

seminar series191

From 'Merit Pay' to
'Pay for Contribution':
New developments in
teacher performance pay

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Introduction	3
Why is there renewed interest in performance pay?	4
Recruitment, retention and teacher compensation	6
Performance pay models	8
Performance pay issues	12
Lessons from performance pay schemes in the United States	13
Conclusion	16

Appendix 1. Examples of performance pay schemes in the United States	17
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Introduction

It is painfully clear that today's teaching profession attracts and retains the most talented professionals by accident, not by design.

(Teaching Commission, 2006)

Critics of traditional 'across the board' teacher pay arrangements (Hassel and Hassel, 2007) argue that such arrangements not only fail to enhance teacher effectiveness but also work against the improvement of teacher quality. This is because across-the-board payment increases create the incentive for the lowest contributors to remain in the profession and send the discouraging message that the highest contributors are no more valuable than those contributing the least.

Consequently it has been suggested that it is

time to move beyond a pay method designed early in the last century and to begin building an innovative system that addresses the realities of public schools in the 21st century.

(Hassel, 2002)

This paper discusses some of the more recent models of 'pay for performance' schemes in the United States, with a view to determining which models seem the most effective in promoting quality teaching and producing improved student learning.

Whilst in the United States the concept of performance pay for teachers is not new (Burgess et al, 2001), it is only in the past decade that 'modern' and 'scaled-up' pay for performance schemes have been implemented in districts and schools, and that attempts to evaluate these schemes have been undertaken. These latest schemes have broadened the performance elements that might attract a payment bonus, resulting in 'pay for contribution' (Hassel and Hassel, 2007) becoming a more apt title for such schemes than terms such as 'merit pay' or 'performance pay'.¹

Early performance pay schemes that relied solely on principals' assessments of teachers' performance, or on student test scores, to determine which teachers were deserving of financial bonuses, were opposed by teachers and teacher unions. Such schemes were considered

to be divisive, unfair and based on inadequate measures of teacher effectiveness.

Typically, objections to these earlier performance pay models have been that

- a large fraction of teachers, about half, could not be part of a performance pay system based on student test gains alone, as they teach subjects for which there are no standardised tests, or they teach in secondary schools where value-added measurement is not well-suited;
- performance incentives might lead to unwanted instructional distortions – eg, teachers could focus on lower-level skills, if they are the focus of tests, at the expense of higher order thinking skills (which are harder to measure);
- teachers might focus overly on tested subjects, at the expense of, say, personal development, social studies or the arts, which are not tested, but are valued in society;
- if incentives are designed to reward individual teachers, cooperation and coordination among teachers in a school – factors that are considered to be associated with effective schools – could be reduced; and

The Australian government has signalled its intention to support the introduction of pay for performance arrangements.

- processes for measuring and estimating the value added by teachers are unfair (eg, the tests might not account adequately for the characteristics of students assigned to a teacher, or might not take into account different school conditions).

Consequently, very few of the narrowly focused merit pay plans introduced in the United States over the past decades have endured or showed positive effects. The concept of pay for performance or for contribution, however, is still very much on the agenda in

the US and elsewhere. At the national level in the US the Federal Government has provided significant funding to encourage the take-up of performance pay schemes. Funds for trialling and implementing performance pay schemes are also available from the Milken Family Foundation (Wyman and Allen, 2001). The impetus for introducing performance pay is also growing at the state, district and school level. The Australian government has also signalled its intention to support the introduction of pay for performance arrangements.

Why is there renewed interest in performance pay?

No other policy reform, if done right, can do more to transform teaching into a real profession in which accomplished teachers are identified, utilized and paid more for spreading their teaching knowhow among students, other teachers, administrators, parents and the policy community.

(Center for Teaching Quality, 2007)

With the establishment of several pay for performance models that have gained teachers' and school authorities' approval, more schools, districts and states in the United States are piloting and adopting various models of pay for performance.

The early adopters of these new 'multi-dimension' models of performance pay appear to be having a significant influence over 'next wave' adopters, who are able to review the different performance pay models currently in operation and devise models that suit their particular local context.

Lessons from the more successful models are also contributing to policy makers becoming more sophisticated when devising performance pay schemes. New entrants to the teaching profession are also becoming more open to exploring performance-based pay.

It has been suggested (Koppich, 2008; Hassel and Hassel, 2007) that a range of intersecting

contemporary circumstances have contributed to the current focus on changing teachers' salary arrangements. These factors include

- a concern over the declining status of teaching, which is reflected in the lower academic achievements of recruits to teaching and the relative decline in teacher salaries.

Improving the rewards for teaching, and in particular for highly effective teachers, is seen as a way to attract more and more capable young people into teaching;

- greater transparency in reporting school and system performance, as well as increased involvement in international standardised tests, has raised awareness of the comparative performance of schools and placed greater emphasis on the need to implement measures to improve student outcomes.

Systems are now not judged on how much they spend, nor on how many teachers are employed, but on student outcomes as measured by standardised tests. A salary structure that offers monetary rewards based only on inputs, as does the single salary schedule – by tying increases to years and qualifications – seems increasingly to be at odds with a system structured around educational outcomes;

- a growing body of research has raised questions about the motivational value of the current teacher compensation system.

The poor correlation between teacher qualifications/length of service and the performance of students calls into question the value of the current standard single salary schedule. Policy makers want a system that provides appropriate incentives for continuous improvement of professional practice, and which rewards good teaching over poor teaching. Research suggests that bonuses can be very effective in attracting and retaining effective teachers, and in improving the performance of all capable staff;

- advances in measurement now enable systems to identify more explicitly an individual teacher's impact on the learning growth of students.

Whilst 'value-add' measures have not been perfected, research using measures of value-add by a teacher reveals that particular teachers using particular practices contribute more to student learning growth than do teachers using less effective methods;

The poor correlation between teacher qualifications/length of service and the performance of students calls into question the value of the current standard single salary schedule.

- subject-specific teacher shortages are becoming increasingly difficult to fill.

New strategies are needed to attract teachers who are effective teachers of subjects for which there is a teacher shortage. Performance pay systems are able to be more sensitive to the market and can be structured in ways that are more likely to attract people to these positions;

- it is becoming increasingly difficult for remote and challenging schools to attract and retain high-quality teachers.

Although salary bonuses alone may not be an adequate incentive to encourage teachers to accept positions in hard-to-staff schools, a financial bonus for working in these schools would be an important component in a comprehensive package designed to attract teachers to these assignments. Multi-dimensional performance pay schemes can readily incorporate elements that address this specific staffing need;

- there is greater awareness of the importance of a good education and of the relative performance of students, schools and systems.

The public expects student outcomes to match those of students in the best performing systems and, in response to public expectations, governments are placing education high on their lists of areas for improvement. Public support is high for increasing payments to teachers, particularly when payments are targeted at the better teachers.

These intersecting factors illustrate that pay for performance schemes have the potential to offer benefits in a range of areas. Consequently, the newer pay for contribution models usually consist of a combination of four remuneration elements (Baratz-Snowden, 2007), which are

- input – pay for skills and knowledge;
- extra work – pay for responsibility;
- market pay – pay for teacher shortage areas; and
- outputs – pay for performance.

Between 1983 and 2003, the average percentile rank of those entering teacher training fell from 74 to 61, while the average rank of new teachers fell from 70 to 62 (Leigh and Ryan, 2006).

Generally, they also include at least four other components from a list that includes

- a base salary that is often weighted to attract new entrants to teaching;
- a professional development bonus, to encourage the take-up of proven teaching practices;
- a bonus for contribution to improved student achievement;
- a bonus for contribution to whole school improvement;
- a group performance bonus, awarded for meeting achievement targets;
- an additional responsibilities bonus, to compensate teachers who mentor or take on other teacher leadership roles; and

- a ‘high-needs’ bonus, to reward teachers for teaching in high-needs or hard-to-staff districts or schools.

These ‘multidimensional’ pay for contribution schemes are being devised as a means for addressing a variety of system level objectives, including objectives such as

- making teaching more attractive to graduates;
- relieving teacher shortages in difficult-to-staff schools and subjects;
- retaining high-quality teachers; and
- improving the overall quality of teaching and learning.

Recruitment, retention and teacher compensation

While boosting average teacher pay may be one way of encouraging more able people to enter teaching, it is also possible that increasing the returns to aptitude (ie, varying pay to reward relative teacher effectiveness) may be a more cost-effective way of raising the quality of the teaching profession.

(Leigh and Ryan, 2006)

It is generally considered that input bonuses and market pay bonuses will help attract

- candidates into teaching;
- teachers to difficult-to-staff schools; and
- teachers with teaching qualifications that are in high demand.

With the growing teacher shortage, many local and overseas schooling systems are providing teachers with a bonus for signing on, and for teaching in a hard-to-staff school (eg, because of remoteness or social disadvantage), or in an area of teacher skill shortage.

These teacher recruitment and retention concerns arise from the fact that teaching is a less attractive occupation for more academically able young people than it was previously.

The aptitude of graduates entering the teaching profession in Australia since the early 1980s has fallen considerably. Between 1983 and 2003, the average percentile rank of those entering teacher training fell from 74 to 61, while the average rank of new teachers fell from 70 to 62 (Leigh and Ryan, 2006).

It appears that fewer academically able students have been attracted to teaching over the last several decades as a consequence of a decline in teacher wages in relative terms, as well as a decline in the general status of teaching within the community. More recent developments, such as the salary increases for Victorian teachers and the downturn in the economy, are likely to provide a counter to these effects and make teaching more attractive to higher-performing graduates. However, the impact of these recent changes might not be evident for several years, and it might not be sustained when the economy recovers and opportunities in other professional areas expand.

Research (Barber and Mourshed, 2007) reveals that top-performing school systems generally hire teachers from the upper ends of the graduate pool. This is because these systems have adopted policies and practices that have made teaching a high-status occupation. This has been done through initiatives such as

- using marketing and recruitment techniques taken from business;
- improving mechanisms for selecting teachers for teacher training, where selection is based on characteristics such as a high overall level of literacy and numeracy, strong interpersonal and communication skills, a willingness to learn and the motivation to teach – attributes which research indicates have a strong correlation with effective teaching;
- controlling entry to teacher training, so that supply matches demand and entry is competitive;
- ensuring that all training providers meet general standards for the selection of students;

- employing and paying students as they undertake their teacher training;
- providing 'alternative entry' pathways to teaching, which select suitable candidates before they enter training;
- increasing starting salaries; and
- developing processes to remove low-performing teachers from the classroom soon after appointment.

Research into teacher recruitment and retention also reveals that

- while raising salaries in line with other graduate salaries is important, raising them above the market average for graduates does not lead to substantial further increases in the quality or quantity of applicants to teaching;
- increasing the returns to teachers with skill sets that are in short supply, rather than increasing average teacher pay, is a more effective way of meeting unfulfilled specialist needs;
- improved recruitment strategies are more likely to impact on the quality of starting teachers than are across-the-board salary improvements;
- mentoring support and professional learning opportunities are more likely to encourage beginning teachers to stay in teaching than a performance bonus;

improved recruitment strategies are more likely to impact on the quality of starting teachers than are across-the-board salary improvements

- pay for contribution systems have a positive effect on the retention of highly qualified teachers;
- teachers who are in the top quartile of verbal ability – a proven predictor of performance – are twice as likely to leave teaching after five years than those in the bottom quartile;

- teachers in successful schools are more likely to continue in teaching than those in unsuccessful schools; and
- younger teachers are more inclined than veteran teachers to be open to a pay for performance scheme and to seek out schools and districts with such schemes.²

However, responding to these research findings will not be simple (Boyd et al, 2007). Policy makers interested in implementing targeted recruitment and retention efforts face several challenges. For example, they will have to identify the effective teachers to be targeted and design and implement strategies to retain these teachers. They may also need to contend with various political and administrative hurdles to implementing the types of targeted incentives needed to retain particular individuals.

Performance pay models

We do not shy away from the principle that teachers who perform at high levels and spread their expertise deserve extra compensation for their performance and accomplishments. And we do not agonize over the fact that teacher salaries may be less predictable. But we worry that many of the performance-pay blueprints now on the table will not translate into the high-achieving schools imagined by their architects.

(Center for Teaching Quality, 2007)

There is no single model of performance pay in the United States. There are a few national schemes and individual states have devised their own schemes. Most districts and schools that have introduced a pay for contribution scheme have either devised their own versions of performance pay or 'opted in' to pre-existing national or state schemes. Texas, as an example, has three different incentive payment schemes (Terry, 2008; Springer et al, 2007; and Springer et al, 2008), funded by the state, which schools can apply to participate in.

Districts within Texas have also used locally raised taxes to fund a variety of district incentive payment schemes and several individual schools have designed their own schemes drawing on federal, district and other funding sources. For example, Denver (Wyman and Allen, 2001) district teachers can elect to exchange time-based, automatic salary increments for performance bonuses, based on a variety of factors including some that are linked directly to students' standardised test scores. In contrast, Houston district teachers accept bonuses on top of their salaries, which continue to be calculated along the traditional dimensions of years in the classroom and coursework. The Houston bonuses are focused tightly on improving student performance, as measured mostly by test-score increases. Some schools in Texas also run a whole-school performance bonus model that rewards a school for improving student learning and ignores the contribution of individual teachers.

Most of the newer multidimensional pay for performance models

- base the student achievement component on standardised measures of student achievement, but also include district or teacher assessments in areas where there are no standardised, state or national assessments;
- ensure that all classroom teachers are eligible for bonuses (eg, bonuses are not confined to English and mathematics teachers but are also open to specialist teachers in areas such as the arts, technology, physical activity and languages);
- base the individual teacher's contribution to the whole school bonus on a teacher evaluation that is usually undertaken by the principal;
- base the whole-school bonus on school performance relative to like schools or on the school's performance improvement from one year to the next (even though the school may be performing below like schools, if the school is delivering constant improvement

a whole-school bonus can be earned) and/or the group bonus on the group's achievement of designated improvement targets;

- incorporate payment for additional responsibilities; and
- incorporate a 'high needs' or 'high demand' component.

That is, a performance pay package can be a combination of 'bonus opportunities', some of which are reward for outstanding teaching, some are a reward for teacher leadership (ie, for taking on extra tasks of benefit to the school), some are a reward for professional growth and some are a bonus for having skills that are in high demand or for teaching in a hard-to-staff school.

These recently introduced approaches to pay for contribution attempt to address many of the problems of earlier failures, by

- using value added methodologies to determine excellent achievement;
- rewarding school-wide and/or individual growth;
- avoiding quotas and rewarding all who meet the outcome criteria;
- having more than one level of excellence, so that pay for performance is not an all or nothing proposition;
- using multiple measures of achievement; and
- including incentives for outcome measures in addition to student achievement (eg, reduced dropout rates, better attendance and improved course completion rates).

(Baratz-Snowden, 2007).

When it comes to implementation, even at the pilot stage, the design of a particular pay for performance model tends to be influenced by a variety of factors, not all of which are 'evidence based'. As examples:

- teachers may object to individual payments and so group payment is adopted as it is less threatening;

- individual payment makes sense in a primary school where a single teacher can be largely responsible for improved student performance, but in a secondary school it is harder to determine which teachers made the most impact (eg, Did an excellent English teacher contribute to improved test scores in other subjects because students were better able to read, interpret and respond to test questions?) so a group payment might be seen to be fairer;

- teachers may not have faith in the quality of testing when it is attempting to measure annual progress made by students and so object to individual payments, as such assessments can be inadequate measures of teacher performance;

- group-based or school-based performance awards offer greater appeal to some by explicitly encouraging the collaborative nature of teaching, though advocates note that individual-based awards may indirectly encourage collaboration, as the awards are available to all teachers and thus are not 'zero-sum' systems.

the design of a particular pay for performance model tends to be influenced by a variety of factors, not all of which are 'evidence based'

Examples of individual and team or whole-school bonus arrangements are provided by the schemes being implemented in several Teacher Union Reform Network³ (TURN) districts (Urbanski and Erskine, undated) in the United States. Six TURN districts (Cincinnati, Columbus, Denver, Memphis, Miami/Dade County, and New York City) grant bonuses directly to the staff, with no restrictions placed on their use. In four other instances (Boston, Minneapolis, Montgomery County, and Rochester), the funds are granted at the school level and must be used for school improvement or other education-related purposes. A large proportion of whole-school payments usually

transfer into individual teacher payments, the amount of payment being decided at the school level.

Individual and group reward systems are seen to have several advantages and disadvantages (Harris, 2007; Harvey-Beavis, 2003; and Lavy, 2007). Individual reward systems are said to have the advantage that they provide high performers with a strong incentive to remain in teaching and provide low performers with a strong incentive to leave. The disadvantages of such systems are that they do nothing to encourage teachers to help colleagues or the school and it is difficult to make assessments of individual performance simple and fair.

The potential advantages of group reward systems are that

- they recognise the collaborative nature of any school's effectiveness, by rewarding a school's teachers for their collective effort and thereby encourage teachers to help their colleagues; and
- group performance is often easier, and less costly to measure and monitor, than individual performance.

Individual reward systems are said to have the advantage that they provide high performers with a strong incentive to remain in teaching and provide low performers with a strong incentive to leave.

The possible disadvantages of group rewards are that

- they may provide high-performing teachers with an incentive to leave low-performing schools;
- they may introduce the 'free rider' problem – where an individual teacher can put forth minimal effort and still receive a financial reward, as long as her/his colleagues behave responsibly (although it has been suggested that professional peer pressure may act as an offsetting effect);

- high-quality teachers have few incentives to work to capacity, since they will only receive a small portion of the reward for their effort, most of the reward being distributed to other group members; and
- low-quality teachers have an incentive to remain in teaching, since they can receive a financial reward derived from the work of their colleagues.

The most common model seems to be a combination of individual and school or team focused bonuses. What evidence exists suggests that student improvements can be generated from either an individual or team focused model or a combined model.

Some pay for performance models that are exclusively whole-school and others that incorporate a component of group incentives are described below.

Whole-school payment

The problem of linking measures of attainment and rewards to individual teachers stimulated the rise, during the 1990s, of group pay for performance schemes based on school-level performance. In some states, school schemes pay bonuses to all teaching staff in a school, in others awards go to school improvement schemes (Burgess et al, 2001).

In Kentucky, the performance of schools is judged by student performance in particular tests and top schools are paid a lump sum, which staff within the school then decide how to allocate. Nearly all of the schools use at least some of the award for personal bonuses. In North Carolina, Charlotte-Mecklenburg district schools that meet targets for pupil attainment and retention are provided with a school-level bonus that is distributed to teachers. Maryland operates a system where a bonus payment is provided to the school as an improvement fund and cannot be paid as salary bonuses to teachers.

Numbers of empirical studies have been conducted focusing on school-level schemes. Most studies (Burgess et al, 2001) find that

teachers support the use of performance pay bonuses, believe that rewards have a positive impact on motivation and, when offered a choice, prefer to receive a reward in the form of a bonus rather than have it given to the school. A few of these studies also found some evidence that teachers believed negative consequences had followed the introduction of school-level schemes, including stress and additional pressure. For example, the practice in Kentucky, of teachers within a school voting on how to divide up the awards, was believed to have generated internal conflict, with some teachers concerned that others were free-riding.

A school-based award program in the small West Texas district of Lamesa commenced in 1995 (Terry, 2008). Its aim was to encourage teachers to perform better and work collaboratively, by rewarding exceptional teachers for improved student performance and having them share their successes with other teachers.

Lamesa's incentive pay plan is a school-wide plan, in which all personnel at the district's four schools are rewarded if they meet certain criteria or performance targets. The targets are broken down into two categories: student performance and employee performance.

The student performance category consists of academic performance targets in reading, writing, mathematics, social studies and science based on test results, a student attendance target, and a student completion target. In addition, if a school achieves a 'Recognized' or 'Exemplary' rating by the state accountability system, all personnel at that school receive an extra financial bonus. Teachers and school administrators are eligible to earn up to \$2,400 a year with the incentive pay plan.

Lamesa district's plan produced

tremendous gains in test scores in reading, mathematics and science at the elementary school, middle school, and high school level

(Terry, 2008)

Whilst the current plan is school-wide, it may not remain so, as the district considers that it is missing 'a vital component in their incentive pay plan – assessing individual teacher performance on student learning with a growth measurement'. Consequently, Lamesa plans to add this element to the scheme in the 2009–2010 school year.

Most studies find that teachers support the use of performance pay bonuses, believe that rewards have a positive impact on motivation and, when offered a choice, prefer to receive a reward in the form of a bonus rather than have it given to the school.

Team-based payments as a component of pay for performance

The Douglas County, Colorado (Wyman and Allen, 2001; Douglas County Federation; undated) total pay package, which has been in place since July 1, 1994, is made up of Individual Teacher Evaluation Credit, Knowledge Level, Outstanding Bonus, Group Incentive Pay, Skill Blocks, Responsibility Pay, and a Master Teacher Program. The Group Incentive pay plan is designed to encourage groups of teachers within schools to work cooperatively to achieve common goals that impact directly on student performance.

Plans are developed within schools by planning committees that work with the school's entire staff. Teachers draft a plan, and collect signatures of support from other faculty members, the school administrator and the school Accountability Committee. The group's plan is then submitted to the Group Incentive Board (GIB), the governing body of the Group Incentive Plan component. This body reviews the proposed plan, can recommend revisions, and grants final approval for the plan to be adopted. At the end of the school year, a participating group compiles a final report, detailing the execution of the plan and evidence of the impact on students.

Additionally, reflections of the overall plan and recommendations for the future are submitted to GIB. The GIB then determines whether or not the plan's goals were met and whether a bonus should be awarded.

All bonus incentives, including the Group Incentive, are voluntary and involve annual payments. The Group Incentive has a high 'buy-in' from teachers.

The Vaughn Next Century Learning Centre (Odden and Wallace, undated) is a charter school in Los Angeles. It serves about 1200 students, from pre-kindergarten through to Grade 5. A joint teacher/administrator design team created Vaughn's teacher compensation plan, which incorporates knowledge-based and skills-based programs, higher pay for leadership roles and school-based performance awards. Under the scheme all teachers earn a \$2000 school-wide performance award when students meet or exceed learning improvement goals in reading, writing and mathematics, as determined by the state's accountability program. The school has met or exceeded its goals for each of the past five years.

An evaluation of teachers' views of the Vaughn scheme (Odden, 2001) revealed that 81 per cent of Vaughn's teachers thought it was fair to give bonuses to teachers when student learning improved; 84 percent said they were motivated by the bonus; and 79 percent said the bonus program should be continued.

A description of the performance pay models operating in Denver, Colorado (and see Douglas County School District, undated), Minnesota and Little Rock Arkansas is provided in Appendix 1.

The goal of a performance pay system is to motivate higher performance. The provision of teacher and school bonuses is a means to this end. It is not an end in itself.

Performance pay issues

Without proper care, even the best-designed pay plans can fail during implementation.

(Hassel and Hassel, 2007)

The goal of a performance pay system is to motivate higher performance. The provision of teacher and school bonuses is a means to this end. It is not an end in itself. The assumption is that teachers will be motivated to improve their teaching, and thereby improve student outcomes, if they are rewarded for the extra effort taken to improve their skills and transfer their new knowledge and skills to the classroom. However, some performance pay schemes have had a negative impact on teaching, have not produced the intended outcomes and have been disbanded.

Most performance pay schemes now are being devised in ways that attempt to reward teachers and schools for improved student achievement in ways that are seen as fair and motivating. However, no scheme appears to have worked through all of the issues and emerged with a model that satisfies on all counts. Some of the performance pay issues that need to be considered when designing a performance pay scheme are canvassed in Table 1 on page 14.

Many of the issues that arise when contemplating the adoption of a pay for contribution scheme reflect the 'work in progress' status of most schemes. Whilst it is acknowledged that there are a few highly regarded models of pay for performance it also needs to be acknowledged that there are aspects of pay for performance practice that need to be improved. In particular there is a need to develop

- value-add assessments that are able to measure the higher-order and interpersonal skills that students will require for living and working in the 21st century;
- multiple measures of teacher effectiveness, and for these measures to provide feedback that reinforces best teaching practice;

- value-add measures that are better at isolating the effect of the teacher from the other influences on a classroom;
- data systems that are capable of matching classroom and individual student results with teachers;
- performance appraisal processes that have high validity and are easy to administer; and
- effective means for evaluating which components of a performance pay scheme have the most effect on teacher quality and improved student learning.

Lessons from performance pay schemes in the United States

It seems a foregone conclusion that conducting a pilot of the pay program is the preferred way to begin. This will allow for capacity building and scaling up and also will provide an opportunity for all affected to learn about the actual system in practice (Heneman et al, 2007).

The research findings and reports about pay for performance schemes provide important lessons about the kinds of performance pay schemes that are most likely to meet the approval of stakeholders and deliver improved teaching and student learning.

One of the key take-away messages from the literature is that to be successful any new pay for performance system must be strategic, quality-focused, fair, flexible, feasible, and affordable. These attributes are elaborated below.

Strategic

Bonuses need to be weighted in ways that optimise teachers' motivation for improvement and that recognise those teachers who are contributing greatest to the success of students, their peers and the school. Experimentation with different component weightings and different bonus amounts will be needed to determine what works best in different school settings.

Quality-focused

The aim of introducing performance pay is to improve the quality of teaching and to reward teachers for improving student outcomes beyond expectations. Schemes should pursue relentlessly the goal of improving and rewarding teacher quality. Consequently, they should not provide bonuses to retain poor or modestly performing teachers in hard-to-staff schools. Nor should they offer incentives to willing but unprepared teachers who apply to teach in low-performing schools, nor reward teachers for attendance at courses that are unlikely to result in improved classroom teaching.

Fair

Teachers will only participate in a pay for contribution scheme if they believe it is fair. Schemes tend to be deemed fair when bonuses are available to all teachers; value-added measurements are combined with principal evaluations; value-add measurements are valid, easily understood and able to be applied widely; individual and group performance is rewarded; and there is a range of components that generate a bonus payment. The design of a pay for contribution scheme needs to be informed by these factors.

Flexible

The schemes that appear to be most supported and effective are those that have several components with different weightings, and those where teachers can 'opt in' to participate. If one component of the scheme is designed to attract teachers to hard-to-staff subjects or schools, then schools with this need should be able to nominate the teaching need that earns a bonus. Hard-to-staff schools should be able to give significant weighting to this factor and there should be flexibility to adapt the scheme in ways that best meet the needs of special, primary, middle, senior and secondary school settings.

Table 1. Performance pay issues

Issue	Discussion
<p>Does performance pay improve teacher performance?</p>	<p>There is some disagreement about what motivates teachers. Some studies (eg, Calnin, 2007) suggest that monetary rewards could have a negative impact on teacher performance and that the main motivations for teaching are its intrinsic rewards – such as contributing to student growth and development, and facilitating student learning.</p> <p>United States research (Allen, 2005) provides strong support for the conclusion that performance pay plays a key role in the recruitment and retention of teachers. Teachers in performance award systems also exhibit greater motivation toward improved student performance (CTAC, 2004). It has also been observed (Johnson et al, 2005) that pay can take on increased importance when working conditions (eg, lack of supplies or a chaotic school environment) make it difficult to succeed with students.</p>
<p>Should rewards for improved student performance be focused on schools or teachers?</p>	<p>Reviewers (Hattie, 2003; Sanders, 1999; Rivkin et al, 2005; and Marzano 2003) of the evidence on the relative importance of schools and individual teachers to student learning outcomes conclude that it is teachers who have the greatest impact on student learning outcomes. Barber and Mourshed (2007, p 19) claim that ‘the quality of an education system cannot exceed the quality of its teachers’; and that from the research evidence it also seems that ‘the quality of a school cannot exceed the quality of its teachers’.</p> <p>Two key lessons that derive from the research and analysis of Hattie are that in order to improve student learning outcomes, primacy needs to be given to</p> <ul style="list-style-type: none"> • focusing on improving teachers and teaching above all else; and • focusing on skilling teachers with those teaching attributes that contribute most to being an excellent teacher. <p>Marzano (2003) concludes that a highly effective teacher can still produce significant gains in student performance in a highly ineffective school.</p> <p>However, the possibility that too great an emphasis on rewarding the exceptional teacher could be divisive within a school and discourage teacher collaboration is often addressed by also including a team or whole-school bonus component within the scheme, or rewarding teachers who demonstrate improved skill development. Lavy (2007) recommends that, because some degree of teamwork characterises all schools, ‘incentives should balance individual rewards with school incentives’ and that the ‘design of these incentives should foster a cooperative culture, but not at the cost of an aggravated free-riding problem, a condition likely to arise when only group incentives are used’.</p>
<p>What incentives seem to work best?</p>	<p>Little research has been undertaken comparing different incentive options within a multidimensional pay for contribution scheme. Lavy (2001) examined the effects of two education interventions on high school student achievement and dropout rates. The first intervention awarded cash bonuses to schools for reducing dropout rates and improving scholastic achievement. The bonuses ranged from about one per cent to three per cent of average teacher salary. The second intervention provided additional resources, such as additional staff and smaller teacher-student ratios, instead of cash awards, if schools reduced dropout rates and improved scholastic achievement. There were significant gains in student performance in the schools participating in the cash bonus scheme two years after the program was implemented, whereas student improvement was not matched with improved dropout rates in the resources improvement scheme.</p> <p>Teske (2008), considers there is insufficient research to determine which of the various components of performance pay appears to be most promising in increasing student achievement. This is not surprising, given the diversity of teaching situations and of performance pay arrangements. Localised research, however, could reveal the relative merits of different bonus arrangements.</p>

Issue	Discussion
<p>What proportion of the pay should be performance-based?</p>	<p>Whilst all schemes have a base salary to which bonus payments are added, different models vary the proportion of salary that is performance-based. Generally, schemes start out with the proportion being weighted towards the base pay but, over time, the proportion tends to change as confidence in the scheme grows. The greater the ratio of performance-based pay to the total teacher salary, the more impact the performance pay is likely to have on how teachers prioritise their responsibilities. Multidimensional schemes provide the opportunity to vary the proportions allocated within the various components of the scheme and to monitor teacher responses to variations in the weightings given to these components.</p> <p>Designers of pay for contribution schemes understand that bonuses must be large enough to matter to teachers or they will have little effect on their performance. It is not clear, however, how large performance incentives need to be because only limited numbers of studies have explored this question. Researchers agree that one of the primary reasons why many early merit-pay programs in education did not work was that the size of the incentives was too small.</p> <p>Odden and Wallace (2007) suggest 'a general principle is that the average bonus awards should be at least between four and eight per cent of base pay'. However, Lavy (2001) suggests that teacher behaviour change is noticeable with a bonus range of one to three per cent. Hanushek et al (2001) estimate that a pay differential of between 20-50 per cent is needed to attract and hold high-quality teachers in hard-to-staff schools. Clearly experimentation is needed, to gain a clearer idea of the level of bonus payments required to improve performance</p>
<p>Why is payment for professional learning often included in bonus schemes?</p>	<p>Research (Carlson, 2006) indicates that bonuses for completing specific professional learning modules encourages teachers to improve their skills and knowledge, and that there is a strong correlation between the number of teachers acquiring new skills and knowledge and improved student performance.</p> <p>Models incorporating a professional learning component are based on the belief that part of the scheme should reward good teaching and part should encourage teachers to become better teachers. By combining the different elements, the likelihood that teachers will demonstrate improvement and be rewarded for it is increased significantly. Payment is approved once the teacher demonstrates the adoption of the newly acquired practices in the classroom.</p>
<p>How is teacher performance evaluated?</p>	<p>Evaluations of teacher performance can be made by looking at the academic success of a teacher's students. This approach generates several possible concerns. How reliable are the tests that are used to determine student outcomes? What about areas for which there are no standardised tests? What allowances are made for classroom cohort differences? What will count – students' absolute achievement or relative gain? A teacher's demonstration of various skills and competencies could also be used to measure the teacher's performance. This also generates several concerns. Is the evaluator skilled in evaluating teaching performance? Can performance be judged fairly on the basis of a few classroom observations or a portfolio presentation?</p> <p>Typically in a multidimensional model, both kinds of measure are used, with student gain in standardised tests and principal appraisals of competency being common evaluation tools. To build confidence in these assessments, new forms of testing may need to be developed and training will be needed on how to appraise teacher performance.</p>

Feasible

If team or school performance is a component of the scheme, then processes for evaluating teams and schools cannot place significant additional burden on the system. If bonus payments are to be tied to student performance, then state or national student data systems need to have in place credible assessment tools and processes for all areas. They must have the capacity to match individual student records from year to year and to link individual teachers to their students' results.

Affordable

It is likely that any new scheme will be built on a base salary that recognises different levels of competency and contribution to the school (eg, 'novice', 'professional' and 'expert' level teachers), and which provides a career ladder for the profession. Additional funds will need to be provided to design, implement, and sustain the bonus payment scheme.

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Another key message from the literature on performance pay is that there need to be several components to a performance pay scheme (Hassel and Hassel, 2007; Center for Teaching Quality, 2007). Possible components that have been discussed previously, and which should be considered for inclusion in any new bonus pay scheme, are

- performance pay – significant bonus pay to teachers for gains in student learning results;
- hard-to-staff school pay – additional compensation for teachers who work in high-poverty schools, as well as very significant performance rewards to those who contribute more to growth in student learning in these schools;

- skill shortage pay – additional compensation to attract teachers in shortage areas, such as maths, science and special education, as well as very significant performance rewards to those who contribute more to student learning gains in the shortage areas;
- advanced role pay – additional compensation for advanced or 'master' teaching roles (and teachers capable of filling them) that contribute measurably more to student learning;
- skill and knowledge pay – additional compensation for specific skills that lead to proven, measurable gains in student learning, particularly in states/territories where teacher-level assessment of student gains has not been implemented;
- limited advanced degree pay – additional compensation for holders of advanced degrees, only in fields such as secondary mathematics, where such degrees have a proven effect on student learning; and
- retention pay – significant one-time pay boosts after the early years of teaching experience, to retain higher performers.

Conclusion

The growing body of literature on the issue of performance pay reveals a shift away from polarised arguments, either categorically for or against performance pay, to discussions about what kinds of performance pay seem to work best and the issues associated with implementation of such schemes.

This softening of the lines between advocates and detractors of performance pay has been assisted by

- research evidence of promising pay for performance schemes;
- the more open processes used to devise schemes;
- the improved techniques for collecting data and making judgement about teacher and school performance; and

- the widespread support for improving the quality of teachers in our schools.

Fortunately, school systems, districts and schools have a small but growing range of workable models of performance pay that can be analysed and built upon. Today's systems and processes for supporting the implementation of performance pay are an improvement on those adopted several decades ago.

However, there is no avoiding the conclusion that, whilst there is a growing consensus that performance pay may contribute to improving schools and student learning, there is still scope for improved program design and for building knowledge about what works best. For example, performance pay models must

- contribute to teacher collaboration, or at worst not undermine teacher collaboration;
- promote those behaviours that are consistent with our knowledge of what makes an effective school and an effective classroom; and
- encourage good teachers to stay in teaching and unsuitable teachers to leave teaching.

How these outcomes are to be achieved consistently, in the wide variety of schooling contexts in which 'pay for contribution' could be applied, is not something for which the research provides a ready answer. However, the research does help to identify those performance pay practices that are most likely to have a beneficial effect and those that are not.

Whilst clearly more work needs to be done to test and refine pay for contribution policies and practices, there seems to be sufficient evidence to suggest that appropriately structured pay for contribution schemes have the potential to become a key strategy for improving the teacher workforce and for lifting the performance of schools across the country.

Appendix 1. Examples of performance pay schemes in the United States

Denver, Colorado – Pro Comp scheme

Denver Public Schools' Professional Compensation System for Teachers (Pro Comp)⁴ is a nine-year bargained agreement between the Denver Classroom Teachers Association (DCTA) and Denver Public Schools (DPS), which is designed to link teacher compensation more directly with the mission and goals of DPS and DCTA.

The Pro Comp system (DCTA, 2006) has been designed to

- reward and recognise teachers for meeting and exceeding expectations;
- link compensation more closely with instructional outcomes for students; and
- enable the district to attract and retain the most qualified and effective teachers, by offering uncapped annual earnings in a fair system.

The compensation plan grew out of the Pay for Performance Pilot, a four-year project in 16 Denver schools from 1999 to 2003 that measured teacher objective setting and student growth. Among the findings from the pilot was that teachers who set the highest objectives could have a positive influence on student achievement.

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Denver's Board of Education proposed a plan to the DCTA and, after negotiations and concessions by the Board and the extensive involvement of local and national philanthropists, DCTA agreed to a pilot program. DCTA insisted that performance be based on objectives chosen by teachers, with the approval of their principals, rather than

objectives identified by some authority. They also insisted that the pilot be evaluated by a third party, and that the final plan be submitted to DCTA members for a general vote.

During the pilot phase, 85 per cent of teachers in a school had to agree to participate, in order for the school to become part of the trial. Only 16 schools, less than ten per cent of the district, joined. When the full program took hold in 2004, with the terms described above, participation became mandatory for new teachers. In effect, teachers made a program participation choice by choosing to work in the district. Teachers who are already employed are able to choose to opt into the program, but are not required to do so. For them, the standard salary schedule will remain in place until the last teacher covered by it retires or leaves the district. In the first year of the program, 28 per cent of the existing teacher workforce opted to participate in the Pro Comp scheme.

Under the Pro Comp scheme teacher bonuses are linked to a broad range of skills and performance. These include the following.

Skills

Teachers earn compensation for acquiring and demonstrating knowledge and skills, by completing annual professional development units, through earning additional graduate degrees and national certificates (two per cent of salary on professional development; nine per cent on National Board certification).

Administrator evaluation

Teachers are recognised for their classroom skill by receiving salary increases every three years for satisfactory evaluations (three per cent).

Student academic growth objectives

Teachers are rewarded for the academic growth of their students – objectives set by teacher and principal (one per cent); increases in test performance of a teacher's students (three per cent); and increases in test performance school-wide (two per cent).

Assignment to hard-to-staff or hard-to-serve schools

Teachers fulfilling these roles are rewarded with three per cent of salary for each factor.

The centrepiece of the Pro Comp scheme has been the teacher objectives at the 16 pilot schools. Teachers developed two annual objectives, based on student achievement, which required the approval of the principal. Teachers received additional compensation if they met their objectives. Pro Comp uses multiple measures to reward teachers, as no one measure can be shown to reflect accurately everything about quality teaching.

An evaluation (CTAC, 2004) of the pilot program revealed the following.

- At all three academic levels – elementary, middle, and high school – higher mean student achievement in the pilot schools is associated positively with the highest quality teacher objectives.
- Student achievement improves as length of teacher participation in the pilot increases.
- The pilot has been the catalyst for developing a fundamentally new compensation scheme for teachers in Denver that is based, in part, on student achievement.
- The pilot has significantly increased the school and district focus on student achievement and this focus has increased with each succeeding year of pilot implementation.
- Teachers indicate that they have greater access to student achievement data and that they use the data more effectively, particularly baseline data, to establish growth expectations, to focus earlier on students who may need more assistance and to monitor progress.
- Most teachers feel that cooperation among teachers has improved or stayed the same at the pilot schools.
- Pilot teachers are less fearful of pay for performance than control school teachers.
- By the end of the pilot, pilot participants were more likely to offer suggestions for

improvement of the scheme than to indicate that pay for performance was not viable.

- Pilot teachers continued throughout the pilot to raise issues of fairness and trust, in the objective setting and review process, and believe that it is possible to set fair objectives.
- Pay for Performance has enabled issues that have adversely affected district progress, sometimes for many years, to be put on centre stage.
- The task of linking student achievement results to specific teachers has proved to be more challenging than was originally anticipated by the district and, as the scheme is expanded, improvements in achievement data collection and analysis will need to be made.

Denver has developed a parallel plan to Pro Comp for its principals. Some other districts award principals bonuses for enhanced student performance.

The relatively minimal connections between salary and outputs have led some observers to suggest that Denver's plan is not a true pay for performance system but rather a 'differentiated compensation' plan.

Douglas County School District, Colorado – Teacher Performance Plan

Performance pay in the Douglas County School District has been in place since 1994 for all employee groups (Kelley, 2000; Kronser, 2008).

The number one reason for pursuing a new compensation system is to improve overall district performance. This plan has come about as an effort to reward outstanding individual and group performance as it relates to measurable goals. The plan will continue to be adjusted, expanded and improved based on the feedback we receive from teachers, administrators and parents.

(Douglas County School District, undated)

The goals of the Douglas County School District teacher compensation scheme are to

- support the district's mission, core values and strategic plan;
- attract, retain and motivate the highest qualified teachers, while competing in the employment market;
- reward growth, development, and skill and knowledge acquisition;
- provide predictability and stability; and
- ensure teacher involvement and participation in the development, evaluation and reward process.

In 1993 a task force of 30 individuals designed the Douglas County pay for performance pilot scheme. Each year since its inception, committees have continued to refine, evaluate, modify and expand each of the scheme's components. Teachers have demonstrated their support for the scheme by voting overwhelmingly to continue its implementation each year. The authorities advise that a major philosophical shift has taken place in relation to performance pay, as 'no longer will all teachers be awarded salary increases without regard to performance'.

All schools and teachers were invited to participate in the pilot program. Once implemented, the scheme was mandatory for new teachers and experienced teachers were given the choice of opting in or staying outside the program. Many teachers have opted into those aspects of performance pay in which they are interested.

The incentive structure includes bonus incentives for responsibilities that were not traditionally compensated, such as the following.

Base pay

This is the starting salary for inexperienced teachers.

Knowledge bonus

The district recognises and rewards further study (eg, completion of approved inservice programs, short courses and degrees).

Evaluation credit bonus

Two category ratings are used. Those teachers rated as proficient receive an evaluation credit bonus and those rated as unsatisfactory do not receive a salary increase.

Outstanding teacher bonus

This is an annual bonus that rewards outstanding teachers who demonstrate and document teaching excellence during the academic year.

Master Teacher bonus

To receive a bonus, teachers must meet eligibility requirements and compile clear supporting documentation demonstrating proficiency in relation to specified performance criteria.

Group Incentive bonus

The Teacher Group Incentive Plan (GIP) identifies a need and establishes a specific, common goal within a school or a group of teachers, focused on improving student achievement. Teachers participating in this component receive a bonus upon the satisfactory completion of the GIP.

Skill development bonus

Bonuses are paid to teachers who acquire, apply and demonstrate skills that support the goals of the school district. Upon successful demonstration of the skill, the teacher is paid a one-time bonus.

Responsibility bonus

A payment is provided for specific additional duties performed at the school or district.

It is claimed that the pay for contribution scheme does not undermine the important element of collegiality and teamwork and has led to

- a great deal of teacher participation in the decision-making process of the district;
- skill development that reflects positively in the classroom; and
- the district being more attractive to prospective candidates.

Minnesota – Quality Compensation for Teachers (Q Comp)

Q Comp was proposed by the State Governor and adopted in July 2005. It is a voluntary performance pay program that allows local districts and ‘exclusive representatives’ of the teachers to work collectively, to design and bargain a plan that meets the five components of the legislation enacted to support the introduction of Q Comp.

The five components (Minnesota Department of Education, undated) under Q Comp legislation include the following.

Career ladder/Advancement options

This component allows teachers to take on additional responsibilities and positions. Teachers in these positions are compensated for the additional responsibilities or receive release time.

Job-embedded professional development

This component requires schools to deliver integrated professional development for teachers. Typically, schools configure teams of teachers into Professional Learning Communities.

Teacher evaluation

The program requires multiple teacher evaluations that are aligned to staff development requirements. Local Q Comp plans are required to use multiple evaluations of a teacher’s instructional performance, based on the school’s educational improvement plan. Evaluations must also include classroom observations during the school year by a locally selected evaluation team.

Performance pay

Sixty per cent of teacher compensation increases must be based on the performance pay measures, which include

- school-wide student achievement gains, based on standardised assessment results;
- measures of student achievement; and
- individual teacher evaluations/observations.

Alternative salary schedule

A school district and exclusive representative of teachers must negotiate a new salary schedule that 'reforms' the 'steps and lanes' salary schedule. In addition, no teacher receives a pay reduction when transitioning to an alternative salary schedule.

All five components must be included in the program submitted by a school district, intermediate school district, or charter school, in order to receive funding from Q Comp.

Districts and schools applying to be included in the scheme must have developed an Education Improvement Plan (Minnesota Department of Education, undated), which includes the assessment that will be used to measure achievement gains, a site-based professional development plan, and an objective and comprehensive teacher evaluation system.

As this is a state initiative, districts need to apply to the state to be included in the scheme. Schools and districts seeking to enter the scheme need teacher/union approval.

Thirty-nine of 336 Minnesota districts have opted for the Q Comp scheme, as have 21 of 132 charter schools. More than 130 additional districts have indicated they plan to submit an application for future years.

Each district creates a plan determining how each component of the scheme will be measured, what type of achievement must be demonstrated, and how much pay will be awarded if the standard of performance is demonstrated. Schools and districts implementing Q Comp receive an annual program preview that begins with a document review and includes peer review site visits.

The Little Rock, Arkansas, Performance Pay Scheme

In 2004, the Little Rock School District and the Public Education Foundation of Little Rock joined efforts to create a pilot performance pay program for teachers, entitled the Achievement Challenge Pilot Project (ACPP) (Ritter et al, 2008; Winters et al, 2007; Barnett et al, 2007). The Little Rock, Arkansas pilot was initiated to provide information about the operation and value of a pay for performance program.

Under the program, teachers received direct bonuses, based on the average academic growth of students in their class, as measured by five gains on the complete battery of a nationally norm-referenced, standardised test, the Stanford Achievement Test (SAT), and the number of students in the class. This was a small-scale pilot involving five schools. The Little Rock School District was keen to demonstrate that performance pay 'pays dividends for students, teachers and staff'. The five schools selected for the pilot had high percentages of students who were academically struggling and economically disadvantaged. Fifty per cent plus one of the teachers in these schools needed to agree with involvement in the pilot program.

The Little Rock School District performance pay pilot scheme was evaluated in 2006 and the final evaluation (Ritter et al, 2008) of the pilot was completed in 2008.

The 2006 'year one' evaluation (Winters et al, 2007) of the performance pay plan found that students attending schools where teachers directly received bonuses based upon their students' test score gains made substantially larger improvements in mathematics proficiency than students in demographically similar control schools that did not participate in the program.

A 2008 'year two' evaluation (Ritter et al, 2008) of the Little Rock ACPP found that students in the three schools where the ACPP began operation in 2006–07 showed an improvement in achievement in multiple subject areas.

Based on the surveys of over 300 Little Rock elementary school teachers, and on interviews with faculty in ACPP schools, teachers have mixed feelings about the program. The data do not indicate that ACPP teachers, in general, are more innovative or work harder, despite the fact that these are two oft-cited potential benefits of pay for performance schemes. However, teachers in schools that have participated for multiple years in the ACPP reported being more satisfied with their salaries than their peers in first-year ACPP schools and in comparable non-participating schools.

The data do not indicate that ACPP teachers experience divisive competition, suffer from a negative work environment, or shy away from working with low-performing students – despite the fact that these are three oft-cited potential problems inherent in merit pay schemes.

Teachers in the three schools implementing merit pay for the first time in 2006–07 highlight some problems with the implementation of the program, which resulted in teacher discontent and decreased program support. ACPP teachers, however, did report being more effective teachers than comparison teachers in non-ACPP schools.

Whilst these findings are promising, they are based on a small sample, in which schools were not randomly assigned to the pilot or control group and the evaluation was limited to only one aspect – improved mathematics scores. Consequently, the higher test score gains in the schools that implemented the program may reflect other characteristics of these schools, not controlled for in the analysis.

Endnotes

1. The author prefers the term ‘pay for contribution’ to ‘pay for performance’ and uses the terms interchangeably in this paper.
2. These findings have been drawn from a range of research, including the work of Allen, 2005; Reed et al, 2006; Hassel and Hassel, 2007; Barber and Mourshed, 2007; Loeb and Reiningger, 2004; Leigh and Ryan, 2006; Reichardt and Van Buhler; 2003; and Boyd et al, 2007.
3. The Teacher Union Reform Network (TURN) is a union-led effort in the US to restructure the nation's teachers unions to promote reforms that will ultimately lead to better learning and higher achievement for all students.
4. denverprocomp.org/
The processes used to establish Denver’s system have been documented in Goring, P, Teske, P and Jupp, B (2007) *Pay-for-performance Teacher Compensation: An Inside View of Denver’s Pro-Comp Plan*, Harvard Education Press, Cambridge, MA.

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Note that:

Johnson et al (2005) provide a comprehensive annotated bibliography at the end of their teacher retention literature review report.

Wyman and Allen (2001) provide an overview of the key issues involved in the pay-for-performance concept; a summary of key questions policymakers need to ask in thinking about pay-for-performance systems; a discussion of lessons learned from the five leading programs represented; a comparison chart of the five programs; and a summary of the individual programs, including sources for further information.

Additional Reading

The following items may be of interest to the reader. They were consulted in the preparation of this paper but not referred to explicitly in the text.

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About the Author

Peter Cole is Director of PTR Consulting P/L, based in Melbourne. His previous Seminar Series paper for CSE was *What makes an education system a leader in performance* (No 173, April, 2008).

About the Paper

'Pay for performance' has been the subject of much recent debate in Australia. In this paper, Peter Cole contributes to informed discussion of the associated issues by exploring some of the more recent working models of pay for performance schemes in the United States. He discusses their relative advantages, disadvantages and effectiveness for promoting quality teaching and producing improved student learning. Whilst more work needs to be done to test and refine pay for contribution policies and practices, he concludes there is sufficient evidence to suggest that appropriately structured pay for contribution schemes have the potential to become a key strategy for improving the teacher workforce and for lifting the performance of schools.

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