

THE STATE ROLE IN TEACHER COMPENSATION

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INTRODUCTION

Policy makers have long been concerned with K–12 teachers’ compensation. Not only might increased teacher compensation purchase more skilled teachers, it might also influence how long teachers stay at their schools and in the teaching profession. Similarly, changes in the structure of teacher salary schedules may change the appeal of teaching even if average salaries remain the same. Much of the extant research on K–12 teacher salaries shows, to no great surprise, that teachers respond to salary changes (for examples, see Baugh and Stone 1982 and Murnane and Olsen 1989, 1990). Teachers’ salaries are just one component of teachers’ overall compensation, however. States and school districts also provide other incentives—both monetary and nonmonetary—aimed at attracting and retaining teachers. These incentives often target certain types of teachers in certain types of positions. In addition, teachers receive health and welfare and retirement benefits that add to their total compensation packages.

This policy brief examines the state role in these three components of total K–12 teacher compensation—base salary, benefits, and other incentives—showing how states across the country are going beyond simple salary structures to compensate teachers. We also examine how teachers’ compensation targets teachers at different points in their career cycles. Some components aim at recruiting teachers, others target retention of early career teachers, and still others aim at the retention and efficient release of older and retirement-eligible

teachers. We summarize the policy approaches of all fifty states and the District of Columbia, drawing from an extensive technical report (Loeb and Miller 2007). The information comes from a variety of sources, including state statutes and administrative codes and state Web sites.¹ We characterize the national state-level policy context as it was in 2005. While some aspects of these policies may have changed, the full picture is likely to look quite similar today.²

SALARY SCHEDULES

More educational dollars are allocated to teacher salaries than to any other educational expense. Teacher salaries therefore figure prominently in education finance debates in every state, giving rise to frequent calls for reforming both how much teachers are paid and the determinants of that pay. The current single district salary schedule pay structure, used in the majority of school districts, is based almost completely on education level and years of experience (see figure 1 for a sample salary schedule from North Kansas City School District in Missouri).

Proponents of this structure argue that the strength of these input-based salary schedules is their objectiveness. Administrators can accurately and consistently assess years of experience and educational attainment, leaving little room for subjective and possibly biased opinions of teachers to influence teachers' pay. As such, some reform-minded proponents of the current system support across-the-board salary increases. They argue that the current salary structure is effective but that higher compensation will better position the teaching profession to recruit and retain high-quality individuals.

Critics of the current system argue that a key weakness of these input-based structures is that they fail to reward individuals' efforts, reducing individuals' incentives to perform at their best and to remain in the classroom rather than move to a profession where their efforts are rewarded by higher compensation. In addition, input-based salary schedules do not distinguish between teachers' fields of experience, so subjects such as math and science, which have high wages in nonteaching occupations, often face shortages while elementary

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1. Our primary sources of information were state statutes and administrative codes. Initial data collection occurred in the summer and fall of 2005, with an additional wave of data collection in the summer and fall of 2006. Initially, we compared the across-state policy summaries compiled by the Education Commission on the States with the current state statutes and administrative codes, correcting and updating the policy descriptions where required. We also conducted our own search of each state's documents using a common set of keywords for each policy area to ensure a thorough review of all relevant language. We consulted state Web sites for additional information when the statutes and regulations were unclear.
 2. We use the state as the unit of observation throughout this discussion because we are focusing on states' roles in teacher compensation. However, this necessarily generalizes district responses to state policy as well as districts' own autonomous policies. Throughout the article we attempt to clarify when district response to state policies is not homogenous across a state.

STEP	BA	BA+12*	BA+24*	MA	MA+8*	MA+16*	MA+24*	MA+32*	MA+40*	MA+48*
									SPEC.*	SPEC.+8* DOCT.**
1	33,000	34,031	35,063	36,094	37,125	38,156	39,188	40,219	41,250	43,313
2	33,627	34,678	35,729	36,996	37,830	38,881	39,932	40,983	42,034	44,084
3	34,266	35,337	36,407	37,921	38,549	39,620	40,691	41,762	42,832	44,869
4	34,917	36,008	37,099	38,869	39,281	40,372	41,463	42,556	43,647	45,667
5	35,580	36,692	37,805	39,840	40,028	41,140	42,251	43,364	44,476	46,479
6		37,389	38,522	40,836	41,255	41,921	43,055	44,187	45,320	47,307
7			39,255	41,857	42,168	42,719	43,872	45,027	46,181	48,149
8				42,904	43,107	43,530	44,706	45,882	47,059	49,006
9				43,977	44,132	44,357	45,555	46,755	47,953	49,878
10				45,375	45,896	46,201	46,421	47,643	48,865	50,766
11				46,097	46,613	47,180	47,303	48,548	49,793	51,670
12					47,231	47,747	48,202	49,470	50,739	52,590
13						48,654	49,117	50,411	51,703	53,526
14							50,051	51,368	52,686	54,479
15								52,344	53,686	55,448
16									54,706	56,435
17										57,440
18										58,463

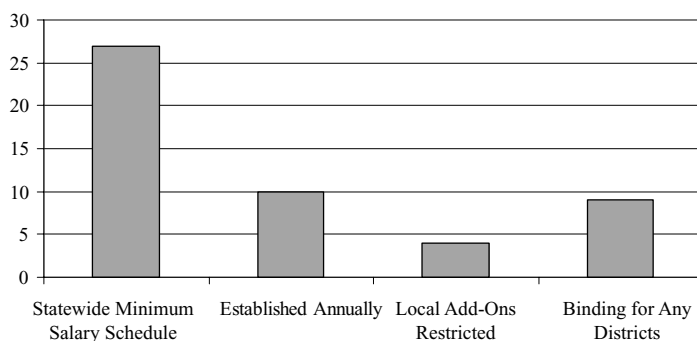
This example salary schedule has been truncated to 18 steps. There are actually 25 steps, with teachers in the final column with 25 years of experience earning \$66,000.

Figure 1. North Kansas City School District, Missouri 2006–7 Salary Schedule

grades and social studies do not. Similarly, teaching jobs that require more preparation or effort, such as special education, can face shortages while other teaching jobs do not. These critics believe that we should pay teachers based on their subject area expertise, the school in which they teach, and/or their performance in the classroom.

Alternative Structures

One alternative to the current structure is to allow for pay differentials based on subject area, grade, or the school in which teachers work. Other proposals suggest career ladders, which base pay on teachers’ increasing responsibilities within the school. As teachers move up the ladder they assume greater responsibilities in other areas such as heading departments, organizing professional development activities, and mentoring other teachers. Another, more radically different alternative is to base pay on teachers’ “outputs,” or their contribution to student outcomes. Supporters of these proposals believe that compensation should be better linked to schools’ educational goals and that salaries that distinguish effective teachers will encourage individuals who would be effective teachers to enter the profession and encourage current teachers to seek the professional development they need to improve.



Minimum salary schedule states are AL, AR, CA, DE, GA, HI, ID, IL, IN, IA, KY, LA, ME, MS, MO, NJ, NM, NC, ND, OH, OK, PA, SC, TN, TX, WA, and WV. They are established annually in DE, GA, HI, KY, MS, NC, SC, TN, TX, and WA. Local add-ons are restricted in AL, MS, TN, and WA. Minimums are binding in AL, HI, MS, NC, OK, SC, TX, WA, and WV.

Figure 2. Statewide Minimum Salary Schedule, 2005

Output-based salary structures link teacher compensation to a productive result of the education process, such as performance evaluations and student test scores. The results used to determine compensation amounts can be at the individual, team, grade, or school level. Such structures are not widely used and prove highly controversial when proposed or implemented. The main critique of such structures is the difficulty in identifying an appropriate performance metric. Are principal evaluations of teachers objective enough to fairly determine compensation? Is it appropriate to hold teachers accountable for the performance of their students when so much that affects that performance is beyond the control of teachers?

Approaches Taken across the Nation

Although the debate over appropriate salary structures rages at the state and federal levels, most states have left decisions regarding salary structures to local districts. However, states are getting in the game by providing at least some guidance. For instance:

- Twenty-seven states have some kind of statewide minimum salary schedule;
- Six states require or provide financial incentives for districts to adopt career ladder salary structures, and two other states have done so in the recent past; and
- Three states operate performance pay programs.

Statewide Minimum Salary Schedule

Twenty-seven states have adopted some type of statewide minimum salary schedule (see figure 2). All teachers in these states must be paid at least

the amount specified by the state. Proponents of policies that set a floor on the minimum salary allotted to teachers at a higher rate than districts may otherwise argue that such policies will help to recruit more qualified personnel into the teaching profession. States with minimum salary schedules provide funds to cover some if not all the mandated minimums. Districts generally are allowed to augment the minimums with local funds. Four states (Alabama, Mississippi, Tennessee, and Washington) place some restrictions on district salary add-ons. For example, Alabama requires that the local add-on be the same for all teachers, while Mississippi prohibits districts from reducing their local add-on from year to year. Although ten states establish their minimum salary schedules on an annual or biennial basis (depending on their budget cycle), other states' minimum salary schedules were last updated a decade or more ago. Partly as a result of these dated policies, not all the statewide minimum salary schedules are binding for districts within the state. Although this information is not readily available, we were able to determine that at least one district in ten of the twenty-seven states pays its teachers exactly the minimums mandated by the state. In these states the minimum is binding. In nine of the twenty-seven states, all districts pay salaries in excess of the minimums. There are eight states for which we are unable to determine whether or not the statewide minimum salary is binding for any districts. (See figure 2.)

Career Ladder Salary Structures

Six states (Arizona, Florida, Indiana, Missouri, Nevada, and Utah) have statutes that require or provide financial incentives for districts to adopt career ladder salary structures. Tennessee and Texas operated programs in the 1980s and 1990s.

Performance Pay

Florida, Kentucky, and North Carolina operate performance pay programs that provide salary bonuses related to student performance. The awards distributed by the programs in Kentucky and North Carolina are school based, whereas Florida's program links an individual teacher's award to the performance of his or her students.

As is evidenced by the low quantity of states with policies encouraging alternative salary schedules, output-based salary schedules are still far less common than the more standard experience- and education-based schedules. Proponents of these output-based policies contend that they will attract more highly qualified people into teaching by promising them rewards for a job well done and will encourage such teachers to remain in teaching because they will be rewarded for success as measured by a specific output.

RECRUITMENT, RETENTION, AND ASSIGNMENT INCENTIVES

Basic salary schedules are not the only monetary compensation tool states have to recruit and retain talented teachers. States have also adopted a variety of incentive policies to attract talented individuals to the teaching profession, to retain them, and to encourage them to accept assignments in particular high-need subject areas or schools. These incentives come in forms as varied as monetary rewards (bonuses), housing stipends, and loan forgiveness programs.

Characterizing Incentive Systems

The incentive systems adopted by states can be characterized by their breadth, or how many stages of a teacher's career they target. We define five career stages that teachers may pass through from college to retirement:

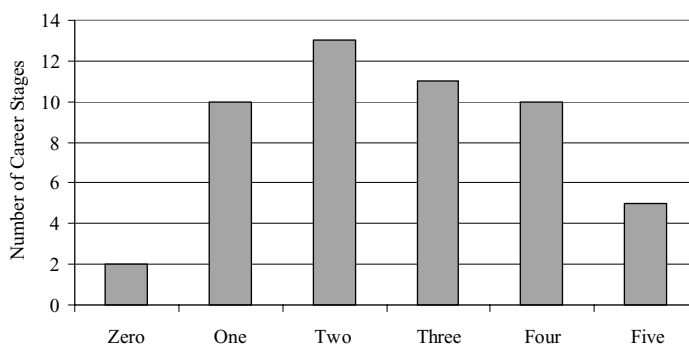
1. Period of teacher preparation to initial certification;
2. Period following this initial preparation as the teacher begins as the teacher of record;
3. Period of additional education as the teacher completes requirements for an additional credential, endorsement, or certification;
4. Period following the completion of additional training and/or the receipt of an advanced credential; and
5. Period of retirement eligibility.

States can implement different types of incentives at different stages of teachers' career cycles to achieve their particular needs. Incentives targeting distinct stages of teachers' career cycles will likely affect the supply of teachers and possibly the quality of teachers in different ways. Those that target the first two and the final stages of teachers' careers may increase states' supplies of teachers, whereas incentives aimed at the third and fourth stages of teachers' careers may improve the skills and quality of states' existing teaching forces. Table 1 outlines the potential labor market effects of incentives aimed at different stages of teachers' careers and examples of the types of incentive policies states may use to recruit and retain teachers.

States' incentive systems can also be distinguished from one another by the degree to which they target specific subgroups of teachers. Many incentives are awarded only to teachers who teach subject areas with critical shortages (such as mathematics, science, and special education) or who teach in difficult-to-staff schools (such as low-performing schools or schools serving high concentrations of students in poverty). Others are further aimed at teachers of critical shortage subjects in difficult-to-staff schools. Although eligibility for some incentives is restricted to specific characteristics of the teacher (such

Table 1. Example State Incentives to Recruit and Retain Teachers throughout Their Careers

	1	2	3	4	5
Career Stage	Initial teacher preparation	Post-completion of initial teacher preparation	Additional training	Post-additional / advanced training or credential	At or near retirement eligibility
Potential Labor Market Effects	Increase teacher supply by enticing potential teachers to teach within the state	Increase teacher supply by enticing potential teachers to teach within the state	Improve skills and quality of existing labor force	Improve skills and quality of existing labor force	Increase teacher supply by enticing retirement-eligible teachers to continue working in schools or decrease supply of older teachers by offering incentives for early retirement
Example Incentives	<ul style="list-style-type: none"> • State-financed forgivable grants and loans • State-financed scholarships 	<ul style="list-style-type: none"> • Assumption of federal loans • Salary bonuses • Housing assistance 	<ul style="list-style-type: none"> • Tuition assistance for teachers to obtain additional education/certification 	<ul style="list-style-type: none"> • Salary bonuses for national board certified teachers • Salary bonuses for specialized teachers 	<ul style="list-style-type: none"> • Part-time consulting/teaching programs • Continued service with no loss of retirement benefits



States with zero are AZ and NH; with one, IN, MN, MT, NE, NJ, NM, OR, PA, SD, and TN; with two, CO, ID, KS, ME, MI, MO, NV, OH, RI, UT, VT, WI, and WY; with three, AL, AK, CT, DE, DC, HI, OK, TX, VA, WA, and WV; with four, CA, GA, IL, IA, KY, MS, NC, ND, NY, and SC; and with five, AR, FL, LA, MD, and MA.

Figure 3. Number of Career Stages Targeted by State Incentive Programs

as teachers of minority racial or ethnic groups), we focus our attention on targeting the characteristics of the job assignment.

Approaches Taken across the Nation

There is considerable variation among the fifty states and the District of Columbia in the breadth of their incentive systems. The majority of states finance incentive systems that target more than one stage of a teacher's career. The most common incentive system can be found in thirteen states and includes policies aimed at two of the five stages. Only two states, Arizona and New Hampshire, offer no state-financed incentives to attract or retain teachers. Figure 3 outlines the distribution of the breadth of state incentive systems.

Recruitment, retention, and assignment incentives that may result in an increase in the supply of teachers are somewhat more common than those that may improve the quality of the existing labor force both across and within states. Forty-four states have at least one policy targeting supply (i.e., the first, second, and/or fifth career stages), while thirty-nine states have an incentive targeting the quality of current teachers (i.e., the third and/or fourth career stages). In addition, states are more likely to operate multiple programs that are likely to increase supply than they are to operate programs aimed at improving the quality of current teachers. Incentives most frequently provide financial support to individuals during their initial or additional teacher preparation. The least common type of incentive is that aimed at retired or soon-to-be-retired teachers. Most of these programs (often referred to as DROP—Deferred Retirement Option Program) provide incentives for teachers to postpone their retirement. Figure 4 outlines the frequency with which states offer incentives aimed at the different stages of teachers' careers.

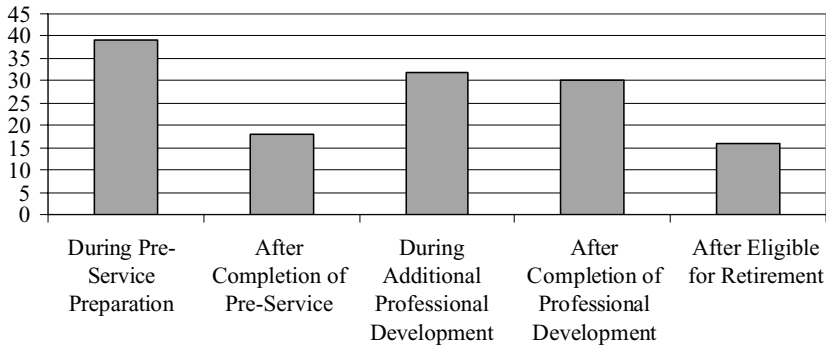


Figure 4. Frequency of Targeted Recruitment Retention and Assignment Incentives



States available on request.

Figure 5. Frequency of State Provision of Incentive Type

Incentives offered through these state systems can also be grouped into five categories:

- Tuition and fees for teacher training;
- Loan payment assumption for teachers;
- Housing benefits;
- Postponed retirement incentives; and
- Salary supplements.

Figure 5 outlines the frequency with which states provide each kind of incentive. It shows that the most popular incentive type is tuition or fee assistance for teacher training, with forty-seven states providing an incentive of this sort. The next most popular type of incentive is the provision of salary supplements. Thirty-three states operate a salary supplement program, with the most common type making awards to national board-certified teachers (NBCTs).

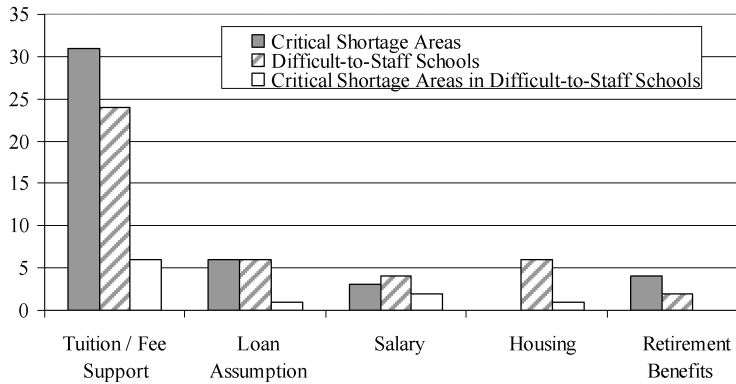


Figure 6. Summary of Job Assignment Targeting of State Recruitment, Retention, and Assignment Incentives, 2005

Thirty-seven states and the District of Columbia have some sort of incentive for teachers to become certified by the National Board for Professional Teacher Standards (NBPTS) or to attract teachers who already are so certified.

In addition to targeting incentives to a particular career stage, eligibility for many incentives is further restricted to teachers in specific subject areas and/or schools. States are more likely to restrict eligibility to teachers of critical shortage subject areas (thirty-six states) than to hard-to-staff schools (twenty-seven states). States are least likely to offer incentives that restrict eligibility to teachers of critical shortage subject areas within hard-to-staff schools, although seven states do so. Figure 6 shows how states restrict particular incentive types to certain kinds of teachers.

TEACHER RETIREMENT POLICIES

The third part of teachers' total compensation packages is fringe benefits, which encompass nonsalary perks such as paid holidays, vacation, health insurance, and teacher retirement policies. Such "extra" benefits comprise a substantial portion of teacher compensation—26 percent according to one estimate (Vedder 2003). Retirement policies cover a significant amount of this percentage. Each state operates a retirement plan that provides benefits such as service and disability retirement and death or survivor benefits for eligible public school teachers. Perhaps most important, retirement benefits provide teachers with pensions and/or other funds with which they can support themselves once they have retired from the workforce. These retirement benefits are distinct from the retention incentives for retirement-eligible teachers discussed in the previous section of this policy brief. Whereas those incentives were geared toward keeping retirement-eligible teachers working in the school system, the retirement benefits discussed here aim to retain teachers

throughout their careers until they are eligible for retirement. Although retirement plans may influence a state's ability to recruit teachers, they likely yield greater influence on teacher retention as teachers remain in the classroom long enough to fulfill the service requirement for retirement benefits.

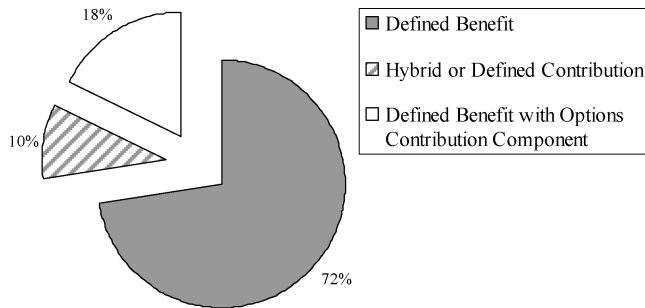
State plans differ on many key aspects that may influence teachers' termination and retirement decisions. While state retirement benefit policies aim to retain talented teachers in the workforce as long as possible, states are also facing severe cost pressures that are causing them to diminish and change some of their retirement programs. For example, some states are implementing policies that provide incentives to teachers who choose to retire before retirement age, thus allowing states to replace expensive, more experienced teachers who are further down the salary schedule with newer teachers who demand lower salaries according to the standard salary scale. The need to contain system costs has also led states to shift from defined benefit to defined contribution hybrid programs and to alter the mandatory contribution rates for employees and employers, service requirements for vesting, service and age eligibility requirements for full retirement benefits, the retirement benefit calculation formula, and retiree health insurance premiums and coverage.

The key aspects of retirement benefits that are addressed by state policies include:

- Type of plan (defined benefit versus defined contribution versus hybrid/combination);
- Plan membership;
- Mandatory employee contribution rates;
- Mandatory employer contribution rates;
- Vesting service requirement;
- Service years eligibility requirement;
- Annual retirement benefit calculation (including final salary calculation and service credit percentage); and
- Health insurance coverage.

Plan Type

Every state's retirement system offers a defined benefit plan or a plan with a defined benefit component. The vast majority of states operate defined benefit (i.e., pension) plans whereby the retirement benefit is predefined rather than determined directly by the amount of contributions the employee makes. Some states have added defined contribution components (e.g., 401(k), 403(b), etc.) to their systems, an action likely driven in large part by the need to control the burgeoning costs of supplying pensions to longer-living beneficiaries. Defined contribution components are similar to the retirement savings plans



Hybrid or defined contribution states are IN, OH, OR, WA, and WV. Defined benefits with optional defined contribution component states are CA, CO, CT, DC, FL, ID, SC, SD, and UT.

Figure 7. Types of Plans Sponsored by State Teacher Retirement Systems, 2005

often found in the private sector and have the effect of shifting the burden of providing retirement benefits from the state to individual employees by directly linking benefit levels to the amount contributed by the employee. As is shown in figure 7, nine states operate plans that include an optional defined contribution component whereby teachers can augment their monthly retirement benefit. Ohio, Oregon, and Washington operate hybrid retirement plans in which employee contributions are fed into the defined contribution component and employer contributions finance the defined benefit component.

Plan Membership

Plan membership varies across states with regard to both the types of employees and employers eligible for participation. In twenty-eight states, teachers belong to retirement systems in which membership is restricted to educational employees. Teachers in other states are commingled with other public employees. All districts participate in their state retirement plan for teachers, with the exception of eight states. In these states, specific districts (usually the largest districts) are typically excluded from membership because of pre-existing district-level retirement systems already in place at the time the state system was formed. The exception is Arizona, in which not all public and charter school districts have elected to participate in the state system.

Employee Contributions

Mandatory employee contribution rates vary significantly across states as well as within states across teachers and plans. Employee contribution rates range from 0.0 percent in seven states to 15.0 percent for some members of one of Washington's hybrid plans. Fourteen states have a schedule of mandatory rates for teachers differentiated according to retirement plan or when they enrolled in the state retirement system.

Employer Contributions

Mandatory employer contribution rates exhibit large variation across states. They range from 0.58 percent in Illinois to 26.0 percent in Alaska. Generally, employer contribution rates are higher than employee rates. Employer rates also experience more variability within state from year to year than do employee rates. Almost all employee rates are established through statute, whereas more than half of all employer rates are established following regular actuarial reviews of the retirement plans' abilities to provide current and projected benefits.

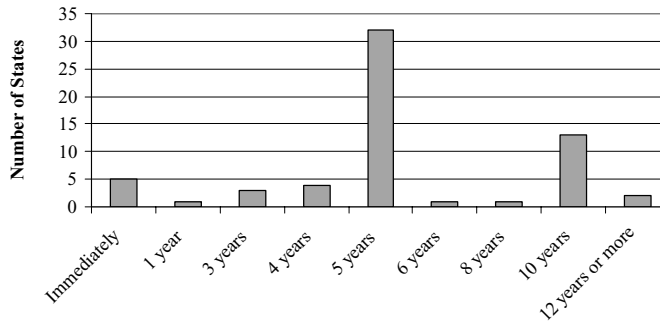
In addition to mandatory contributions to their state retirement system, teachers in 36 states also have federal social security payroll taxes (i.e., Old-Age, Survivor, and Disability Insurance—OASDI) deducted from their paychecks. Teachers are exempted from OASDI taxes in fifteen states.³ However, these teachers may still be eligible for Social Security benefits through other employment or their spouse. There are two federal provisions that may reduce their Social Security benefits: the Windfall Elimination Program (WEP) and the Government Pension Offset (GPO). The WEP affects teachers who receive both a pension from a state retirement plan and Social Security benefits earned through covered employment. In 2005 the maximum reduction was \$313 per month (or \$3,456 annually). The GPO affects teachers who receive both a state pension and Social Security benefits as a spouse, former spouse, widow, or widower. Under GPO, the Social Security benefit is reduced by two-thirds of the state pension.

Whether or not teachers pay OASDI taxes appears to be correlated with mandatory employee and employer contribution rates for state retirement systems. Almost all the states in which teachers are not charged OASDI taxes have mandatory employee and employer contribution rates higher than the 6.20 percent OASDI rate. In addition, they have the highest rates of all states. This is likely because teachers who do not earn Social Security benefits from their employment as teachers must rely more on their state benefit to support them during retirement.

Vesting Service Requirements

A key aspect of state retirement systems is the service requirement for vesting. While teachers are immediately vested in the defined contribution portions of

3. There are four states in which some teachers pay OASDI taxes and others do not (MD, MN, MO, and TX). This is most often because a state has changed its policy regarding whether or not teachers pay OASDI taxes such that teachers hired before a certain date fall into one system and teachers hired after that date fall into another. We make distinctions between OASDI and non-OASDI states based on the policies in place for the most recently hired teachers. Some states operate two retirement systems, one of which requires teachers to pay OASDI taxes while the other does not. We classify states such as these according to the system to which the majority of teachers belong.



For AK, AZ, HI, IA, ID, IN, ME, OH, OR, TN, WA, WV, and WI, vesting eligibility requirements vary across groups of teachers, plans, or plan components. IN, OH, OR, WV, and WI have plans with immediate vesting eligibility; OH, with one year; MN, ND, and SD, with three years; IA, MS, TN, and UT, with four years; AK, AZ, AR, CA, CO, DE, DC, HI, IL, KY, LA, ME, MD, MO, MT, NE, NV, NM, NY, NC, OH, OK, OR, PA, SC, TN, TX, VT, VA, WA, WV, and WI, with five years; FL, with six years; AK, with eight years; AL, CT, GA, HI, IN, KS, ME, MA, MI, NH, NJ, RI, WA, with ten years; and AK and WV with twelve or more years.

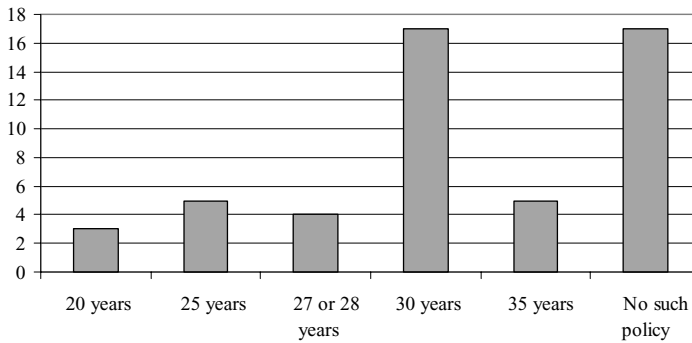
Figure 8. Service Requirements for Vesting in State Teacher Retirement Systems

plans, they must serve a set number of years before they become vested in the defined benefit aspect of retirement plans. Once vested, a teacher is eligible to receive his or her retirement benefit. A vested teacher is able to leave the classroom but postpone drawing a retirement benefit until years later. Many states refer to this as a deferred retirement benefit. As is shown in figure 8, the majority of states (thirty-two) fully vest teachers after five years of creditable service. Teachers in another thirteen states must teach for ten years before being fully vested for retirement benefits.

In a handful of states, nonvested teachers are eligible for retirement benefits once they attain a certain age. For example, an active teacher in New Hampshire with fewer than the ten years of service required to vest retirement benefits can retire with benefits on turning age sixty.

Service Years Eligibility Requirements

Although teachers are vested after a set number of years, as detailed in figure 8, each state has established separate eligibility requirements for the various benefits they offer, including service, early retirement, and disability retirement. We restrict our attention here to full service retirement benefits. A very common criterion by which teachers qualify for full retirement benefits is the “X years and out” rule whereby the teacher can retire as soon as he or she accumulates a specific number of years of service regardless of his or her age. In other words, although teachers may be vested in their retirement benefits, they may not wish to retire at that vesting point because they are not yet eligible for states’ full provision of service retirement benefits. Figure 9 outlines states’ “X years and out” eligibility requirements for full retirement benefits.



The policy applies to some but not all teachers in CO, DC, LA, MA, NY, OH, OR, WA, and WV. Twenty-year states are AK, LA, and MA; 25-year states, AL, ME, MS, MT, and NM; 27- or 28-year states, AR, KY, RI, and SC; 30-year states, CO, DE, DC, FL, GA, LA, MD, MA, MO, NC, OH, OR, TN, UT, VT, and WA; 35-year states, CO, CT, NY, PA, and WV. In SC, teachers must have at least five years of earned service rather than purchased service. In DC, these teachers must have five years of creditable service as a DCPS teacher. In CT, at least 25 of the 35 years required must have been rendered in CT. In AZ, CO, IA, KS, MN, MO, NE, ND, NM, OK, TX, and WY teachers are eligible for full retirement benefits if the sum of their age and years of creditable service is at least some amount, typically 80 or 85.

Figure 9. “X Years and Out” Eligibility Requirement for Full Retirement Benefits, 2005

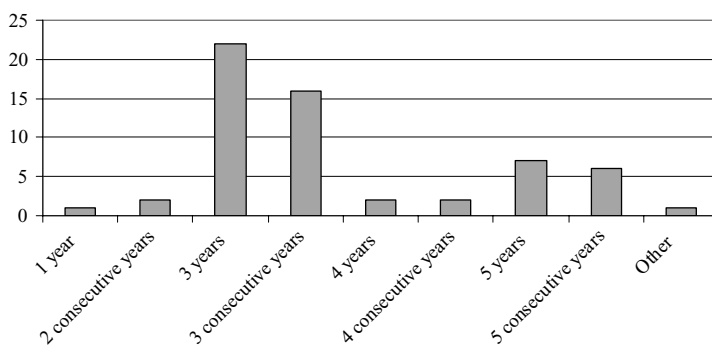
The target number of years of service ranges from twenty years (three states) to thirty-five years (five states). The most common requirement, established in seventeen states, is thirty years of service. Similarly, teachers can qualify for full retirement benefits in ten states once their age and years of service sum to a minimum amount—typically eighty or eighty-five. Seventeen states have no X years and out policy.

It is important to note that all states credit only those years of service during which the teacher and/or the employer made contributions to the retirement system. Teachers are able to purchase additional years of service, however, and are also able to remove their own contributions, usually with accumulated interest. Therefore it is possible for a teacher to use personal contributions from one state’s retirement system to buy into another state’s retirement system.

Annual Retirement Benefit Calculation

Almost every teacher’s full (as opposed to early) retirement benefit is calculated using a three-element formula based on (1) years of service, (2) final salary, and (3) a service credit percentage. Although final salary is always calculated as the highest average salary earned over some period of time, there is substantial variation across states in the number of years included in the calculation of this average. Figure 10 outlines the variations across states in the definitions of final salary.

States also differ in the service credit percentage included in retirement benefit calculations. A service credit percentage indicates the percent of final



AZ, CA, KS, KY, MD, MI, OK, UT, and WA are in multiple groups. One year includes CA; two consecutive years, GA and WA; three years, AL, AK, CO, CT, DE, HI, IA, KS, KY, ME, MD, MT, NH, NJ, NY, ND, OH, OK, PA, SC, UT, and WI; three consecutive years, AZ, CA, DC, LA, MD, MA, MI, MO, NE, NV, OR, RI, SD, VT, VA, and WY; four years, KS and MS; four consecutive years, IL and NC; five years, AZ, FL, IN, KY, TX, UT, and WV; five consecutive years, MI, MN, NM, OK, TN, and WA; and other, ID.

Figure 10. Definition of Final Salary Used in Retirement Benefit Calculations, 2005

salary that a retiree receives as a retirement benefit for each year of service. This percentage is also called benefit factor, age factor, multiplier, and benefit rate. The majority of states' retirement benefit calculations use service credit percentages between 1 and 2 percent, although this percentage is as high as 3.7 percent for some teachers in Ohio and less than 1 percent for some teachers in Maryland, Massachusetts, and Tennessee.

We use Maine's retirement benefit calculation as an example of how states determine teachers' retirement benefits based on years of service, final salary, and service credit percentage. In Maine, a teacher's final salary is based on the average of his or her three highest-earning years of service, and the service credit percentage is 2.0 percent. If a hypothetical teacher has worked 30 years in Maine public schools and the average of her three highest-earning years of teaching is \$60,000, then:

$$\begin{aligned} & \text{Final salary} \times \text{Years service} \times \text{Service credit percentage} \\ & = \text{Annual retirement benefit} \\ & \$60,000 \times 30 \text{ years} \times 2.0\% = \$36,000/\text{year} \end{aligned}$$

The Maine teacher's replacement rate with thirty years of service is 60 percent, bringing the total annual retirement benefit to \$36,000 per year. The calculations are not always this straightforward because in most states the service credit percentage varies across retirement plans, years of service, and/or teacher's age at retirement.

Table 2 summarizes estimated final salary replacement rates. Our calculations are based on each state's service credit percentage schedule and are

Table 2. Average Estimated Final Salary Replacement Rates across State Retirement Plans for a Teacher First Employed in 2005–6, Retiring at Age 58, 2005

Type of Retirement Plan	Years of Credited Experience			
	20 Years (%)	25 Years (%)	30 Years (%)	35 Years (%)
All defined benefit only plans ^a	32.4	43.6	58.3	69.1
All plans where teachers do not contribute to Social Security	38.4	52.4	66.8	80.0
All plans where teachers contribute to Social Security	29.9	40.3	55.4	65.4
Difference between groups	8.5	12.1	11.4	14.6

Notes: We exclude states from the overall averages represented if teachers in those states are unable to draw retirement benefits at age 58 with that specified number of years of service. Teachers in AL, DC, GA, LA, MS, NJ, SC, and VA are unable to draw retirement benefits at age 58 with 20 years of service. We were unable to calculate replacement rates for OR and PA for teachers retiring at 58 with 20 years of service. Teachers in DC and WV are unable to draw retirement benefits at age 58 with 25 years of service. We were unable to calculate replacement rates for OR for teachers retiring at 58 with 25 years of service. Calculations assume the following: (1) teacher first employed for the 2005–6 school year, (2) teacher retires at age 58 but could have stopped teaching prior to age 58, and (3) current benefit calculation formulas remain constant over time. The averages in this table are based on the estimated replacement rates for all retirement plans that were open to teachers first employed in 2005–6 with a few exceptions. We were unable to estimate replacement rates for the Maryland Noncontributory and Tennessee plans as they depend on how a teacher's final salary interacts with the Social Security integration limit.

^a This excludes three hybrid plans (IN, OH, and WA) for which the replacement rate could only be estimated for the defined benefit component.

applicable for a teacher first employed in the 2005–6 school year. We assume that the teacher retires at age fifty-eight. In other words, we assume that a teacher begins receiving a benefit from the state retirement plan at age fifty-eight. We chose age fifty-eight because many, if not most, teachers retire before the official retirement age of sixty-five. As a result, many of the estimated replacement rates do not assume full retirement benefits because states impose early retirement penalties on retirees who retire prior to age sixty-five and/or prior to completing a minimum number of service years. Assuming that teachers retired at sixty-five would have resulted in full retirement benefits calculations in all states. However, because many teachers retire prior to age sixty-five, we believe that assuming fifty-eight as an average retirement age provides greater and more relevant information. Our estimates also assume that all years of experience were either rendered within the state's retirement system or were credited to the retirement system and that the current retirement benefit formulas continue to apply when the teacher retires.

Average replacement rates range from slightly more than 30 percent for teachers with twenty years of service to almost 70 percent for those with thirty-five years of service. In other words, teachers who remain in the classroom longer receive a greater proportion of a higher salary (as salaries increase over time according to classroom experience) on their retirement. State policy

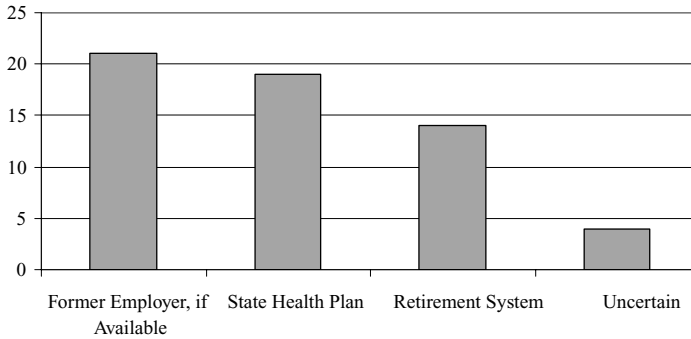
makers may consider that this nearly 40 percentage point difference will influence teachers to remain in the classroom longer than they might without the promise of an increased retirement benefit. However, given that teachers who retire later necessarily collect their pensions for a shorter period of time, it is uncertain whether or not teachers who retire later actually receive greater benefits. Depending on how states define their replacement rates and the service years at which different rates apply to retiring teachers, state policies can serve either to provide incentives to teachers to stay in the classroom for longer periods of time, increasing states' supplies of experienced teachers, or to encourage teachers to leave the classroom before retirement age, creating space for new hires and/or reducing the costs of paying the relatively high salaries of older, more experienced teachers.

Whether or not a state's teachers contribute to the federal Social Security system through OASDI payroll taxes is related to average replacement rates. Higher average replacement rates are found in states where teachers do not pay OASDI taxes than in states where they do because teachers rely solely on their school-based retirement funds in these states rather than on a combination of school-based and Social Security retirement funds. The difference ranges from roughly 9 percentage points at twenty years of service to almost 15 percentage points at thirty-five years of service. The higher replacement rates help explain the higher mandatory contribution rates in these states noted above.

Health Insurance Coverage

As the costs of health care continue to soar, health insurance coverage increases in value to retirees, especially those not yet eligible for Medicare. States differ in their approach to providing health insurance to their retired teachers. Teachers in at least twenty-one states can elect to continue coverage through their former employer should the employer make it available. Details of this coverage are generally subject to local collective bargaining agreements if present. We were unable to determine the extent to which districts in these states provide retiree health benefits. Other states allow eligible retirees to purchase membership in either a health plan overseen by the retirement system (fourteen states) or a health plan overseen by another state agency (nineteen states). Figure 11 outlines the different ways in which retired teachers are provided with health insurance.

Monthly premiums for health insurance coverage vary dramatically across states and within states across insurance plans and retiree years of service. Almost all states offer lower monthly premiums to retirees enrolled in Medicare, with most requiring retirees to be enrolled in both Medicare Parts A and B. In response to the recent implementation of Medicare Part D (prescription coverage), states are revamping their Medicare supplemental



Former Employer states include CA, CT, DC, FL, LA, ME, MD, MA, MI, MN, MO, MT, NV, NH, NY, OK, OR, RI, UT, VA, and WY. State Health Plan states include AK, AR, GA, HI, IL, KS, KY, MS, NV, NJ, NM, NC, ND, OH, SC, TN, WA, WV, and WI. Retirement System states include AL, AZ, CO, CT, DE, IN, KY, MS, OR, PA, RI, TX, UT, and VT. Uncertain states are ID, IA, NE, and SD.

Figure 11. Providers of Health Insurance to Retired Teachers, 2005

insurance plans to provide even lower premiums for retirees no longer needing prescription coverage. At least twenty-three states subsidize a portion of the monthly premiums.

EVIDENCE OF EFFECTIVENESS OF THESE POLICIES

All the elements of compensation packages discussed in this policy brief can be tied to important labor market outcomes, which can be categorized into the recruitment of teachers, the retention of high-quality teachers within the state, and the efficient release of retirement-eligible teachers. States may implement aspects of compensation packages in order to achieve certain outcomes. Maintaining a high-quality teaching force also has proven ties to improving student achievement, a clear goal of state governments, especially in this era of accountability.

However, there are still very few studies focusing on how well many of the policies discussed here achieve the states’ stated goals of maintaining a high-quality teaching force and increasing student achievement. Table 3 provides a brief summary of the current evidence of effectiveness attributed to state compensation policies. It shows that little work has been done examining the effectiveness of compensation policies in achieving states’ goals of recruiting, retaining, and efficiently releasing a high-quality teaching force and of improving student achievement.

Salary Schedules

One of the few education policy areas that benefits from a sizable body of research is the effect of salaries on teacher recruitment and retention and student achievement. This literature can be split into three groups. The bulk

Table 3. Summary of Studies and Evidence on State Compensation Policies, 2005

	Specific Policy	Possible Outcomes	Studies	Evidence of Effectiveness
Salary Schedule	Minimum salary schedule	<ul style="list-style-type: none"> Recruit 	<ul style="list-style-type: none"> Boal 2005: TX, SC 	<ul style="list-style-type: none"> Schools respond to increase in state-mandated minimum salaries by shrinking teaching staff
	Output-based salary schedules	<ul style="list-style-type: none"> Recruit Retain 	<ul style="list-style-type: none"> Dee and Keys 2004: TN Lay 2004: Israel Ladd 1999: Dallas Eberts, Hollenbeck, and Stone 2002: MI 	<ul style="list-style-type: none"> Career ladder program successful at identifying effective teachers Performance pay led to increased student achievement Merit pay reduced high school dropouts but increased percentage of students who failed
	Tuition support	<ul style="list-style-type: none"> Recruit 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No proof
	Loan assumption	<ul style="list-style-type: none"> Recruit 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No proof
	Housing incentive	<ul style="list-style-type: none"> Recruit Retain 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No proof
	Postponed retirement incentive	<ul style="list-style-type: none"> Retain 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> No proof
	Forgivable loans	<ul style="list-style-type: none"> Recruit Retain 	<ul style="list-style-type: none"> SCEOC 2004: SC 	<ul style="list-style-type: none"> No strong evidence of success or failure
	Salary supplements	<ul style="list-style-type: none"> Recruit Retain 	<ul style="list-style-type: none"> Churchill et al. 2003: MA Fowler 2003: MA Cloffelter, Ladd, and Vigdor 2006: NC Goldhaber and Anthony 2005: NC NBPTS 	<ul style="list-style-type: none"> Some positive effects on retention, but difficult to operate and suffer early shut-down NBPTS certification somewhat successful at identifying effective teachers Completing national board assessment has no impact on student test score gains
	Increase in retirement benefits	<ul style="list-style-type: none"> Release 	<ul style="list-style-type: none"> Ferguson, Strauss, and Vogt 2006: PA 	<ul style="list-style-type: none"> Increases in retirement benefits increase retirement rates among retirement eligible
	Teacher Retirement Policies			

of the research assesses the effects of salary levels or the salaries relative to those of other professions (i.e., opportunity costs). Studies of the effects of output-based pay schemes such as career ladders and merit pay form the second group. Finally, we know of only one study that examines the effect of minimum salary schedules like those discussed above.

Mandated Minimum Salaries

In the one study of this popular policy, Boal (2005) examines the effects of mandated minimum salaries on the demand for teachers using the minimum salaries in two nonunion states, South Carolina and Texas. He finds that schools respond to an increase in state-mandated minimum teacher salaries by shrinking their teaching staff (a short-run demand elasticity of approximately -0.2). Boal (2005) tells us that minimum salary schedules may not actually recruit more teachers to the workforce because districts and schools may not be able to hire as many teachers at higher salaries as they would at lower nonmandated salaries. However, we do not learn how these minimum salary policies affect teacher quality. There is also no research that we know of assessing the impact of state-level salary schedules on student achievement.

Output-Based Salary Structures

Studies of output-based pay structures often focus on their effects on student achievement and find some positive effects, but not without costs. Dee and Keys (2004) found that Tennessee's career ladder program was successful at identifying effective teachers. Lavy (2004) found positive student achievement effects for an Israeli cash bonus program, and Ladd (1999) found positive effects for a school-based award program in Dallas. Eberts, Hollenbeck, and Stone (2002) looked at another merit pay program in Michigan that was not aimed at student achievement and found that it reduced the number of high school dropouts but increased the percentage of students who failed.

While the results of these studies seem to support the argument that merit pay can improve student achievement, there also appear to be substantial costs to many of these systems that may or may not outweigh the benefits. First, it is difficult to structure a system that provides incentives to more than a few teachers. The studies above find that teachers who with a bit of effort could get a reward often do put in that effort and improve student test scores but that most teachers are so unlikely to get it (or alternatively are so likely to get it) that they do not change their behavior. Proponents of merit systems argue that even if the systems do not improve effort, they will benefit schools because they will attract into teaching those individuals who believe they will benefit from such a system. Unfortunately, there is little evidence to support or refute this argument.

In addition, teachers tend not to support merit-pay systems and encourage their representative union not to as well. These programs can increase the stress felt by teachers and can lead to unintended behaviors such as cheating, focusing on test-taking skills instead of content, and narrowing the curriculum. Overall, it appears difficult to design effective programs, though Ballou and Podgursky (2001) point out that they may be easier to implement in smaller organizations. For a further discussion of the advantages and disadvantages of merit-based pay, see Lavy 2007.

Recruitment, Retention, and Assignment Incentives

Despite the popularity of recruitment, retention, and assignment incentives, there is sparse research on the effects of these incentive policies on the recruitment, retention, and assignment of teachers in general, and in critical shortage areas and difficult-to-staff schools in particular. We found no evaluations of the effectiveness of tuition support, loan assumption, or housing incentive programs. However, several states have conducted annual reviews of some of these programs, which provide useful insight into how they operate. Three programs in particular provide examples: the South Carolina Teacher Loan Program, the Massachusetts Signing Bonus Program for New Teachers, and the North Carolina Math/Science/Special Education Teacher Bonus Program. We also discuss the implications of evaluation findings from a recent study of an NBPTS incentive program for state NBPTS incentive policies.

The available evidence on the effects of these three incentive programs is mixed. The Massachusetts program sought to recruit high-achieving candidates to the profession with an intensive seven-week summer training program and a \$20,000 signing bonus distributed over four years, yet it shut down in failure after three years. The evaluation of North Carolina's program, which paid yearly bonuses of \$1,800 to mathematics, science, and special education teachers in high-poverty or low-performing schools and also ended after three years, found some positive effects on teacher retention, reducing turnover by approximately 12 percent. South Carolina's program provides forgivable loans to individuals to enroll in teacher credentialing programs and commit to teach in areas of critical need (either subject or geographic). It continues to operate but with no strong evaluation of success or failure.

The reports and evaluations of these incentive programs emphasize three key lessons: (1) implementation errors doom most programs; (2) targeting the incentives to specific teachers and schools, while appealing from policy and financial standpoints, is challenging to carry out; and (3) the ability to draw policy-relevant conclusions regarding the programs' effects on teacher recruitment, retention, and assignment is substantially hampered by lack of data.

The evidence of the impact of NBCTs on student achievement in North Carolina offered by Goldhaber and Anthony (2005) provides insight into

the possible effects of several key aspects of the NBPTS incentive programs implemented in other states. NBPTS certification was found to be somewhat successful in identifying effective teachers. The achievement growth of students of successful applicants exceeded that of unsuccessful applicants by 5 percent of a standard deviation in reading and 9 percent of a standard deviation in mathematics. NBPTS status is by no means a perfect measure of effective teachers—many non-NBPTS teachers show achievement gains with their students that are larger than those of many NBPTS teachers. However, there are differences on average, with the students of NBPTS teachers showing greater test score gains.

The study also found that completing the national board assessment process had no impact on teacher effectiveness as measured by student test score gains in math and reading. Teachers going through the process added no more to their students' test score gains after they completed the program than before they entered. This result cautions against the use of national board certification (NBC) as a means of professional development. However, given that the process may contribute to teachers' effectiveness in ways not picked up by students' performance on math and reading exams, the evidence is not strong enough to completely condemn NBC as a means of professional development. Finally, the study found that NBCTs have a larger impact on students who are receiving free or reduced price lunch than on students who are not, suggesting the usefulness of targeting the incentives to high-need schools, such as in California's policy.

Considerable tax dollars are expended on teacher recruitment, retention, and assignment incentives. The evidence suggests that teachers do respond to incentives. However, we know very little about the effects of different incentives, defined either by type or by amount. State efforts in this area would benefit greatly from additional research, including cost-benefit analysis, on the full array of incentives.

Teacher Retirement Policies

It is a generally held belief that retirement systems influence the termination and retirement decisions of teachers. Despite this belief, we are aware of only one study that explicitly attempts to link retirement benefits to teacher career decisions. Furgeson, Strauss, and Vogt (2006) exploit a change in Pennsylvania's retirement benefit formula to assess the effects of an increase in retirement benefits on the retirement decisions of eligible teachers. As reported above, Pennsylvania has a "thirty-five years and out" eligibility requirement for full retirement benefits. In 1997–98 and 1998–99, this eligibility requirement was temporarily reduced to thirty years for those years only. They find that a \$1,000 (or 0.4 percent) increase in the real present value of retirement benefits increases the probability of a female teacher retiring by between 0.02 and 0.08

percent. These results imply an elasticity of retirement of between 2.0 and 3.5. If a state wants to encourage long-serving teachers to retire, increases in retirement benefits will increase retirement rates among the target population.

CONCLUSION

It is clear that there is a huge variety in teacher compensation policies across the country. No two states have implemented the same set of policies. As is the case with many education policies, we lack sufficient data and evidence with which to evaluate these potentially important tools for teacher recruitment and retention and for the improvement of student achievement. Existing research points to a few important conclusions. First, teachers respond positively to increases in base salaries, for example, increasing their retention. We also know that some incentive policies achieve their desired goals by increasing teacher retention and, in the case of NBC incentives, identifying effective teachers.

However, the news is not all good. Unintended consequences can result from well-intended compensation policies. For example, Texas's and South Carolina's mandated minimum salary schedules were likely intended to increase base salaries for new teachers, thereby recruiting more highly skilled teachers into the workforce. However, the result of the policy was a decrease in district demand for teachers, thus lowering employment levels and increasing class sizes in order to abide by the mandated salary increase. Another example of an unintended consequence of a well-intentioned policy is the potential for detrimental responses by teachers, such as cheating or focusing on test-taking skills instead of content, to merit pay or performance pay salary structures.

Finally, research shows that the implementation of effective compensation policies can be difficult and the negative consequences of poor implementation can override any positive benefits of compensation policies. For example, it appears to be difficult to create a merit pay system that creates positive incentives for a large number of teachers—many teachers will either receive or not receive a bonus regardless of a change in their behavior. Incentive programs are equally difficult to implement. Successful implementation requires a clear purpose of the program and a plan for disseminating program information to the appropriate people. For instance, Massachusetts's program was undone in part due to confusion over the program's goals, and information dissemination proved a significant hurdle in the North Carolina program, where survey data revealed that principals and teachers had very little knowledge about the program.

Moreover, it is difficult to understand the intricacies of how state policies are adapted at the district level, especially given the pressures exerted

on districts by local collective bargaining agreements and by requirements instituted by the federal No Child Left Behind (NCLB) policy. Districts' responses to uniform state policies will likely vary according to differences in their collective bargaining agreements and relationships with their local teachers' unions. In addition, districts' specific teacher needs will shift according to the requirements of NCLB, which will necessarily affect how they interpret and implement state compensation provisions. In order to learn from the experiences of the fifty-one different sets of policies across the country, we must carefully construct and evaluate the programs.

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