can be learned

for three reasons. First, performance-based contracts for teachers have been tried in a great many school districts over the last 70 years. Consequently, there is a long track record of natural experiments that can be examined. Second, a central theme of recent theoretical work is that the technology of an activity plays a critical role in determining the type of employment contract that is efficient for that activity.[1] The existence of a large body of literature on the "technology" of schooling provides the opportunity to demonstrate the role technology plays in influencing employee responses to different contract forms in the education industry. Third, we were able to identify and study in detail six school districts that have used performance-based compensation plans for at least five years. These case studies provide a great deal of evidence about the characteristics of surviving plans in education--characteristics that may also be important elements of successful performance-based compensation plans in other industries.

II. COMPENSATION OF PUBLIC SCHOOL TEACHERS

A. Uniform Salary Scales

More than 99 percent of the public school teachers in the United States work in districts that employ uniform salary scales. Under such contracts, a teacher's salary is determined exclusively by educational credentials and years of teaching experience. All teachers with the same credentials and experience receive the same salary, irrespective of subject

specialty or perceived performance. Typically each school district sets its own salary scale, or negotiates it with the local teachers' union through collective bargaining.

The limitations of uniform salary scales have been well documented: no financial reward for superior performance; no financial penalty, short of dismissal, for inferior performance (Hanushek, 1981). Many critics of uniform salary schedules argue that improvement in the quality of education offered by public schools requires a change from uniform salary schedules to a compensation scheme that bases individual teachers' compensation on their performance. In education circles, such performance-based compensation plans are called merit pay.

We define merit pay as a compensation system in which the pay of individual teachers depends on their success in teaching their students, as measured either by student test score gains, or by supervisors' evaluations of teacher actions in the classroom. Clearly, this is a narrow definition. As we explain in Section V, however, a broader definition raises questions about what does and what does not constitute performance-based compensation.

B. A Brief History of Merit Pay

Merit pay in an old idea. In 1918, 48 percent of United States school districts sampled in one study used merit pay (Evendon, 1918, as reported in Johnson, 1984). Little is known about these early plans, except that most did not last. In 1923, the National Education Association (NEA) reported that 33 percent

of sampled districts used merit pay. In 1928, a subsequent NEA survey reported that 18 percent of districts surveyed awarded merit pay.

Interest in merit pay waned during the 1940s and early 1950s, as the vast majority of public school districts adopted uniform salary schedules. Between 1939 and 1953, the percentage of school systems in cities with more than 30,000 population that used merit pay fell from twenty to four (Porwoll, 1979, p.26).

Sputnik rekindled interest in merit pay. During the 1960s, approximately 10 percent of United States school districts had merit pay plans. Most of these plans fared no better than their predecessors. By 1972, the percentage of districts using merit pay had fallen to 5.5 percent (Porwoll, 1979). A 1978 survey of the 11,500 U.S. school districts with enrollments of 300 or more students found only 115 with merit pay plans (4 percent of the districts that responded to the survey; 1 percent of districts to whom the questionnaire was sent). Moreover, the majority of districts that reported having tried and dropped merit pay indicated that their plans lasted less than five years (Porwoll, 1979, p.41).

Thus, the history of merit pay suggests that interest in paying teachers according to merit endures, but attempts to use merit pay do not. Moreover, the geographical and temporal nature of the evidence indicates that teacher union resistance cannot account for the demise of most merit pay plans. We must search for other explanations, and the framework provided by the optimal contracts literature is useful in guiding this search.

III. WHY MOST MERIT PAY PLANS FAIL

A. A Framework for Analysis

While there are differences in emphasis, all economic explanations of the existence of particular contract forms are based on the following assumptions:

1. Contracts that exist and have endured for an extended period of time in a competitive environment are efficient.
2. Workers' preferences are not completely consonant with the employing organization's goals. If there are no adverse consequences, workers prefer to work less hard than the organization would like. We will adopt Alchian's and Demsetz's (1972) term, shirking, for such behavior.
3. Monitoring the output or the actions of workers is costly.
4. Imperfect monitoring will induce workers to attempt behavior that makes them appear productive relative to other workers, but in fact is contrary to the goals of the organization. Williamson (1975) labels such behavior, opportunistic, and defines it as self-interest seeking with guile.

Optimal contract design requires finding the terms that involve the most efficient tradeoff between cost of monitoring and loss from shirking or opportunism. Efficient contract terms

will vary among organizations and types of work due to differences in the cost of monitoring output or worker actions, and differences in the potential for opportunistic behavior. In the next sections we explore the extent to which this contracting framework explains the failures of two types of merit pay.

B. Two Models For Merit Pay

1. Payment by results

Approximately 30 percent of U.S. workers in manufacturing are employed under piece rate contracts, the most common form of payment by results (Pencavel, 1977; Seiler, 1984). Piece rate contracts are efficient when the true contribution of the individual worker to the firm's output can be measured at relatively low cost. Commercial laundries' (typically implicit) contracts with workers who iron shirts provide an example. The number of shirts ironed provides a good measure of the worker's contribution to the firm. Consumer complaints provide a check on quality. Multiple dimensions of output can be managed by providing a schedule of piece rates for different types of clothing.

As Pencavel (1977) explains, piece rate contracts sometimes elicit opportunistic behavior such as collusion among workers for the purpose of preventing a change in the piece rates, and neglect of machine maintenance. For many types of work, however, the costs of such opportunism are outweighed by the advantages that piece rate contracts have over contracts that

attempt to control opportunism by monitoring worker actions. In particular, piece-rate contracts result in self-selection of productive workers to the firm, thereby reducing the transaction costs associated with selecting able workers. Piece-rate contracts also provide strong incentive for workers to find the most rapid way to iron shirts. High productivity results in immediate rewards; shirking results in immediate penalty.

Why haven't merit pay plans that compensate teachers on the basis of their output, measured, for example, by student test score gains, become populer? (Such compensation plans have recently been advocated in several states (cf. The Nation Responds,1984, p.45)). One reason concerns incentives. Any explicit algorithm for compensation based on student test score gains creates a specific price--a piece rate--for each student's test score gain in each subject area. For example, an algorithm that bases compensation solely on average reading score gains implicitly places a zero price on student gains in other subject areas. Moreover, it places an equal weight on each student's gain. If teacher time is viewed as a private good (time spent with one student reduces time available for other students), then this algorithm creates incentives for teachers to allocate time so that the last unit of time spent with any child yields the same expected test score gain.

There is limited evidence that teachers do respond to payment by results by allocating their time to specific subject areas and children. For example, in the middle of the 19th century in England, elementary school teachers worked under a payment by results plan that based their compensation on the

number of children who acquired a set of narrowly defined skills. This led to a narrowing of the curriculum to exclude all nontested skills, including many skills that were perceived to be important, but were difficult to test (Coltham, 1972).

Other evidence comes from the performance contracting experiments sponsored by the Office of Economic Opportunity in the early 1970s. In these experiments, private firms provided reading instruction to public school children with the firm's compensation dependant on student test score gains. In at least one of the sites, teachers concentrated their time on children in the middle of the test score distribution, neglecting children at the top of the distribution, who would advance well on their own (test score gains above a threshold were not rewarded), and children at the bottom of the distribution, whose test scores would not respond to modest additional amounts of teacher time (Gramlich and Koshel, 1975).

Why are the responses of teachers to the incentives implicit in the test score algorithm problematic? If different time allocations among subjects and students are desired, why not simply alter the algorithm, for example, by giving positive weight to skill development in more skill areas, and perhaps by weighting achievement gains of some children more than those of others? There are two problems with this solution: lack of consensus about the appropriate weights, and the nature of teachers' work. Consider each problem in turn.

Most policy debates about public education avoid the divisive topic of weights--at its core, a discussion about whose education matters the most. Instead of explicitly debating what

the weights should be, it is common in public education to delegate resource allocation decisions to teachers and administrators, with the inoperable admonition that they provide every student with the opportunity to fulfill his or her potential. Such delegation is not consistent with the design of contracts that pay teachers on the basis of their output.

If the lack of consensus on weights were the only problem in paying teachers on the basis of their students' progress, one would expect to see more extensive use of such compensation schemes in private schools, where, presumably, family choice leads to greater agreement on school goals. The limited available evidence suggests that performance based pay for teachers is relatively rare in private schools, however. In 1983, only seven percent of Catholic high schools used any form of merit pay, and none of those schools base pay differentials on student test score gains (The Catholic High School: A National Portrait, 1985).

Why aren't teachers paid on the basis of their students' test score gains, even in organizations in which there is relatively high consensus on goals, and contract form is management's prerogative? We believe that the answer concerns the nature of the work in schools. Even in schools in which there is a high level of consensus on goals, the goals are multidimensional--for example, raise the average reading level in each class, and eliminate drugs and violence from the school. While it may be reasonable to attribute the average reading gain of a group of students to a particular teacher working with students behind a closed classroom door, it is not possible to

measure each teacher's contribution to the second goal. In fact, eliminating violence and drugs from a school requires that teachers open their classroom doors and work as a team to monitor students' actions while not in class. If teachers' pay is based solely on success in raising reading scores, teachers have strong incentives to keep their classroom doors closed, and neglect the teamwork outside of classrooms that contributes to accomplishment of the second goal.

Managers (i.e. school principals) as well as teachers realize that much of the important work in schools must be done by teachers working together and that compensation algorithms that reward only those dimensions of performance for which each teacher's contribution can be measured create perverse incentives. This may explain why paying teachers on the basis of their students' test scores is extraordinarily rare in American education.

The significance of teamwork and the presence of school principals who have direct supervisory functions suggests the possibility of basing teachers' compensation on principals' evaluations. In fact, this is the common model for merit pay, and we consider it in detail in the next section.

In concluding this section, it is appropriate to point out that advocates of paying teachers on the basis of their students' test score gains might make the following argument:

> The issue is not lack of consensus on goals, or the nature of teachers' work. The real issue is giving merit pay a chance. All previous merit pay plans have provided

only modest performance-based bonuses added to a pay level dictated by a uniform salary scale. These bonuses are not large enough to attract talented entrepreneurs to teaching--people who have the skills to respond aggressively to incentives, and the desire to do so. The promise of merit pay comes from the attraction of such people to teaching, not from motivating the existing teaching force to better performance.

It is not possible to respond definitively to this argument since there have been only a few experiments in which teachers' pay has been based on their students' academic performance, and the evidence on the results of these experiments is very limited. One can only ask why the experiments did not last or become more widespread?

2. Compensation depends on supervisor's evaluation

Economic models (e.g. Alchian and Demsetz, 1972; and Williamson, 1975) posit that contracts in which compensation depends on supervisors' assessments of individual workers' actions are efficient when the following conditions are satisfied:

1. the true contribution of each worker to the firm's output cannot be measured directly, either because employees work in teams and only team output can be measured (Alchian and Demsetz, 1972), or because attempts to measure individuals' outputs would lead to

undetected opportunistic behavior (Williamson, 1975).

2. the relationships between worker actions and worker contribution to firm output are well-defined so that supervisors can accurately estimate individual workers' contributions by observing their behaviors.
3. monitoring worker actions imperfectly will not result in undetected opportunism.
4. the cost of monitoring worker actions is low relative to the cost of the shirking that would take place in the absence of monitoring.

Alchian and Demsetz (1972) provide the example of workers unloading a truck:

> clues to each input's productivity can be secured by observing <u>behavior</u> of individual inputs. When lifting cargo into the truck, how rapidly does a man move to the next piece to be loaded, how many cigarette breaks does he take, does the item being lifted tilt downward toward his side. (p.780).

We agree that fulfillment of the four conditions listed above permits the efficient use of supervisors' ratings to divide workers doing the same job into three groups: a minority of exceptional workers who will be promoted to a higher paying assignment, a minority whose poor performance dictates dismissal, a large group that will continue to do the same job <u>at the same common rate of pay</u>. However, a system of merit pay for workers who will continue to do the same job requires that supervisors

make much more fine-grained distinctions among workers. We believe that such a system is efficient, relative to alternatives, only when the following fifth condition is also satisfied:

5. Workers must accept that supervisors' ratings usually reflect productivity differences, and are not routinely biased by undetected opportunistic behavior. Fulfillment of this condition requires that supervisors be able to answer convincingly the following questions posed by workers:

    a. Why is worker x being paid more than I am?

    b. What can I do to earn higher pay?

Why this fifth condition? The reason is that workers' reactions to incentive pay depend critically on their perceptions of the justice of the system. While perception of justice is not a concept that lends itself to formal modelling, and consequently has not been considered in recent theoretical work on optimal employment contracts, the idea does play an important role in the industrial relations literature (Dunlop, 1984a). Moreover, it is also present in earlier economic analyses of the employment relationship. For example, J.R. Hicks (1963), in his Commentary on his own Theory of Wages wrote:

> The labor market is--by nature, and quite independent of Trade Union organization--a very special kind of a market which is likely to develop 'social' as well as purely economic aspects... For the purely economic correspondence between the wage paid to a particular worker and his value to the employer is not a sufficient condition for efficiency; it is also necessary that there should not be strong feelings of injustice about the relative treatment of different employees (since these would diminish the efficiency of the team)....Wage rates are more uniform both between workers, and over time, than they would be if the labour market worked like a commodity market.(1963, p. 317).[2]

More recently, Williamson (1975, p.38) has introduced the criterion, "a satisfying exchange relation," in describing the necessary conditions for a stable employment relationship. Implicit in his usage is the notion that optimal contract form depends on more than the conditions that have, to this date, been modelled formally. We suggest that a good test of whether a contract that bases employees' compensation on supervisors' ratings provides a "satisfying exchange relation" is whether supervisors can answer convincingly the two questions posed in our fifth condition.

We believe that in most experiments with merit pay for teachers, supervisors (typically school principals) have not been able to answer convincingly questions about why teacher x is paid more than teacher y, and what teacher y should do to earn higher

pay. Moreover, we believe that the lack of convincing answers to these questions contributes in a central way to the low morale and "problems of administration," that are cited in a recent survey as the primary reasons school districts drop merit pay (Calhoun and Protheroe, 1983).

Supervisors' inability to justify fine-grained distinctions among teachers stems from two characteristics of teaching. First, there are no well-defined teaching techniques that are consistently superior to alternatives in helping children to learn.[3] Consequently, supervisors cannot justify the superior ratings given to a few teachers by pointing to their use of teaching techniques that are generally acknowledged to result in higher levels of student learning than alternatives.

Second, the nature of teaching is such that experienced teachers do have knowledge that they can use opportunistically without detection. Minimizing participation in the critical teamwork needed to keep schools free of violence and drugs is one example. A second is not sharing teaching materials. A third is using friendships with parents, developed through teaching several children in the same families, to spread rumors about other teachers' incompetence. The significance of the potential for opportunistic behavior is suggested by one study that asked superior teachers, as designated by their supervisors, about merit pay. These teachers, who would gain financially under merit pay, stated that they would not work under this compensation system because of the negative effect it would have on teamwork and morale (Jackson, 1968).

Two interesting pieces of information suggest that public

education's experience with merit pay is not atypical, and that contracts basing compensation of workers with the same job definition on supervisors' ratings are not common in for-profit educational institutions, or in other sectors of the economy. The first is the compensation policy of Stanley Kaplan, the largest of the for-profit firms specializing in preparing students to take standardized tests, such as the Scholastic Aptitude Test. Stanley Kaplan does monitor the performance of its teachers closely, in part by observing them in the classroom, and to an even greater extent, by soliciting student evaluations of each teacher's performance. In fact, students are quick to complain when the quality of instruction does not justify the cost of the course. Kaplan uses the feedback from students in deciding which teachers to dismiss. The firm does not use this information in determining individual teacher's compensation, however. In fact, teachers who work for Stanley Kaplan are paid in much the same way public school teachers are paid. All teachers are paid according to a salary scale that bases compensation on experience--on the number of courses taught. There are no bonuses for superior performance.

We asked the personnel director of Stanley Kaplan why the firm does not use performance-based pay. Her answer included these points. All Stanley Kaplan teachers are effective; those who are not are dismissed. There are some teachers who are superstars, and the firm has considered paying bonuses to these teachers. The firm has rejected this plan because of the perception that the positive impact bonuses might have on the performance of the superstars would be more than offset by

negative effects on the performances of effective teachers who believe themselves to be as good as the superstars.

In the context of our paper, the Kaplan evidence can be interpreted as implying that performance-based compensation would not provide a "satisfying exchange relation" even when management can make relatively accurate fine-grained distinctions among workers because the merely good teachers would not be convinced of the superior performance of some of their co-workers. As a result, the responses to the pay differentials would not further the goals of the organization.

The second piece of evidence is Medoff and Abraham's (1981) report that pay differentials among employees with the same job classification in a major corporation were not explained by supervisors' performance evaluations. This leads us to wonder whether contracts that base pay differentials among workers with the same job definition on supervisors' evaluations, the model for merit pay, may in fact be rare in the private sector.

We want to be clear about what we do and do not mean. We argue that a primary reason for the failure of most merit pay plans is supervisors' inability to justify fine-grained productivity distinctions among teachers. We conjecture that this is true in many other activities as well; as a result, contracts that base compensation of workers with the same job definition on supervisors' evaluations may be quite rare. We do not mean that supervisors cannot identify the very best and the worst workers. For many activities, including teaching, they can. Moreover, using such distinctions to determine which workers are promoted, and which are fired, is a common element of

personnel policies in many organizations. However, this type of employment relationship is not a model for merit pay, when the term implies, as it does in public education, pay differentials based on doing the same job differentially well.

IV. WHY DOES MERIT PAY SURVIVE IN SOME SCHOOL DISTRICTS?

A. Our Research Strategy

If merit pay is indeed a relatively inefficient contract form for public school teachers, why do merit pay plans survive in a few districts? Are the districts atypical? Are the provisions of the merit pay plans atypical? What can be learned from these exceptions about the nature of the employment relationship?

We began our search for the answers to these questions by identifying school districts that have used merit pay for a number of years. Two Educational Research Service (ERS) reports were helpful in this regard. The first (Porwoll, 1979) identified 115 school districts in the U.S. that used merit pay in 1978. The second (Calhoun and Protheroe, 1983) reported the results of a survey that inquired whether each of these 115 districts was still using merit pay in 1983, and if not, why not. We used the 47 districts that reported in the 1983 survey that they were still using merit pay as the population from which we selected districts for study.

We had hoped to identify urban districts within this population. The reason is that, since urban districts are

thought to have particularly serious problems with poor teaching performance and low teacher morale, analysis of enduring merit pay plans in urban districts might provide important insights about the factors that contribute to the success of performance-based contracts for teachers. We found no urban districts with long-lived merit pay plans. In fact, we could not find even one documented case of a large, once-troubled school district that had successfully used merit pay to improve its performance. To the contrary, one of the striking aspects of the list of districts with enduring merit pay is the large percentage of very small districts serving relatively homogeneous student populations. Moreover, these districts tend to use very small amounts of money as merit pay bonuses.

We then looked for districts that had used merit pay for at least five years and either used pay differentials of at least $1000, or served more than 10,000 students. We found seven districts that met these criteria. We spent several days in six of these districts interviewing teachers and administrators with the goal of learning how each merit pay plan worked and what teachers' and administrators' reactions to the plans were.

B. Characteristics of the Districts

The six districts that we visited vary in size, from 2500 students to 60,000 students. Three are located in the southwest; one in the northeast; one in the midatlantic region and one in the northcentral region of the country. Two districts have collective bargaining; the union role in the other four is

insignificant.

All of the six districts are considered to be among the best in their geographical area--places where teachers like to work, and where parents pay housing premiums to send their children to the public schools. In evaluating the role merit pay plays in contributing to these districts' success, it is important to focus first on other attributes that the districts have in common. All of the districts have salary schedules (to which merit pay is added) that are above average for their geographical area. The high salaries and good working conditions permit these districts to be selective in choosing among applicants for teaching positions. These districts also dismiss teachers judged to be incompetent (and are pressured by parents to do so). This practice has not been resisted by teachers' unions in the two districts with relatively powerful unions. Union leaders in these districts stated that they made sure that due process was observed, but that it was not in the union's interest to protect incompetent teachers.

These common characteristics of school districts with enduring merit pay plans suggest two related points about the nature of the employment relationship. First, contract form is only one determinant of an organization's ability to attract, retain, and motivate high quality workers. Focusing exclusively on the terms of employment contracts (whether explicit or implicit) can result in neglect of other critical determinants, such as nonpecuniary attributes of jobs and recruitment practices. Second, employee responses to performance-based employment contracts depend critically on these other

determinants of the employment relationship. For example, employees with favorable working conditions may respond differently to performance-based pay differentials than employees with unfavorable working conditions. This is part of the reason why merit pay does not survive in urban districts, but does in a small number of relatively affluent suburban districts.

C. Characteristics of the Merit Pay Plans

Why did merit pay survive in our six districts while it was dropped by a large number of districts with similar profiles? The answer lies in part in the strategies used to make merit pay a "satisfying exchange relation." These districts all found strategies for dealing convincingly with the questions: Why does teacher x get paid more than I do? What can I do to earn higher pay? The strategies consist of varying combinations of four themes: extra pay for extra work; make everyone feel special; make the program inconspicuous, and legitimation through participation.

1. Extra pay for extra work

One common theme in the long-lived merit pay plans is that the definition of performance is altered so as to reduce emphasis on classroom teaching, and increase emphasis on completion of tasks outside the classroom. For example, the numerical rating system used by one district to determine merit pay awards gives school and community service the same weight as

classroom performance. Another district requires that a teacher complete six outside activities to be eligible for merit pay.

A complementary practice is to make the teacher responsible for documenting that he or she is worthy of merit pay. As part of the merit pay application process in several districts, teachers had to prepare lengthy documents describing their accomplishments and providing evidence in the form of testimonials from colleagues and parents.

These practices, which we call extra pay for extra work, provide one set of relatively convincing answers to the two questions teachers raise about merit pay. Administrators can clearly state that teacher x received merit pay because he devoted time to organizing a variety of activities and to documenting his accomplishments, both in the classroom and outside the classroom. If another teacher wants merit pay, he can do these same things. To the extent that merit pay is perceived to be extra pay for extra work, it may evoke no more hostile reactions from workers than voluntary overtime does.

2. Make everyone feel special.

A second theme is to quietly award merit pay to almost all teachers. This strategy is most pronounced in one district in which a numerical rating system is used to determine whether teachers who ask to participate in the merit pay system receive an award of $0, $500, $1000, $1500, or $2000. Teachers whom we interviewed were unaware of the distribution of actual awards, but typically were pleased that they received a substantial

award. In fact, every teacher who volunteered to participate in the merit pay program (over 90 percent of eligible teachers in the district) received a positive award, and 85 percent of the teachers received either $1500 or $2000.

We suspect that the bunching of the ratings at the top of the scale and the relatively small monetary differential between the top two awards is important in minimizing ill-feeling on the part of teachers in schools headed by hard grading principals. In this district, having the principal be a hard grader means that the productive teacher gets a $1500 annual bonus instead of a $2000 bonus.

In effect, the "make everyone feel special" strategy deals with teachers' potentially destructive questions about merit pay by reducing the number of teachers who ask. We find it interesting that this strategy was particularly evident in the two districts in our sample that have had merit pay for more than twenty years.

3. Make merit pay inconspicuous.

In several districts, the design of the merit pay system is such that the incentives are of little interest to a large percentage of the teachers. For example, in one district, eligibility for merit pay requires ten years of service, completion of six activities outside the classroom, and satisfactory performance evaluations. The reward for fulfilling these requirements is $600 (somewhat more, if coupled with advanced degrees). Only 40 percent of the teachers in this

district who do fulfill the length of service requirement choose to participate in the voluntary merit pay plan.

In another district, teachers can apply for one of four different award levels, with each level having different requirements. While the award levels are sizeable, $1000 for level I, $4000 for level IV, the requirements are so demanding that only twelve percent of the teachers apply for any level (two-thirds of these teachers receive awards). For example, the level IV requirements include a Master's Degree and 30 hours of graduate credits, superior teaching skills, as demonstrated, for example, by "representing the district at the state or national level as a resource person, chairperson, or committee member," and superior professional contributions, as demonstrated, for example, by serving "in an official capacity in the management of the professional associations or organizations related to a specific field of study" (quotations from school district description of performance based compensation plan). For the vast majority of the teachers in this school district, the financial awards do not justify the extra work.

In all of our districts, merit pay has a low profile. In part, this stems from the perception that merit pay is something almost any teacher could earn, but that the financial rewards do not justify the extra work. Another element is that teachers are urged not to discuss with colleagues either who receives merit pay or the amount of the awards. In these districts, where most teachers like their jobs, the primary effect of secrecy seems to be to reduce teachers' interest in merit pay and thereby to reduce the number of teachers who ask the hard questions about

why some teachers get merit pay, and others don't.

4. Legitimation through participation.

One final attribute of merit pay in our districts concerns the process by which the programs were designed. In all of the districts, teachers played a significant role in the design of the merit pay plans. Moreover, in each of the two districts that have had merit pay for more than twenty years, the system has been revised several times in response to teacher complaints. We believe that teachers' participation in the design, and redesign, of the merit pay plans contributes to their longevity. One reason is that the process of participation reveals information about teachers' preferences, information that is critical in predicting teachers' responses to incentives, but is extremely difficult to collect. A second reason is that participation creates the impression that merit pay is not a system thrust upon teachers, but rather one they helped to create. Seen as such, teachers may still ask why some teachers get merit pay and others don't, but the intensity with which the questions are asked is diminished, since teachers recognize that if many of them find the program objectionable they can change it.

V. THE NATURE OF THE EMPLOYMENT RELATIONSHIP

As the observant reader will already have concluded, merit pay in the districts we studied does not satisfy the strict definition of merit pay stated in Section II--pay dependent on success in teaching students, as measured either by student test score gains, or by supervisors' evaluations of teacher actions in the classroom. This raises two questions: Does merit pay, as it actually operates, have any influence on the performance of the school districts we studied? Do the history of merit pay failures and the characteristics of merit pay plans that survive provide insights into the nature of the employment relationship? We consider these questions in turn.

In our six districts, merit pay does not appear to be either a powerful control on shirking or a powerful stimulus to superior performance. It does, however, appear to contribute to the overall effectiveness of these school districts in several modest, but significant respects. First, it provides teachers who value income over leisure opportunities to increase their income through extra work--and specifically, through work that management values. Second, it provides managers with a mechanism to acknowledge a job well done in a profession where such ackowledgements are rare. Third, it increases community support for public education by helping district level administrators make the case to school boards and taxpayers that teachers are accountable and productive.

Turning to the second question, we believe that our analysis of merit pay throws light on the economics of the

employment relationship in three respects. First, although it might be argued that the characteristics and contributions of merit pay in public education are idiosyncratic and are not valuable in understanding how performance-based compensation plans work in other industries, we doubt that this is the case. We speculate that many of the strategies used in our six districts to make merit pay a "satisfying exchange relation" are also used with similar effects in other industries. We hope that this paper will stimulate research exploring this speculation.

Second, our analysis demonstrates that the employment contract is only one determinant of the nature of the employment relationship. Moreover, workers' responses to the incentives provided by contracts are sensitive to other determinants, such as working conditions. Modelling such interaction effects is difficult, but they are important in understanding why the same type of contract elicits quite different reactions from workers in different organizations in the same industry.

The third insight concerns the importance of process. Our analysis of merit pay suggests that teachers' participation in the design (and redesign) of the performance-based compensation plans contributed to the plans' longevity. One reason is that participation elicited information about probable responses to particular contract clauses, and thereby informed the choice of clauses. A second reason is that participation may have reduced the incidences of opportunistic responses to performance-based compensation by giving teachers evidence from management that the system, if dysfunctional, could be changed.

The importance of process is not a new idea. For

example, it is implicit in Hirschman's important work on the role of voice as a mechanism for change (1970) and it is explicitly considered in Freeman and Medoff's recent work on unions (1984).[4] This idea has not entered the mainstream of research on the employment relationship, however. Our empirical work supports the case that it should.

FOOTNOTES

1. We define technology to include consideration of the potential for undetected opportunistic behavior and the role of teamwork. The factors Alchian and Demsetz (1972) and Williamson (1975) identify as determinants of efficient contract form fit within this broad definition.

2. Dunlop (1984b) first made us aware of Hicks's discussion of labor markets.

3. See Wise et al., (1984, p. 10) for a discussion of the claims and refutations concerning the role of specific teacher actions in fostering student learning.

4. Williamson (1983) also emphasizes the need for economists to pay attention to the role of process in studying organizations.

REFERENCES

Alchian, Armen A. and Harold Demsetz, "Production, Information Costs, and Economic Organization," American Economic Review, 62(Dec. 1972)5, pp. 777-795.

Calhoun, Frederick S. and Nancy J. Protheroe. Merit Pay Plans for Teachers: Status and Descriptions. Arlington, Va.: Educational Research Service, 1983.

The Catholic High School: A National Portrait. Washington, D.C.: National Catholic Education Association, 1985.

Coltham, Jeanette B., "Educational Accountability: A English Experiment and Its Outcome,' School Review, (Nov. 1972), pp. 15-34.

Dunlop, John T., Dispute Resolution: Negotiation and Consensus Building. Dover, Ma.: Auburn House Pub. Co., 1984a.

Dunlop, John T., "Industrial Relations and Economics: The Common Frontier of Wage Determination," address to Industrial Relations Research Association, Dallas, Texas, Dec. 1984b.

Evendon, E.S. Teachers' Salaries and Salary Schedules in the United States, 1918-19. Washington, D.C.: National Education Association, 1918.

Freeman, Richard B. and James L. Medoff. What Do Unions Do? New York: Basic Books, 1984.

Gramlich, Edward and Patricia Koshel. Educational Performance Contracting. Washington, D.C.: Brookings Institution, 1975.

Hanushek, Eric, "Throwing Money at Schools," Journal of Policy Analysis and Management, 1(Fall 1981)1, pp. 19-41.

Hicks, J.R., Theory of Wages. Second Edition, New York: St. Martin's Press, 1963.

Hirschman, Albert O. Exit, Voice, and Loyalty. Cambridge, Ma.: Harvard University Press, 1970.

Jackson, Philip W., Life in Classrooms. New York: Holt, Rinehart & Winston, 1968.

Johnson, Susan M., "Merit Pay for Teachers: A Poor Prescription for Reform," Harvard Educational Review, 54(May 1984)2, pp. 175-185.

Medoff, James L. and Katherine G. Abraham, "Are Those Paid More Really More Productive: The Case of Experience," Journal of Human Resources, 16(Spring 1981)2, pp. 188-216.

Murnane, Richard J. and Richard R. Nelson, "Production and Innovation When Techniques are Tacit: The Case of Education," Journal of Economic Behavior and Organization, 5(Dec. 1984), pp. 353-373.

The Nation Responds: Recent Efforts to Improve Education. Washington, D.C.: U.S. Department of Education, 1984.

National Education Association (NEA), Practices Affecting Teacher Personnel, Research Bulletin, Vol. 6, No. 4 (Washington, D.C., 1928.

National Education Association (NEA), Report of the Salary Committee, Teachers' Salaries and Salary Trends in 1923. Washington, D.C.: NEA, 1923.

Pencavel, John H., "Work Effort, On-the-Job Screening, and Alternative Methods of Remuneration," in (R. Ehrenberg, ed.), Research in Labor Economics, Vol.I, Greenwich, Ct.: JAI Press, 1977, pp.225-258.

Porwoll, Paul J. Merit Pay for Teachers. Arlington, Va.: Educational Research Service, 1979.

Schlechty, Philip C. and V. S. Vance, "Do Academically Able Teachers Leave Education? The North Caroline Case," Phi Delta Kappan, 63(Sept. 1982), pp. 106-112.

Seiler, Eric, "Piece Rate vs. Time Rate: The Effect of Incentives on Earnings," The Review of Economics and Statistics, 66(Aug. 1984)3, pp. 363-375.

Weaver, Timothy, "Solving the Problem of Teacher Quality, Parts I and II," Phi Delta Kappan, Oct. and Nov. 1984.

Williamson, Oliver E., Markets and Hierarchies: Analysis and Antitrust Implications. New York: Free Press, 1975.

Williamson, Oliver E., "The Economics of Governance: Framework and Implications," Discussion Paper #153, University of Pennsylvania, Center for the Study of Organizational Innovation, Philadelphia, Pa., July 1983.

Wise, Arthur E., Linda Darling-Hammond, Milbrey W. McLaughlin, and Harriet T. Bernstein. Teacher Evaluation: A Study of Effective Practices. Santa Monica, Ca., 1984.