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Rewarding Good Teachers

More than two centuries ago, Adam Smith wrote that "the rivalship of competitors" and emulation of those who have succeeded are two potent reasons why people "execute [their] work with a certain degree of exactness."[1] We've seen how students respond positively when allowed to compete for rewards. How about teachers?

Proposals to pay teachers based on the performance of their students face stiff resistance for several reasons. Since many of us find learning to be a pleasurable activity, we assume teaching is as well and jump to the conclusion that internal motivation dominates the choices made by teachers. There is no doubt that most teachers are attracted to their careers by a sense of calling and not as a route to personal wealth.[2] Offering some teachers financial rewards but withholding them from others may seem crass or offensive since it implies some aren't already trying as hard as they can to help their students learn. The difficulty of discerning how much learning is due to the efforts of individual teachers and not their colleagues, their students' innate abilities, or parents and other influences outside the school raises questions about how performance-based pay could be calculated and whether it would incentivize the desired behavior.

We can start our inquiry into performance-based pay by reviewing evidence regarding the variability in teacher effectiveness and the impact it has on student achievement. This literature suggests large increases in student learning could occur if the behavior of teachers could be changed. We then examine the problem of teacher burnout – teachers who feel disrespected, trapped in their careers, and denied access to the tools or

policies they need to perform at higher levels. For these teachers, the current system of teacher compensation plainly isn't working. After reviewing how performance-based pay works in other occupations, we present a series of best practices based on experiences of schools in the U.S. and elsewhere.

Impact of Good Teachers

Not all teachers are equally effective in their classrooms. Researchers have found teacher quality varies considerably from teacher to teacher and among schools, and this variation in turn has a significant measurable impact on student achievement. Among the earliest researchers to find this was Eric Hanushek, now a senior fellow at the Hoover Institution of Stanford University.[3] Based on data on approximately 1,800 students in Gary, Indiana, he estimated the city's most effective teachers boosted their students' learning by about 1.5 grade-level equivalents a year while the least effective teachers produced only 0.5 grade-level equivalents of growth. His research originally was published in 1971, and he has frequently revisited the issue using different databases and methodologies.[4]

Other researchers have found similar effects. William Sanders and June Rivers, for example, found students who had encountered teachers at or above the 80th percentile of performance for three consecutive years performed 50 percentile points higher on student achievement tests than students who encountered teachers in the bottom 20th percentile for three years.[5] Douglas O. Staiger and Jonah E. Rockoff, using data from public schools in Los Angeles and New York City, found "the standard deviation across teachers in their impact on student achievement gains is on the order of 0.1 to 0.2 student-level standard deviations, which would improve the median student's test score 4 to 8 percentiles in a single year."[6]

Writing in 2010, Staiger and Rockoff acknowledged that research on teacher effects rests on statistical assumptions that are "extraordinarily strong and rarely tested," but they contend there is strong research support for the conclusion "that the magnitude of variation in teacher effects is driven by real differences in teacher quality."[7] They find estimates by different researchers tend to be consistent in a variety of circumstances. Teacher effects on achievement are also consistent with evaluations made by school principals and other professional educators, and studies based on random assignments of teachers to classrooms show teacher effects similar to those of non-experimental studies.

These findings have prompted a large number of studies seeking to

determine what distinguishes a "highly effective" from a "least effective" teacher. Surprisingly, researchers have found teacher characteristics such as post-graduate degrees, years of experience (beyond the first year or two), and licensing examination scores "do not represent teacher quality" and do not predict how a teacher's students will perform.[8] This finding poses problems for those who would seek to hire only "high-quality" teachers or dismiss "low-quality" teachers since teachers in both categories may have identical training and apparent qualifications.

Rather than being a source of despair for reformers seeking to accelerate student learning, these findings should be a cause for optimism. In Chapter 1 we reported research showing that self-discipline, perseverance, and "grit" play a bigger role than innate intelligence in predicting academic success. This means innate intelligence does not limit who might benefit from incentives or impose a ceiling on how much such incentives can enhance academic performance. Similarly, we find teachers can be highly effective regardless of their training, lack of experience, or performance on licensing exams. Some teachers already are highly effective. But nearly all teachers can become highly effective. They need to be appropriately taught and incentivized.

Teacher Burnout

If education, training, experience, and other standard measures of teacher quality don't correlate with success in the classroom, why aren't more teachers highly effective? One major reason is because millions of teachers are unhappy in their current positions.[9] Frederick M. Hess, a former teacher and currently director of education studies at the American Enterprise Institute, recently painted a grim picture of what it is like to be a public school teacher in America:

> Teachers are hired, essentially for life, through drawn-out recruiting processes that pay little attention to merit and alienate many highly qualified candidates. Little or nothing about teachers' or administrators' performance affects their career prospects or job security. Educators who propose new approaches or new efficiencies are treated with suspicion by district officials and must run a gauntlet of official and cultural resistance in order to try anything new. There is little systemic recognition for excellent educators, while pay, perks, and assignments are distributed

> primarily on the basis of longevity. The result is a culture of public schooling in which educators learn to keep their heads down, play defense, and avoid causing waves.[10]

Other researchers report that hiring and retaining good teachers is handicapped by "disparities in pay and working conditions, interstate barriers to teachers' mobility, inadequate recruitment incentives, bureaucratic hiring systems that discourage qualified applicants, transfer policies that can slow hiring and allocate staff inequitably, and financial incentives to hire cheaper, less qualified teachers."[11] Little wonder, then, that more than 30 percent of new teachers leave the profession within five years. This churning "results in a constant influx of inexperienced teachers" resulting in "insufficient preparation and support of new teachers, poor working conditions, and uncompetitive salaries."[12]

These conditions have led to an epidemic of "teacher burnout," which Anthony Dworkin, a sociologist at the University of Houston, defines as "a response to job stress and related to a sense of meaninglessness and powerlessness" and "a malady of human service professionals who are denied professional autonomy, status, and respect."[13] Dworkin has conducted surveys showing teacher burnout has risen following each of three school reform "waves' since 1983: legislated standardization and competency testing, decentralization and site-based decision-making, and high-stakes testing with accountability.[14] Dworkin found teachers in 2012 reported feeling stressed at twice the rate as those in 2002.[15]

Anecdotal evidence of teacher burnout abounds. A long-time Milwaukee teacher wrote in 1994, "Very common are teachers who at one time were good, but after years of bureaucratic nonsense and dwindling morale, do not much like their job anymore."[16] A 1997 *San Antonio Express-News* Sunday Insight section, titled "Schoolhouse Blues," described the same feelings among teachers and administrators in Texas.[17] The authors noted the constant changing of programs creates panic, low morale, and burnout. A letter-writer to *Education Week* in 1998 similarly reported "teachers are in a virtual state of panic, caught between crushing district mandates and the need to raise standardized test scores."[18]

These anecdotes all date prior to 2001, the year the No Child Left Behind Act was passed. Lisa Singleton-Rickman reported in 2009, "with stricter-than-ever accountability laws through the federal No Child Left Behind and significantly more paperwork, teachers suffer burnout more

quickly than they did 10 years ago."[19]

Is teacher burnout an unavoidable part of the teaching profession? To answer this question, Greg Forster and Christian D'Andrea analyzed data from the 2007–2008 Schools and Staffing Survey (SASS), a national survey of teachers and principals conducted by the U.S. Department of Education.[20] They found compelling evidence that teacher burnout is mostly a public school phenomenon. Forster and D'Andrea wrote:

> Private school teachers consistently report having better working conditions than public school teachers across a wide variety of measurements. Most prominently, private schools provide teachers with more classroom autonomy, a more supportive school climate, and better student discipline. It appears that the dysfunctions of the government school system – long evident in mediocre educational outcomes – are a problem for teachers as well as for students.

These professional opinions, survey data, and anecdotes reveal that many public-school teachers under-perform in the classroom. They feel mistreated by the current system of recruiting, paying, and managing teachers.

Performance-based Pay

Performance-based pay is pervasive outside the world of public K–12 education. An estimated 75 percent of the U.S. workforce is paid at least partly based on performance.[21] The late Nobel economist Robert William Fogel wrote, "even in occupations such as surgery, which attracts some of the most diligent and talented persons in the nation, there are significant variations in hours worked and in skill. As a result, those in the top tenth of the distribution of surgeons' incomes earn six times as much as those in the bottom tenth."[22]

Performance-based pay is common in higher education. Labor economist Michael Podgursky writes, "there are large differences in pay between faculty by teaching fields. Faculty pay structures in most higher education institutions are flexible. Starting pay is usually market driven, and institutions will often match counteroffers for more-senior faculty whom they wish to retain. Merit or performance-based pay is commonplace."[23] Also common in higher education is the use of prizes to reward high achievement and incentivize others to compete for future awards. Some of

the more notable prizes include the Abel Prize (in mathematics, $1 million), Lasker Award (in medical sciences, $250,000), MacArthur Foundation Fellowship awards for "creative work" ($500,000), Nobel Prizes ($1.2 million, launched in 1901), Shaw Prizes (in astronomy, life science and medicine, and mathematical sciences, $1 million), and Wolf Prizes (in various sciences, $100,000). In recent years several new prizes with large financial rewards have been launched: the Fundamental Physics Prize and Breakthrough Prize in Life Sciences (each $3 million), Tang Prize (in sustainable development, biopharmaceutical science, Sinology, and rule of law, $1.7 million), Queen Elizabeth Prize for Engineering ($1.5 million), and Blavatnik Award (for young scientists, $250,000).[24]

The wide ranges in compensation seen in many professions and the use of cash awards to recognize and promote high achievement differ dramatically from the way teachers are paid in public K–12 schools. Nearly all public school teachers are paid according to a "single-salary schedule" or "position-automatic system" that requires teachers with a given number of years of experience and education level to receive identical pay.[25] Except during the first few years of teaching, neither of these pay determinants is linked to student achievement. Even special pay for difficult-to-recruit-for subjects such as science and mathematics and "combat pay" for teaching in difficult schools are rare. As a result, underperforming teachers get paid the same as the best teachers and rarely lose their jobs. Ambitious, hardworking, fairness-conscious superior teachers resent that they earn no more than the least competent and laziest member of the faculty, which may cause them to scale back their own efforts or leave the profession entirely.[26]

Dale Ballou and Michael Podgursky say there is "no other profession where compensation and contract renewal are so largely divorced from evaluations of performance as they are in public school teaching."[27] In the current system, even the rare teacher salary incentives are a mixed blessing. They can motivate innovation and spur creativity, but they also can create tension among teachers.[28] Increased productivity doesn't raise a public school's merit pay funding or total budget. More money for one teacher can mean less for others. Since someone else's good evaluation can be bad for them, teachers become more reluctant to share ideas and materials, praise their colleagues, or work in teams.

Basing pay on performance does not mean other kinds of rewards should not be used. A survey of business managers conducted by a prominent business consulting group found respondents ranked three

noncash motivators – "praise from immediate managers, leadership attention (for example, one-on-one conversations), and a chance to lead projects or task forces" – just as high as or higher than the three highest-rated financial incentives in the survey: cash bonuses, increased base pay, and stock or stock options.[29] Financial and nonfinancial incentives ought to be in the toolbox of every effective manager including school principals and other school leaders.

Even if most current teachers were internally motivated to enter the teaching profession, changing the way they are compensated may not affect their decisions to remain in the profession or attract more talented persons to become teachers. Indeed, changing teacher compensation may be necessary to attract the best and brightest to the profession. Dworkin, who is no fan of competition or rewards in K–12 education, found "teacher burnout has a minimal effect on student achievement and attendance"[30] in part because higher-performing teachers tend to have transferrable skills and are more likely to quit the teaching profession.[31] In other words, burned-out teachers don't affect student achievement and attendance because most of the good teachers who could raise student achievement have left the profession.

Raising teacher salaries, Dworkin admits, would have the effect of retaining some lower-quality and burned-out teachers.[32] His conclusion is striking, even though he fails to recognize that he is, in effect, endorsing performance-based pay for teachers: "It is likely that only when so many of the best and the brightest elect never to consider a career in public school teaching or quit after a short tenure in teaching, that one would expect to find, as we have, that teacher commitment has such a tiny effect upon student learning."[33]

North Carolina recently adopted legislation eliminating teacher tenure and automatic pay increases for master's degrees, making it a leader in the movement to remove the disincentives to teacher excellence.[34] But there is still a long way even for North Carolina to go before the promise of performance-based pay for teachers is realized. Many educators and some policy analysts say performance-based pay for student learning hasn't been sufficiently demonstrated to justify further study or use in schools. Yet, the achievement failures and rising costs of public schools suggest the opposite. Since performance-based pay is nearly universal in other occupations and professions, the burden of proof rests with those who defend the single-salary schedule. While spurious claims are made that performance-

based pay is unfair to educators, the single-salary schedule is actually unfair to the millions of children in public schools who are subject to poor teaching and repeatedly failing schools.

Best Practices

Performance-based compensation is widely used outside the K–12 education sector, including by government. A robust literature on best practices can be applied, with some modifications, to teacher compensation.[35] An excellent guide to best practices is a 2006 report from the U.S. Merit Systems Protection Board, an independent, quasi-judicial agency in the executive branch. It recommends that performance-based compensation programs be designed around 12 "decision points" and that agencies contemplating such programs meet seven "requirements." Both lists appear in the table on the following page.

Performance-based pay for teachers has been debated, proposed, and attempted "in virtually every decade since the 1950s."[36] Unfortunately, little progress has been made in implementing the idea on a large scale. Teachers union opposition accounts for much of this failure[37] but also to blame was the absence, until recently, of longitudinal student test results and teacher panel data that could reliably connect an individual teacher's efforts to the academic progress of his or her students, a procedure called value-added modeling.[38] During the past decade, value-added modeling has informed small-scale experiments and pilot programs in several states including Arkansas, Illinois, New York, North Carolina, Tennessee, and Texas, and internationally in India, Israel, Kenya, and Mexico. Evaluations of these programs typically find modest positive effects on student achievement.[39]

Some possible best practices for performance-based pay for teachers derived from studies of these experiments and pilot programs[40] include:

- Since conventional measures of teacher qualification fail to predict teacher effectiveness, principals and administrators should reward actual classroom performance rather than credentials.

- Starting teachers whose performance results are below average should be let go quickly, after their first year or two of data are available for review, even at the risk of losing some teachers who might improve.[41]

Effective Pay-for-Performance Systems

Decision Points

1. Is the agency ready for pay for performance?
2. What are the goals of pay for performance?
3. Who should be paid for performance?
4. What should be the timing for implementing pay for performance?
5. What should be rewarded?
6. How should employees be rewarded?
7. How much pay should be contingent upon performance?
8. How should performance-based pay be funded?
9. How can costs be managed?
10. Who makes performance rating and pay decisions?
11. Who provides input to performance ratings?
12. How can agencies facilitate pay system integrity?

Agency Requirements

1. A culture that supports pay for performance
2. Effective and fair supervisors
3. A rigorous performance evaluation system
4. Adequate funding
5. A system of checks and balances to ensure fairness
6. Appropriate training for supervisors and employees
7. Ongoing system evaluation

Source: U.S. Merit Systems Protection Board, *Designing an Effective Pay for Performance Compensation System, A Report to the President and the Congress of the United States*, January 2006, http://www.mspb.gov/netsearch/viewdocs.aspx?docnumber=224104&version=224323&application=ACROBAT.

- Teacher effectiveness should be measured by value added – the change in the academic achievement of a teacher's class as measured by standardized tests – rather than absolute test levels or pass rates that could reflect student aptitude or the effects of teachers in prior school years.

- The average achievement gains of all students may be taken as the performance criterion rather than simply the percentage that crosses a particular minimum score or pass rate (called the "cut score"). This avoids encouraging educators to concentrate on students below the cut scores while neglecting other students.

- All teachers should be eligible for the reward offered, but only a subset of teachers should be rewarded in practice.

- The best incentive programs align teachers' raises and bonuses with student learning, but additional criteria may be used such as giving the principal's assessment half the weight of the overall performance rank.

- Principals also should be rewarded based on school performance to encourage them to take greater care in assessing teachers.

- Given the poor performance and high costs of public schools, large incentives seem to be in order. Making the incentive half the total compensation for both teachers and principals may be too much, but 5 percent seems too little.

- Reward systems "must align performance with ultimate outcomes and must be monitored closely to discourage gaming if not outright fraud in measured output."[42]

- Individual rewards must be balanced with school incentives, fostering a cooperative culture but not at the expense of free riding or some teachers unjustifiably riding on the coattails of others.

Conclusion

Research clearly demonstrates that teacher effectiveness varies considerably and that differences in teacher quality have major effects on student

achievement. Since teacher effectiveness is not determined by post-graduate degrees, years of experience (beyond the first year or two), or scores on licensing exams, it follows that the behavior of teachers can be changed by incentives: nearly every teacher, regardless of training or experience, could be effective.

Many teachers are under-performing because the current system of hiring, paying, and managing teachers creates perverse incentives. Good teachers are not rewarded for their successes or additional efforts and ineffective teachers are rewarded with pay increases and pension benefits based solely on tenure, encouraging them to stay long after they have "burned out." Beginning teachers are granted tenure within a few years without consideration of their effectiveness, and once granted tenure they are difficult to terminate.

Performance-based pay is the rule rather than the exception in the private sector and in higher education. Experiments with performance-based pay for teachers have been moderately successful to date but typically have been seen only on small scales and often not informed by newly available data from value-added modeling. This creates an opportunity to implement performance-based pay on a much wider scale based on more reliable data than previously were available. Available research suggests this would lead to a considerable boost in student achievement.

Notes

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