The Politics of Teacher Pay Reforms

Dan Goldhaber

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DAN GOLDHABER

University of Washington and Urban Institute

Abstract

This paper explores the politics of various types of teacher compensation reforms, with a particular focus on pay for performance. It examines the political positions taken by the nations two teachers' unions, the extent to which these reflect the preferences of teachers, and how both influence the decisions by localities to implement reforms. New Washington State survey data that describes teachers' views on compensation is analyzed to contextualize teacher opinions and show variation based on both the type of teacher and the context in which a teacher works.

The role of local decision-makers (for instance, school boards and superintendents) and the incentives that drive their thinking about reform implementation is also examined, with a focus on the dynamics of local school district politics and the institutional inertia of public school systems. The paper concludes with a discussion of various logistical hurdles associated with pay reforms (such as data systems, comparison groups, methods of calculating teacher effectiveness, or confidence in effectiveness measures) and whether and how these can be overcome, and fleshes out what the forces shaping teacher compensation choices might portend for reform initiatives.

I. Teacher Pay Reform: Newsworthy and Rightly So

Teacher pay reform seems much in the news of late, as states, localities and the federal government have not only started considering, but actually experimenting with pay reform programs.¹ Florida, Minnesota, and Texas, for example, have all embarked on high-profile pay experiments that include performance pay, arguably the most controversial type of pay reform, as a central component.² These states are joined by urban school systems such as Denver, Houston, and New York City that have launched reform initiatives. The federal government is providing additional encouragement with its Teacher Incentive Fund (TIF), which provides grants to states or localities to develop pay alternatives to the "single salary schedule" – a system used by the overwhelming majority of school districts that bases teacher pay solely on experience and degree level.³

While interest in teacher pay reform may be on the rise, calls for reform are certainly not new.⁴ Pay-for-performance (also often described as "merit pay") was, for example, one of the

^{1.} Note that I say teacher "pay" as opposed to teacher "compensation", which in addition to pay would also include benefits. While total compensation is very much an issue (see, for instance, Robert M. Costrell and Michael Podgursky, "Peaks, Cliffs, and Valleys: The Peculiar Incentives of Teacher Pensions," *Education Next* 8, no. 1 (2008)), there currently appears to be little policy debate over the value of changing the non-pay portions (including retirement benefits) of teacher compensation.

^{2.} See Robin Chait, "Current State Policies That Reform Teacher Pay: An Examination of Pay-for-Performance Programs in Eight States," (Washington, D.C.: Center for American Progress, 2007), for a review of these and other state-level teacher pay reform initiatives.

^{3.} For more on the single salary schedule, see Dan Goldhaber, "Teacher Pay Reforms: The Political Implications of Recent Research," (Washington, DC: Center for American Progress, 2006) and Gregory A. Strizek et al., "Characteristics of Schools, Districts, Teachers, Principals, and School Libraries in the United States: 2003-04 Schools and Staffing Survey," (Washington, D.C.: U.S. Department of Education, National Center for Education Statistics, 2006). The Teacher Incentive Fund was established in 2006 to support efforts to develop and implement performance-based teacher and principal compensation systems in high-need schools. Its four primary stated goals are: 1) to improve student achievement by increasing teacher and principal effectiveness, 2) to reform teacher and principal compensation systems so that teachers and principals are rewarded for increases in student achievement, 3) to increase the number of effective teachers teaching poor, minority, and disadvantaged students in hard-to-staff subjects, and 4) to create sustainable performance-based compensation systems.

^{4.} See Michael J. Podgursky and Matthew G. Springer, "Teacher Performance Pay: A Review," *Journal of Policy Analysis and Management* 26, no. 4 (2007).

recommendations of the 1983 *A Nation at Risk Report*.⁵ But the politics of pay reform may well have shifted, as calls for reform now appear to come from across the ideological spectrum. For example, while it has traditionally been Republicans who have called for market-based teacher pay reforms, today they are joined by the three leading Democratic presidential candidates (Clinton, Edwards, and Obama), each of whom has advocated teacher pay reforms that include pay-for-performance (PFP) recommendations of one form or another. Furthermore, PFP experiments have recently been adopted with the agreement of local union affiliates in Denver and New York City, and drafts of the upcoming reauthorization of the No Child Left Behind (NCLB) Act also include provisions for teacher pay incentives for performance and for those who teach in highneeds areas.⁶ Given all this, it is unlikely that teacher pay reform will disappear anytime soon.

There are good reasons to focus on teacher compensation as an avenue for school reform. The structure of compensation in education, which is dictated by the single salary schedule, is clearly out of step with the way that the broader labor market tends to function. As a whole, private sector compensation generally reflects not only individual attributes such as cognitive or technical skills, but also performance on the job. And there is some evidence that the divergence in compensation structure in and outside of the teaching profession may help explain recent

^{5.} National Commission on Excellence in Education, "A Nation at Risk: The Imperative for Educational Reform," (Washington, D.C.: U.S. Department of Education: National Commission on Excellence in Education, 1983).

^{6.} For more on these PFP agreements, see Joan Baratz-Snowden, "The Future of Teacher Compensation: Déjà Vu or Something New," (Washington, D.C.: Center for American Progress, 2007). For the draft reauthorization for Title II by Representatives Miller (D-CA) and McKeon (R-CA), see George Miller and Howard P. McKeon, "Discussion Draft: Title II_Teacher Excellence for All Children," (2007).

^{7.} See Eric Eide, Dan Goldhaber, and Dominic Brewer, "The Teacher Labour Market and Teacher Quality," Oxford Review of Economic Policy 20, no. 2 (2004).

^{8.} For more on individual attributes, see Dominic Brewer, Eric R. Eide, and Ronald G. Ehrenberg, "Does It Pay to Attend an Elite Private College? Cross-Cohort Evidence on the Effects of College Type on Earnings," *Journal of Human Resources* 34, no. 1 (1999); Jeff Grogger and Eric Eide, "Changes in College Skills and the Rise in the College Wage Premium," *Journal of Human Resources* 30, no. 2 (1995); and R. J. Murnane, J. B. Willett, and F. Levy, "The Growing Importance of Cognitive Skills in Wage Determination," *Review f Economics and Statistics* 77, no. 2 (1995). For more on performance on the job, see Robert D. Bretz and George T. Milkovich, "Performance Appraisal in Large Organizations: Practice and Research Implications," (Ithaca, NY: Cornell University: Center for Advanced Human Resource Studies, 1989).

findings that suggest the quality of teachers (as measured by standardized test scores and/or the selectivity of colleges) has declined over time.

Research by Sean Corcoran and colleagues, for example, finds that the likelihood that a female teacher will have come from the top ten percent of high school students has dropped by more than half from 1964 to 2000 (from about a 20 percent probability to about a 10 percent probability). Some of this decline is a result of increased opportunities for women in fields outside of education, but there is also speculation that the structure of pay in education has contributed to the decline in quality. Related work by Caroline Hoxby and Andrew Leigh suggests that wage compression due in part to negotiated single salary schedules is such that an individual opting for a career as a teacher is far more likely to receive a salary close to the mean than if he or she had opted instead for a non-teaching profession. And, as a result, teaching is likely to be a more attractive profession for those individuals whose outside of teaching wage is apt to be low – as their teaching wage would be dragged upward toward the mean – and less attractive to those whose outside of teaching wage is apt to be high – as their teaching wage would be dragged downward toward the mean.⁹

Research linking teacher attributes to student achievement provides another argument in favor of pay reform. A significant amount of this work suggests that inputs-based strategies for improving teacher quality, such as changes in teacher training or licensure standards, are unlikely to yield significant changes in the quality of the teacher workforce due to the weak links between

^{9.} See Caroline M. Hoxby and Andrew Leigh, "Wage Distortion: Why America's Top Female College Graduates Aren't Teaching," *Education Next* 4, no. 2 (2005); Sean P. Corcoran, William N. Evans, and Robert S. Schwab, "Women, the Labor Market, and the Declining Relative Quality of Teachers," *Journal of Policy Analysis and Management* 23, no. 3 (2004); and Eric A. Hanushek and Richard R. Pace, "Who Chooses to Teach (and Why)?" *Economics of Education Review* 14, no. 2 (1995).

such policies and student achievement.¹⁰ More recent research utilizing datasets that link individual teachers to their individual students is yielding new insights about how teachers compare to one another. This work shows that there is tremendous variation in the effectiveness of teachers in the workforce (measured based on their value-added contribution toward student achievement). It reinforces findings from previous educational production function studies that show little or no relationship between key teacher credentials (for example, having a Masters degree) and student outcomes. Finally, this work illustrates that even when a particular characteristic or credential statistically predicts teacher effectiveness, the differences between teachers who share a common characteristic or credential dwarf the average differences between teachers with different characteristics or credentials.¹¹

This point is graphically illustrated by Figure 1, which is based on research on the relationship between teacher performance on licensure exams and student achievement on standardized tests of math achievement.¹² Figure 1 shows the distribution of estimated teacher

^{10.} See, for example, Donald Boyd et al., "How Changes in Entry Requirements Alter the Teacher Workforce and Affect Student Achievement," *Education Finance and Policy* 1, no. 2 (2006); Steven Glazerman, Daniel P. Mayer, and Paul T. Decker, "Alternative Routes to Teaching: The Impacts of Teach for America on Student Achievement and Other Outcomes," *Journal of Policy Analysis and Management* 25, no. 1 (2005); Dan Goldhaber, "Why Do We License Teachers?" in *A Qualified Teacher in Every Classroom? Appraising Old Answers and New Ideas*, ed. Frederick M. Hess, Andrew J. Rotherham, and Kate Walsh (Cambridge, MA: Harvard Education Press, 2004); Dan D. Goldhaber and Dominic J. Brewer, "Why Don't Schools and Teachers Seem to Matter? Assessing the Impact of Unobservables on Educational Productivity," *Journal of Human Resources* 32, no. 3 (1997); Eric A. Hanushek, "The Economics of Schooling - Production and Efficiency in Public-Schools," *Journal of Economic Literature* 24, no. 3 (1986); and Kate Walsh, "Teacher Certification Reconsidered: Stumbling for Quality," (Baltimore: Abell Foundation, 2001).

^{11.} For example, see Steven Rivkin, Eric A. Hanushek, and John F. Kain, "Teachers, Schools and Academic Achievement," *Econometrica* 73, no. 2 (2005); Dan Goldhaber, "Everyone's Doing It, but What Does Teacher Testing Tell Us About Teacher Effectiveness?," *Journal of Human Resources* 42, no. 4 (2007); and Thomas J. Kane, Jonah E. Rockoff, and Douglas O. Staiger, "What Does Teacher Certification Tell Us About Teacher Effectiveness? Evidence from New York City," in *Working Paper Series* (Stanford, CA: National Bureau of Economic Research, 2006).

^{12.} For more detail about this analysis, see Goldhaber, "Everyone's Doing It, but What Does Teacher Testing Tell Us About Teacher Effectiveness?" Although the results are not reported here, the findings are quite similar when measuring teacher effectiveness based on student achievement on reading tests.

effects for teachers who have passed and failed state required licensure exams (based on a licensure exam standard in North Carolina).¹³

[Figure 1]

The horizontal axis is teacher effectiveness (measured in standard deviation units) and the vertical axis is the density of the distribution of teachers in the study population. The solid line shows the distribution for teachers who passed the licensure test standard, and the vertical line drawn from the peak of the distribution to point P (for "test passer") of the horizontal axis is the mean effectiveness level of those who passed the tests. The dotted line represents those teachers who failed to meet the test standard, and the vertical line from the peak of their distribution to point F (for "test failer") shows the mean effectiveness of those who failed the tests.

Point P lies to the right of point F, suggesting that teachers who meet the state standard tend to be more effective than those who do not. The difference between points P and F is about 18 percent of a standard deviation in teacher effectiveness, and the difference between passers and failers is statistically significant. The considerable overlap in the distributions, however, is noteworthy: about 40 percent of teachers who *met* the licensure standard (shaded area A) are estimated to be *less* effective than the average teacher who failed to meet the standard, and a similar proportion of those who *failed* to meet the licensure test standard (shaded area B), are estimated to be *more* effective than the average teacher who did meet the standard.

Findings like those in Figure 1 suggest that input-based policies that determine employment eligibility will necessarily exclude from the workforce many individuals who would

^{13.} Elementary-level teachers in North Carolina are required to attain certain levels on two specific Praxis II tests, (0011 and 0012): the Praxis II Curriculum, Assessment, and Instruction ("Curriculum") test and the Praxis II Content Area Exercises ("Content") test. As of 2000, the state requires a two-test combined score of 313 to pass; however, applicants are allowed to take the test multiple times and bank their scores. And, because teachers are eligible to teach for a brief period of time despite having failed to achieve the state licensure standard, it is possible to compare the effectiveness of teachers who pass the test to those who fail.

turn out to be effective teachers (at least in terms of measuring teacher value-added), and also likely allow significant numbers of teachers into the classroom who turn out to be relatively ineffective; of course these measures are only based on those who are in the teacher workforce, and are not relative to the potential pool of teachers in the population. This fact, in conjunction with the generally weak estimated link between teacher credentials (such as having a Masters degree) and student outputs, has led researchers as well as various commissions and task forces to call for teacher pay reforms.¹⁴

Yet the politics of teacher pay reform are complicated. The next section focuses on the political positions taken by the nations two teachers' unions and the extent to which these reflect the preferences of teachers. Section III describes the role of local decision-makers (for instance, school boards and superintendents) and the incentives that drive their thinking about reform implementation. Section IV addresses some of the logistical hurdles associated with pay reforms, suggests some ways in which they might be overcome, and offers some concluding thoughts on what the various forces shaping the politics of teacher pay policies might portend for reform initiatives.

II. Teachers Unions, Teacher Preferences, and Pay Reform

The two major teacher unions – the National Education Association (NEA) and the American Federation of Teachers (AFT) – are generally opposed to teacher pay reforms, but diverge in terms of their specific positions on reform. ¹⁵ A well-developed body of theoretical and

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^{14.} See, for example, Eric A. Hanushek, "The Failure of Input-Based Schooling Policies," *Economic Journal* 113, no. 485 (2003); Center for Teaching Quality, "Performance-Pay for Teachers: Designing Systems That Students Deserve," (Washington, D.C.: Center for Teaching Quality, 2007); Committee for Economic Development, "Investing in Learning: School Funding Policies to Foster High Performance: A Statement on National Policy," (Washington, D.C.: Committee for Economic Development, 2004); and The Business Roundtable, "Pay-for-Performance in Education: An Issue Brief for Business Leader.," (Washington, D.C.: The Business Roundtable, 2000).

^{15.} For more detail and a history of the two unions, as well as research on their effects on K-12 schooling, see Dan Goldhaber, "Are Teachers Unions Good for Students?" in *Collective Bargaining in Education: Negotiating Change in*

empirical research investigating the role that unions play in labor markets as a whole suggests that unions work to increase the compensation (and improve working conditions) of their members by restricting employment and threatening firms with the possibility of labor stoppages.¹⁶

While the purpose of unions in general is fairly well defined, the role of teachers unions tends to be somewhat more difficult to pin down, at least in terms of the rhetorical debate that surrounds them. This is because, unlike unions in most other sectors of the economy, many teachers unions' documents and statements by their leaders include remarks or arguments not only about how changes in schooling policies might impact their members, but also about broader societal issues, such as human rights or the well being of the children they serve. For example, the full NEA mission statement is: "To fulfill the promise of a democratic society, the National Education Association shall promote the cause of quality public education and advance the profession of education; expand the rights and further the interest of educational employees; and advocate human, civil, and economic rights for all." The full AFT mission statement is: "The mission of the American Federation of Teachers, AFL-CIO, is to improve the lives of our

Today's Schools, ed. Jane Hannaway and Andrew Rotherham (Cambridge, MA: Harvard Education Press, 2006). The NEA refers to itself as a professional organization rather than a union, but the two organizations play very similar functional roles. Both are large labor unions – the NEA with its roughly 3 million members is nearly twice the size of the AFT – and have built their influence around collective bargaining muscle, legislative brokering, and the sheer scale of their memberships.

^{16.} Some good examples from this body of research are O. C. Ashenfelter, G. E. Johnson, and J. H. Pencavel, "Trade Unions and the Rate of Change of Money Wages in the United States Manufacturing Industry," *The Review of Economic Studies* 39, no. 1 (1972); Brian Bemmels, "How Unions Affect Productivity in Manufacturing Plants," *Industrial and Labor Relations Review* 40, no. 2 (1987); Charles Brown and James Medoff, "Trade Unions in the Production Process," *The Journal of Political Economy* 86, no. 3 (1978); Henry S. Farber, "Nonunion Wage Rates and the Threat of Unionization," (Cambridge, MA: National Bureau of Economic Research, 2003); Robert N. Mefford, "The Effect of Unions on Productivity in a Multinational Manufacturing Frm," *Industrial and Labor Relations Review* 40, no. 1 (1986); and Sherwin Rosen, "Trade Union Power, Threat Effects and the Extent of Organization," *The Review of Economic Studies* 36, no. 2 (1969). The impacts of union actions on firms are not as clear as one might think. On the one hand, unions are thought to raise the cost of operation (Randall W. Eberts and Joe A. Stone, "Teacher Unions and the Cost of Public Education," *Economic Inquiry* 24, no. 4 (1986)), but they also may serve the interest of employers by efficiently providing information to them about the preferences of employees, which in turn leads to greater productivity (Steven G. Allen, "Trade Unions, Absenteeism, and Exit-Voice," *Industrial and Labor Relations Review* 37, no. 3 (1984); Richard B. Freeman, "Individual Mobility and Union Voice in the Labor Market," *American Economic Review* 66, no. 2 (1976); and Richard B. Freeman and James L. Medoff, *What Do Unions Do?* (New York City, NY: Basic Books, 1984)).

members and their families, to give voice to their legitimate professional, economic and social aspirations, to strengthen the institutions in which we work, to improve the quality of the services we provide, to bring together all members to assist and support one another and to promote democracy, human rights and freedom in our union, in our nation and throughout the world."

Of course the fact that the union missions are focused on broad societal issues does not mean that they fail to take explicit positions on the structure of teacher pay. Of the two, the NEA tends to take the more definitive position opposing changes to the current teacher pay system. Specifically, it supports the use of salary schedules that assign pay based on academic degrees, preparation, professional growth, and length of service, and opposes pay-for-performance or additional compensation to attract or retain individuals for hard-to-recruit positions. The AFT also tends to oppose pay-for-performance (PFP), particularly when it rewards individual teachers (as opposed to whole schools), but is more likely than the NEA to endorse deviations from the single salary schedule. For example, in one of its policy positions, the AFT notes that the single salary schedule has "severe drawbacks" and "does not allow teachers to be compensated like other professionals in our society". In fact, the AFT does not endorse specific reforms, but urges local affiliates to explore alternative teacher evaluation and compensation systems, and explicitly states that alternatives could include "financial incentives to teachers who acquire additional knowledge and skills ... [increased pay for those] who agree to teach in low-

^{17.} For specifics on the NEA and AFT positions, see National Education Association, "The 2007 Nea Handbook," (Washington, D.C.: National Education Association, 2007). and http://www.aft.org/topics/teacher-quality/comp.htm for "Professional Compensation," (accessed November 29, 2007). Interestingly, the former president of the AFT, Sandra Feldman, openly suggested that pay reforms could include both salary increases and rewards for "different roles, responsibilities, skills, and yes, results" in her article, "Rethinking Teacher Compensation: Equitable Pay for Teachers is Part and Parcel of Improving Student Performance," in *American Teacher*, 2004.

performing and hard-to-staff schools... [or] increased pay for school wide improvement, mentoring new and veteran teachers and teaching in shortage areas." 18

The policy positions that the teachers unions take appear to be quite influential in determining the direction of education policy. Not only do unions expend resources directly to influence an outcome, there are numerous examples where local union affiliates sued school districts to block them from employing pay reforms.¹⁹ Furthermore, as the next section describes in greater detail, unions can indirectly influence policy through the electoral system. It should then come as little surprise that school districts in which unions have less influence (for example, because they are in right-to-work states or do not have collective bargaining to negotiate contracts) are found to be far more likely to utilize PFP than are school districts in places where unions have greater influence.²⁰

And, not surprisingly, PFP is more prevalent in private and charter schools where unions are generally less influential. As Michael Podgursky and Matthew Springer point out in a recent review, less than 10 percent of public schools (in the 1999-00 school year) report using a salary incentive to reward teaching excellence, compared to over 35 percent of charter schools and over 20 percent of private schools (over 40 percent of non-religious private schools report rewarding teaching excellence).²¹

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^{18.} The AFT national policy includes additional compensation for: 1) knowledge and skills that advance and/or address high-priority educational goals; 2) school-wide improvement; 3) achieving National Board Certification; 4) mentoring new and veteran teachers, providing peer assistance and review, serving as lead teachers, etc.; 5) teaching in shortage areas; 6) agreeing to teach in hard-to-staff and/or low-performing schools; 7) assuming additional responsibilities; and 8) instructional practice that meets mutually agreed-upon high-quality professional standards. See http://www.aft.org/topics/teacher-quality/comp.htm for additional details.

^{19.} See Cynthia Prince "The Case for Financial Incentives." American Association of School Administrators, 2002.

^{20.} See Dan Goldhaber et al., "Why Do So Few Public School Districts Use Merit Pay?" *Journal of Education Finance* 33, no. 3 (2008).

^{21.} Michael J. Podgursky, and Matthew G. Springer. "Teacher Performance Pay: A Review." *Journal of Policy Analysis and Management* 26, no. 4 (2007): 909-49.

But, while the union position (particularly the NEA) tends to oppose pay reforms, it is not unheard of to see local school districts negotiating a reform contract with union approval: ProComp in Denver, which was adopted with the cooperation of the local NEA affiliate, is probably the best example.²² The successful implementation in Denver (and elsewhere, as other districts have used alternatives to the single salary schedule over the years, such as career ladders) is attributed largely to the willingness to engage the union and teachers from the beginning in thinking through the design and implementation of the proposed system, and the fact that supporters pushed for reforms over a long period of time with the assistance of significant foundation support.²³ While ProComp is widely touted as a PFP plan, this is but one component of a more comprehensive pay reform. Under ProComp, in addition to pay that is linked to student learning growth, teachers are rewarded based on their knowledge and skills, a professional evaluation, and market incentives.²⁴ The fact that ProComp encompassed a number of elements other than just PFP and that teachers under this system can be rewarded for credentials like NBPTS certification, as an example, may help explain the reason for union buy-in.

So how well do the views of the teachers unions reflect the wider views of teachers? This question is important, as the politics of implementing reform is likely to be quite contentious if, for instance, teachers' views toward reforms are as hard line as the position taken by the NEA. Unfortunately, opinion surveys don't provide a definitive answer to this question. Different polls

^{22.} See Baratz-Snowden, "The Future of Teacher Compensation: Déjà Vu or Something New." ProComp is a comprehensive pay reform system that includes PFP as one of its components.

²³ See Phil Gonring, Paul Teske, and Brad Jupp, *Pay-for-Performance Teacher Compensation: An inside View of Denver's Procomp Plan* (Cambridge, MA: Harvard Education Press, 2007).

²⁴ For more information on ProComp, see http://denverprocomp.org/. For information on other PFP programs, see Podgursky and Springer 2007.

of teacher attitudes towards pay reform suggest very different levels of support for PFP, ranging from over 60 percent in favor to over 60 percent opposed.²⁵

It is fairly clear that support for reform depends on how questions about it are framed. For example, a 2003 survey of public school teachers by Public Agenda, which asked teachers whether or not school districts should deviate from the single salary by providing teachers with financial rewards for things besides their years of experience and graduate credits, suggested only about 50 percent support for a move away from the single salary schedule. But, in that same survey, teachers appear far more supportive of a deviation in the schedule when asked about (at least some) specific compensation reforms. Around 70 percent of teachers support providing incentives to teachers "who work in tough neighborhoods with low-performing schools," and a similar percentage favor additional compensation for teachers "who consistently work harder, putting in more time and effort than other teachers." By contrast, far fewer (around 40 percent) are favorably inclined to support PFP or incentives for "hard-to-fill" subjects.

This general pattern of support for various types of reform is reflected in a 2006 survey of teachers in Washington State conducted at the University of Washington. As Figure 2 demonstrates, this work suggests teachers strongly support extra pay for "work in tough neighborhoods with low-performing schools" and very strongly oppose rewarding "teachers whose students make greater gains on standardized tests than similar students taught by other teachers." Support for rewarding "teachers who specialize in hard-to-fill subjects such as science or

^{25.} See Brian Jacob and Matthew G. Springer, "Teacher Attitudes on Pay for Performance: A Pilot Study," (National Center on Performance Incentives, 2007). A nuanced interpretation of the findings (at least this reader's interpretation) for teacher support for PFP suggests that support drops the more specific the survey is about how "performance" is measured.

^{26.} See Dan Goldhaber, Michael DeArmond, and Scott DeBurgomaster, "Teacher Attitudes About Compensation Reform: Implications for Reform Implementation." SFRP Working Paper 20. Available online at http://www.schoolfinanceredesign.org/pub/pdf/wp20 goldhaber.pdf (August 2007).

mathematics" or those "who receive accreditation from the National Board for Professional Teaching Standards (NBPTS)" was more modest.

[Figure 2]

While interesting and salient for those considering the likely teacher reaction to the idea of various pay reforms, there are also limits to what one should infer based on broad-based teacher responses to survey questions. For example, some reforms might be more appropriate to specific educational contexts, and policymakers might also be interested in how teacher attitudes evolve after having experienced first-hand changes in the structure of their pay. Indeed, analysis of teacher attitudes toward pay reform suggests that context is in fact quite important in shaping teacher views.

Ballou and Podgursky find that support for various types of pay incentives varies based not only on individual teacher attributes such as race and experience, but also on the characteristics of the students they teach. For example, there appears to be a generational divide when it comes to PFP (which is also reflected in some of the above survey findings), with younger teachers far more favorably inclined toward this type of pay structure. Additionally, they find that teachers are more likely to be favorably inclined toward PFP if they are teaching disadvantaged and low-achieving students, or have direct experience teaching in a system that has used it.²⁷

More recent work by Goldhaber, DeArmond and DeBurgomaster and Jacob and Springer

– which, like Ballou and Podgursky, analyzes the factors influencing teacher attitudes towards pay

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^{27.} Dale Ballou and Michael Podgursky, "Teacher Attitudes toward Merit Pay - Examining Conventional Wisdom.," *Industrial & Labor Relations Review* 47, no. 1 (1993). Interestingly they find that teachers in PFP districts were more supportive of it regardless of whether they themselves received a performance bonus.

reforms – also finds that attitudes depend on individual teacher attributes like experience.²⁸ Both also find that teaching context matters, with elementary level teachers being less supportive of PFP than are secondary level teachers, and, not surprisingly, teachers who have a positive view of their principal (or in the case of Jacob and Springer, those who report greater self-efficacy) being more supportive of incentive pay.

The extent to which these factors influence teachers is not trivial. For instance, as Table 1 shows, high school teachers are substantially more likely to at least somewhat favor PFP when they have a high degree of trust for their principal and a low degree of trust of their colleagues.

[Table 1]

This review of union positions and teacher attitudes toward pay reform suggests that successful engagement of teachers in reform efforts depends a great deal on local context and the process through which reforms are initiated. The next section explores this idea further, with a focus on the role that local decision-makers play in teacher pay reform.

III. Local Decision Makers and Pay Reform

The role that teachers unions and teacher attitudes play in influencing the politics of pay reform may be direct, for example through negotiated collective bargaining agreements or strikes, or more indirect via their influence on local decision-makers. Politicians are, of course, unlikely to implement pay reforms that they suspect could cost them their jobs. As Terry Moe points out, teachers (and unions) can greatly influence the outcomes of elections and thus play an outsized role in determining the political make-up of school boards and hence the policies of

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^{28.} Goldhaber, DeArmond, and DeBurgomaster, "Teacher Attitudes,"; Jacob and Springer, "Teacher Attitudes on Pay for Performance: A Pilot Study."

their localities.²⁹ Specifically, school boards are often elected in off year, low-turnout races where small shifts in the number of voters opting for particular candidates can swing a school board election.³⁰

The influence of teachers in these type of races is magnified by the fact that the much of the voting public may know little about school board candidates (for instance, when the race is concurrent with city council elections). Having teachers, or their designates, at polling places identifying board candidates as "the teachers' candidate" or "on the teachers' side" may be enough to tip the balance in some situations. Superintendents, while not usually directly elected, well understand the political dynamics of local races and dealing with an unhappy teacher workforce is certainly part of their calculation in pushing for or implementing particular policies. Oft times the safest thing to do is implement a delay strategy when it come to controversial policies that are sure to upset the apple cart, as a change in direction often accompanies the election of a new school board.

Although the attitudes of teachers and policy positions of teachers unions are certain to play a role in influencing reform, it would be erroneous to focus on them exclusively. Union power is weak in many states and localities, and while use of alternatives to the single salary schedule is somewhat more prevalent in these districts, it is still only a tiny minority of such districts—for instance, in localities without collective bargaining—that employ alternative compensation models.³¹

^{29.} Terry M. Moe, "Teacher Unions and School Board Elections," in *Besieged: School Boards and the Future of Education Politics*, ed. William G. Howell (Washington, D.C.: Brookings Institution Press, 2005); Terry M. Moe, "The Union Label on the Ballot Box," *Education Next* 6, no. 3 (2006). Moe tests the notion that teachers wish to influence school policies by examining whether teacher turnout in elections is higher if they live in the district in which they work. And, as he hypothesizes, teachers are significantly more likely to vote in such cases.

^{30.} For example, see the Summer 2006 issue of *Education Next*, which includes several articles on the relations between unions and school boards (accessed November 29, 2007 at http://www.hoover.org/publications/ednext/3211896.html). See Goldhaber et al., "Why Do So Few Public School Districts Use Merit Pay?"

Furthermore, surveys have suggested that, of various types of pay reforms, teachers appear to be most favorably inclined toward pay incentives for hard-to-staff schools, and the AFT, unlike the NEA, actually supports this type of reform. Overwhelming evidence shows that teachers are inequitably distributed across students, with the most-disadvantaged students being far more likely to be taught by the least-credentialed, least-experienced teachers, and that incentives designed to rectify this issue can be effective. Much of this inequity is a result of within-district teacher distributions, meaning that such disparities could be addressed through district-level policies. Given these facts, it is surprising that pay reform designed specifically to address this inequity (hard-to-staff school incentives) is precisely the type of reform that is least likely to be utilized by school districts (according to the 2003-04 wave of the Schools and Staffing Survey). Jacob and Springer, for example, report that in 2003-04, less than 5 percent of districts nationally use incentive pay to encourage teachers to take positions in less-desirable locations, as compared to over 10 percent who reward teachers in a shortage field and nearly 20 percent who reward teachers for being NBPTS-certified.

So if it's not teachers who oppose financial incentives for hard-to-staff schools, what could explain this? One speculative, but not unreasonable, suggestion is that the political interests of elected officials—not related to union opposition—explain the failure to use pay incentives to address within-district inequities. Turnout in school board elections is unlikely to be uniform throughout a school district; more-affluent neighborhoods tend to have more active parent populations, and thus these schools are likely to garner more attention from elected officials. As a

^{32.} See Charles T. Clotfelter et al., "Would Higher Salaries Keep Teachers in High-Poverty Schools? Evidence from a Policy Intervention in North Carolina? (Cambridge, MA: National Bureau of Economic Research, 2006); Charles T. Clotfelter, Helen F. Ladd, and Jacob L. Vigdor, "Teacher-Student Matching and the Assessment of Teacher Effectiveness," *Journal of Human Resources* 41, no. 4 (2006); and Hamilton Lankford, Susanna Loeb, and James Wyckoff, "Teacher Sorting and the Plight of Urban Schools: A Descriptive Analysis.," *Educational Evaluation and Policy Analysis* 24, no. 1 (2002).

result, it can be difficult to move a district's best teachers (through pay incentives or other policies) from the advantaged schools where they tend to be teaching to the disadvantaged schools where they are most needed.³³

The anticipated political consequences of pay reforms certainly hinder their adoption, but there are other important details that are often overlooked, and which are likely to play key roles in determining the success of any attempted reforms.

IV. The Devils in the Details: Where From Here?

The broad discussion around reforming teacher pay tends to belie some of the complicated issues that arise when figuring out the practical details of how a given reform would actually work. It is easy, for instance, for policymakers to suggest that we ought to move away from a single salary schedule toward a PFP-based system, and in the abstract, this concept may make perfect sense. But do we know precisely how to structure rewards? Should they be individual or group-based? Should they cover teachers that are not in tested areas? In the case of individual-based plans, do we know how to judge the value-added of specific teachers? Do we know the appropriate size of incentives needed to induce the changes in teacher behavior that we might wish to see? Do school systems have the support infrastructures – adequate data, sufficient capacity in human resource and accounting departments, and so on – to implement and administer a new pay system? Were pay reform to be adopted, how would we know whether it was effective?

I would argue that the answer to most of these questions is *no* for the vast majority of school systems. Group-based rewards, such as rewarding all teachers within a school, solve some of the sticky political issues that come up around pay reform in the sense that they provide

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^{33.} As described in Goldhaber, "Teacher Pay Reforms: The Political Implications of Recent Research," this may imply that some types of pay reforms are more likely to take hold at higher levels of government – for example, to be adopted by mayors or governors who have a greater political stake in the quality of *all* schools in a region, and who rely on broader constituencies than just public school parents.

incentives for collaboration and can easily include teachers that are not in tested areas. Such rewards have a downside, however, in that they also encourage free-riding and ignore within-school variation in performance. To my knowledge there is no research that assesses the efficacy of group versus individual teacher performance-pay plans. In the case of individual-based PFP, researchers are just beginning to explore the extent to which one can accurately evaluate individual teacher effectiveness based on student test scores and they have already encountered significant limitations in using value-added methodologies for this purpose.³⁴

Of course, linking teacher pay to student learning gains on standardized tests is not the only way of doing PFP; one could, for instance, reward teachers based on assessments from their peers or supervisors. As the Denver ProComp plan illustrates, deviations from the single salary schedule can certainly be more nuanced.

Despite a fair amount of experimentation with pay reforms, we know very little about how to structure them so that they are effective.³⁵ A major reason for this is that we have very little quantitative analysis on the effects of pay reform.³⁶ This in turn is because only a handful of

^{34.} For more on these issues, see Dale Ballou, "Value-Added Assessment: Controlling for Context with Misspecified Models," (Paper presented at the Urban Institute Longitudinal Data Conference, March 2005); Dale Ballou, William Sanders, and Paul Wright, "Controlling for Student Background in Value-Added Assessment of Teachers," *Journal of Educational and Behavioral Statistics* 29, no. 1 (2004); Daniel F. McCaffrey et al., "Models for Value-Added Modeling of Teacher Effects," *Journal of Educational and Behavioral Statistics* 29, no. 1 (2004); and Petra E. Todd and Kenneth I. Wolpin, "On the Specification and Estimation of the Production Function for Cognitive Achievement," *Economic Journal* 113, no. 485 (2003).

^{35.} See Michael DeArmond and Dan Goldhaber, "A Leap of Faith: Redesigning Teacher Compensation," (Seattle, WA: University of Washington: Center on Reinventing Public Education, 2007); Harry P. Hatry, John M. Greiner, and Brenda G. Ashford, *Issues and Case Studies in Teacher Incentive Plans*, 2nd ed. (Washington, DC: Urban Institute Press; Distributed by University Press of America, 1994); and Richard J. Murnane and David K. Cohen, "Merit Pay and the Evaluation Problem: Why Most Merit Pay Plans Fail and a Few Survive," *Harvard Educational Review* 56, no. 1 (1986). For example, should incentives be targeted to individual teachers or groups? How large should different types of incentives be?

^{36.} Some evidence suggests that group-based PFP awards impact school-level performance (see Charles T. Clotfelter and Helen F. Ladd, "Recognizing and Rewarding Success in Public Schools," in *Holding Schools Accountable: Performance-Based Reform in Education*, ed. Helen F. Ladd (Washington, D.C.: The Brookings Institution, 1996)), and some international evidence suggests that individual teacher-based PFP systems enhance teacher productivity (see Victor Lavy, "Evaluating the Effect of Teachers' Group Performance Incentives on Pupil Achievement," *Journal of Political Economy* 110, no. 6 (2002); Victor Lavy, "Performance Pay and Teacher's Effort, Productivity, and Grading

states currently have the data structure necessary to properly evaluate the effects of pay reforms (individual teacher-student links that can be tracked over time). This is slowly changing, as the *No Child Left Behind* (NCLB) *Act of 2001* has led to major upgrades in the amount of teacher and student data that are collected, and some recent pay reform legislation (the TIF, for example) requires that reforms be studied. Nevertheless, the available evidence base on which to draw inferences about different pay reform designs remains thin.

I do not believe that this lack of knowledge about how to structure effective reforms should stand in the way of experimenting with reform. What we do know about the single salary schedule suggests that it is not a system well suited to ensuring a high-quality teacher workforce that fairly allocates teachers across students.

The increasing availability of data, and the consequent research showing the variation in teacher effectiveness, has no doubt tipped the scales of political debate over teacher pay reforms. This is probably for the good, as we can only learn through experimentation what does or does not work. But there are reasons to be cautious, and to be realistic about the financial costs associated with reform. In particular, evidence to-date suggests that lasting, effective pay reforms cannot be achieved on the cheap: building the support, capacity, information and evaluation system infrastructures is crucial.

Confronting the issue of institutional inertia is central to managing the politics of pay reform. Furthermore, figuring out how to nudge systems away from the well-entrenched single salary schedule is no small task. If school districts and teachers are pushed too hard, they are likely to push back. For example, recent experiences with pay reform initiatives in Florida and Texas

Ethics," (Cambridge, MA: National Bureau of Economic Research 2004)), but only one major quantitative study has been done on the impact of individual teacher-based PFP in the U.S. (see David N. Figlio and Lawrence W. Kenny, "Individual Teacher Incentives and Student Performance," *Journal of Public Economics* 91, no. 5-6 (2007)).

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suggest that many school districts will balk at implementing reforms that are perceived to be top-down. Despite repeated attempts to boost teacher incentives in recent years, most of the merit-pay programs in Texas and Florida have been rejected. These experiences may also poison the water, lessoning the chances that districts will be willing to participate in the future.³⁷

More politically promising are reform initiatives (like those in Minnesota and the national Teacher Incentive Fund) that put additional monies on the table that districts can apply for should they wish to pursue pay reforms. The same logic would suggest an opt-in system for teachers in the existing workforce, with the understanding that opting in would likely require some sweetening of the pay pot. Under the single salary schedule, teachers have little doubt about their future earnings. Convincing them to accept changes (or hiring teachers of equal or better quality) will likely require increased salaries to compensate for any increased risk associated with a reformed pay structure.

The implementation of and support for pay reform programs may be at least as important in determining the success of a reform as the specifics of a program design. Perhaps one of the most important findings from surveys of teachers in states or districts that have undertaken pay reforms is that they often do not understand key features of how they work or even that there is a reform in place.³⁸ This is likely to both lessen the effectiveness of a reform, and open the door for misinformation (accidental or purposeful) that leads to political opposition. Consequently, investing in clear and direct lines of communication with teachers about the specifics of any reform program will be crucial to its success.

^{37.} See Tanya Cladwell, "Lake County Teachers Reject State Merit-Pay Bonuses," *The Orlando Sentinel*, 11/15/07 2007; Tom Marshall, "Schools May Drop Merit Pay," *St. Petersburg Times*, 11/5/07 2007; and Terrence Stutz, "50 Schools Reject Grants for Merit Pay Programs," *The Dallas Morning News*, 11/3/07 2007.

^{38.} See Clotfelter, Ladd, and Vigdor, "Teacher-Student Matching and the Assessment of Teacher Effectiveness," and Jacob and Springer, "Teacher Attitudes on Pay for Performance: A Pilot Study."

The single salary schedule, for all its shortcomings, has a number of appealing features. It is objective and easy to administer. It does not require any year-to-year adjustments or statistical analyses. This makes it less costly to administer, and means there is not likely to be much suspicion among teachers about the basis of their pay. It is not certain that public school systems, whose central offices are populated with former teachers who are used to the single salary schedule, will generally have the capacity to support such changes. Building capacity for pay reform is also likely to be costly in the short-run.

There is some indication that voters and policymakers are willing to ante up additional funding for teacher salaries if the funding goes toward pay reform initiatives. ProComp is a good illustration of this. For the system to be implemented, voters were first required to approve a ballot initiative to pay an additional \$25 million in taxes annually to fund it. Similarly, the federal TIF grants result in new monies going into systems that are willing to implement pay reforms. These anecdotal examples suggest there is the outline of a grand bargain between teachers and unions and pay reformers, whereby teachers accept some reforms if they come with a pay increase.

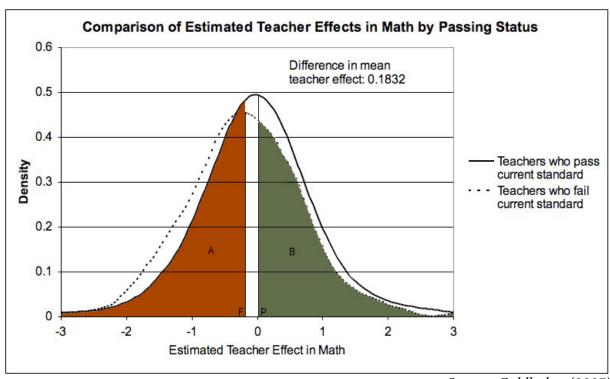
Unfortunately, individual political actors who successfully push reforms have strong incentives to "declare victory and go home," regardless of the evidence. For those who are truly committed to pay reform, however, this would be a mistake since the next governor, legislature, superintendent or school board is likely to reverse course. A history of failed attempts at pay reforms that were tried and abandoned for one reason or another illustrates the fact that, over the long run, reformers will likely bear the burden of proof in showing that a particular reform was in fact beneficial. In the absence of such evidence, it is hard to make a strong case for sustaining a

more-complex pay structure that tends to cause trouble with employees, or for the adoption of reforms by other districts (especially in the absence of any new money associated with adoption).

The sustainability of any new education policy is always dicey, and advocates of pay reforms have only a thin evidentiary base on which to make their case. Thus, it makes sense when advocating reforms to also push for (and invest in) credible research that can help determine both the impacts of reform as well as ways in which it might be improved.³⁹ Given the complicated political dynamics surrounding pay reform, rushing forward with ill-conceived or unsupported reforms that don't include an evaluation component could be potentially costly. High-profile pay reform failures—whether they are real or perceived—are likely to undermine the notion that such reforms can work.

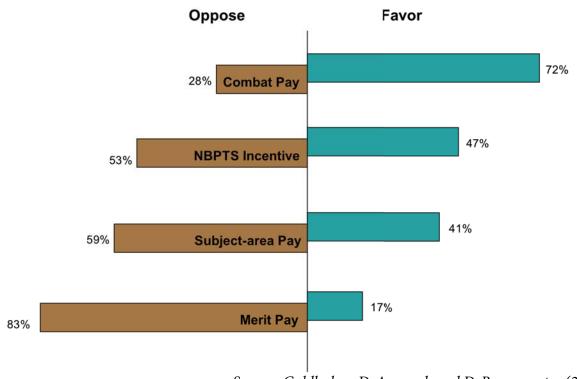
^{39.} Many of the implementation, support, and evaluation elements of pay reform that are advocated here are also embodied by the TIF grants.

Figure 1.
Comparison of Estimated Teacher Effects in Math by Passing Status



Source: Goldhaber (2007)

Figure 2.
Teachers' Attitudes Towards Different Pay Structures



Source: Goldhaber, DeArmond, and DeBurgomaster (2007)

Table 1.
Predicted Probabilities for Female Teachers' Support for Merit Pay

	Predicted Probability			
	Strongly	Somewhat	Somewhat	Strongly
	Favor	Favor	Oppose	Oppose
Teachers whose students make greater gains on standardized tests than similar students taught by other teachers				
Basic Ideal Types				
Veteran High School Teacher	0.03	0.14	0.24	0.59
Novice High School Teacher	0.04	0.18	0.27	0.51
Ideal Types with varying regard for coworkers				
Veteran High School Teacher Low teacher trust/High principal trust	0.09	0.25	0.29	0.37
Veteran High School Teacher High teacher trust/Low principal trust	0.01	0.07	0.18	0.74
Novice High School Teacher Low teacher trust/High principal trust	0.13	0.30	0.28	0.29
Novice High School Teacher High teacher trust/Low principal trust	0.02	0.10	0.21	0.67

Source: Goldhaber, DeArmond, and DeBurgomaster (2007)

Bibliography

- Allen, Steven G. "Trade Unions, Absenteeism, and Exit-Voice." *Industrial and Labor Relations Review* 37, no. 3 (1984): 331-45.
- Ashenfelter, O. C., G. E. Johnson, and J. H. Pencavel. "Trade Unions and the Rate of Change of Money Wages in the United States Manufacturing Industry." *The Review of Economic Studies* 39, no. 1 (1972): 27-54.
- Association, National Education. "The 2007 Nea Handbook." Washington, D.C.: National Education Association, 2007.
- Ballou, Dale. "Value-Added Assessment: Controlling for Context with Misspecified Models." Paper presented at the Urban Institute Longitudinal Data Conference, March 2005, 2005.
- Ballou, Dale, and Michael Podgursky. "Teacher Attitudes toward Merit Pay Examining Conventional Wisdom." *Industrial & Labor Relations Review* 47, no. 1 (1993): 50-61.
- Ballou, Dale, William Sanders, and Paul Wright. "Controlling for Student Background in Value-Added Assessment of Teachers." *Journal of Educational and Behavioral Statistics* 29, no. 1 (2004): 37-66.
- Baratz-Snowden, Joan. "The Future of Teacher Compensation: Déjà Vu or Something New." Washington, D.C.: Center for American Progress, 2007.
- Barone, Michael. 2007. Leaving the Children Behind in Favor of the Unions. In, National Review Online,
 http://article.nationalreview.com/?q=ZTU0NWM2M2Y5ZTgzNWFhODFjZWYxZTQyOWMzMDMwYTA=. (accessed 11/12/07, 2007).
- Bemmels, Brian. "How Unions Affect Productivity in Manufacturing Plants." *Industrial and Labor Relations Review* 40, no. 2 (1987): 241-53.
- Boyd, Donald, Pamela Grossman, Hamilton Lankford, Susanna Loeb, and James Wyckoff. "How Changes in Entry Requirements Alter the Teacher Workforce and Affect Student Achievement." *Education Finance and Policy* 1, no. 2 (2006): 176-216.
- Bretz, Robert D., and George T. Milkovich. "Performance Appraisal in Large Organizations: Practice and Research Implications." Ithaca, NY: Cornell University: Center for Advanced Human Resource Studies, 1989.
- Brewer, Dominic, Eric R. Eide, and Ronald G. Ehrenberg. "Does It Pay to Attend an Elite Private College? Cross-Cohort Evidence on the Effects of College Type on Earnings." *Journal of Human Resources* 34, no. 1 (1999): 104-23.
- Brown, Charles, and James Medoff. "Trade Unions in the Production Process." *The Journal of Political Economy* 86, no. 3 (1978): 355-78.
- Chait, Robin. "Current State Policies That Reform Teacher Pay: An Examination of Pay-for-Performance Programs in Eight States." Washington, D.C.: Center for American Progress, 2007.
- Cladwell, Tanya. "Lake County Teachers Reject State Merit-Pay Bonuses." *The Orlando Sentinel*, 11/15/07 2007.
- Clotfelter, Charles T., Elizabeth Glennie, Helen F. Ladd, and Jacob L. Vigdor. "Would Higher Salaries Keep Teachers in High-Poverty Schools? Evidence from a Policy Intervention in North Carolina?" Cambridge, MA: National Bureau of Economic Research, 2006.
- Clotfelter, Charles T., and Helen F. Ladd. "Recognizing and Rewarding Success in Public Schools." In *Holding Schools Accountable: Performance-Based Reform in Education*, edited by Helen F. Ladd. Washington, D.C.: The Brookings Institution, 1996.

- Clotfelter, Charles T., Helen F. Ladd, and Jacob L. Vigdor. "Teacher-Student Matching and the Assessment of Teacher Effectiveness." *Journal of Human Resources* 41, no. 4 (2006): 778-820.
- Corcoran, Sean P., William N. Evans, and Robert S. Schwab. "Women, the Labor Market, and the Declining Relative Quality of Teachers." *Journal of Policy Analysis and Management* 23, no. 3 (2004): 449-70.
- Costrell, Robert M., and Michael Podgursky. "Peaks, Cliffs, and Valleys: The Peculiar Incentives of Teacher Pensions." *Education Next* 8, no. 1 (2008): 22-28.
- DeArmond, Michael, and Dan Goldhaber. "A Leap of Faith: Redesigning Teacher Compensation." Seattle, WA: University of Washington: Center on Reinventing Public Education, 2007.
- Development, Committee for Economic. "Investing in Learning: School Funding Policies to Foster High Performance: A Statement on National Policy." Washington, D.C.: Committee for Economic Development, 2004.
- Eberts, Randall W., and Joe A. Stone. "Teacher Unions and the Cost of Public Education." *Economic Inquiry* 24, no. 4 (1986): 631-43.
- Education, National Commission on Excellence in. "A Nation at Risk: The Imperative for Educational Reform." Washington, D.C.: U.S. Department of Education: National Commission on Excellence in Education, 1983.
- Eide, Eric, Dan Goldhaber, and Dominic Brewer. "The Teacher Labour Market and Teacher Quality." *Oxford Review of Economic Policy* 20, no. 2 (2004): 230-44.
- Farber, Henry S. "Nonunion Wage Rates and the Threat of Unionization." Cambridge, MA: National Bureau of Economic Research, 2003.
- Figlio, David N., and Lawrence W. Kenny. "Individual Teacher Incentives and Student Performance." *Journal of Public Economics* 91, no. 5-6 (2007): 901-14.
- Freeman, Richard B. "Individual Mobility and Union Voice in the Labor Market." *American Economic Review* 66, no. 2 (1976): 361-68.
- Freeman, Richard B., and James L. Medoff. *What Do Unions Do?* New York City, NY: Basic Books, 1984.
- Glazerman, Steven, Daniel P. Mayer, and Paul T. Decker. "Alternative Routes to Teaching: The Impacts of Teach for America on Student Achievement and Other Outcomes." *Journal of Policy Analysis and Management* 25, no. 1 (2005): 75-96.
- Goldhaber, Dan. "Are Teachers Unions Good for Students?" In *Collective Bargaining in Education: Negotiating Change in Today's Schools*, edited by Jane Hannaway and Andrew Rotherham, 141-57. Cambridge, MA: Harvard Education Press, 2006.
- ——. "Everyone's Doing It, but What Does Teacher Testing Tell Us About Teacher Effectiveness?" *Journal of Human Resources* 42, no. 4 (2007): 765-94.
- ——. "Teacher Pay Reforms: The Political Implications of Recent Research." Washington, DC: Center for American Progress, 2006.
- ———. "Why Do We License Teachers?" In *A Qualified Teacher in Every Classroom? Appraising Old Answers and New Ideas*, edited by Frederick M. Hess, Andrew J. Rotherham and Kate Walsh, 81-100. Cambridge, MA: Harvard Education Press, 2004.
- Goldhaber, Dan D., and Dominic J. Brewer. "Why Don't Schools and Teachers Seem to Matter? Assessing the Impact of Unobservables on Educational Productivity." *Journal of Human Resources* 32, no. 3 (1997): 505-23.

- Goldhaber, Dan, Michael DeArmond, and Scott DeBurgomaster. "Teacher Attitudes About Compensation Reform: Implications for Reform Implementation." SFRP Working Paper 20. Available online at
 - http://www.schoolfinanceredesign.org/pub/pdf/wp20_goldhaber.pdf (August 2007).
- Goldhaber, Dan, Daniel Player, Michael DeArmond, and Hyung-Jai Choi. "Why Do So Few Public School Districts Use Merit Pay?" *Journal of Education Finance* 33, no. 3 (2008): 262-89.
- Gonring, Phil, Paul Teske, and Brad Jupp. *Pay-for-Performance Teacher Compensation: An inside View of Denver's Procomp Plan.* Cambridge, MA: Harvard Education Press, 2007.
- Green, Elizabeth. 2007. Voucher Showdown Set for Tuesday in Utah. In, Premium, The New York Sun, http://www.nysun.com/article/65835?page no=1. (accessed 11/5/07, 2007).
- Grogger, Jeff, and Eric Eide. "Changes in College Skills and the Rise in the College Wage Premium." *Journal of Human Resources* 30, no. 2 (1995): 280-310.
- Hanushek, Eric A. "The Economics of Schooling Production and Efficiency in Public-Schools." *Journal of Economic Literature* 24, no. 3 (1986): 1141-77.
- ——. "The Failure of Input-Based Schooling Policies." *Economic Journal* 113, no. 485 (2003): 64-98.
- Hanushek, Eric A., and Richard R. Pace. "Who Chooses to Teach (and Why)?" *Economics of Education Review* 14, no. 2 (1995): 101-17.
- Hatry, Harry P., John M. Greiner, and Brenda G. Ashford. *Issues and Case Studies in Teacher Incentive Plans*. 2nd ed. Washington, DC: Urban Institute Press; Distributed by University Press of America, 1994.
- Hoxby, Caroline M., and Andrew Leigh. "Wage Distortion: Why America's Top Female College Graduates Aren't Teaching." *Education Next* 4, no. 2 (2005): 50-56.
- Jacob, Brian, and Matthew G. Springer. "Teacher Attitudes on Pay for Performance: A Pilot Study." National Center on Performance Incentives, 2007.
- Jalsevac, Meg. 2007. Teacher Unions Real Reason Utah Parents Lost School Choice Vote. In LifeSiteNews.com, LifeSiteNews.com, http://www.lifesite.net/ldn/2007/nov/07110905.html. (accessed November 2007, 2007).
- Kane, Thomas J., Jonah E. Rockoff, and Douglas O. Staiger. "What Does Teacher Certification Tell Us About Teacher Effectiveness? Evidence from New York City." In *Working Paper Series*. Stanford, CA: National Bureau of Economic Research, 2006.
- Lankford, Hamilton, Susanna Loeb, and James Wyckoff. "Teacher Sorting and the Plight of Urban Schools: A Descriptive Analysis." *Educational Evaluation and Policy Analysis* 24, no. 1 (2002): 37 62.
- Lavy, Victor. "Evaluating the Effect of Teachers' Group Performance Incentives on Pupil Achievement." Review of 2002. *Journal of Political Economy* 110, no. 6 (2002): 1286-317.
- ——. "Performance Pay and Teacher's Effort, Productivity, and Grading Ethics." Cambridge, MA: National Bureau of Economic Research 2004.
- Marshall, Tom. "Schools May Drop Merit Pay." St. Petersburg Times, 11/5/07 2007.
- McCaffrey, Daniel F., J. R. Lockwood, Daniel Koretz, Thomas A. Louis, and Laura Hamilton. "Models for Value-Added Modeling of Teacher Effects." *Journal of Educational and Behavioral Statistics* 29, no. 1 (2004): 67-101.
- Mefford, Robert N. "The Effect of Unions on Productivity in a Multinational Manufacturing Frm." *Industrial and Labor Relations Review* 40, no. 1 (1986): 105-14.

- Miller, George, and Howard P. McKeon. "Discussion Draft: Title Ii_Teacher Excellence for All Children." 2007.
- Moe, Terry M. "Teacher Unions and School Board Elections." In *Besieged: School Boards and the Future of Education Politics*, edited by William G. Howell. Washington, D.C.: Brookings Institution Press, 2005.
- ———. "The Union Label on the Ballot Box." *Education Next* 6, no. 3 (2006): 58-67.
- Murnane, R. J., J. B. Willett, and F. Levy. "The Growing Importance of Cognitive Skills in Wage Determination." *Review f Economics and Statistics* 77, no. 2 (1995): 251 66.
- Murnane, Richard J., and David K. Cohen. "Merit Pay and the Evaluation Problem: Why Most Merit Pay Plans Fail and a Few Survive." *Harvard Educational Review* 56, no. 1 (1986): 1-17.
- Podgursky, Michael J., and Matthew G. Springer. "Teacher Performance Pay: A Review." *Journal of Policy Analysis and Management* 26, no. 4 (2007): 909-49.
- Press, Associated. 2007. Utah Voters Defeat Measure to Create U.S. First Statewide School Voucher Program. In, foxnews.com, http://www.foxnews.com/story/0,2933,308936,00.html. (accessed 11/7/07, 2007).
- Prince, Cynthia. "Higher Pay in Hard-to-Staff Schools: The Case for Financial Incentives." Arlington, VA: American Association of School Administrators, 2002.
- Quality, Center for Teaching. "Performance-Pay for Teachers: Designing Systems That Students Deserve." Washington, D.C.: Center for Teaching Quality, 2007.
- Rivkin, Steven, Eric A. Hanushek, and John F. Kain. "Teachers, Schools and Academic Achievement." *Econometrica* 73, no. 2 (2005): 417-58.
- Rosen, Sherwin. "Trade Union Power, Threat Effects and the Extent of Organization." *The Review of Economic Studies* 36, no. 2 (1969): 185-96.
- Roundtable, The Business. "Pay-for-Performance in Education: An Issue Brief for Business Leaders." Washington, D.C.: The Business Roundtable, 2000.
- Strizek, Gregory A., Jayme L. Pittsonberger, Kate E. Riordan, Deanna M. Lyter, and Greg F. Orlofsky. "Characteristics of Schools, Districts, Teachers, Principals, and School Libraries in the United States: 2003-04 Schools and Staffing Survey." Washington, D.C.: U.S. Department of Education, National Center for Education Statistics., 2006.
- Stutz, Terrence. "50 Schools Reject Grants for Merit Pay Programs." *The Dallas Morning News*, 11/3/07 2007.
- Todd, Petra E., and Kenneth I. Wolpin. "On the Specification and Estimation of the Production Function for Cognitive Achievement." *Economic Journal* 113, no. 485 (2003): F3-F33.
- Walsh, Kate. "Teacher Certification Reconsidered: Stumbling for Quality." 86. Baltimore: Abell Foundation, 2001.

Faculty and Research Affiliates

Matthew G. Springer

Director

National Center on Performance Incentives

Assistant Professor of Public Policy and Education

Vanderbilt University's Peabody College

Dale Ballou

Associate Professor of Public Policy and Education

Vanderbilt University's Peabody College

Leonard Bradley

Lecturer in Education
Vanderbilt University's Peabody College

Timothy C. Caboni

Associate Dean for Professional Education and External Relations

Associate Professor of the Practice in Public Policy and Higher Education Vanderbilt University's Peabody College

Mark Ehlert

Research Assistant Professor University of Missouri – Columbia

Bonnie Ghosh-Dastidar

Statistician
The RAND Corporation

Timothy J. Gronberg

Professor of Economics
Texas A&M University

James W. Guthrie

Senior Fellow George W. Bush Institute

Professor Southern Methodist University

Laura Hamilton

Senior Behavioral Scientist RAND Corporation

Janet S. Hansen

Vice President and Director of Education Studies Committee for Economic Development

Chris Hulleman

Assistant Professor

James Madison University

Brian A. Jacob

Walter H. Annenberg Professor of Education Policy Gerald R. Ford School of Public Policy University of Michigan

Dennis W. Jansen

Professor of Economics Texas A&M University

Cory Koedel

Assistant Professor of Economics University of Missouri-Columbia

Vi-Nhuan Le

Behavioral Scientist RAND Corporation

Jessica L. Lewis

Research Associate
National Center on Performance Incentives

J.R. Lockwood

Senior Statistician RAND Corporation

Daniel F. McCaffrey

Senior Statistician PNC Chair in Policy Analysis RAND Corporation

Patrick J. McEwan

Associate Professor of Economics Whitehead Associate Professor of Critical Thought Wellesley College

Shawn Ni

Professor of Economics and Adjunct Professor of Statistics University of Missouri-Columbia

Michael J. Podgursky

Professor of Economics *University of Missouri-Columbia*

Brian M. Stecher

Senior Social Scientist RAND Corporation

Lori L. Taylor

Associate Professor Texas A&M University

Performance Incentives

EXAMINING PERFORMANCE INCENTIVES IN EDUCATION

National Center on Performance Incentives Vanderbilt University Peabody College

Peabody #43 230 Appleton Place Nashville, TN 37203

(615) 322-5538 www.performanceincentives.org

