

RESEARCH &
EVALUATION

NOVEMBER 2010

**Recommended Citation**

Jensen, U, G. Yamashiro and K. Tibbetts. 2010. *What Do We Know about Teacher Pay-for-Performance?* Honolulu: Kamehameha Schools.



KAMEHAMEHA SCHOOLS

What Do We Know about Teacher Pay-for-Performance?

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Executive Summary

Research has shown that teachers and teacher expertise are the most important factors related to student learning and achievements (Darling-Hammond 1997). However, the importance of teachers to student achievement has not always been reflected in how teachers are compensated. Literature describing the current reform efforts that link teacher performance to compensation and other incentive strategies reveals the following key takeaways:

The issues driving the need for compensation reform in education:¹

- There is highly visible support for linking teacher quality and compensation, based in part on the weak links between teacher experience and educational credentials and student achievement (Springer 2009).
- A major factor in the current attention being paid to teacher professional development and compensation is attrition due to retirement and teachers leaving the profession for more lucrative opportunities. (Margolis 2008; Chait and Miller 2009; Boyd, et al. 2009)
- Another major factor is the difficulties many jurisdictions are experiencing at they attempt to recruit and retain new teachers, due at least in part to financial and social/generational issues. (Liu, et al. 2004; Murnane and Steele 2007; Cogshall, et al. 2009)

The current knowledge base regarding teacher compensation including key components of strategies and performance pay models:

- Some research suggests equitable teacher compensation and development leads to increased teacher engagement. (Heneman, et al. 2007)
- There are a number of models including skill-based pay, individual-based performance, school-based performance and plans that combine elements of each of these. (Conley and Odden 1995; Mohrman, et al. 1996; Heneman, et al. 2007)

Considerations for the development of “best practice” pay-for-performance strategies:

- The most promising systems are based on a collaborative effort from teachers and administrators that honors multiple perspectives and builds trust. (Firestone 1991; Ellerson 2009)
- Use of assessments of teacher performance and learner outcomes that are valid, reliable, and feasible. (Conley and Odden 1995; Heneman, Minaowski and Kimball 2007; Joint Committee on Standards for Educational Evaluation 2010)
- Financial incentives can contribute to positive changes in teaching practices and student outcomes, particularly when coupled with professional development and a supportive organizational structure. (Cogshall, et al. 2009; Firestone 1991; Springer, et al. 2010)

¹ This review places particular emphasis on performance pay in education, defined as any program that compensates educators based at least in part on student growth or achievement.

Introduction

Research has shown that teachers and teacher expertise are the most important factors related to student learning and achievements (Darling-Hammond 1997). However, the importance of teachers to student achievement has not always been reflected in teacher compensation. With the recent award of the Race to the Top Phase 2 (RTT) grant, Hawai'i's education system is charged with demonstrating reforms to increase student achievements and outcomes. These reforms will drive a review of teacher compensation standards and strategies in the State of Hawai'i. As Kamehameha Schools continues to review and revise the ways in which it recruits, rewards, and retains teachers and the Hawai'i public school system moves to align with the reform agenda outlined by RTT (Common Education Agenda), a review of the current state of scholarship in teacher development (including compensation) and student outcomes, is indicated. This literature review addresses one important aspect of this reform—performance pay, defined here broadly as any program that compensates educators based at least in part on student growth or achievement. The purpose of this literature review is to describe the current reform efforts that link teacher performance to compensation and other incentive strategies.

Teacher compensation has long been based solely on individual development criteria such as length of service and level of education attained. These criteria were initially aimed at preventing pay inequity between men and women prevalent until the 1940s. These criteria also helped to protect teachers against subjective administrators, and to give incentives to younger teachers to stay in the classroom (Firestone 1995). Recently, this traditional compensation system has been criticized as there are weak relationships among teacher skills, teacher development, student performance, and teacher compensation. While advocates champion pay-for-performance as a tool for recruiting and keeping more effective teachers and motivating higher performance, many educators challenge such programs due to the limited evidence that they improve student achievement. Critics and supporters alike also warn against using inadequate measures for evaluating student and teacher performance (Springer 2009).

This review will cover three major areas: first, it will review the issues driving the push for compensation reform, including the need to recruit more qualified teachers and reduce the attrition of effective teachers. Second, it will provide a brief summary of the current knowledge base regarding teacher compensation, including key components of strategies and performance pay models. Finally, the implications of the literature review and considerations for the development of “best practice” pay-for-performance strategies will be discussed.

What is driving teacher compensation reform?

Pay-for-performance is appearing as a strategy increasingly implemented on the district, state and even national levels to address issues of teacher quality, recruitment, and retention in hopes that it will improve academic outcomes. There is a wide-spread perception that the quality of American schools will not ensure a secure future for upcoming generations. As reported in a recent editorial “One-quarter of U.S. high school students drop out or fail to graduate on time. Almost one million students leave our schools for the streets each year... America's youth are now tied for ninth in the world in college attainment.” (Friedman 2010). Although many factors contribute to educational achievement, quality teaching is clearly a significant element (Darling-Hammond 1997).

In addition to a perceived lack of quality, or at least unevenness in quality of teaching, the nation is facing an imminent teacher shortage. The contemporary literature shows that the reasons for the shortage of teachers are multifold, but tend to center around two main factors: teacher recruitment and teacher attrition. The first factor, teacher recruitment, refers to the shortage of new teachers entering or even considering the profession due to social and economic considerations. The second factor, teacher attrition is due to teacher retirement or teachers who are already in the profession leaving or transferring to other occupations. Both factors, in addition to the increase in student population, are becoming growing issues in education.

Teacher Quality

For most stakeholders, the primary purpose of educational reform in general and compensation reform in particular is to help ensure access to quality education/teaching for all students. Pay structures that reward teachers based on individual or group effectiveness (merit pay) is one strategy for accomplishing this goal. Curtis (2010) states “The purpose of developing and implementing a human capital strategy is to drive significant and lasting improvement to overall student achievement. To do so, we must improve the quality of teaching and reduce the variance in teaching quality.” (p. 10).

Defining teacher quality is difficult and not within the scope of this brief report. However, it is helpful to know that definitions of teacher quality range from bare-bones approaches that rely solely on student achievement as measured by standardized test scores to complex portrayals of teaching based on rich descriptions of the work of teachers, including moral and ethical components of practice (Cochran-Smith 2010). It is also difficult because of the diversity of teacher preparation, assignments, and supports available in the contexts in which they teach (Cohen 2010).

Regardless of the challenges inherent in reaching agreements on the definition and measurement of teacher quality, there is visible support for the concept of pay-for-performance systems, based at least in part on the observed weak links between teacher experience and educational credentials and student achievement (Springer 2009). At the current time, a number of research and evaluation projects are underway to assess the potential of pay-for-performance systems to make a positive impact on student achievement and to identify the characteristics of effective and ineffective programs.

Teacher Recruitment

Studies have revealed that salary gaps between teachers and non-teachers with similar technical training dissuade potential teachers from entering the profession and discourage current teachers from staying (Chait and Miller 2009). In a study of teachers’ career paths, Margolis (2008) found that teacher salaries are disproportionately low and that this caused highly skilled potential teachers to look for higher earning positions. The author concluded that the historical perception of teaching as “woman’s work” still affects teacher compensation. Margolis further concludes that “retaining the best teachers will depend on salary reforms, including merit pay, so that the talented can afford to stay in the profession and be compensated justly for their gifts” (p. 4). Because financial factors greatly affect decisions to enter and stay in the education field, implementing financial incentives is an obvious response to the situation.

Teacher recruitment will continue to be an issue if the supply of teachers cannot meet the growing demand of students. In 2005, 42 percent of teachers were over the age of fifty (Chait and Miller 2009) and so almost half of current teachers could be on the verge of retirement. The demand for teachers grows as immigration and more births increase school enrollment. With class sizes declining in recent decades and state policies that cap class sizes, the increase in students and the increase in classes contribute to the increasing demand for teachers (Murnane and Steele 2007). The projected demand for teachers is creating an increased focus in teacher recruitment initiatives. The Teacher Incentive Fund—a federal program created in 2006 that provides grants to states, schools and nonprofit organizations—has funded successful programs such as the Mission Possible program in North Carolina which awards recruitment and retention bonuses for designated Mission Possible schools (Chait and Miller 2009).

In a review of the market forces in the teacher labor market, Murnane and Steele (2007) describe how decisions about teaching (and teaching at a certain school) depend on financial incentives “but also on a wide range of non-pecuniary incentives, such as working conditions” (p. 20). For example, it is difficult to recruit teachers in such working conditions as large, urban, low-income schools. Policies that create salary structures that compensate teachers for working in more difficult school environments may not effectively retain teachers unless work conditions are also improved.

Some efforts have focused on financial incentives such as signing bonuses to increase teacher recruitment, but a study by Liu, Johnson, and Peske (2004) found that an alternative teacher licensing program played a greater role than a \$20,000 signing bonus in participants' decisions to start teaching. The study concludes that the signing bonus program focused too much on recruitment and the individual and not enough on retention, capacity-building, and the school. Similarly, Borman and Dowling (2008) found that higher salaries and incentives for teaching in schools serving low-income communities, although expensive, were beneficial policy options. They found that incentives could be more effective when used in conjunction with a focus on retention, rather than focusing solely on recruitment.

Teacher Attrition

Attrition is another side of the issue of teacher shortage. While salary and work conditions affect the recruitment of teachers, these and other factors also influence teachers' decisions to leave the profession. Factors such as school conditions, teacher preparedness and effectiveness, and in-service support interplay to affect both student achievement and teacher attrition. Another study of 50 new Massachusetts teachers shows that lack of support and resources and "few prospects for improvement or success, either in their schools or in other public schools" caused some teachers to leave (Johnson and Birkeland 2003, p. 594). Less effective teachers could greatly benefit from increased support and resources for their development. A study looking at attrition rates of first-year teachers in both low- and high-performing schools in New York City found that teachers who were less effective in improving student math scores had higher attrition rates than more effective teachers, especially if teaching in a low-performing school (Boyd et al. 2009). At low-performing schools, more effective teachers tended to transfer to higher-performing schools while less effective teachers would stop teaching all together or transfer to another low-performing school where they would be, on average, less effective than their peers.

Ingersoll (2001) found school staffing problems thought to be caused by increased retirement and school enrollment, and often attempted to be solved through recruitment efforts, were due to much larger factors. His analysis of large, national school staff and teacher surveys showed job dissatisfaction around school/organizational conditions contributes to teacher turnover. Unsupportive administrations, limited faculty input in decision-making, and student discipline problems were correlated with teachers leaving schools and creating gaps in staffing. Focusing on improving job and school conditions and other (non-compensation) retention efforts such as teacher development initiatives has been shown to engage and support teachers and keep them in schools, thus helping to reduce the need to recruit more teachers.

On top of the many financial and organizational factors playing into why teachers stay in the profession is intrinsic value. For example, Johnson and Birkeland (2003) found that teachers stayed because they felt like they made a difference for students, even though they are dissatisfied with the drawbacks of low pay, high demands, low public respect and lack of career paths.

Changing Workforce

Aside from economic factors, social trends have also contributed to the shortage of qualified teachers. Today's potential teachers are of a different generation and live in a work context full of more attractive career options (Johnson and Birkeland 2003). Generation Y teachers (those born between 1979 and 1995) make up over 18 percent of teachers and will continue to grow. Therefore, their needs, concerns and preferences need to be addressed to retain them in the profession (Coggshall et al. 2009). Margolis' findings from a study of teachers with 4-6 years experience are consistent with teacher retention literature in that new generation teachers, who want "challenge, ways to remain fresh, and recognition when deserved," are taking advantage of teacher development activities and paths for advancement (2008). To meet new expectations and to promote job satisfaction and retention, he suggests exploring merit pay options, job differentiation and university-school partnerships.

The Retaining Teacher Talent study found that "Gen Y" teachers are more open to differentiated pay based on performance and duties (but not based on student achievement) than are older teachers, but that performance pay is secondary to other retention and teacher improvement initiatives such as raising salaries, increasing

parent involvement, and professional development opportunities (Cogshall et al. 2009). Many Gen Y teachers also support removing ineffective teachers, want individualized feedback from principals, desire meaningful collaboration with other teachers, and believe they will have long-term careers in education.

Summary

Challenges related to teacher quality, attrition, and recruitment lay at the foundation of proposed reforms to traditional teacher compensation systems. While the potential for pay-for-performance systems to improve teacher quality is unclear, what is clear is that there is a perceived need to recognize and reward high quality instruction.

As suggested in the research literature, increasing teacher recruitment and retention is likely to require a multi-prong approach involving the improvement of organizational conditions, job opportunities and professional development in conjunction with some sort of financial reward system. While the inclusion of different professional development and recruitment components may vary greatly, the one component that remains constant is pay. Low pay, or pay that does not reflect the increased capacity of educators, is a deterrent in teachers' decisions to enter or stay in the profession.

How best to change the way teachers are financially compensated is the most controversial piece of pay-for-performance models, as it inherently changes the long-standing single salary schedule that honors experience and degrees (Springer 2009). However, to improve the quality, recruitment, retention and recognition of teachers and, consequently, to benefit their students, teacher compensation reform on the local, state and national levels seems inescapable.

What models of compensation reform are being implemented?

A performance pay plan is defined as “any systematic process for measuring teacher behavior or results, and linking these measurements to changes in teacher pay” (Heneman, Minaowski, and Kimball 2007). Performance pay plans come in all shapes and sizes and often include components in addition to compensation packages such as professional development and/or performance management. Alternatives to the traditional single salary schedule include systems of compensation based on teacher professional skill and knowledge and individual or school-based performance evaluation (Kelley 1997). A summary of the major approaches is provided in Figure 1. This is an adaptation of Heneman, Minaowski and Kimball's description of performance pay plans. In addition to the compensation models in Figure 1, incentive-based hard-to-staff school programs, hard-to-staff subject programs, and other recruitment and retention award programs have been implemented to alleviate teacher retention issues particular to certain types of schools, districts, and subject areas.

Figure 1: Common Types of Performance Pay Plans

Types of Performance Pay Plans	Description
Knowledge- and skill-based pay	<ul style="list-style-type: none"> • Base-pay increase or bonus for demonstrating skill/competency • Revised salary schedule with performance-linked career ladder progression
Individual-based performance pay	<ul style="list-style-type: none"> • Also known as merit pay • Individually based performance indicators • Teachers compete for bonuses • May modify single salary schedule
School-based performance pay	<ul style="list-style-type: none"> • School-level plan with school-wide performance indicator goals • Keep single salary schedule but add bonuses
Combined Plan	<ul style="list-style-type: none"> • Could include individual/skill-based and school-level performance measures • Additional pay on top of salary for meeting skill, evaluation, student achievement requirements • Single salary schedule replaced

Knowledge- and Skill-Based Pay

Knowledge and skill-based pay plans foster professional development, collaboration, and horizontal and vertical movement, creating a framework for what skills to reward. These inputs help align educator professional development goals and activities to the specific skills and competencies desired at the school. Although school needs and teacher education and professional development may be aligned, there is sometimes a disconnect between the content of individuals' certificates or degrees and the application of this content to practice. When this occurs, the professional development may not contribute to achievement of school goals (Mohrman, Mohrman and Odden 1996).

On the other hand, determining which skills to foster, which professional development framework or career ladder to implement, and which assessment methods to apply are debated points of this type of plan (Conley and Odden 1995). Studies have shown that it was difficult for teachers to understand skill requirements, the pay structure and system procedures. Teachers were also concerned with glitches in implementation, lack of alignment to HR and other systems, and the exclusion of administrators from being similarly accountable (Heneman, Minaowski and Kimball 2007). However, skill-based pay can be effective in motivating educators to acquire new skills which may in turn increase their capacity to "contribute more flexibly and broadly to the school's purpose" (Mohrman, Mohrman and Odden 1996, p.57).

Individual-Based Performance Pay

Similar to skill-based plans that reward individuals for attaining knowledge and skills identified by the organization, individual-based performance pay plans also compensate on an individual level but assess individual behaviors and outcomes based on performance evaluations, student test scores, graduation rates, etc.. Often known as merit pay, this is effective in organizations in which there are direct, defined links to measure value-added and merit. The fact that some teachers limit their pursuit of continuing learning and development after reaching their top salary step points to the utility of financial incentives (Agam, Reifsnider, Wardell 2006).

Because student tests and teacher observation/performance evaluations can be considered biased or unreliable, individual-based performance pay was discontinued in some school districts, specifically after problems with administration (i.e., record keeping and personnel evaluation), questionable evaluation methods, staff dissension, bonus pay determination, and false assumption of teacher motivation (Conley and Odden 1995). Technical issues of implementation could be troublesome for performance evaluation and pay, or the problem could be more fundamental in nature. For example, how can the effects of an individual teacher be measured by student performance when that student has multiple teachers? While this type of pay plan may work in business or private sectors, rewards tied to individual performance could discourage teamwork among teachers, particularly when it is set up so teachers compete for a finite pool of awards (Mohrman, Mohrman and Odden 1996).

School-Based Performance Pay

School-based, or group-based pay for performance plans recognize that teachers don't work in isolation and compensate interdependent groups based on their attainment of organizational goals. The quality and accuracy of assessments is again an issue but may be less problematic when linked to school or group level performance as it doesn't single out the efforts and effects of an individual teacher.

A team of teachers or an entire school staff could receive bonuses for achieving school objectives. The challenge with this approach is the potential for the "free rider" problem. That is, there may be pressure on the school as a whole but this may not filter down to improved contributions from all teachers and administrators (Harris and McCaffrey 2010). The effective application of group-based pay in other industries requires that the group have the resources necessary to achieve the goals, that individual work be interdependent, and that group work be independent of other groups (Mohrman, Mohrman and Odden 1996). Also, because it is increasingly difficult to differentiate individual impact, the larger a group becomes, group-based compensation loses its effect on

shaping and giving incentive to individual behaviors (Mohrman, Mohrman and Odden 1996). As a teacher's individual contribution is distanced from the achievement of the group, it becomes increasingly unclear what behaviors contribute to achievement of school goals and it could be questioned whether individual impacts are made on a school level.

On the other hand, a review of school-based performance award plans found that schools whose teachers expected their individual contribution to help meet school performance goals did meet their performance goals (Heneman, Minaowski, and Kimball 2007). If teachers are well-equipped and feel confident in achieving school-wide goals and assessment and performance assessments are sound, school-based compensation could motivate staff to work together to meet school goals while leaving behind controversial ties to individual performance evaluation.

Combined Plans

Combined plans join the elements of multiple approaches to compensation reform employing a multi-faceted approach to enhancing teacher performance. For example, the Denver ProComp plan uses teacher knowledge and skills (skills-based compensation), professional evaluation (individual-based), market incentives, and student growth to decide the performance pay that is added to a base salary (Heneman, Minaowski, and Kimball 2007). Another combined plan, the Teacher Advancement Program (TAP), joins financial incentive components with training and career advancement to improve teacher effectiveness (Sawchuk 2009). But having multiple components can still create issues with system alignment, fairness and trust in the pay-for-performance model and/or performance reviews done by administrators (Heneman, Minaowski and Kimball 2007).

Summary

In general, pay-for-performance plans are promoted as an alternative to the single salary schedule with the goal of attracting and retaining talented individuals from other career fields and providing compensation more reflective of teacher effectiveness. Because pay-for-performance systems can hold educators accountable for student outcomes when many contributing factors are beyond their control, some authors suggest alternative accountability systems which do not link directly to compensation. Opponents are also concerned about the potential of pay-for-performance to discourage teamwork and collaboration among teachers and administrators.

Another concern is the quality of teacher evaluation tools which are used to link student achievement to teacher effectiveness. The potential to shift the focus of teaching only to those actions that are linked to rewards and to crowd out intrinsic rewards with external rewards are additional sources of concern (Springer 2009). With any of these approaches, in under-resourced schools or schools with weak or unaligned professional development, teachers may not have the supports necessary to meet organizational goals.

James W. Stigler (2010) criticizes reform that focuses on outcomes rather than the process that produces those outcomes and advocates for a teacher-owned and teacher-driven improvement process such as in the "lesson study" movement in Japan, in which teacher groups develop, implement, share, and critique teaching methods in response to variability in student test scores.

Despite the list of concerns, thoughtful and collaboratively developed models like Denver ProComp have demonstrated the potential to create systems that increase teacher recruitment and retention and contribute to higher levels of student achievement (Gonring, Teske, and Jupp 2007).

What to consider in developing a pay-for-performance plan?

Regardless of how it is implemented, compensation reform will be an item of controversy. Because it departs from the traditional pay schedule, utilizes alternative and sometimes questionable indicators and assessments of success, and is new, performance pay on any level is likely to meet resistance in education despite its historical application in the private sector (Mohrman, Mohrman and Odden 1996).

Sometimes seen as a wedge between faculty and administrators, pay-for-performance can become a top-down, us-against-them type of school and compensation reform. Both faculty and administrators should be involved in the shaping of a pay-for-performance plan to ensure trust and buy-in to the new system. One national study illuminated the potential challenges in building collaboration around reform efforts. The study showed that 75 percent of administrators identified teachers and teacher unions as the greatest obstacle to compensation reform (Ellerson 2009). Through collaborative efforts, comprehensive guidelines for change can be developed around the shared goals of increased educator capacity and improved student outcomes.

Links between teacher knowledge and behaviors, student outcomes, and compensation need to be crafted based on sound research, high quality measurements, and the highest values of education. In implementation, issues related to the validity, reliability, and feasibility of performance evaluation measures and processes for teachers and students must be carefully addressed by both administrators and faculty. Any system should be consistent with the principles of propriety, utility, feasibility, and accuracy found in The Personnel Evaluation Standards (Joint Committee on Standards for Educational Evaluation 2009).

Although research shows that compensation strategies can be an effective piece of reform, pay alone is not all that needs to be considered with regard to compensation strategies. While researchers have found that improvements in teacher recruitment and retention are correlated to financial factors, teacher retention is also highly influenced by professional development opportunities, work conditions, organizational structure and teacher support. Part of improving organizational conditions is promoting a professional culture that increases retention of new teachers and the new generation of workers, who put performance pay second to other teacher development initiatives (Coggshall et al. 2009). Strategies that address only performance pay may not provide adequate support to highly motivated teachers who need additional assistance and skill development.

A multi-step approach to development and implementation of compensation reform has proven not only successful but necessary in some contexts (e.g., the ground-breaking Denver ProComp system). The implementation of a combination plan could begin with a skills-based component and link the acquisition of knowledge and skills desired by the school or district to compensation. Additional performance-based measures such as student achievement could be phased in after the development and successful implementation of reliable and valid measures and assessments.

Compensation can be a small or large element of educational reform and could be included in novel, contextualized ways such as non-financial rewards. As Hawai'i considers educational reform opportunities, decisions should not be hindered by the many negative aspects pointed out by critics and opponents. But rather, decisions should be fueled by the lessons learned from each of the studies, pilots and programs reviewed here and elsewhere.

Annotated Bibliography

Agam, K., D. Reifsneider, et al. (2006). The Teacher Advancement Program: National Teacher Attitudes, The Teacher Advancement Program Foundation.

This paper is the most recent report summarizing the ongoing study of teacher attitudes and satisfaction with TAP. This paper reports on both results from the 2005 teacher attitudinal survey, as well as a look at teachers' opinions about TAP over time. Both the 2005 results as well as the longitudinal data reveal that in general TAP teachers accept and support the system and continue to do so over time.

Amrein-Beardsley, A. (2008). Methodological Concerns about the Education Value-Added Assessment System. *Educational Researcher* 37(2): 65-75.

Value-added models help to evaluate the knowledge that school districts, schools, and teachers add to student learning as students progress through school. In this article, the well-known Education Value-Added Assessment System (EVAAS) is examined. The author presents a practical investigation of the methodological issues associated with the model. Specifically, she argues that, although EVAAS is probably the most sophisticated value-added model, it has flaws that must be addressed before widespread adoption. She explores in depth the shortage of external reviews and validity studies of the model, its insufficient user-friendliness, and methodological issues about missing data, regression to the mean, and student background variables. She also examines a paradigm case in which the model was used to advance unfounded assertions.

Borman, G. D. and N. M. Dowling (2008). Teacher Attrition and Retention: A Meta-Analytic and Narrative Review of the Research. *Review of Educational Research* 78(3): 367-409.

This comprehensive meta-analysis on teacher career trajectories, consisting of 34 studies of 63 attrition moderators, seeks to understand why teaching attrition occurs, or what factors moderate attrition outcomes. Personal characteristics of teachers are important predictors of turnover. Attributes of teachers' schools, including organizational characteristics, student body composition, and resources (instructional spending and teacher salaries), are also key moderators. The evidence suggests that attrition from teaching is (a) not necessarily 'healthy' turnover, (b) influenced by various personal and professional factors that change across teachers' career paths, (c) more strongly moderated by characteristics of teachers' work conditions than previously noted in the literature, and (d) a problem that can be addressed through policies and initiatives. Though researchers have utilized a number of national and state databases and have applied economic labor theory to questions related to teacher attrition, the authors argue that better longitudinal data on teacher career paths and more nuanced theories are needed.

Boyd, D., P. Grossman, et al. (2009). Who Leaves? Teacher Attrition and Student Achievement. Washington, DC: Urban Institute.

This paper analyzes attrition patterns among teachers in New York City public elementary and middle schools and explores whether teachers who transfer among schools, or leave teaching entirely, are more or less effective than those who remain. We find that the first-year teachers who are less effective in improving student math scores have higher attrition rates than do more effective teachers. The first-year differences are meaningful in size; however, the pattern is not consistent for teachers in their second and third years. Attrition patterns differ between schools having disproportionate numbers of low- vs. high-scoring students. A relatively high percentage of the ineffective first-year teachers in low-scoring schools leave teaching altogether; whereas inefficient first-year teachers in higher-scoring schools disproportionately transfer within NYC. In general, first-year teachers who transfer, on average, are less effective than their peers in their new schools, as was the case in their original schools. Furthermore, the more effective first year teachers who transfer differentially move to schools with fewer low-scoring, poor, Black and Hispanic students, possibly contributing to achievement gaps. As discussed in the paper, these findings raise important questions about policies and policy proposals intended to reduce teacher attrition.

Chait, R. and R. Miller (2009). *Paying Teachers for Results: A Summary of Research to Inform the Design of Pay-for-Performance Programs for High-Poverty Schools*. Washington, DC: Center for American Progress.

The increased funding and increasing interest in pay-for-performance programs sparked the Center for American Progress to present this short paper on pay for performance. The paper first defines pay-for-performance and outlines its logic as a strategy to improve teaching and learning in high-poverty schools. The authors then proceed to summarize what researchers have learned about this compensation strategy, and then offer guidance to states and districts on the design of successful pay-for-performance programs based on this research.

Coggsball, J. G., A. Ott, et al. (2009). *Retaining Teacher Talent: The View from Generation Y*. New York: Public Agenda.

Retaining Gen Y teachers is a concern because in 2004-05, turnover among public school teachers under age 30 was 44 percent higher than the average teacher turnover rate (which includes retirees). The loss that this teacher attrition and mobility represents in terms of human and financial capital is staggering (see Barnes, Crowe, & Schaefer 2007; Milanowski & Odden 2007). To gain a better understanding of why this may be occurring and what human resources practices may stem the loss, researchers from Learning Point Associates and Public Agenda partnered together to conduct the Retaining Teacher Talent study. The six key findings in this report indicate that supporting teacher effectiveness will have a profound impact on teacher retention for Gen Y teachers as well as their colleagues.

Coggsball, J. G., A. Ott, et al. (2009). *Retaining Teacher Talent: Convergence and Contradictions in Teachers' Perceptions of Policy Reform Ideas*. New York: Public Agenda.

As a new decade dawns, teachers stand at the center of a policy vortex. They serve as the primary focus of one of the Obama administration's four pillars of educational reform--effective teachers and leaders. Educational reformers of all stripes have focused tremendous energy on thinking of ways to identify effective teachers and in turn recruit, retain, compensate, and support them. But what do teachers think of these ideas? What conclusions should reformers draw from teachers' perceptions? This report is the third release of data from the Retaining Teacher Talent study conducted by Learning Point Associates and Public Agenda. The report suggests that what teachers think are good indicators of effectiveness--and what they think will make them more effective--are not always aligned with what policymakers or researchers think. Some educational reformers have proposed dramatic changes to teacher evaluation, compensation, and working conditions in hopes that such changes will ultimately improve student learning. The success of these reforms, however, rests in large part on the support of those who will be most directly affected--teachers. Therefore, policymakers need to recognize the critical importance of including teachers in the debate to bring not only nuance and experience to the conversation but also to build legitimacy for the reforms as they are implemented. This report, intended for policymakers and teachers who want to influence policy, describes the implications of the results of the nationwide survey conducted by Learning Point Associates and Public Agenda.

Cohen, D. K. and R. J. Murnane (1985). *The Merits of Merit Pay*. *The Public Interest* 80: 3-30.

A study of six selected school districts that had been using merit pay plans successfully for at least 6 years provided insight into administrative strategies associated with merit pay program success. The researchers visited the districts, interviewed teachers and administrators, and studied local documents. Each district used a unique combination of strategies from a list of four: the programs can involve (1) providing extra pay for extra work rather than for higher performance, (2) involving teachers in the establishment of merit criteria, (3) minimizing the impact of awards by keeping them small or distributing them widely, or (4) keeping the program profile low by limiting publicity or making participation voluntary. In the districts studied, teaching quality was generally high, relations between teachers and administrators were good, morale was high, the communities were economically and socially advantaged, teacher salaries were good, and teacher evaluation criteria were broad and not tied to student performance. The merit pay programs examined seemed to

encourage work outside the classroom and useful evaluation of teachers, but appeared to have little direct impact on instructional practice. The programs also seemed to encourage community support by adding to the district's aura of accountability. This report discusses three of the districts in some detail and concludes with a discussion of the ironic finding that merit pay programs may be most successful when conditions exist that are likely to lead soon to the elimination of the programs' value—that is, when most teachers exhibit comparably high merit.

Cochran-Smith, M. (2010). Foreword. In *Teacher Assessment and the Quest for Teacher Quality: A Handbook*, edited by M. Kennedy. San Francisco: Jossey-Bass.

See M. Kennedy for a description of this reference.

Conley, S. and A. Odden (1995). Linking Teacher Compensation to Teacher Career Development. *Educational Evaluation and Policy Analysis* 17(2): 219-237.

Pay can be primarily based on individual or organizational performance, job tasks, or skills and knowledge (Lawler 1990). This article suggests that teacher skill- and knowledge-based pay plans in education may be related to major demarcation points in teachers' career development. To illustrate the potential features of this approach, career ladder programs in three U.S. districts, as well as the Advanced Skills Teacher (AST) system in Australia, are described. Each plan includes three or four career stages that would qualify a teacher for a significant pay increment. Policy analysts should strategically consider how such systems might affect school culture, norms, and micropolitical processes.

Cohen, D. K. (2010). Teacher Quality: An American Educational Dilemma. In *Teacher Assessment and the Quest for Teacher Quality: A Handbook*, edited by M. Kennedy. San Francisco: Jossey-Bass.

See M. Kennedy for a description of this reference.

Curtis, R. E. and J. Wurtzel. (2010). *Teaching Talent: A Visionary Framework for Human Capital in Education*. Cambridge, MA: Harvard Education Press.

About 80 percent of education spending is devoted to personnel, yet the capacity of schools and districts to recruit, develop, and retain top talent is stunningly low compared with other knowledge sectors. This problem is most profoundly felt in urban school systems, which creates tremendous inequity for the students who most need a high-quality education. Research findings make it clear that human capital is one of the most important levers we have for improving school effectiveness and student achievement. However, educators, district leaders, and policy makers are just beginning to recognize that strengthening human capital should be their top priority—and to act on that recognition.

Teaching Talent presents a framework for human capital development that draws on a two-year initiative by the Aspen Institute Education and Society Program to research sectors that have effective, well-developed human capital systems and point the way toward human capital innovations in public education. The book first identifies the elements of a robust human capital strategy in education—teacher recruitment and career development; the principal's role in ensuring teacher quality; and the district's role in creating the conditions necessary to support effective human capital management. It then offers a comprehensive, visionary framework that weaves these elements together.

Darling-Hammond, L. (1997). *Doing What Matters Most: Investing in Quality Teaching*. New York: National Commission on Teaching & America's Future.

This follow-up report, *Doing What Matters Most: Investing in Quality Teaching*, seeks to gauge the nation's progress toward the goal of high-quality teaching in every classroom in every community. It draws on data about the conditions of teaching that have become available since the original Commission report was released, and it examines policy changes that have occurred.

Dunne, K. and S. Villani (2007). *Mentoring New Teachers through Collaborative Coaching: Linking Teacher and Student Learning*. San Francisco, WestEd Publications.

What are the best approaches for developing effective teacher mentors? In their work across the country, Kathy Dunne and Susan Villani have combined the nonjudgmental approach of collaborative coaching with a focus on student learning to heighten teacher effectiveness. The result is a stunningly effective model that benefits new and experienced teachers alike — all in the service of students. For education leaders who oversee mentor programs and those who provide professional development for mentors, this book looks at mentoring from the context of the research on effective mentoring and provides extensive guidance on how mentors can understand the needs of new teachers, build strong relationships with them, and coach them through an ongoing process of improving their teaching practice.

Ellerson, N. M. (2009). *Exploring the Possibility and Potential for Pay for Performance in America's Public Schools*. Arlington: American Association of School Administrators.

In response to a growing dialogue at the local, state and national levels around the idea of restructuring teacher pay to include performance measures, the American Association of School Administrators surveyed a randomly selected sample of its members to gauge their feedback and interest in pay-for-performance programs. AASA launched this survey in light of the renewed national conversation and feedback from AASA members who sense a shift in the tide of teacher compensation. For the purposes of this survey, AASA used the term “pay for performance” to represent a compensation system that uses financial incentives/motivation for employees. A total of 536 school administrators from 45 states completed the 10-question survey in May 2009. The majority of respondents were superintendents (86 percent) and associate or assistant superintendents (13 percent). Fifty-two percent of respondents came from rural districts, 35 percent from suburban districts, and 13 percent from urban districts.

Firestone, W. A. (1991). *Merit Pay and Job Enlargement as Reforms: Incentives, Implementation, and Teacher Response*. *Educational Evaluation and Policy Analysis* 13(3): 269-288.

Based on intensive district case studies, this study presents a comparison of two teacher work reforms. Merit pay gives individual teachers more money to do the same work better. Job enlargement pays them more to do different work. The study suggests that job enlargement is more likely than merit pay to improve teacher motivation. It also enriches teaching practice while merit pay standardizes it. Job enlargement increases intrinsic incentives for teachers, but these must be bought by purchasing more time. The way these reforms play out at different sites will depend on the extent of teacher participation in program design and on the vision for the program projected by top administrators.

Goertz, M. E., L. N. Olah, et al. (2009). *Can Interim Assessments be Used for Instructional Change? CPRE Policy Briefs*. Madison: Consortium for Policy Research in Education (CPRE).

The past ten years have witnessed an explosion in the use of interim assessments by school districts across the country. A primary reason for this rapid growth is the assumption that interim assessments can inform and improve instructional practice and thereby contribute to increased student achievement. Testing companies, states, and districts have become invested in selling or creating interim assessments and data management systems designed to help teachers, principals, and district leaders make sense of student data, identify areas of strengths and weaknesses, identify areas of instructional strategies for targeted students, and much more. Very little research exists on how interim assessments are actually used, by individual teachers in classrooms, by principals, and by districts. The purpose of this exploratory study was to examine the use of interim assessments and the policy supports that promote their use to change instruction, focusing on elementary school mathematics.

Gonring, P., P. Teske, et al. (2007). *Pay-for-Performance Teacher Compensation: The Inside View of Denver's ProComp Plan*. Cambridge, MA, Harvard Education Press.

Denver's groundbreaking campaign to introduce performance-based pay for teachers captured national and international attention and has paved the way for similar efforts elsewhere. Based on unprecedented labor-management collaboration, the newly implemented ProComp compensation plan is the most advanced in the country. Each teacher's pay is based on several factors: evaluated performance, professional development efforts, and willingness to work with at-risk populations, as well as student achievement. Denver's ProComp plan has raised the debate over teacher compensation to a new level. In this book, the authors describe how entrepreneurial behavior within the teachers union and support from outside philanthropic groups propelled the plan from a cutting-edge concept into concrete policy.

Heneman, H. G., III, A. Milanowski, et al. (2006). *Standards-Based Teacher Evaluation as a Foundation for Knowledge- and Skill-Based Pay*. CPRE Policy Briefs. RB-45. Madison: Consortium for Policy Research in Education.

State accountability systems and the federal No Child Left Behind Act have put additional demands on schools and teachers to improve teacher quality and improve student achievement. Many researchers (e.g., Cohen 1996; Corcoran & Goertz 1995; Floden 1997; Newman, King, & Rigdon 1997) have argued that such improvements will require a substantial increase in the instructional capacity of schools and teachers. One strategy for capacity building is to provide teachers with incentives to improve their performance, knowledge, or skills. The incentive strategy requires the design and implementation of alternative teacher compensation systems that depart from the single salary schedule (Odden 2000; Odden & Kelley 2002). Though slow to take hold, the incentive strategy is currently being pursued by several states (Peterson 2006). Most of these new or proposed plans link pay to combinations of assessments of teacher performance, acquisition of new knowledge and skills, and student test score gains. Findings from research on the design and effectiveness of some of these assessment systems are the focus of this issue of CPRE Policy Briefs.

Heneman, H. G., III, A. Milanowski, et al. (2007). *Teacher Performance Pay: Synthesis of Plans, Research, and Guidelines for Practice*. CPRE Policy Briefs. Philadelphia, PA, Graduate School of Education, University of Pennsylvania.

The single salary schedule has ruled the delivery of teacher pay for decades, despite long-standing criticism that it fails to link some portion of teachers' pay to their performance. In recent years, there has been some experimentation with performance pay for teachers. Early attempts focused on the development of merit pay, in which pay raises were linked to subjective evaluations of teacher performance. Subsequent evaluations of merit pay plans questioned their effectiveness, especially given their limited survival, though it was acknowledged that the problem was not necessarily merit pay per se, but the way the plans were designed, implemented, and administered (Hatry, Greiner, & Ashford, 1994). Notwithstanding these unsuccessful experiences, national surveys have found that teacher attitudes toward some forms of performance pay are not unfavorable (Ballou 2001; Ballou and Podgursky 1993).

Ingersoll, R. M. (2001). *Teacher Turnover and Teacher Shortages: An Organizational Analysis*. *American Educational Research Journal* 38(3): 499-534.

Contemporary educational theory holds that one of the pivotal causes of inadequate school performance is the inability of schools to adequately staff classrooms with qualified teachers. This theory also holds that these school staffing problems are primarily due to shortages of teachers, which, in turn, are primarily due to recent increases in teacher retirements and student enrollments. This analysis investigates the possibility that there are other factors—those tied to the organizational characteristics and conditions of schools—that are driving teacher turnover and, in turn, school staffing problems. The data utilized in this investigation are from the Schools and Staffing Survey and its supplement, the Teacher Followup Survey conducted by the National Center for Education Statistics. The results of the analysis indicate that school staffing problems are not

primarily due to teacher shortages, in the technical sense of an insufficient supply of qualified teachers. Rather, the data indicate that school staffing problems are primarily due to excess demand resulting from a “revolving door” where large numbers of qualified teachers depart their jobs for reasons other than retirement. Moreover, the data show that the amount of turnover accounted for by retirement is relatively minor when compared to that associated with other factors, such as teacher job dissatisfaction and teachers pursuing other jobs. The article concludes that popular education initiatives, such as teacher recruitment programs, will not solve the staffing problems of such schools if they do not also address the organizational sources of low teacher retention.

Johnson, S. M. (2010). Once a Teacher, Always a Teacher? Specialized roles offer new promise for retaining and developing talent. *Harvard Education Letter* 26(3).

To ensure academic success for all students, we must develop a career in teaching that retains and supports the most skilled and effective teachers, while also drawing on their expertise to strengthen the work of others. The author finds that there is resistance to change in a career that is relatively ‘flat’ with little differentiation in roles or alternative paths within the teaching career. She also goes on to describe how the new generation of teachers are seeking new rewards, how accountability policies can lead to new roles, and also discusses prospects for a differentiated career in teaching.

Johnson, S. M. and S. E. Birkeland (2003). Pursuing a “Sense of Success”: New Teachers Explain Their Career Decisions. *American Educational Research Journal* 40(3): 581-617.

This article, based on a longitudinal interview study of 50 new teachers in Massachusetts, presents respondents’ reasons for staying in their schools, moving to new schools, or leaving public school teaching within their first 3 years of teaching. Although the respondents’ prior career orientations, financial situations, and preparation played a role in their career decisions, their experiences at the school sites were central in influencing their decisions. Teachers who felt successful with students and whose schools were organized to support them in their teaching—providing collegial interaction, opportunities for growth, appropriate assignments, adequate resources, and schoolwide structures supporting student learning--were more likely to stay in their schools, and in teaching, than teachers whose schools were not so organized.

Joint Committee on Standards for Educational Evaluation (2009). *The Personnel Evaluation Standards: How to Assess Systems for Evaluating Educators*. Thousand Oaks, CA, Corwin Press.

Personnel evaluation plays a vital role in supporting professional growth. This updated resource provides 27 standards that together have been approved as an American National Standard (ANSI/JCSEE 1-2008) for use in developing sound evaluation policies and procedures for staff in Pre-K through graduate school. Covering the propriety, utility, feasibility, and accuracy of staff evaluations, these standards offer support for decisions that affect tenure, dismissal, promotion, and staff development. The second edition reflects the changing educational climate by providing important new standards, substantive revisions to existing standards, and updated case studies. This book offers educational administrators and supervisors: in-depth explanations of each standard and its rationale, application guidelines, and common errors in implementation, brief case studies with follow-up analysis, a functional table of contents to help locate specific standards pertinent to individual evaluations

Ka Pi‘ina Core Project Team. (2009). *Ka Pi‘ina: A Proposal for a New Education Workforce Framework*, Honolulu: Kamehameha Schools.

In summary, the Ka Pi‘ina framework outlines proposed integrated strategies to better recruit, retain and reward our education workforce through a series of blueprints in the following four framework elements:

- Transparent career paths and opportunities that provide career progression and professional growth with both explicit and implicit leadership roles and functions such as coach and mentor;

- An enhanced performance management and evaluation system that focuses on continuous development of key organizational and professional core competencies with an appreciation for and sensitivity of both Hawaiian culture and Christian values;
- An enhanced professional development program that links directly to career opportunities and performance management and evaluation while supporting the identification and use of daily professional development opportunities; and
- An integrated compensation program that will align and reward the effective delivery of educational programs and services which lead to increasing the number of native Hawaiians served and improvements in student learning.

Kelley, C. (1997). Teacher Compensation and Organization. Educational Evaluation and Policy Analysis 19(1): 15-28.

Traditionally, teacher compensation has been viewed in isolation from other components of organizational reform. This paper examines changes in the conceptualization of schooling over time using an organizational lens, and considers how compensation systems might be better designed to match alternative organizational designs. Four different organizational designs are considered: scientific management, effective schools, content-driven, and high standards/high involvement. Implications of each design are considered for the development of compensation models which better mesh with current conceptualizations of schools and teachers.

Kennedy, M. (2010). Teacher Assessment and the Quest for Teacher Quality: A Handbook. San Francisco: Jossey-Bass.

This handbook addresses and sorts out many of the complex issues related to teacher assessment and teacher quality, and the connections between the two. This is no small task, given the numerous ways and time points at which teacher quality is assessed, the multitude of stakeholders with a vested interest in assessment processes and assessment products, the competing policy and political agendas to which various assessments of teachers and teaching are attached, and ongoing controversies about what teacher quality means and why it is important. One of the strengths of this handbook is that it does not shy away from or attempt to reduce the messiness of these issues by offering a simplified notion of assessment and quality.

Kimball, S. M., B. White, et al. (2003). Preliminary Analysis of Criterion-Related Validity of the Teacher Performance Evaluation System in Washoe County. CPRE-UW Working Paper Series, Consortium for Policy Research in Education (CPRE).

This paper presents the results of an analysis of the relationship between teacher evaluation scores on a standards-based teacher evaluation system to student achievement on state tests of reading and mathematics. Using a value-added framework and hierarchical linear modeling, scores on the teacher evaluation system were included at the second or teacher-level of the model, when other student and teacher-level characteristics were controlled. The analyses provided some initial evidence of a positive association between the evaluation system and measures of student achievement on four of the six exams studied.

Kowal, J., E. A. Hassel, et al. (2007). Teacher Compensation in Charter and Private Schools Snapshots and Lessons for District Public Schools, Center for American Progress.

Across the country, states and districts are struggling to attract, support, and retain high-quality teachers in the classroom. The limitations of the traditional salary schedule in attracting and keeping good teachers have prompted many policymakers to search for alternative methods of compensation. In this paper, the authors examine teacher compensation policies in charter and private schools for lessons to help traditional public schools more effectively draw and keep high-quality teachers.

Liu, E., S. M. Johnson, et al. (2004). *New Teachers and the Massachusetts Signing Bonus: The Limits of Inducements. Educational Evaluation and Policy Analysis* 26(3): 217-236.

In 1998, Massachusetts instituted a \$20,000 Signing Bonus to address concerns about the supply of quality teachers. This article reports on a longitudinal, qualitative study of the experiences of 13 of the original 59 recipients of the Signing Bonus, and analyzes their responses to various incentives embedded within the Massachusetts Signing Bonus Program (MSBP). Interviews revealed that the bonus money had very little influence on recipients' decisions to enter teaching. Far more important was the alternate certification program created to implement the policy. Findings suggest that the MSBP: (a) relied too much on inducements and not enough on capacity-building; (b) focused too narrowly on recruitment and not enough on retention, and (c) centered too much on individuals and not enough on schools.

Margolis, J. (2008). *What Will Keep Today's Teachers Teaching? Looking for a Hook as a New Career Cycle Emerges. Teachers College Record* 110(1): 160-194.

Drawing from Ingersoll's (2001) study of teacher attrition, Huberman's (1989) study of the professional life cycle of teachers, and recent retention/attrition literature across the professions, this study seeks to make sense of the complexities of contemporary teachers' careers in light of changes in social and economic forces, the relationships between political and educational institutions, and the work of teaching over the past 20 years. The empirical part of this study explores how teachers with 4-6 years' experience conceive of their career path in education, as well as ways that universities and schools can better partner to increase teacher job satisfaction. It also provides professional development and opportunities for growth as teacher educators, examining any potential benefits to these teachers, their schools, and the interns they work with.

Seven teachers with 4-6 years' experience in one school district in the Pacific Northwest were selected as participants and mentor teachers. The main research questions were: How do teachers with 4-6 years of teaching conceive of their career path? Does taking on a teacher educator role via hosting an intern impact their long-term career plans? Throughout the 2004-2005 school year, led by the principal investigator (PI), the seven teachers participated in a variety of activities designed to support (and simultaneously study) their development as teachers and teacher educators, including workshops and seminars. Additionally, the PI created a website discussion board so that the teachers could share ideas, experiences, concerns, and questions in between the group meetings. Teachers also participated in two 45-minute individual interviews--once at the beginning, and once at the end of the school year. Data included field notes, website and e-mail artifacts, and interview transcripts. Data analysis began with a list of initial descriptive codes, and then moved toward refining and developing new codes outside the initial list, ultimately linking codes into categories and themes. Analytical memos fostered the development of categories related to teachers' perceived professional need for greater stimulation in the classroom and beyond.

Findings include that teachers with 4-6 years' experience are searching for roles/activities that are regenerative (keeping them learning and excited about their teaching); and also generative (widening their sphere of influence, sharing their gifts with others in the profession). Further, the mentor teacher role may be uniquely suited to synergistically provide both regenerative and generative opportunities. The paper concludes with three potential areas of exploration for both educational practice and research concerned with keeping "good teachers" teaching--merit pay, differentiated jobs, and university-school partnerships.

Milanowski, A. T., H. G. Heneman, III, et al. (2009). *Review of Teaching Performance Assessments for Use in Human Capital Management. Working Paper, Consortium for Policy Research in Education.*

The major goal of this study is to review the current state of the art in teaching assessment by examining a sample of assessment systems, then to develop a "specification" for a state-of-the-art performance assessment system to be used for human capital management (HCM) functions. This specification could be a stimulus and guidepost for working on a coherent instructional vision and methods to assess how well actual instruction reflects the vision. The results could also help states or districts think about how they want to

develop their own teaching competency model and what assessment approaches fit best with different uses of this model. To that end, the paper concludes with a first look at a “specification” for a high quality, multi-use assessment system, and a preliminary roadmap for developing such a system.

Mohrman, A. M., S. A. Mohrman, et al. (1996). *Aligning Teacher Compensation with Systemic School Reform: Skill-Based Pay and Group-Based Performance Rewards*. *Educational Evaluation and Policy Analysis* 18(1): 51-71.

Standards-based education reform requires that teachers develop a new array of professional knowledge and skills to teach a thinking-oriented curriculum, engage in the organization and management of schools, and produce higher levels of student achievement. Such a change is systemic and requires that all aspects of the school organization be restructured. This article describes a potential teacher compensation structure that is consistent with these types of systemic and normative changes and that is an example of the kinds of compensation practices they require for successful implementation. The authors’ purpose is to spur systemic thinking about the role of compensation by offering a concrete proposal that includes skill- and competency-based pay as well as group performance awards.

Murnane, R. J. and J. L. Steele (2007). *What is the Problem? The Challenge of Providing Effective Teachers for All Children*. *The Future of Children* 17(1): 29.

Richard Murnane and Jennifer Steele argue that if the United States is to equip its young people with the skills essential in the new economy, high-quality teachers are more important than ever. In recent years, the demand for effective teachers has increased as enrollments have risen, class sizes have fallen, and a large share of the teacher workforce has begun to retire. Women and minorities have more career options than ever before, making it increasingly difficult to attract and retain the many effective teachers who are needed. Moreover, schools are limited in their ability to identify and reward the most effective teachers. Perhaps the most urgent problem facing American education, say Murnane and Steele, is the unequal distribution of high-quality teachers. Poor children and children of color are disproportionately assigned to teachers with the least preparation and the weakest academic backgrounds. Teacher turnover is high in schools that serve large shares of poor or nonwhite students because the work is difficult, and the teachers who undertake it are often the least equipped to succeed.

Murnane and Steele point out that in response to these challenges, policymakers have proposed a variety of policy instruments to increase the supply of effective teachers and distribute those teachers more equitably across schools. Such proposals include across-the-board pay increases, more flexible pay structures such as pay-for-performance, and reduced restrictions on who is allowed to teach. Several of these proposals are already being implemented, but their effectiveness remains largely unknown. To measure how well these policies attract effective teachers to the profession and to the schools that need them most, rigorous evaluations are essential. Murnane and Steele also note that policymakers may benefit from looking beyond U.S. borders to understand how teacher labor markets work in other countries. Although policies rooted in one nation’s culture cannot be easily and quickly transplanted into another, it is important to understand what challenges other countries face, what policies they are using, and how well those policies are working to enhance teacher quality and improve student achievement.

Odden, A. (2008). *New Teacher Pay Structures: The Compensation Side of the Strategic Management of Human Capital: A Summary*, *Strategic Management of Human Capital (SMHC)*, Consortium for Policy Research in Education (CPRE).

For the past several years if not decades, the United States has been engaged in an ambitious and far reaching education reform agenda. The rationales cited for reform include increased international economic competitiveness and enhanced civic and family opportunities for individuals, as well as the moral imperative of an equal and adequate public education as a stepping stone to civic progress and economic growth. The goal is to educate the vast majority of all children to rigorous student performance levels. The education system

will need to change in many ways in order for the country to attain these goals. All schools will need to adopt rigorous curriculum programs and engage in a continuous cycle of instructional improvement. The education system will need smart and capable individuals to implement these strategies. But the current education system does not recruit, select, deploy, train, pay or retain the appropriate human capital to implement an effective cycle of continuous instructional improvement, suggesting that the entire human capital development system in public education, particularly in large urban districts, needs to be redesigned. A major component of any strategic human capital management system is the compensation system, which can be designed to reinforce the strategic goals of the organization or be neutral with respect to those goals. This paper argues that the compensation system for teachers can and should be changed to reinforce an aligned human capital management system (see Odden & Kelly 2008) and thus more supportive of the goal of teaching all students in all classrooms to high and rigorous performance standards.

Papay, J. P. (2010). Different Tests, Different Answers: The Stability of Teacher Value-Added Estimates Across Outcome Measures. *American Educational Research Journal* 47(4): 30.

Recently, educational researchers and practitioners have turned to value-added models to evaluate teacher performance. Although value-added estimates depend on the assessment used to measure student achievement, the importance of outcome selection has received scant attention in the literature. Using data from a large, urban school district, I examine whether value-added estimates from three separate reading achievement tests provide similar answers about teacher performance. I find moderate-sized rank correlations, ranging from 0.15 to 0.58, between the estimates derived from different tests. Although the tests vary to some degree in content, scaling, and sample of students, these factors do not explain the differences in teacher effects. Instead, test timing and measurement error contribute substantially to the instability of value-added estimates across tests.

Pomplun, M. R. (2009). Do Student Growth Scores Measure Academic Growth? *Educational & Psychological Measurement* 69(6): 966-977.

This study investigates evidence for the validity of student growth scores with high school course grades. Approximately 1,800 ninth graders for over two years were scored using the Measures of Academic Progress and Educational Planning and Assessment System. Their growth scores were related to various courses including language, arts, and mathematics across developmental-, standard-, and honors-level courses. Findings show that for mathematics, students in honors courses had more test score growth than students in the standard-level courses. Also, students with A or B grades experienced more test growth than students with D or F grades. These relationships between growth scores and grades were not found in English courses.

Quartz, K. H., A. Thomas, et al. (2008). Careers in Motion: A Longitudinal Retention Study of Role Changing among Early-Career Urban Educators. *Teachers College Record* 110(1): 218-250.

Teacher retention, especially of qualified teachers within high-poverty schools, is an issue of local, national, and international concern. School staffing research has typically examined two groups: those who remain in full-time classroom teaching versus those who quit teaching altogether. This article complicates the teacher staffing picture and adds a third category of attrition: role changing, which is the phenomenon of teachers shifting into nonteaching professional roles in the field of education. The purpose of this article was to find what proportion of teacher career movement within our sample was attributable to leaving teaching versus role changing. Further, we wanted to know the influence of race/ethnicity, gender, credential type, and age on role-changing patterns. To deepen our understanding of teacher career patterns, we conducted a 6-year longitudinal study that involved collecting survey data on teacher career movement, school experiences, and attitudes from 838 well-prepared urban educators in their first through eighth career year. These educators had all completed master's degrees in the teacher education program of a high-status urban public university and all began their careers as teachers. After collecting the data, we documented and diagrammed career patterns. In addition, we analyzed the influence of select time invariant covariates on the hazard probabilities of both role changing and leaving education.

The study found that not only did teachers move into a variety of nonteaching roles within the field of education, but they also followed diverse career “pathways” along the way. Survival analysis substantiated prior research showing that Latino teachers have lower attrition rates from the field of education compared with White teachers, but this effect disappeared for role changing with the field. In terms of gender, the men in our population were less likely to leave education entirely than women but more likely to leave teaching for a role change in career years 3-8. Teachers with single-subject (secondary) credentials were more likely than their colleagues who held multiple-subject (elementary) credentials to leave teaching for a role change in education. Set within the framework of teacher professionalism, we argue that role changing is a form of sanctioned attrition and that understanding movement among roles within the educational workforce is essential for crafting policies and incentives to keep well-prepared teachers rooted in careers that serve the nation’s most underserved students.

Rothman, R. (2008). Taking the Measure of New Teachers: California shifts from standardized tests to performance-based assessment as a condition of licensure. *Harvard Education Letter* 24(4): 3.

Like most states, California has long required prospective teachers, whether they attended education schools or entered the profession through alternate routes, to pass standardized tests in basic skills and subject knowledge in order to earn their licenses. However, there is little evidence that performance on these tests is associated with future performance in the classroom. Teacher educators have therefore begun to look for ways to assess the quality of a candidate’s work in the classroom, the skills he or she has mastered, and the effects on student performance.

Sartain, L., S. R. Stoelinga, et al. (2010). Rethinking Teacher Evaluation: Findings from the First Year of the Excellence in Teaching Project in Chicago Public Schools, Consortium on Chicago School Research.

This policy brief highlights key findings and policy implications from a CCSR study of the first year of a pilot teacher evaluation program in Chicago Public Schools (CPS). The report’s authors conclude, “In the first year of the Excellence in Teaching Project, CPS leaders took significant steps toward revitalizing teacher evaluation in Chicago.” The findings are relevant for policymakers and practitioners contemplating how best to support the design and development of effective teacher evaluation systems, particularly those focused on classroom observations. The brief is designed to add to the national discourse around teacher evaluation, a subject of growing emphasis and interest since it became a priority of the U.S. Department of Education’s Race to the Top grant program.

Sawchuk, S. (2009). “TAP: More than Performance Pay.” *Education Week* 28(27).

This article gives a review of the Teacher Advancement Program and its implementation. It serves as a gentle reminder that TAP is not just performance pay, but is a combination of several components, all of which work together to improve teacher effectiveness. In efforts to address the very challenging issue of how to align systems for managing schools’ human capital with goals for improving student achievement, TAP utilizes on-the-job training, career advancement, and evaluation. Accounts of teachers at various levels of the career ladder are included, followed by a discussion on teacher accountability and next steps.

Springer, M., D. Ballou, et al. (2010). Teacher Pay for Performance: Experimental Evidence from the Project on Incentives in Teaching, Project on Incentives in Teaching (POINT), National Center on Performance Incentives.

The Project on Incentives in Teaching (POINT) was a three-year study conducted in the Metropolitan Nashville School System from 2006-07 through 2008-09, in which middle school mathematics teachers voluntarily participated in a controlled experiment to assess the effect of financial rewards for teachers whose students showed unusually large gains on standardized tests. The experiment was intended to test the notion that rewarding teachers for improved scores would cause scores to rise. It was up to participating teachers to decide what, if anything, they needed to do to raise student performance: participate in more professional

development, seek coaching, collaborate with other teachers, or simply reflect on their practices. Thus, POINT was focused on the notion that a significant problem in American education is the absence of appropriate incentives, and that correcting the incentive structure would, in and of itself, constitute an effective intervention that improved student outcomes. By and large, results did not confirm this hypothesis. While the general trend in middle school mathematics performance was upward over the period of the project, students of teachers randomly assigned to the treatment group (eligible for bonuses) did not outperform students whose teachers were assigned to the control group (not eligible for bonuses). The brightest spot was a positive effect of incentives detected in fifth grade during the second and third years of the experiment. This finding, which is robust to a variety of alternative estimation methods, is nonetheless of limited policy significance, for as yet this effect does not appear to persist after students leave fifth grade. Students whose fifth grade teacher was in the treatment group performed no better by the end of sixth grade than did sixth graders whose teacher the year before was in the control group. However, we will continue to investigate this finding as further data become available, and it may be that evidence of persistence will appear among later cohorts.

Springer, M. G. (2009). *Rethinking teacher Compensation Policies: Why Now, Why Again? Performance Incentives: Their Growing Impact on American K-12 Education*. M. G. Springer. Washington, D.C., Brookings Institution Press: 1-21.

The concept of ‘pay for performance’ for public school teachers is once again growing in popularity and use. U.S. education is now at a critical juncture that requires thoughtful and informed consideration of this policy innovation. The purpose of this research was to identify the potential strengths and weaknesses of performance-based pay and address key conceptual and implementation issues that have dominated the debate. Among the specific questions addressed include: How does pay-for-performance work in other sectors, and what can the education sector learn from those experiences? What do the teachers themselves think of merit pay? What has been the experience of jurisdictions that have implemented incentive pay? They examine recent examples in Florida, Texas, Arkansas, and Missouri. They discuss different strategies for measuring teacher accomplishment and, most importantly, the impact of merit pay on student achievement.

Stepanek, J. (2010). *Looking for Evidence: What We Know About High-Quality, Highly Effective Teachers*. Education Northwest Magazine, Education Northwest. 15: 2.

The field of education research includes many debates about methods, policies and practices. The role that teachers play in student learning is a rare, unequivocal area of agreement. Although the evidence is limited, research has not uncovered any school-based factors that have a stronger impact on student success.

Stigler, J. W. (2010). “Needed: Fresh Thinking on Teacher Accountability.” Education Week 29(33).

U.S. Secretary of Education Arne Duncan and Microsoft co-founder and philanthropist Bill Gates have both thrown their support behind a new accountability system for teachers. Based on research showing significant variability in teachers’ effectiveness (as measured by their students’ learning), Duncan and Gates propose developing measures of effectiveness to get rid of bad teachers and increase the pay of good ones. It sounds like common sense. Or does it?

von Zastrow, Claus. (2010). “Carrots and Sticks are So Last Century”: A Conversation with Author. <http://www.learningfirst.org/carrots-and-sticks-are-so-last-century-conversation-author-dan-pink>.

Dan Pink has written several bestselling books on the future of work. His most recent book, *Drive*, explores what motivates us to do our best work. These days, carrots and sticks will do more harm than good, Pink argues. The time has come to tap “the deeply human need to direct our own lives, to learn and create new things, and to do better by ourselves and our world.” *Drive* says for 21st-century work we need to upgrade to autonomy, mastery and purpose. This article is a conversation between Public School Insights and Pink regarding his book and its implications for school reform.