



# Market-Based Reform of Teacher Compensation

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November, 2009

## EXECUTIVE SUMMARY

Compensation accounts for over ninety percent of instructional costs in public schools, yet the process for setting the level and structure of educator compensation is rarely rational or strategic. Ideally, total compensation and its components would be structured to recruit, retain, and motivate the highest quality professional workforce for a given level of expenditures. In this policy brief we examine two aspects of teacher compensation policy in K-12 education that are problematic; rigid salary schedules and retirement benefit systems.

## INTRODUCTION

During the 2004-05 school year, the most current year for which national data are available, U.S. public schools spent \$179 billion on salaries and \$50 billion on benefits for instructional personnel. These compensation payments account for 55 percent of K-12 current expenditures and 90 percent of instructional expenditures. As large as these expenditures are, they do not fully capture the resources committed to K-12 compensation,

since they do include billions of dollars of unfunded liabilities of pension funds and retiree health insurance for teachers and administrators (Clark, 2008). If productivity doubles as an input accounting for one percent of total cost, there will be little overall efficiency gain. However, given the large share of K-12 costs that arise from educator compensation, even small gains in efficiency would yield large benefits.

A burgeoning research literature outside of K-12 highlights the importance of human resource (HR) policies within organizations. To quote a leading textbook in the field: "...human resources are key to organizational success or failure. It is perhaps going too far to say that excellent HR policies are sufficient for success. But success with poor HR policies is probably impossible, and the effects of improved HR success are potentially enormous." (Baron and Kreps, 1999) Compensation is a central part of a strategic HR policy.

Unfortunately, the compensation "system" for public school teachers is

neither strategic nor integrated. Rather, it is best seen as an amalgam of different components, reflecting pressures from different constituencies, legislative tinkering, and legacies from earlier vintages of employment agreements, but with little consideration to overall efficiency. For example, teacher base pay is set by salary schedules that have evolved through generations of collective bargaining agreements, or in non-bargaining states like Texas, legislative fiat. Base pay is augmented by various types of district or state-wide salary supplements (e.g., coaching, career ladder). Finally, deferred compensation in the form of retirement pay inhabits another silo altogether, with policy typically set by statewide pension boards dominated by senior educators and administrators. Teacher compensation is the sum of all of these parts (plus fringe benefits such as health insurance).

Ideally, the overall compensation package would be designed to recruit, retain, and motivate the highest quality professional workforce for any given level of expenditures. In prac-

tice, the pieces of educator compensation systems – current salary, additional compensation, benefits, deferred compensation – are set in ad hoc ways with little coordination or consideration of strategic tradeoffs, or tested against labor market benchmarks. The result is excessive costs, inefficiency, and perverse incentives.<sup>1</sup>

### THE SINGLE SALARY SCHEDULE

The most important determinant of a teacher’s pay is the salary schedule in the district. These salary schedules are nearly universal in public school

districts. For example, Table 1 reports the 2007–08 salary schedule for the Houston Independent School District. The rows are years of experience and the columns refer to graduate degrees. Some districts have more or fewer experience steps and differences in the step gains. Some have more columns (e.g., BA, BA+15 credits, BA+30 credits). However, the basic structure – with years of experience and graduate credits or degrees as the only or primary determinants of base pay – is common over many school districts. In addition to district

schedules, some states (primarily southern states including Texas) have state-wide salary schedules that set a minimum pay level for all public school teachers in the state. Districts are free to set pay in their own schedules above the state schedule, and many do. Table 2 reports the 2008–09 Texas state salary schedule.

These teacher salary schedules are sometimes referred to as “single salary schedules,” a term reflecting their historical development. Kershaw and McKean (1962) note that there were

Table 1 — Salary Schedule: Houston Independent School District (2007–2008)

Bachelors Degree			Masters Degree			Doctoral Degree		
Step	Experience (years)	Annual Salary	Step	Experience (years)	Annual Salary	Step	Experience (years)	Annual Salary
1	0-1	\$44,027	1	0-1	\$45,057	1	0-1	\$46,087
2	2	\$44,477	2	2	\$45,507	2	2	\$46,537
3	3	\$44,992	3	3	\$46,022	3	3	\$47,052
4	4	\$45,507	4	4	\$46,537	4	4	\$47,567
5	5	\$46,022	5	5	\$47,052	5	5	\$48,082
6	6-8	\$47,476	6	6-8	\$48,506	6	6-8	\$49,536
7	9-10	\$48,801	7	9-10	\$49,831	7	9-10	\$50,861
8	11	\$49,251	8	11	\$50,281	8	11	\$51,311
9	12	\$49,814	9	12	\$50,844	9	12	\$51,870
10	13-14	\$51,838	10	13	\$52,868	10	13	\$53,318
11	15-17	\$53,601	11	14	\$53,368	11	14	\$53,818
12	18-19	\$55,138	12	15-16	\$55,138	12	15-16	\$56,791
13	20-22	\$56,791	13	17-19	\$56,791	13	17	\$57,241
14	23-25	\$58,444	14	20-21	\$58,444	14	18-19	\$60,091
15	26-27	\$60,091	15	22-23	\$60,091	15	20-21	\$61,741
16	28-29	\$61,741	16	24-25	\$61,741	16	22-23	\$63,395
17	30+	\$65,222	17	26-27	\$63,395	17	24-25	\$65,045
			18	28	\$63,845	18	26	\$65,495
			19	29+	\$68,590	19	27+	\$71,960

Source: [http://www.nctq.org/salary\\_schedule/32-08.pdf](http://www.nctq.org/salary_schedule/32-08.pdf)

Table 2 — Texas State Teacher Salary Schedule (2008–2009)

Experience (years)	Monthly Salary	Annual Salary (10 month contract)
0	\$2,732	\$27,320
1	\$2,791	\$27,910
2	\$2,849	\$28,490
3	\$2,908	\$29,080
4	\$3,032	\$30,320
5	\$3,156	\$31,560
6	\$3,280	\$32,800
7	\$3,395	\$33,950
8	\$3,504	\$35,040
9	\$3,607	\$36,070
10	\$3,704	\$37,040
11	\$3,796	\$37,960
12	\$3,884	\$38,840
13	\$3,965	\$39,650
14	\$4,043	\$40,430
15	\$4,116	\$41,160
16	\$4,186	\$41,860
17	\$4,251	\$42,510
18	\$4,313	\$43,130
19	\$4,372	\$43,720
20+	\$4,427	\$44,270

Source: <http://ritter.tea.state.tx.us/school.finance/salary/>

<sup>1</sup> A perverse incentive is an incentive that has an unintended and undesirable effect that is against the interest of the incentive makers. Perverse incentives by definition produce negative unintended consequences.

three phases in the development of teacher pay regimes. The first phase, which lasted roughly until the beginning of the 20th century, saw teacher pay negotiated between an individual teacher and a local school board. As school districts consolidated and grew in size, this type of salary determination became increasingly unpopular with teachers. With consolidation and growth, the monopoly power of school districts in the labor market increased and charges of favoritism were common. In response to these problems, there was gradual movement toward the use of salary schedules that differed by grade level and position. “Typically, the salaries differed from grade to grade, and high school salaries would inevitably be higher than those at the elementary level.” (Kershaw and McKean, 1962)

The current phase began in the 1920’s and accelerated in World War II and the immediate post-war period. This is characterized by what is termed the “single salary schedule.” An education commentator writing in the 1950’s noted that, “the distinguishing characteristic of the single salary schedule is that the salary class to which the classroom teacher is assigned depends on the professional qualifications of the teacher rather than the school level or assignment.” Kershaw and McKean write, “The single salary schedule was regarded as bringing a feeling of contentment and professionalism. A teacher would no longer be an elementary teacher, but a

teacher, a member on equal footing of the profession that included all teachers.” By 1951, 98 percent of urban school districts employed the single salary schedule (Lieberman, 1956).

These salary schedules for teachers contrast with the situation in most other professions. In medicine, pay of doctors and nurses varies by specialty. Even within the same hospital or HMO, pay will differ by specialty field. In higher education 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 counter-offers for more senior faculty whom they wish to retain. Merit or performance-based pay is commonplace. Ballou and Podgursky (1997) and Ballou (2001) report generally similar findings for private K-12 education. Even when private schools report that they use a salary schedule for teacher pay, payments “off schedule” are common.

Rigid salary schedules would not be as costly if the factors rewarded, teacher experience and graduate education, were strong predictors of teacher productivity. Surveys of the education production function literature find little support for a positive effect of teacher Masters Degrees, and teacher experience has little effect beyond the first few years (Hanushek, Kain,

O’Brien, and Rivkin, 2005). Hanushek (2003) reports that of 41 “value-added” estimates of the effect of education levels on teacher effectiveness (primarily MA’s), not a single study found a statistically significant positive effect. In fact, ten of the studies found negative effects. In spite of the depth and consistency of this negative finding in the research literature, school districts continue to spend billions of dollars annually rewarding MA degrees.

#### EFFECTS ON TEACHER QUALITY

There is an adage in economics: “You can’t repeal the law of supply and demand.” By this economists mean that if governments or regulators do not let prices clear a market then some other mechanism will. For example, if city governments use rent controls to set rates below the market clearing level, then shortages will develop. In such a case the market will “clear” in the sense that individuals will have to invest more of their time searching for an apartment. Some will give up and quit. Others will pay bribes. And the overall quality of the apartment stock may decline. All of these non-price mechanisms will act to clear the market instead of price. It is useful to keep this idea of non-price clearing in mind as we consider the effects of teacher salary schedules on the level and distribution of teacher quality.

#### *Shortages by field*

The training, working conditions,

and non-teaching opportunities for teachers on average differ significantly by teaching field, yet salary schedules within a school district treat all teachers the same. On average the non-teaching opportunities for, say, high school physical science teachers are more remunerative than for second grade teachers, yet the salary schedule in a district gives both groups identical salaries. A nationally representative survey of school administrators conducted by the US Department of Education found that in 2003-04, 75 percent of respondents who had recently hired in the field reported it was “easy” to fill elementary education vacancies, whereas only roughly 30-35 percent with science and math openings, and 30 percent of those recruiting in special education gave such an assessment. More to the point, only two percent of the elementary vacancies could not fill the position or reported it “very difficult” to fill. Similar statistics for science and math were around 30 percent (21 percent for biology) and 35 percent for special education. Since salaries are rigid, the market thus clears in a quality dimension. Science, math, and special education teachers are less likely to have majors in their field, regular licenses, and are more likely to be teaching “out of field” than elementary school teachers (Podgursky, 2008).

#### *Novice teachers concentrated in high-poverty schools*

A consistent research finding is that

novice teachers (e.g., first or second year) tend to produce smaller student achievement gains for students than more experienced teachers (Rivkin, Hanushek, and Kain, 2005). Within a district, schools differ in attractiveness as places to teach. Higher socioeconomic status (SES) schools are typically perceived as more desirable places to teach than low SES schools by most teachers. Teachers will thus tend to use their seniority to transfer into the former and out of the latter. Or, if they cannot transfer, they will simply quit. In either case, children in low SES schools will have greater exposure to novice teachers (Iaterola and Steifel, 2003). This is a direct consequence of a uniform salary schedule in the district. If pay is equalized then teacher quality is disequalized across schools. In order to equalize quality it is necessary to disequalize pay. Some districts have begun to experiment with bonuses to induce their better teachers to transfer to low performing schools (Prince, 2002).

#### *More effective teachers have no additional incentive to stay on the job.*

A consistent research finding is that the distribution of teacher effectiveness within schools is large (Kane, Staiger, and Rockoff, 2006). Some teachers are consistently better at raising student achievement than others. In fact, the difference in learning growth for a student exposed to a teacher in the top versus the bottom quintiles of effectiveness is substantial, and if cumulated over

several years, could substantially narrow or widen achievement gaps. However, the salary schedule provides no differential incentive for the more effective teachers to remain in the school or the profession. A more efficient pay structure would attempt to retain the more effective and shed the less effective teachers. It is well recognized in the literature on performance pay that differential recruitment and retention of more productive employees can be at least as important as motivation in boosting overall performance (Podgursky and Springer, 2007).

#### **CONFOUNDING FACTORS: TENURE AND THE SIZE OF WAGE-SETTING UNITS**

Two other institutional factors in teacher labor markets exacerbate the inefficiency effects of single salary schedules. The first is teacher tenure. Even if experience per se did not raise a teacher’s effectiveness, in principle a seniority-based wage structure might be efficient if less effective teachers were weeded out over time. In this case, what looks like a reward for experience would actually be a reward for performance. However, personnel policies in traditional public schools are not likely to produce such an effect. Teachers in traditional public school districts receive automatic contract renewal (tenure) after two to five years on the job. After receiving tenure it is very difficult to dismiss a teacher for poor job performance, a finding which has been widely documented (Bridges,

1992). Thus, the presence of teacher tenure laws makes the economic costs associated with single salary schedules even greater.

A second factor that increases the cost of rigid district salary schedules is the size of the wage-setting units. Other things being equal, the larger the unit size, the greater the economic damage. The wage-setting unit in private and charter schools is typically the school, whereas in traditional public schools, wage-setting occurs at the district level. The average charter school has 16 full-time teachers; a private school has just 15. In traditional public schools, fifty percent of teachers are employed in districts with at least 560 other teachers where the level and structure of teacher pay, benefits, and recruiting policies are centralized at the district level. Given the skewed distribution of districts by size, the typical teacher finds himself or herself in a wage-setting unit that is quite large. This has two consequences. First, it makes the market for teachers less flexible and competitive. From an efficiency point of view, it would be better to have ten “districts” each setting pay for ten schools than a single one setting pay for one hundred schools. At least the ten smaller districts could compete with one another and adjust their schedules to meet their own internal needs, and teachers could sort according to their preferences over the structure of pay.

### RETIREMENT BENEFIT SYSTEMS

Retirement benefits are increasingly costly for districts and pension incentives in most systems are perverse. They are acting to drain qualified teachers out of the profession at relatively early ages.

The retirement benefit cost gap between teachers and private sector professionals is large and widening. Costrell and Podgursky (2009b) compare employer pension costs as a percent of salaries for public school teachers versus private sector professionals. They find that the pension costs are higher for teachers, they are growing, and that the public-private gap is widening. The recent sharp drop in the asset values of teacher pension funds is almost certainly going to accelerate the growth of teacher pension costs. This makes it important for education policymakers to assess whether these increasingly costly systems are efficient ways to compensate teachers.

#### *Perverse Incentives*

Pension wealth does not accrue uniformly in teacher pension systems. It is heavily backloaded. The incentive structure acts to “pull” teachers to certain years in which pension wealth accrual peaks and then push teachers out at an early age (often in her mid to late-fifties) because pension wealth accrual turns negative (Costrell and Podgursky, 2008). Data on the timing of retirements suggests that teachers (like workers generally) are responsive to these incentives. The

median retirement age for active teachers is the mid to late 50s (Podgursky and Ehlert, 2007).

The existing teacher pension systems generally produce harsh penalties for mobility. Teachers (or administrators) who split a work career between two pension systems incur very large losses of pension wealth as compared to educators who work an entire career in a single system. A teacher who splits a 30 year career between two systems may lose one half or more of her pension wealth by age 55 as compared to a teacher who remains in the same system. A “cash-balance” type reform of the teacher pension systems, as adopted by many private sector firms that retain defined benefit pension plans, would smooth accrual of teacher pension wealth and eliminate these perverse incentives (Costrell and Podgursky, 2009a).

#### *Retiree Health Insurance*

Since teachers typically retire well before they are eligible for Medicare (age 65), there is a strong demand for retiree health insurance. Unlike teacher pensions, these benefits have generally been provided on a pay-as-you-go basis and not adequately pre-funded by districts. New accounting standards require school districts and states to cost out and report these liabilities in their annual financial reports. The size of these liabilities in many cases is very large, and is a direct outgrowth of the early retirement incentives built into the pension systems (Clark, 2009).

## CONCLUSION

Human resource (HR) policy – the recruitment, retention, and motivation of employees -- is increasingly recognized as a critical variable in the success of an organization. An integrated and coherent compensation policy is the central core of an efficient HR policy. In private and many public organizations, the compensation package is considered as a strategic whole, and carefully designed to get the most HR return per dollar of compensation. In public K-12 by contrast, the compensation “system” is fragmented and uncoordinated, each piece perhaps responding to pressures from a particular constituency or inherited from an earlier contracts, but without systematic

assessment of the logic or incentive effects of the whole.

Accountability pressures are forcing school districts to address the inefficiencies built into this compensation system, and rethink how they are spending roughly \$250 billion annually for compensation of instructional personnel. Federal programs such as the Teacher Incentive Fund are encouraging states to experiment with performance and market-based pay. States such as Minnesota, Florida, and Texas have developed programs to encourage their districts to develop such programs. Texas has taken steps in this direction with the Texas Educator Excellence Grant, and, more recently, the District Awards for Teacher

Excellence. A number of large urban districts, most notably Denver, have taken important steps in this direction as well.

Performance and market-based incentives are much more common in charter schools and are expanding with the charter school base. Less movement has occurred in the area of teacher pensions; however, large unfunded liabilities for pensions and retiree benefits are likely to force reforms in this area as well. States and districts contemplating change should consider running pilot programs or phasing in changes (or better yet, some type of randomized pilot study) so as to permit assessment of the effectiveness of such reforms.

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