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Economic Incentives as a Strategy for Responding to Teacher Staffing Problems: A Typology of Policies and Practices

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Abstract

Background: Many district and school leaders experience difficulties staffing their classrooms with qualified teachers. Economic incentives may motivate teachers to enter and remain in the workforce and entice teachers to work in less desirable districts and schools. However, very little is known about incentives in use, how they are used to address teacher staffing challenges, or their relative effectiveness in meeting teacher staffing needs.

Purpose: This article presents a typology that organizes and differentiates among economic incentive policies. The typology provides a framework for understanding the alignment between incentive policies and dimensions of the teacher staffing problem and interactions among incentive policies across levels of the educational system. **Research Design:** The typology is based on a broad review of scholarly literature, state and district documents and websites, and research and interest group reports and briefings. The typology was tested and refined using descriptive case studies in four districts in two states. **Findings:** The authors' findings confirm the typology's applicability, highlight patterns in the use of economic incentive policies, and

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point to the importance of considering the incentive “packages” to which teachers may be entitled in policy making and research. **Conclusions:** The study makes both conceptual and empirical contributions. Conceptually, the authors develop and test a tool policy makers, educational leaders, and researchers can use to examine economic incentive policies and align policies with teacher staffing problems. Empirically, the study identifies patterns that raise important questions about the ways in which economic incentive policies are implemented and evaluated.

Keywords

economic incentives, human resource management, teacher compensation, teacher recruitment, teacher retention

High-quality teaching is critical to student learning and achievement (Rivkin, Hanushek, & Kain, 2005; Sanders & Rivers, 1996). Despite its importance, many district and school leaders experience difficulties staffing their classrooms with qualified teachers. Staffing challenges arise because of an inadequate supply of qualified teachers, difficulties recruiting teachers for specific positions, trouble retaining teachers, and challenges with distributing teacher talent between and within school districts (Rice, Roellke, Sparks, & Kolbe, 2009). Although these problems are particularly acute in schools that serve large proportions of minority, low-income, and low-performing students (Jacob, 2007), persistent teacher shortages in subject areas such as math, science, and special education also pose challenges for a great number of schools (U.S. Department of Education, 2011).

Offering economic incentives to teachers has been identified as a potential strategy for motivating teachers to enter and remain in the workforce and enticing teachers to work in less desirable districts and schools (Berry, 2008; Odden & Kelley, 2002; Prince, 2002). In fact, recent federal initiatives—including the Teacher Incentive Fund, the Race to the Top Fund, and School Improvement Grants—encourage states, districts, and schools to adopt economic incentive policies to address teacher staffing challenges. Broadly speaking, economic incentive policies enhance teacher compensation by offering monetary and nonmonetary rewards over and above teachers’ typical wages and benefits. In doing so, incentive policies are intended to increase and differentiate teacher compensation in ways that affect teachers’ decisions about whether and where to work. Their use is grounded in empirical research that suggests teacher compensation plays an important role in teachers’

decision making (Baugh & Stone, 1982; Hanushek, Kain, & Rivkin, 2004; Ingersoll, 2001b; Ingersoll & Alsalam, 1997) and that the predominant approach to teacher compensation, the “single salary schedule,” poses challenges for strategic management of human capital (Odden & Kelly, 2008).

Evidence suggests that there has been considerable experimentation on the part of states and districts with using economic incentives as a response to difficulties staffing classrooms with qualified teachers (Balter & Duncombe, 2008; Cornett & Gaines, 2002; Hirsch, Koppich, & Knapp, 2001; Kolbe & Rice, 2006; Loeb & Miller, 2006; Prince, 2002; Strunk & Zeehandelaar, 2011). Along with this experimentation comes substantial variation in how economic incentives have been designed and implemented. For example, mandated minimum starting salaries, hiring bonuses, differential pay for teaching in hard-to-staff schools, student loan forgiveness programs, tuition assistance and remission, retirement waivers, and in-kind benefits such as housing and transportation assistance have been offered to teachers (Kolbe & Rice, 2006). Although all types of economic incentives supplement or enhance teacher compensation, they differ greatly in their intended purpose, structure, and value (Johnson & Papay, 2009). For instance, incentives may be structured in different ways, with some operating as recurring supplements whereas others are one-time rewards. In addition, incentives may be targeted at improving teacher supply, recruitment, retention, or distribution among districts and schools, or more generally address interests in improving the overall quantity or quality of teachers available (Rice, Roellke, Sparks, & Kolbe, 2009). Moreover, their actual or equivalent value may range from a few hundred to thousands of dollars (Strunk & Zeehandelaar, 2011). The broad range of economic incentive policies reflects not only specificity and tailoring to local staffing conditions and preferences but also local political and financial realities and stakeholder interests (Johnson & Papay, 2009). Overall, economic incentives have emerged as a heterogeneous set of human resource policies that vary in both their design and implementation.

Although economic incentives have been identified as a promising practice for addressing teacher staffing challenges, very little is known about the variety of incentives in use, how incentives are used to address the teacher staffing challenges, or their relative effectiveness in meeting teacher staffing needs (Guarino, Santibanez, & Daley, 2006). The absence of information presents serious challenges for policy makers and educational leaders as they consider using economic incentives. This article takes a first step toward filling these critical knowledge gaps by introducing a comprehensive typology of economic incentives currently in use by states and districts. The typology organizes and differentiates among economic incentive policies, aligns

incentives policies with different teacher staffing problems (e.g., recruitment, retention, distribution), and serves as a framework for future research and evaluation.

The typology is based on a national policy scan. We use case studies in four districts, located in two states, to highlight patterns in specific states' and districts' use of economic incentive policies and to illustrate how the typology may be used to inform decision making and future research. Our typology builds on an analytic framework developed by Rice et al. (2009) and Roellke and Rice (2008) for evaluating teacher policies.¹ We extend this work by expanding the prior framework to include a more detailed examination of the range of economic incentive policies used by states and districts to address teacher staffing problems. In doing so, we offer a new tool for policy makers and educational leaders and a framework for evaluating incentive policies. Furthermore, our case studies illustrate the tool's usefulness for decision making. Our findings outline patterns in districts' and states' use of economic incentive policies to address staffing needs and point to the importance of considering the incentive "packages" to which teachers may be entitled and the extent to which these packages vary according to the range of incentive policies adopted across multiple levels of the educational system. The case studies also raise important questions about the ways in which economic incentive policies are implemented and evaluated.

The remainder of this article is organized as follows. First, we discuss the use of economic incentives as a response to teacher staffing problems. Second, we describe the economic incentive typology. Third, we present the data and methods used in our case studies. Fourth, we describe and synthesize our case study findings. Finally, we conclude by appraising the typology and identify implications for policy and practice, as well as considerations for future research.

Economic Incentives and Teacher Staffing Challenges

Economic incentives for teachers are a frequently cited human resource management strategy for addressing teacher staffing challenges (Berry, 2008; Odden & Kelley, 2002; Prince, 2002; Rice et al., 2009). Such strategies differentiate teacher compensation in an effort to attract qualified individuals to the teaching profession, recruit and retain teachers, and strategically allocate teachers to classrooms where they are most needed.² Most often, incentives are thought of as strategies that provide direct monetary rewards to teachers. For example, teachers may qualify for one-time cash bonuses or recurring

salary supplements to increase their base pay. However, this conceptualization excludes additional strategies that affect teachers' total compensation, not just their wages (Kolbe & Rice, 2006; Rice et al., 2009). Incentives such as student loan forgiveness programs, tuition assistance, retirement waivers, and in-kind benefits such as housing and transportation assistance also add to teachers' compensation and are intended to influence teachers' decision making (Kolbe & Rice, 2006).

Using economic incentives to respond to teacher staffing problems is grounded in the theory of "compensating differentials." This theory suggests that additional compensation can offset otherwise unattractive job characteristics associated with the teaching field or working in a particular district or school and, as a result, entice teachers to take positions they might not typically accept (Milanowski et al., 2009). For example, schools with poor working conditions such as undesirable locations or difficult-to-teach students may need to offer teachers additional compensation to overcome these barriers. Likewise, teachers with employment opportunities outside of education also may require additional compensation to fully account for the opportunity costs associated with teaching as opposed to another career.

Implicit in the argument that economic incentives, as compensating differentials, may be an effective strategy for meeting teacher staffing needs is the premise that compensation and working conditions play important roles in teachers' decision making and that teachers are willing to make trade-offs between these attributes when making decisions about where to work. To a great extent, these presumptions are supported by existing research. Like workers in other fields, teachers consider salary and benefits when deciding whether and where to work and, on average, prefer higher levels of compensation (Brewer, 1996; Gritz & Theobald, 1996; Hanushek & Rivkin, 2007; Ingersoll, 2001a; Kirby, Berends, & Naftel, 1999). Teachers also show strong preferences toward particular working conditions, such as quality school facilities (Buckley, Schneider, & Shang, 2004; Horng, 2009), smaller class sizes (Kirby et al., 1999), and lower percentages of poor, minority, and low-achieving students (Carroll, Reichardt, Guarino, & Meija, 2000; Hanushek et al., 2004). Teachers also appear willing to make trade-offs between working conditions and additional compensation. For example, when teachers were asked to compare jobs with different characteristics, Milanowski et al. (2009) found that a higher beginning salary had a greater effect on job attractiveness when the job was located in a school with a high proportion of students of color. In an analysis of the trade-offs elementary school teachers make among school characteristics, compensation, and student attributes, Horng (2009) found that receiving additional pay, equivalent to \$8,000 in

annual salary, was a more important workplace characteristic than student ethnicity, performance, or socioeconomic status. Salary enhancements in the form of limited duration bonuses also have been shown to influence teacher decision making. Findings from a natural experiment with new teachers in California suggest that the now-defunct California Governor's Teaching Fellowship (worth \$20,000) increased the likelihood that academically talented new teachers would accept positions in low-performing schools (Steele, Murnane, & Willett, 2010). In North Carolina, Clotfelter, Glennie, Ladd, and Vigdor (2008) found that a \$1,800 retention bonus reduced teacher turnover among math, science, and special education teachers working in high-poverty and failing schools.

However, differentiating teacher pay in response to staffing needs can be difficult. Most public school teachers are paid according to "single salary schedules" adopted by the school districts in which they work. Salary schedules provide a standardized framework for determining teachers' pay in a given school district, whereby teachers with the most experience, education, and training are rewarded with the highest salaries regardless of their subject specialty or location in which they teach. Most schedules are negotiated for all teachers in a district, with the assistance of teachers unions or other collective bargaining arrangements and, in some cases, state-specified minimums for teacher salaries. The process by which salary schedules are set, coupled with their inherent rigidity, can make it difficult for human resource managers to adapt teacher pay for different circumstances, including working conditions, classroom location, subject or grade level specialty, or teacher skills and knowledge (Hanushek, 2007; Odden & Kelley, 2002). For the most part, economic incentive policies circumvent these problems by modifying or working outside of teacher salary schedules. Although some incentives are collectively negotiated and subsequently included in district employment agreements with teachers, they need not be (Strunk & Zeehandelaar, 2011). Incentive policies have been adopted at the federal, state, district, and school levels and consist of a variety of monetary and nonmonetary rewards that supplement and enhance teachers' base wages and benefits.

The Economic Incentive Typology

This study's primary objective is to provide education policy makers and educational leaders with a framework they can use to understand and evaluate the economic incentive policy landscape. The economic incentive typology provides such a tool for organizing and differentiating among incentive policies as well as aligning strategies with different teacher staffing problems.

The typology is based on a national scan of economic incentive policies used by states and districts completed during the 2009–2010 school year; we limited our analysis to incentive policies in place between the 2000–2001 and 2009–2010 school years. When undertaking this scan, we broadly defined economic incentive policies to include monetary and nonmonetary rewards that supplement or enhance existing teacher wages and benefits for the purposes of increasing the supply of qualified teachers and attracting, retaining, or distributing teachers to where they are needed. This definition goes beyond the narrow conceptualization of economic incentives as a set of strategies that provide direct financial remuneration to include additional types of economic benefits that supplement or enhance teachers' total compensation.

The policy scan included a broad review of the scholarly literature, state and district documents, and research and interest group reports and briefings such as those published by independent research organizations and regional education laboratories. We used keyword searches (e.g., *teacher compensation*, *bonuses*, *economic incentives*, *teacher pay*) of education research databases (e.g., ERIC) and web-based searches of government (federal and state), research, and advocacy organization sites to identify source documents. From these documents we established a comprehensive list of economic incentive policies used by states and districts.

Using this information, we developed a typology that categorizes incentive policies along two dimensions: their structure and purpose (Johnson & Papay, 2009). The typology's rows group incentives, according to their structure, into six general categories: (a) salary schedule modifications, (b) salary enhancements, (c) limited duration incentives, (d) tuition subsidies and remission, (e) in-kind incentives and benefits, and (f) retirement benefit waivers. Within each category we further identified example policies that characterize the types of incentive strategies in use. The typology's columns link incentive policies with their intended purpose, recognizing that incentives may be used to address multiple teacher staffing problems (e.g., recruitment, retention, distribution). The typology's categorization of teacher staffing problems mirrors what was used in the analytic framework introduced by Rice et al. (2009) and Roellke and Rice (2008). We extend this earlier work by introducing a second distinction among incentive policies—those that are targeted at ensuring a sufficient quantity of teachers and those that incorporate requirements for teachers with specific qualifications or attributes that are thought to be proxies for teacher quality. The resulting typology is presented in Figure 1. In the following sections we expand our discussion of the typology's rows and columns.

Type	Problem Dimensions				Emphasis	
	Supply	Recruitment	Retention	Distribution	Quantity	Quality
Salary schedule modifications						
Salary enhancements						
One-time incentive payments						
Tuition subsidies and remission						
In-kind incentives						
Retirement benefit waivers						

Figure 1. Economic incentive typology

Types of Economic Incentive Policies

The typology recognizes six general types of economic incentives: (a) salary schedule modifications, (b) salary enhancements, (c) limited duration incentives, (d) tuition subsidies and remission, (e) in-kind incentives and benefits, and (f) retirement benefit waivers. Each incentive type corresponds with a row in the typology framework. Within each category, we provide examples of policies identified in our nationwide scan to illustrate the types of incentives in use. In the following sections we describe the types of incentive policies included in the typology.³ Figure 2 supports this discussion.

Salary schedule modifications. Salary schedule modifications alter teacher salary schedules to increase teacher compensation in ways that affect all teachers' salaries or the salaries of a specific group of teachers. Our policy scan identified four ways in which states and districts modify teacher salary schedules in response to teacher staffing concerns.

1. *State-mandated minimum salaries:* States may require school districts to adopt a minimum base salary for new teachers. The state-mandated base salary amount is typically set to be on par or higher than base teacher salaries in neighboring states or equivalent to starting salaries in competing occupations.
2. *Across-the-board salary increases:* Districts may modify teacher salary schedules to provide across-the-board salary increases for all teachers, or teachers with specific qualifications. Increases come in

Incentive Categories	Example Policy Types
Salary schedule modifications	<ul style="list-style-type: none"> • State-mandated minimum salary levels • Across-the-board salary increases • Alternative salary schedules • "Frontloaded" or "backloaded" salary schedules
Salary enhancements	<ul style="list-style-type: none"> • Salary credits • Additional pay for teaching in geographic- or subject-shortage areas • Additional pay for certifications or credentials • Additional pay for extra responsibilities • Tax waivers and credits • Transportation subsidies
Limited duration incentives	<ul style="list-style-type: none"> • Signing bonuses • Relocation incentive • Credential or certification bonus • Performance-based rewards • Loan forgiveness • Home ownership assistance
Education and training-related incentives	<ul style="list-style-type: none"> • Tuition subsidies and remission • Pre-service teacher scholarships and stipends • Alternative routes to teacher certification • Tuition tax credits
In-kind incentives	<ul style="list-style-type: none"> • Housing assistance • Subsidized meals • Access to local amenities
Retirement benefit waivers	<ul style="list-style-type: none"> • Return-to-work policies • Deferred retirement

Figure 2. Types of economic incentive policies

the form of a fixed dollar amount or percentage increase. States also mandate salary increases for teachers statewide.

3. *Alternative salary schedules:* School districts adopt alternative salary schedules for teachers in high-demand fields such as math, science, and special education. The alternative schedule may provide selected teachers a higher starting wage and larger pay increases as they proceed along the schedule's steps and lanes.
4. *"Front-loaded" or "back-loaded" salary schedules:* District salary schedules can intentionally front-load or back-load teacher salaries. Front-loading occurs when salary schedules provide additional compensation through higher starting salaries or disproportionately larger pay increases to early career teachers. Conversely, back-loaded teacher pay occurs when a district's salary schedule provides higher salaries or larger raises to veteran teachers.

Salary enhancements. Salary enhancements provide teachers with additional ongoing pay over and above their base salary. This type of policy does not change the pay structure, as would a salary schedule modification, but rather provides teachers with extra recurring compensation. Enhancements take two forms: direct and indirect. Direct enhancements are recurring increases to teachers' salaries. We identified four examples in our policy scan.

1. *Salary credits*: Experienced teachers or teachers with special skills receive salary schedule “credits” that improve their position on a salary schedule, resulting in more pay. Experience credits acknowledge past teaching experience for teachers who relocate to a new state or district. Teachers with experience outside of teaching or with unique skills also may be awarded a higher step on the scale at entry to a state or district.
2. *Additional pay for teaching in geographic or subject shortage areas*: Teachers who work in high-need areas may receive recurring salary supplements for as long as they work in an eligible teaching position.
3. *Additional pay for certifications or credentials*: Teachers with specific certifications or credentials, such as master’s or doctoral degrees or National Board for Professional Teaching Standards (NBPTS) certification may be eligible for recurring salary supplements.
4. *Additional pay for assuming extra responsibilities*: Teachers who take on leadership roles or additional duties may be rewarded with additional pay. Responsibilities can include mentoring new teachers, serving as a master or lead teacher, or acting as department chair.

Indirect salary enhancements provide monetary savings to teachers, thereby supplementing earned income. We identified two examples in our policy scan.

1. *Tax waivers and credits*: States or districts may pay the additional payroll taxes associated with economic incentives teachers receive. It also is the case that teachers may receive tax credits that remove a fixed amount from their actual tax bill.
2. *Transportation subsidies*: Teachers can receive an annual salary supplement to defray transportation costs associated with teaching in a particular district or school. These supplements are separate from a teacher’s salary and can subsidize public or private transportation costs.

Limited duration incentives. In contrast to recurring salary supplements, teachers may receive stipends or cash bonuses. These incentives are limited in their duration—operating as a one-time or finite reward paid in increments over a fixed number of years. They do not add to a teacher’s base pay. There is considerable variation in the amount paid to teachers, with payments ranging from a few hundred to thousands of dollars. Our policy scan identified four examples of limited duration incentives.

1. *Signing bonuses*: Teachers can receive a one-time signing bonus in exchange for agreeing to teach in a particular state, district, or school. They are most often targeted at teachers with qualifications in subject shortage areas, which agree to teach in difficult-to-staff districts or schools, or high performers from undergraduate or graduate education programs. Bonuses are paid as a single lump sum or as installments over several years, and sometimes require a multi-year commitment to stay in a particular teaching position.
2. *Relocation assistance*: Teachers who agree to relocate to a new state or district may receive a one-time payment to offset moving expenses.
3. *Credential or certification bonus*: Teachers who complete a specific program, such as NBPTS, or gain an endorsement in specific content areas (e.g., reading certification) may receive a stipend or bonus.
4. *Performance-based awards*: Individual teachers or groups of teachers (e.g., grade level or school) may receive a nonrecurring bonus payment as a reward for performance in the classroom.
5. *Loan forgiveness*: Teachers may be eligible to have all or a portion of their student loans forgiven in exchange for accepting and remaining in an eligible teaching position. Programs operate at the federal, state, and district levels. Most often, student loan forgiveness programs are targeted at teachers who agree to teach in geographic or subject shortage areas.
6. *Home ownership assistance*: Some communities offer teachers low-interest mortgages or financial help with making down payments toward a home purchase. We identified these policies in rural communities that have a difficult time recruiting qualified teachers as well as geographic areas where home prices are prohibitively expensive given prevailing teacher wages. We also identified districts that assist teachers with paying apartment rental security deposits.

Education- and training-related incentives. Economic incentives have been used to encourage teachers to attend trainings or pursue additional education to enhance their capabilities and improve professional practice. Teachers can receive cash advances for tuition or other training costs, their employer can pay education and training providers directly, or teachers may be reimbursed for education-related expenses. Our policy scan identified four examples of education- and training-related incentives.

1. *Tuition subsidies and remission*: Teachers may be reimbursed for all or part of the costs associated with obtaining degrees, training, or credentials. In our policy scan, we found examples of tuition remission and reimbursements for teachers pursuing advanced degrees, particularly master's degrees; Bilingual, Cross-cultural, Language and Academic Development certificate (BCLAD), Cross-cultural, Language, and Academic Development certificate (CLAD), NBPTS, and other specialized credentials; or additional certifications to meet "highly qualified teacher" requirements. In addition, tuition policies that offered free or reduced-price tuition were targeted at early-career, initially certified, or temporary teachers to assist them in obtaining required certification.
2. *Preservice teacher scholarships and stipends*: Individuals pursuing a teaching career may receive stipends to defray education-related costs. Other incentives, such as "teacher cadet" or intern programs, provide college scholarships to high school and college students who commit to teaching after college, and oftentimes target students who agree to teach in geographic or subject shortage areas. We also identified preservice scholarship programs that target existing district employees, such as instructional aides.
3. *Alternative routes to certification*: Teachers pursuing alternative routes to certification may receive financial assistance from states and districts. This is particularly the case for teachers working toward certification in subject shortage areas. School districts also may operate stand-alone alternative certification programs that are free to selected applicants.
4. *Tuition tax credits*: Teachers who pursue additional education and training may be eligible for federal, state, and local tuition tax credits. The credits ease teachers' tax burdens by removing all or a portion of tuition costs from their tax bill.

In-kind incentives. Incentive policies also include a range of nonmonetary, or in-kind, rewards. These policies provide goods and services at little or no cost to teachers. Our policy scan identified three exemplary in-kind incentive policies.

1. *Housing assistance*: Communities may provide teachers with subsidized or free housing.
2. *Food and meal subsidies*: Districts and schools offer free meals to teachers while they work as well as provide vouchers for food at local vendors.

3. *Access to local amenities:* Teachers may receive discounted or free access to local amenities, including gym memberships, admission to local theaters and cultural events, and recreation opportunities.

Retirement incentives. Our policy scan identified two general types of retirement incentive programs. In both cases, the policies are targeted at keeping experienced teachers in the classroom. First, “return to work policies” allow retired teachers to work, at least part-time, without losing pension benefits. Such programs bring retired teachers back to public schools as consultants, short-term substitutes, or long-term substitutes, with agreements that span months or years. Second, “retirement deferral programs” permit experienced teachers to remain in the classroom while banking their retirement benefits. Deferral programs may be generally available to all teachers or targeted at teachers with specific skills or credentials.

Teacher Staffing Problems

Rice et al. (2009) and Roellke and Rice (2008) recognize that policy makers and educational leaders face multiple, conceptually distinct problems when trying to staff classrooms with qualified teachers, and that teacher staffing policies may be directed at one or more of these problems.⁴ Their analytic framework for studying teacher policies distinguishes among policies that are targeted at (a) ensuring an adequate supply of qualified teachers, (b) recruiting teachers, (c) retaining teachers, and (d) distributing teachers to the districts and schools where they are most needed. We adopt this categorization, with each dimension representing a column in the economic incentive typology. Incorporating this categorization into the typology provides decision makers with a framework for considering the alignment between incentive policies and teacher staffing problems.

Conceptually, economic incentive policies may be used to address different problems. First, incentive policies may be implemented with the goal of expanding the supply of qualified teachers in a specific location or content area. Such policies decrease the costs or increase the benefits associated with becoming a teacher. For example, incentive policies may lower barriers to entry into the profession by offsetting the cost associated with pursuing teacher training and licensure or increase the appeal of teaching relative to other jobs that require similar training. Second, economic incentives can be used to recruit and hire qualified candidates. Recruitment-oriented incentives improve the attractiveness of a particular teaching position by increasing teachers’ compensation relative to alternative teaching positions in other

states, districts, and schools. Third, incentive policies can be used to motivate teachers to remain teaching in a district or school or remain teaching, more generally, by increasing teachers' compensation. Finally, incentive policies can be used to strategically allocate teachers to where they are most needed. Teacher sorting among districts and schools oftentimes leaves poor, urban, and disadvantaged schools with insufficient numbers of teachers or teachers with lesser or mismatched qualifications (Jacob, 2007). Incentive policies affect teacher sorting by incentivizing teachers to take and remain in teaching positions they might not typically accept. It is important to note that incentive policies may be simultaneously directed at more than one staffing problem. For example, a district may offer a recruitment bonus to new teachers who commit to working in a difficult-to-staff school.

In addition to recognizing that incentive policies may be used to address multiple dimensions of the teacher staffing problem, the typology framework distinguishes between incentive policies that are targeted at ensuring a sufficient quantity of teachers and those directed at teachers with specific qualifications or attributes that are thought to be proxies for teacher quality. The distinction between policies aimed at ensuring a sufficient number (i.e., quantity) of qualified teachers and those that include a "quality" dimension is not a new one. Specifically, earlier works by Rice et al. (2009) and Rice (2008) identify this difference in policy focus.

Data and Method

Initially, the typology was developed based on a national scan of economic incentive policies used by states and districts. Subsequently, we relied on descriptive case studies in four districts, located in two states, to further refine the typology and to test its usefulness as a framework for understanding and evaluating economic incentive policies. In this section, we discuss site selection and data collection procedures used in the case studies. This is followed by descriptive profiles for each site.

Site Selection

For the purposes of this study, our primary focus is on school districts' use of economic incentives. This focus on district-level policy making is grounded in several important assumptions. First, human resource functions related to teacher wages and benefits typically occur at the district level.⁵ In large measure, this is the result of the fact that teacher compensation is almost always negotiated by school districts and is binding for all schools in

each district. As such, we expect that districts, not schools, typically set and administer economic incentive policies. Second, we are interested in capturing the extent to which incentive policies are used to differentiate teacher pay to address intradistrict teacher staffing challenges. Although school districts are our primary focus, given that districts operate within unique state contexts we also examine incentive policies used by the states in which our selected districts reside. Specifically, we are interested in the degree to which district-level teacher staffing policies may substitute or complement state policies, and in the ways in which district-level policy making may be enabled or constrained by state policies.

We used a two-step process to select the case study sites. First, we identified two states: Florida and California. Historically, both states have experienced teacher shortages resulting from a combination of factors, including rising student enrollments, state-mandated class size reduction policies, and an insufficient number of new teachers produced within the state (Bradley, 1999; Murphy & DeArmond, 2003). In each state, we selected two school districts. Like our goal in selecting the states, our primary goal was to select districts that experienced teacher staffing challenges and utilized economic incentives. We reviewed district websites, collective bargaining agreements, and teacher recruitment materials, as well as consulted state officials to identify candidate districts. Two districts in each state were selected: the School District of Palm Beach County (Florida), Broward County Public Schools (Florida), Oakland Unified School District (California), and Oxnard Elementary School District (California). Below, we provide more detail on each of these case study sites. In addition, Figure 3 provides an overview of each district's characteristics and summarizes the nature of its teacher staffing challenges.

Florida districts. The School District of Palm Beach County (Palm Beach) and Broward County Public Schools (Broward) are adjacent and compete for teachers in the same regional labor market (along with Miami-Dade County Public Schools). In the 2008–2009 school year, Palm Beach employed about 12,600 teachers and served approximately 170,200 students in its 163 schools. The district covers a diverse geographic area, including several midsized urban centers (Palm Beach and Boca Raton), as well as suburban areas along the east coast of Florida and a geographically isolated rural region, the “Glades.” For the same time period, neighboring Broward employed about 23,500 instructional staff and served about 255,000 students in 285 schools, located primarily in urban and suburban settings (including Fort Lauderdale).

Both districts face a variety of teacher staffing challenges. Each district encounters difficulties recruiting sufficient numbers of qualified teachers and

Nature of Teacher Staffing Challenges					
District	Descriptive Characteristics (SY 2008-09)	Supply	Recruitment	Retention	Distribution
Broward County Public Schools (FL)	<ul style="list-style-type: none"> 255,000 students/325 schools 17,800 teachers Primarily urban and suburban settings Student Race/Ethnicity: 37% White; 29% Black; 28% Hispanic 48% FRPL 	<ul style="list-style-type: none"> Critical shortages in math, science, and reading (secondary) 	<ul style="list-style-type: none"> Competes with surrounding districts for qualified teachers, notably Palm Beach and Miami-Dade. 	<ul style="list-style-type: none"> Not identified as a problem. 	<ul style="list-style-type: none"> Difficulties staffing Title I and Differentiated Accountability (DA) schools, and subject-shortage area classrooms.
The School District of Palm Beach County (FL)	<ul style="list-style-type: none"> 170,200 students/163 schools 12,600 teachers Diverse geographic area, including mid-sized urban areas, suburban coastal areas, and geographically isolated/rural areas in the northeastern Everglades Student Race/Ethnicity: 38% Black; 30% White; 26% Hispanic 44% FRPL 	<ul style="list-style-type: none"> Critical shortages in math, science, and reading (secondary) 	<ul style="list-style-type: none"> Competes with surrounding districts for qualified teachers, notably Broward County. 	<ul style="list-style-type: none"> Not identified as a problem. 	<ul style="list-style-type: none"> Difficulties staffing Title I schools and rural schools in "Glades" area, and subject-shortage area classrooms.
Oakland Unified School District (CA)	<ul style="list-style-type: none"> 46,400 students/160 schools 2,645 teachers Primarily urban with a few suburban schools Student Race/Ethnicity: 36% Hispanic; 39% Black; 18% Asian 72% FRPL Under state-receivership due to low student performance 	<ul style="list-style-type: none"> Critical shortages of math, science, special education, and bilingual education 	<ul style="list-style-type: none"> Struggles to recruit qualified teacher most candidates for positions, with particular difficulties in critical subject shortage areas. 	<ul style="list-style-type: none"> Has difficulties retaining teachers, especially those participating in partner programs (e.g., Teach for America) that only require a 2-year commitment. 	<ul style="list-style-type: none"> Difficulties staffing schools in urban center, and subject-shortage area classrooms.
Oxnard Elementary School District (CA)	<ul style="list-style-type: none"> 15,281 students/21 schools 720 teachers Primarily urban and suburban settings Student Race/Ethnicity: 88% Hispanic; 2% Black; 3% Asian Grades K-8 only 	<ul style="list-style-type: none"> Historically encountered a shortage of math, science, and special education teachers. Did not encounter problem during the 2009-10 school year. 	<ul style="list-style-type: none"> Not identified as a problem. 	<ul style="list-style-type: none"> Does not face retention challenges. 	<ul style="list-style-type: none"> Not identified as a problem.

Figure 3. Case study district characteristics

competes with neighboring districts for teacher talent. Critical shortages exist in math and science (especially at the middle and secondary levels), language arts, and reading. District recruiting challenges are particularly acute in Title I and differentiated accountability (DA) schools (i.e., failing schools under No Child Left Behind targeted for intensive “turn around” efforts). In addition, Palm Beach encounters difficulties staffing classrooms in its less populated, more isolated western rural area. Each district hired new teachers during the 2007–2008 and 2009–2010 school years; neither experienced teacher layoffs during this time period. Both districts have established relationships with local and regional teacher preparation institutions to recruit new teacher candidates, and both districts recruit teacher candidates from states known for an excess supply of new teachers (e.g., New York and Pennsylvania). Neither district reported difficulties retaining qualified teachers. However, like other large districts, both struggle with distributing teachers among schools. Schools that primarily serve high-needs students (low income, minority, and English language learner [ELL] students) are particularly difficult to staff, as are subject areas with a critical shortage of qualified teachers (science, math, special education, and secondary reading). In addition, Broward’s policy that allows new teachers to easily move between schools compounds these problems. Each district also operates its own alternative certification program.

California districts. Oakland Unified School District (OUSD) is a large urban school district located in the San Francisco Bay area. During the 2008–2009 school year, the district employed about 2,600 teachers in 160 schools, serving 46,400 students. Most of OUSD’s students are non-White and poor. However, OUSD’s “Hill Schools,” located in neighborhoods outside the urban center, serve a less diverse and higher income population. Oxnard Elementary School District (Oxnard) is located in an urban–suburban area between Los Angeles and Santa Barbara. It is a medium-sized school district, with 720 teachers in 21 schools. During the 2008–2009 school year, the district served about 15,200 students in grades K–8. The majority of its students are Hispanic (86%), with nearly half of its students identified as ELL and poor (77% free or reduced-price lunch).

OUSD has a difficult time staffing its classrooms with qualified teachers, particularly in its high-poverty and central city schools. The district has been under state receivership since 2002, and many operations are controlled by the state. In addition, there has been considerable instability in leadership; only recently was a permanent superintendent hired. Before that time, several state administrators served as acting superintendent. District officials reported that instability has negatively affected their ability to recruit and retain teachers.

The San Francisco Bay Area's high cost of living further exacerbates staffing difficulties, and provisions in the existing teacher contract that prevent the district from hiring external teacher candidates until late June add to these difficulties. Only about half of OUSD's teaching positions are filled through "traditional" pathways, and the district relies heavily on alternative pathway and certification programs such as Teach for America and the New Teacher Project to supply teachers for its difficult-to-staff schools and subject shortage areas (e.g., math and science). However, these programs typically require only a two-year teaching commitment, and the district has difficulty retaining these teachers after that time period.

Given its location between two metropolitan areas, Oxnard faces stiff competition for qualified teachers. However, despite the tough labor market, Oxnard faces relatively few teacher staffing challenges. Because of shrinking enrollment, the district has undergone several reductions in force in recent years. For the 2009–2010 school year, the district recruited only special education, math, and science teachers. Despite limited hiring, the district reported receiving hundreds of applications for its vacancies, including in subject shortage areas. District officials attributed some of this success to its generous compensation policy. Salaries and benefits are reportedly at the 90th percentile among the state's school districts, and over the past 3 years average teacher salaries increased by 18%. Historically, Oxnard has not experienced difficulties retaining teachers or distributing teachers among its schools.

Data Collection

We collected case study data using a multistage process. We first reviewed district documents (e.g., salary schedules, union contracts, teacher personnel policies) and websites (e.g., teacher hiring and recruitment information) that described each district's compensation package and economic incentives. Based on this information, we constructed a preliminary typology for each district. The typology included policies identified in publicly available documents. In applying the typology's columns to our case study sites, we relied on references in the extant documents we reviewed to infer the purpose of a particular incentive policy. In addition, when identifying distinctions in a policy's focus on teacher "quantity" or "quality," we relied on the policy's stated attributes. For instance, a hiring bonus policy that did not include specific qualification criteria (i.e., it was available to all teachers who accepted positions in a certain district or school) was identified as a "quantity" policy. In contrast, incentives with explicit qualification criteria (e.g., degree or NBPTS certification) were identified as "quality-oriented" policies. It is

important to note that although a specific policy is “intended” to serve a specific purpose, it may or may not do so. More research is needed on the relative effectiveness of different incentive policies, and policy packages, and their alignment with different dimensions of the teacher staffing problem.

Each district’s typology template served as a starting point for subsequent interviews with key district personnel. A total of seven district officials were interviewed. Respondents were chosen based on knowledge of their district teacher staffing and compensation policies. Interviewees included senior administrators such as administrative superintendents, teacher recruitment and development administrators, and human resources or personnel officials. Interviews were conducted by phone, and in some cases multiple individuals participated in the call. The interview protocol was organized around three discussion topics. First, respondents described their district’s characteristics and context, including their community and student population. Second, respondents described their local teacher labor market. Probes included questions about the local supply of qualified teachers, district demand for teachers, and challenges encountered in staffing classrooms with qualified teachers. Finally, interviewees were asked about their districts’ use of economic incentives to address teacher staffing problems. Interviewers probed for district incentive policies and their intended purpose. Interviews lasted about 1 to 1.5 hours each and were conducted during the fall of 2009. We also developed incentive typologies for each state. Like the typologies for districts, the typologies were based on reviews of state documents and websites and interviews with state-level personnel. State-level interviews followed the same semistructured interview protocol as used with districts. Altogether, we interviewed five state-level officials.

Interviewers took careful field notes, recording data using the typology templates completed following the state and district document reviews. Additional detail was added to the template to further describe the policies in use, and new rows were added when policies were uncovered that were not previously identified in district documents. In addition, we probed interviewees regarding the intent of specific incentive policies. This information was used to confirm or revise our earlier inferences regarding an incentive policy’s purpose. In some instances, respondents were recontacted for additional information and clarification. The profiles were subsequently analyzed for patterns and themes related to both the types of incentives used and the extent of alignment between incentives and teacher staffing problems.

A number of checks were in place to ensure the accuracy of our data and analyses. We took detailed notes during our interviews and promptly

converted these notes into the state and district profiles. Interview data were cross-checked using multiple sources, including state and district documents and websites. Where there were uncertainties or gaps in information, respondents were recontacted and asked to clarify.

Findings

Figures 4 and 5 summarize the economic incentive policies in place at the state and district levels. For each site, we list the specific policies according to their type. Figure 6 provides an overview of the links between state and district incentive policies and different dimensions of the teacher staffing problem as well as the extent to which policies emphasize ensuring a sufficient quantity of teachers or are targeted at teachers with specific qualifications.⁶ Overall, our case studies show evidence of broad use of economic incentives that span the categories and purposes included in the incentive typology framework and confirm the typology's usefulness for organizing and differentiating among the incentives in use. When applied to our case study sites, the typology framework also points to the links between specific policies and the problems they are intended to address. In addition, our policy scan suggested that incentive policies may be distinguished according to whether they are targeted at teachers with specific qualifications—oftentimes relied on as proxies for quality—or minimally qualified teachers more generally. Our case study findings confirm this distinction. Finally, we also find that states and districts simultaneously draw on multiple policies, targeted at different dimensions of the teacher staffing problem. The typology framework highlights the complex incentive structures in place for teachers, particularly when considering the incentive structures in place across levels of the educational system.

In the following sections, we synthesize and report the general trends and themes in the use of economic incentives by states and districts that emerge across our case study sites. We subsequently discuss the incentive packages in place for teachers across levels of the educational system and their potential impact on teachers' compensation.

Patterns in Use

Looking across our case study sites, we identified four patterns in the use of economic incentive policies. First, school districts were more likely to scaffold economic incentives onto existing salary schedules rather than modifying the schedules themselves. Second, districts more frequently implemented

	State of Florida	State of California
Salary Schedule Modifications		
	None	- Minimum base salary requirement
Salary Enhancements		
	- Dale Hickam Excellent Teaching Program – Annual Supplement	None
Limited Duration Incentive Payments		
	- Merit Award Program (MAP) - Critical Teacher Shortage Student loan Forgiveness Program (CTS LF)	- National board of Professional Teaching Standards Incentive Program - Assumption Program of Loans for Education (APLE) - Extra Credit Home Purchase Program
Education- & Training-Related Incentives		
	- Dale Hickam Excellent Teaching Program – Fee Subsidy - Critical Teachers Shortage Student Tuition Reimbursement (CTS TR)	None
In-kind Incentives		
	- Apartment assistance	None
Retirement Incentives		
	- Deferred Retirement Option Program (DROP) - Retirement credits for years of teaching experience in other states	None
<i>Total Number of Strategies</i>	8	4

Figure 4. State-level economic incentive policies

recurring incentives as opposed to limited duration incentives. Third, incentives adopted by states and districts address different dimensions of the teacher staffing problem. Finally, most district-level incentive policies are targeted at teachers with specific qualifications rather than all teachers more generally. We discuss each of these themes in further detail below.

Working around, rather than modifying, salary schedules. States and districts were less inclined to undertake wholesale modifications to their teacher salary schedules than they were to scaffold other types of incentive policies around existing compensation structures (Figures 4 and 5). One district official in Florida noted that this was partially the result of concerns raised by local teachers unions over pay equity for teachers within her district. Union negotiators were more comfortable with the district targeting incentives at

	Broward County Public Schools (FL)	The School District of Palm Beach County (FL)	Oakland Unified School District (CA)	Oxnard Elementary School District (CA)
Salary Schedule Modifications				
	- Frontloading	- Backloading	None	- Across-the-board pay raises - Backloading
Salary Enhancements				
	- Effective Teacher Program for Title I Schools - NBPTC Supplement/Broward County Recognition Program - Subject-shortage area supplements - Coursework incentives - Advanced degree supplements - Salary credits for teaching and vocational work-related experience	- "Glades" supplement - Advanced degree/certification pay - Salary credits for teaching and work-related experience - National Board Certification Supplement	- Oakland Unified NBPTC Supplement - Bilingual teacher incentives (for BCLAD) - Salary credits for teaching & related work experience	- Advanced degree supplements - Subject-shortage supplements - Salary credits for teaching & related work experience
Limited Duration Incentive Payments				
	- Signing bonus for new hires with NBPTC	- Reading endorsement incentive - School-wide performance incentives in high-need schools	- Partner program supplement	- Future administrators academy - Principal for a day program
Education- & Training-Related Incentives				
	- Alternative Certification for Educators (ACE) program - New Teacher Academy (Induction Program) - Tuition reimbursement/remission	- Tuition reimbursement program - Alternative certification program - Florida Future Educators of America scholarship program		
In-kind Incentives				
	None	None	None	None
Retirement Incentives				
	None	None	- Hourly/substitute employment for retired teachers	None
<i>Total Number of Strategies</i>	11	10	5	6

Figure 5. District-level economic incentive policies

specific “problems,” such as subject-specific shortages, than they were with more extensive modifications that fundamentally changed the typical “steps and lanes” approach to compensating all teachers or differentiated pay for teachers in ways that deviated from the traditional experience and training metrics. In the few instances where salary schedule modifications were in place, they either applied to all teachers equally or were closely linked to teacher experience. For instance, Oxnard provided across-the-board salary increases to its teachers. Increases were based on a revenue-sharing agreement between the district and teachers, and all teachers received the same percentage increase in pay. In addition, recent teacher salary escalations in Broward were apportioned in such a way that that teachers with fewer years of experience received slightly larger pay increases than veteran teachers.

Although this approach to “front-loading” the salary schedules affects teachers differently, it does so in a way that is consistent with existing metrics (i.e., experience and training) for differentiating teacher pay. Alternatively, the Palm Beach and Oxnard district salary schedules are slightly back-loaded, rewarding teachers with the most experience and training with slightly higher bumps in pay as they move along the schedule’s steps and lanes.

Recurring versus limited duration incentives. Districts were more likely to rely on recurring salary supplements to teachers’ base pay than they were to offer limited duration incentive payments (Figures 4 and 5). For instance, in Broward 6 of 12 incentive programs operate as salary enhancements, and there are only 2 small bonus programs (\$1,000 bonus for NBPTS and \$1,500 for NBPTS in Title I schools). Similarly, Palm Beach was more likely to offer incentives that operated as recurring salary supplements than limited duration incentives. This tendency was characterized by one Florida district official as “consistent rewards for consistent behavior.” By this she meant that if the district wanted a long-term commitment from a teacher, such as relocating to a high-needs school or recruiting a teacher with credentials in a subject shortage area, it needed to provide an ongoing reward; otherwise there was a risk that teachers would change their behavior once the incentive went away. Limited duration incentives were perceived as less effective in motivating teachers to commit to working in less desirable locations for extended periods of time. Consistent with this viewpoint, limited duration incentives were most often used by districts to reward teachers for achieving specific milestone (e.g., NBPTS certification) or to reward instructional performance in the classroom in a given year. In contrast, salary supplements were used to entice teachers—particularly those with high-demand subject matter qualifications—to accept positions in schools in which they might not ordinarily work (e.g., Title I, DA, geographically isolated). It is interesting that states, however, were more likely to offer limited duration incentives. Both California and Florida, for example, offered multiple bonuses to incentivize teachers to obtain NBPTS certification.

Incentive policies across levels of the educational system. We find that states and districts adopt a range of incentive policies. However, the specific types of policies are targeted at different dimensions of the teacher staffing problem. For example, as discussed above, our case study districts are more likely to offer salary enhancements and offer few limited duration incentives. By contrast, both of our case study states offered more limited duration incentives than they did salary enhancements. In addition, state- and district-level incentive policies differed in their purpose. State-level policies primarily focused on enhancing teacher supply and facilitating the distribution of

qualified teachers across districts and schools. For example, state incentive policies were used to address the inadequate supply of teachers within the state, either through adopting incentive policies that support new teachers entering the field or recruiting teachers from other states (see Figure 6). By comparison, districts were more likely to target incentive policies at recruiting and retaining teachers as well as strategically distributing teacher talent among schools within the district. To a great extent, the difference in policy focus makes sense. States play a supporting role in assisting districts with meeting their staffing needs. In contrast, districts are directly responsible for assessing and meeting their schools' staffing needs.

It is somewhat surprising that we did not find explicit interactions between state and district policy making. Although school districts were aware of the incentives offered by the state, they pursued their own incentive policies with little regard to state efforts. For example, three of the four case study districts offered incentives to attract NBPTS-certified teachers, even though both states also offered incentives for NBPTS teachers. Our interviews with district officials suggest that districts did not explicitly consider state-level incentive policies when developing and implementing their own policies. Districts were reluctant to rely on state help to meet local staffing needs, and state incentive policies were viewed as "easy targets" for state budget cuts and, as a result, a somewhat unreliable tool for addressing district staffing needs.

Targeting incentives at teachers with specific qualifications. The majority of district incentive policies are targeted at teachers with specific qualifications rather than teachers more generally (Figure 6). Most district-level incentive policies were directed at recruiting, retaining, and distributing teachers with qualifications in subject shortage areas or to entice teachers to pursue additional qualifications such as NBPTS or additional coursework and advanced degrees. For example, 9 of 11 incentive policies in Broward County and 5 of the 7 incentive policies in Oxnard are directed at teachers with specific qualifications. Incentive policies, available to all teachers, were for the most part aimed at attracting a sufficient quantity of teachers to difficult-to-staff locations (e.g., Title I schools, geographically isolated areas).

The pattern among states was less clear-cut. In both California and Florida, state-level incentive policies were primarily directed at increasing the supply, recruiting, and distributing teachers in subject shortage areas. In cases where incentives were generally available to all teachers, they were most often used to entice teachers to work in less desirable locations. However, most of Florida's policies have an explicit "quality" dimension, limiting eligibility for state-supported initiatives to those teachers with specific qualifications

	Problem Dimensions				Emphasis	
	Supply	Recruitment	Retention	Distribution	Quantity	Quality
<i>States</i>						
State of Florida	5	2	2	4	4	4
State of California	4	0	0	3	3	1
<i>Districts</i>						
Broward County Public Schools (FL)	1	9	5	3	2	9
School District of Palm Beach County (FL)	2	6	3	6	5	6
Oakland Unified School District (CA)	1	2	0	2	2	3
Oxnard Elementary School District (CA)	0	4	6	0	2	5

Figure 6. Economic incentive policies and teacher staffing problems

and credentials, particularly NBPTS certification. California, on the other hand, had only one incentive policy with an explicit reference to teacher qualifications (its NBPTS incentive program). The state's remaining three incentive policies were aimed at increasing the number of teachers available to districts and distributing teachers among difficult-to-staff districts.

Economic Incentive Packages

The typology framework illustrates the complex incentive structures in place for teachers in our case study districts. It is important that we find that, at any one time, a teacher may be eligible for more than one economic incentive, including both state- and district-sponsored initiatives. Taken together, the policies form incentive "packages." Incentive packages have the potential to substantially enhance a teacher's compensation, even more so than a single incentive, and vary greatly within states and districts and according to teacher qualifications. Consider the following hypothetical examples (see Figure 7). First, a veteran teacher thinks about relocating to one of two neighboring Florida districts. Given her qualifications, in Broward County she may be eligible for five different types of salary enhancements and one limited duration incentive. Altogether these incentives add up to as much as \$17,000 in extra pay during her first year—approximately 38% in additional compensation over and above the hypothetical starting salary of \$45,000. The same teacher, however, would potentially qualify for about \$6,000 in extra pay if she chose to relocate to neighboring Palm Beach. Similarly, a new teacher considering job opportunities in both districts also encounters different incentive packages. In Broward, a new teacher would receive a higher starting salary because of the district's front-loaded salary schedule as well as an additional \$3,650 annual salary enhancement for her master's degree. In Palm Beach her starting salary would most likely be lower because of a back-loaded salary schedule, and she would be eligible for a slightly lower recurring salary enhancement (\$3,000) for her master's degree. She would, however, qualify for a one-time bonus of \$1,000 for her "reading" endorsement.⁷

Our interviews with state and district officials suggest that education policy makers and leaders may not readily identify economic incentive packages and take them into account in their decision making. For example, in our conversations with district administrators, they identified various stand-alone policies in place at both the state and district levels and their intended effects (e.g., recruitment, retention, distribution). However, when probed further, district administrators had not considered the possible interactions among

	Broward County		Palm Beach County	
	New Teacher <i>English teacher with master's degree, reading endorsement, and no prior teaching experience</i>	Veteran Teacher <i>English teacher with master's degree, National Board Certification, reading endorsement, and past teaching experience</i>	New Teacher <i>English teacher with master's degree, reading endorsement, and no prior teaching experience</i>	Veteran Teacher <i>English teacher with master's degree, National Board Certification, reading endorsement, and past teaching experience</i>
Starting Salary	"Frontloaded" salary schedule favoring new teachers	Salary credits for past teaching experience	"Backloaded" salary schedule, favoring veteran teachers	Salary credits for past teaching experience
Salary Enhancements	\$3,650 for master's degree	\$2,348 or 5% of base salary for NBPTC \$10,000 or 20% of base salary for NBPTC if in Title I school \$3,650 for master's degree	\$3,000 for master's degree	\$3,000 for master's degree \$2,000 NBPTC supplement
Limited Duration Incentives		\$1,000 signing bonus for NBPTC	\$1,000 one-time bonus for reading endorsement	\$1,000 one-time bonus for reading endorsement
Potential Additional Compensation for Year 1 in District	\$3,650 in pay above base salary	\$16,998 in pay above base salary	\$4,000 in pay above base salary	\$6,000 in pay above base salary
% Increase on \$30,000 annual salary	12%		13%	
% Increase on \$45,000 annual salary		38%		13%

Figure 7. Florida teacher decision-making scenarios

incentive policies, nor the fact that multiple incentives could result in sizable additions to teachers' compensation. When applying the typology framework to her district, one administrator was somewhat surprised at both the number and distribution of incentive policies, noting that she had not previously considered the overlap in incentives—notably for NBPTS teachers.

Appraising the Typology

Conclusions

In this study we introduce a comprehensive typology for understanding and evaluating the range of economic incentives used by districts. Our case studies confirm the typology's usefulness as a tool for organizing and differentiating among incentive policies. We find that the proposed framework not only covers the range of policies in place in our selected states and district but also illustrates patterns in how they use economic incentive policies. Specifically, consider the following:

- *Working around rather than modifying teacher salary schedules:* We find that states and districts are more likely to scaffold incentive policies to existing salary schedules rather than modifying existing salary schedules. This highlights the somewhat intractable nature of traditional approaches to teacher pay, and state and district efforts to use more flexible policies to differentiate teacher compensation in response to their staffing needs.
- *Recurring versus limited duration incentives:* Our case studies suggest that recurring incentives are a preferred approach to meeting longer-term staffing needs. District officials reported that teachers needed an ongoing reward to offset undesirable working conditions; otherwise, there was a risk that they would change positions once the incentive went away. Limited duration or one-time incentives were reported as more effective tools for incentivizing teachers to attain specific performance-related or education and training goals. Although this finding seems intuitive, in our policy scan we noted examples of state and district policies that operated counter to this logic.
- *Incentives at multiple levels of the educational system:* Our case studies show that incentive policies are in place at multiple levels of the educational system and that to a great extent policies at the different levels are typically aligned with different dimensions of the staffing problem. States tend to adopt a more macro view toward

teacher staffing policy, whereas districts are tasked with designing and implementing more targeted policies and programs. These findings reinforce earlier evidence presented by Rice, Roellke, Sparks, and Kolbe (2009), which demonstrated that teacher policies, in general, are multilevel in nature and reflect different policy actors' perspectives on problems. However, we also found that in some instances considerable overlap exists between state and district policies. For instance, a number of our case study districts adopted incentive policies for NBPTS teachers, despite the fact that similar incentives were offered by the state. Officials in one district reported doubting the stability of state incentive policies and, instead, instituted their own policies to meet staffing needs. This suggests that, despite potential efficiencies that might be gained through implementing incentive policies at multiple levels of the educational system and coordinating district policies with those already offered by the state, if districts feel they cannot rely on state-level policies they may adopt duplicate or overlapping strategies of their own.

- *Quantity and quality*: District-level incentive policies most often were targeted at teachers with specific qualifications rather than teachers more generally. When incentive policies were available to all teachers, they were aimed at attracting teachers to work in difficult-to-staff locations. Consistent with their goals of increasing overall teacher supply and distributing teachers among districts, states were less likely to incorporate qualification requirements in their incentive policies.

Although our case studies are drawn from a limited number of states and districts, given the growing interest and use in economic incentives and the paucity of research on state and district incentive policies, these findings represent important first steps toward mapping the policy landscape.

The typology framework also illustrates the incentive packages in place across multiple levels of the educational system. Although states and districts enact multiple stand-alone incentive policies, these policies combine to form complex incentive packages that, depending on teacher qualifications and preferences, can substantially enhance teachers' compensation. The concept of policy packages is not a new one. Roellke and Rice (2008) and Rice, Roellke, Sparks, and Kolbe (2009) found that at any one time different levels of government target resources at teacher staffing problems through multiple policies and practices, and that multiple stand-alone policies combine and interact in complex ways with one another to influence teachers' labor

market decisions. Similarly, we find that the economic incentives offered by states and districts form distinct incentive packages, acting together to elevate teachers' total compensation. Such packages naturally occur, even if not conceptualized as such. States and districts may even implement multiple incentive policies without consideration of their combined or even offsetting effects on teachers' decision making.

Implications for Policy, Practice, and Research

Education policy makers increasingly rely on economic incentives as a strategy for motivating teachers to enter and remain in the teacher workforce, enticing teachers to work in less desirable districts and schools, and stimulating higher levels of performance in the classroom (Rice, Roellke, Sparks, & Kolbe, 2009; Springer, 2009). Much recent discussion and debate has focused on one type of economic incentive, "pay for performance," which provides teachers with additional compensation in exchange for improving classroom performance. However, in practice, economic incentives take various forms and are an established feature of existing teacher compensation packages (Rice, Roellke, Sparks, & Kolbe, 2009; Odden & Kelley, 2002). In addition to performance-oriented inducements, incentives may reward teachers who acquire or demonstrate special skills and knowledge, assume particular roles or additional responsibilities, or fulfill a staffing need (Glazerman et al., 2006; Johnson & Papay, 2009; Odden & Kelley, 2002). Incentive policies vary substantially in both their design and implementation, and much of the innovation in their use has occurred at the state and district levels. The diversity in types of incentives reflects not only specificity and tailoring to local staffing conditions and preferences but also local political and financial realities and stakeholder interests (Johnson & Papay, 2009). To date, the field has lacked a standardized framework for distinguishing among incentive policies as well as considering the alignment between policies and different teacher staffing problems. Establishing such a framework is particularly useful given the considerable experimentation on the part of states and districts in implementing incentive policies and the need for additional research on their relative effectiveness in addressing teacher staffing needs. As noted in this study, meaningful variation exists among incentive policies in both their structure and purpose. Furthermore, as suggested by our case study findings, different incentive policies may be better suited to addressing specific staffing problems.

The extent of use and innovation in incentive policies also suggests that states and districts view economic incentives as an effective strategy for addressing teacher staffing challenges. Moreover, recent federal grant programs such as the Teacher Incentive Fund, Race to the Top, and School Improvement Grants identify economic incentives for teachers as a preferred strategy for states, districts, and schools that encounter difficulties staffing classrooms with qualified teachers. However, research on the effectiveness of economic incentive policies and, in particular, their cost-effectiveness is quite slim and in some instances confounding (Guarino et al., 2006). More research is needed on both the prevalence, use, and value of incentive policies as well as their cost-effectiveness relative to other strategies targeted at addressing teacher staffing problems. The typology provides a framework for researchers to use in considering the impacts incentive policies may have on teacher decision making. It is important that the typology calls attention to the complex incentive structures currently in place in many states and districts. To date, research and evaluation of economic incentives have focused on stand-alone policies. This study suggests an important new direction for future research—identifying and evaluating the impact of incentive packages on teacher decision making.

Our case study findings also call attention to important policy questions regarding differentiating pay for teachers. The single salary schedule evolved from historical concerns regarding equity and objectivity in teacher compensation (Odden & Kelley, 2002). One of the main advantages of such a system is the objectivity and transparency with which teachers are rewarded for their service. This study demonstrates, however, that states and districts may respond to the rigidities inherent in single salary schedules by developing and implementing incentive policies that operate largely outside the “steps and lanes” that characterize most teacher salary schedules. As such, reforms to teacher compensation are occurring in a piecemeal fashion, and seemingly often without systematic consideration of new potential inefficiencies generated through the stacking of a traditional step-and-lane system with ad hoc incentives throughout. Our study suggests that it may make sense for policy makers at both the state and district levels to consider more systemic changes to existing teacher compensation approaches.

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Notes

1. The earlier typology identifies five broad and sometimes overlapping categories of strategies that states, districts, and schools use to address different aspects of the teacher staffing problem: (a) economic incentives, (b) avenues into the profession, (c) hiring strategies, (d) professional development, and (e) working conditions.
2. In practice, economic incentives take on many forms. Much recent discussion and debate has focused on one type of incentive, “pay for performance,” which provides teachers with additional compensation for their accomplishments in the classroom. However, in practice, teachers may receive additional compensation for acquiring or demonstrating special skills and knowledge, taking on particular roles or additional responsibilities, or fulfilling a staffing need (Glazerman et al., 2006; Johnson & Papay, 2009; Odden & Kelley, 2002). This article focuses on the latter type of reward strategy: economic incentives used to address teacher staffing challenges.
3. In the interest of space, we do not provide specific examples from our policy scan of each type of incentive policy outlined below. Specific examples may be found in the full report at: <http://www.education.uconn.edu/directory/details.cfm?id=344>.
4. In their earlier work, Rice, Roellke, Sparks, and Kolbe (2009) and Roellke and Rice (2008) note that the dimensions of the teacher staffing problem identified in their framework are conceptually distinct, but not necessarily mutually exclusive. To a great extent, differences among closely related components of the problem are a function of the level of the system at which policy is made. For example, states, districts, and schools all may encounter challenges with meeting their demand for qualified teachers. However, at the state level, the problem may be one of inadequate supply and distribution of qualified teachers, whereas districts and schools encounter challenges recruiting teachers from a limited pool of qualified teachers in a given labor market.
5. This assumption was confirmed by our case studies. In each case, incentive policies were established and managed at the district level, and human resource functions related to teacher wages and benefits were largely centralized.
6. Economic incentive typology templates and detailed descriptions of the incentive policies in place at each study site are available in Strunk and Zeehandelaar (2011).

7. Similar examples were generated for teachers in California school districts. See <http://www.education.uconn.edu/directory/details.cfm?id=344> for hypothetical incentive packages in California.

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Bios

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