

## 9

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# Teacher Compensation

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**I**t is becoming broadly recognized that quality teachers are the key ingredient to a successful school. Yet standard policies do not ensure that quality teachers are recruited and retained in the profession. Finding solutions to this problem is particularly important in Florida, where huge numbers of new teachers must be hired over the next few years. Recognizing this, Florida has taken some initial steps through its STAR (Special Teachers are Rewarded) plan.<sup>1</sup> Florida's teacher policies are path breaking, and the nation would almost certainly be better off if other states emulated Florida in this regard. At the same time, Florida's plan could be strengthened by a coordinated set of complementary policies.

1. The plan was originally called "E-Comp" (Effectiveness Compensation).

### Traditional Approaches to Teacher Recruitment and Retention

Teachers provide the front line delivery of education to the student. Nonetheless, virtually all of the traditional actions taken in the policy arena fail to work in the direction of improving teacher quality. Indeed, many operate to restrict entry of potentially good teachers and to retain the wrong group of teachers.

#### *Recruitment*

As Terry Moe notes, existing restrictions to entrance into the teaching profession do not necessarily improve teachers' quality. A large number of studies have found that the certification status of a teacher is seldom related to the academic gains made by his/her students.<sup>2</sup> Also, the common national practice of requiring that teachers be certified, as Moe points out, is particularly damaging for states like Florida that must hire an especially large number of teachers, because it reduces the pool of potential teachers.

Two distinctly different types of policies aimed at improving the quality of the teachers recruited have been proposed as solutions.<sup>3</sup> The

2. Some of the evidence on certification is actually quite controversial. Elements of the debate and controversy over the effectiveness of teacher credentialing can be traced through National Commission on Teaching and America's Future, "What Matters Most: Teaching for America's Future," (New York: NCTAF, 1996), Abell Foundation, "Teacher Certification Reconsidered: Stumbling for Quality," (Baltimore, MD: Abell Foundation, 2001), Kate Walsh, "Positive Spin: The Evidence for Traditional Teacher Certification, Reexamined," *Education Next* 2, no. 1 (2002), Dan D. Goldhaber and Dominic J. Brewer, "Does Teacher Certification Matter? High School Teacher Certification Status and Student Achievement," *Educational Evaluation and Policy Analysis* 22, no. 2 (2000), Dan D. Goldhaber and Dominic J. Brewer, "Evaluating the Evidence on Teacher Certification: A Rejoinder," *Educational Evaluation and Policy Analysis* 23, no. 1 (2001), Linda Darling-Hammond, Barnett Berry, and Amy Thoreson, "Does Teacher Certification Matter? Evaluating the Evidence," *Educational Evaluation and Policy Analysis* 23, no. 1 (2001).

3. For a more detailed discussion of the various positions plus the relevant bibliography, see Eric A. Hanushek and Steven G. Rivkin, "How to Improve the Supply of High Quality Teachers," In *Brookings Papers on Education Policy 2004*, edited

first type, and perhaps the dominant in the national debate, proposes to tighten up on who can become a teacher by requesting specific formal schooling requirements. These requirements frequently include an undergraduate major in a teaching field, a master's degree that provides pedagogy, psychology, and maybe field experience, and possibly higher entry test scores to enter teacher training programs, elevated minimum grade point averages, and the like.

People advocating this position frequently understand that such a program would be more difficult and more costly to prospective teachers than the current certification requirement. As a result of the increased teacher preparation standards, overall salaries would be raised, in part in recognition of the additional credentials and in part to offset any reductions in the supply of potential teachers. An increase of the teachers' salary across the board is also frequently viewed as a benefit in itself. Paying teachers a salary more in line with, say, that of accountants, lawyers, and other professionals would increase the level of status and respectability of the teaching profession and ultimately would make recruitment easier.

The other type of policies proposed to improve quality of the teachers recruited involves loosening up rather than tightening up the requirements. These policies move in the direction of more entry paths into the profession such as described by Moe. In other words, they would allow people to come into teaching by routes other than the traditional education school preparation.

This second position is generally silent about the level of salaries. Because this approach would remove some of the current entry-level restrictions into teaching, the supply of applicants would increase. It is difficult to know, however, how responsive the supply of new

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by Diane Ravitch (Washington, DC: Brookings Institution Press, 2004), pp.7–25. See also Robert Gordon, Thomas J. Kane, and Douglas O. Staiger, "Identifying Effective Teachers Using Performance on the Job" (Washington, Brookings Institution, April 2006).

applicants would be and how the quality of the new entrants might compare to today.

Within the debate about teacher recruitment policies, special attention has been directed towards solving the shortages of quality teachers in specific fields—generally including math and science, special education, and languages. Some see evidence of this shortage in the fact that a large number of courses are taught by “out-of-field” teachers.<sup>4</sup>

The particular policy prescriptions for dealing with this problem vary widely. Some ask for regulatory solutions—simply not permitting teachers to teach in fields for which they are not certified. It is unclear, however, what would happen when insufficient numbers of appropriate teachers were available. Others argue for a combination of altered teacher preparation and salary adjustments.

### *Retention*

Perhaps the most frequently considered issue when discussing teacher policy is the overall level of turnover in teaching. Nationally, every year over seven percent of the teachers with less than three years of experience quit the profession altogether, while another 13 percent change schools.<sup>5</sup> Even among the teachers with four to nine years of experience, the annual exit rate is five percent, and the transfer rate is 10 percent. In sum, over one-third of all new teachers leave the classrooms by the end of their fifth year. These statistics are frequently interpreted as a reflection that the best teachers—those with the best opportunities elsewhere—are leaving. As a policy prescription, this

4. Richard Ingersoll, “Out-of-field Teaching and the Limits of Teacher Policy,” University of Pennsylvania, Consortium for Policy Research in Education (September 2003).

5. National data on teacher mobility can be found in Michael T. Luekens, Deanna M. Lyter, Erin E. Fox, and Kathryn Chandler, “Teacher Attrition and Mobility: Results from the Teacher Follow-up Survey, 2000–01” (Washington, NCES 2004-301, National Center for Education Statistics, August 2004).

argument points to the necessity to raise salaries to limit this exodus from teaching and to maintain the quality of teachers.

Within the debate about teacher retention policies, special attention has been directed towards ensuring that low-income, minority children have access to a high quality education. Although as John Chubb stresses in his chapter, Florida has made some progress in closing the achievement gap between groups of different races and ethnicities, the gap still remains. Policies that aim to close the gap must find ways to upgrade the quality of the teachers available to disadvantaged and minority students and to create incentives for these teachers to stay in these more challenging schools. Studies of teacher mobility show that teacher exit rates tend to be significantly higher in the schools serving disadvantaged students.<sup>6</sup> Two problems are evident from this statistic. First, there is less continuity in the instructional program in the schools serving those most in need. Second, a high proportion of the teachers assigned to schools serving disadvantaged students are novices. Given that teachers tend to do a worse job in their first year or two in the classroom, this means that these students, who already need extra help, tend to get less prepared teachers.<sup>7</sup>

6. See Hamilton Lankford, Susanna Loeb, and James Wyckoff, "Teacher Sorting and the Plight of Urban Schools: A Descriptive Analysis," *Educational Evaluation and Policy Analysis* 24,no.1 (Spring 2002): 37–62; ; and, Eric A. Hanushek, John F. Kain, and Steve G. Rivkin, "The Revolving Door," *Education Next* 4, no.1 (Winter 2004): 77–82.

7. Two early investigations of experience effects and their interpretation are Richard J. Murnane and Barbara Phillips, "What Do Effective Teachers of Inner-City Children Have in Common?," *Social Science Research* 10, no. 1 (1981) and Richard J. Murnane and Barbara R. Phillips, "Learning by Doing, Vintage, and Selection: Three Pieces of the Puzzle Relating Teaching Experience and Teaching Performance," *Economics of Education Review* 1, no. 4 (1981). More recent analyses that find any experience effects concentrated in the early years include: Jonah E. Rockoff, "The Impact of Individual Teachers on Student Achievement: Evidence from Panel Data," *American Economic Review* 94, no. 2 (2004), Steven G. Rivkin, Eric A. Hanushek, and John F. Kain, "Teachers, Schools, and Academic Achievement," *Econometrica* 73, no. 2 (2005), Eric A. Hanushek et al., "The Market for Teacher Quality," (National Bureau of Economic Research, 2005), Don Boyd et al., "How Changes in Entry Requirements Alter the Teacher Workforce and Affect Student Achievement," (Cam-

The most frequent suggestion made to improve the quality of the teachers available to disadvantaged students is to raise the salary levels for teachers in urban districts—so that schools can compete with alternative jobs and with more suburban schools. An alternative or addition to the proposed increase in overall salaries is increases that are largest in the most difficult schools, i.e., “combat pay” to those teaching in the most disadvantaged schools. Variants on this also include various housing subsidy programs, student loan forgiveness, etc.

Any coherent set of policy prescriptions aimed at improving the quality of the teachers in our classrooms must have multiple dimensions. An induction policy is obviously crucial. But an induction policy must be coordinated with policies that manage teachers and reward them according to their performance once they have been inducted.

In 2006 under the A++ legislation, the Florida legislature addressed issues of disadvantaged schools through a combination of differentiated pay and of regulatory actions. First, it restricted districts from assigning above the district average proportions of new teachers, temporarily certified teachers, teachers identified as in need of improvement, and out-of-field teachers to schools with concentrations of minorities and disadvantaged students and to schools ranked at the bottom (D or F) by the Florida accountability system. Second, they encouraged districts to use differentiated pay to accomplish this allocation and precluded any collective bargain that would not allow such differentiated pay.

These policies, which go into effect in 2007, represent thoughtful responses to the problems. It will be important to evaluate the outcomes of these policy experiments thoroughly to ensure that they are achieving their objectives.

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bridge, MA: National Bureau of Economic Research, 2005), and Thomas J. Kane, Jonah E. Rockoff, and Douglas O. Staiger, “What Does Certification Tell Us About Teacher Effectiveness? Evidence from New York City,” (National Bureau of Economic Research, 2006).

### Teacher Compensation Policies

There is very little disagreement about the fact the economic well-being of the nation and its citizens depends crucially on improving the knowledge and performance of our students.<sup>8</sup> Moreover, the quality of teachers must improve if we are to improve student outcomes.<sup>9</sup> Yet, the traditional approaches to improving teacher quality have not focused directly on the outcomes of the teacher's students but instead have relied upon a series of proxies for teacher quality.

The most common measure used as a proxy of teacher's quality is the average salary paid to the teachers. Ever since World War II, salaries of young female and male teachers have fallen relative to those of other occupations nationwide. Some have argued that the decline in the relative earnings of teachers has led to an obvious fall in the average teacher quality. However, the extent of the teaching decline is unclear since it depends in large part on the correlation between the teaching skills and those rewarded in the non-teacher labor market. For example, if teaching places greater emphasis on a set of communication and interpersonal skills than the general labor market, the salaries relative to all college graduates may not provide a particularly good index of teacher quality. In addition, the link between relative salaries and quality may be different today than in the 1960s and 1970s, a period of rapidly expanding opportunities and dramatic social changes for women.

Using the average teacher salary paid by different states to make assertions about the relative quality of their teachers would also be misleading. First, there are no reliable data on teacher salaries, because the federal government has failed to collect this information and only

8. For calculations of the benefits of improved student achievement, see Eric A. Hanushek, "The Economics of School Quality." *German Economic Review* 6, no.3 (August 2005), pp. 269–286.

9. For a comprehensive look, see Paul E. Peterson (ed.), *Our Schools and Our Future: Are We Still at Risk?* (Stanford, CA: Hoover Press, 2003).

the teacher unions, with no external validation, have supplied such information. Second, states use different definitions and policies that do not permit direct comparisons.<sup>10</sup> Third, average teacher salaries in a state are heavily influenced by experience and degree status of teachers, so that a state like Florida with relatively less experienced teachers and fewer teachers with master's degrees than elsewhere will appear to have relatively low salaries simply because comparisons do not adjust for such differences.

From a policy perspective, there is no analysis that suggests that student achievement would improve from simply raising the salaries of all teachers across the board. Although it is plausible that increasing the average teacher salary would expand the pool of applicants, its impact on student achievement would depend on two factors. First, the ability of the school districts in identifying the best teachers out of the pool of applicants without observing them in the classroom. Past evidence suggests that this is difficult and very imprecisely done. Second, the number of new, higher quality teachers that would be hired as a result. Increasing compensation of all teachers would provide incentives for both high and low quality teachers to enter and remain in the profession and would cut down teacher turnover—but this also lessens the possibilities to bring in newer, and better, teachers.

More importantly, the traditional teacher salary scheme only rewards experience and the possession of advanced education degrees but neither of these, with the exception of initial experience levels, has been shown to be consistently related to student performance.<sup>11</sup> As a result, salaries tend to be unrelated either to shortages of teachers or to quality dimensions.

The impact of the rigidities of the salary system could be amelio-

10. Florida Department of Education, *Teacher Pay Review* (State of Florida: Division of Accountability, Research, and Measurement, March 2006).

11. See Hanushek and Rivkin, "How to Improve the Supply of High Quality Teachers."

rated if the pay system were complemented by a policy of retention and replacement of teachers based on performance in the classroom or the demand for specialized teachers. Unfortunately, it is well-documented that few dismissals are sought on the basis of teaching performance.

Breaking with the tradition, the State of Florida has explicitly linked teacher quality with the gains made by the teacher's students. In 2002, the state legislature enacted the requirement that districts base a portion of its teacher salary determination on student performance. By 2005, because most districts had not moved very far in this direction, the State Board of Education instructed the Commissioner to ensure that the performance pay provisions of the law were met.

The Florida Department of Education released its plan during Spring 2006 to push forward with "E-Comp" (Effectiveness Compensation). This plan requires that districts devise a scheme ensuring that at least ten percent of the district's teachers receive at least a five percent bonus pay in recognition of their high performance. In subjects covered by the current state testing program (FCAT), student achievement gains must be used in determining awards. In other subjects, the districts are required to devise an objective system that relates directly to student achievement.

The plan included some extra funding to help districts comply with E-Comp and ensure that the program was a bonus for good performance, and not a redistribution of existing salary funds. In the 2006 Florida legislative session, the legislature took the budget for E-Comp and expanded it from \$55 million to \$147 million. They also renamed the program STAR (Special Teachers are Rewarded). The STAR funds are to be distributed across participating districts in proportion to current state funding. Participation requires meeting a set time schedule on developing and implementing a plan that is approved by the state. (Districts that do not participate in STAR must nonetheless meet the state requirements for having a system of compensation for effective teachers). The STAR program increases the proportion of

teachers getting the awards to at least 25 percent of the district's teachers.

The STAR program fits into a series of other programs that Florida has created to reward performance and direct high quality teachers to those schools where they are most needed. The School Recognition Program provides extra funding for schools based on school grades and learning gains. About \$134 million was distributed in 2005–06 to high performing schools. These schools may distribute these funds among their teachers and administrators, if they desire to do so.<sup>12</sup> Another program directly rewards teachers (and schools) for students who score highly on the International Baccalaureate and Advanced Placement tests. Other, smaller programs include mortgage assistance and tuition forgiveness for teachers agreeing to work in hard to staff schools or critical shortage areas.

The key element of Florida's programs is that funding is following those who improve student performance. Again, if the objective is improving student academic achievement, there is no substitute for policies that directly relate to student outcomes. Florida is indeed leading the nation in this. Although there are some other examples, ones that have received considerable national publicity including the Denver and Houston negotiated contracts and the broader state policies in Minnesota, none match Florida in terms of magnitude, breadth, and focus.

### **Florida's Next Frontier**

Florida has blazed new ground in designing a teacher compensation plan that focuses on student outcomes. Just how effective this plan will be in raising student performance via increasing the quality of

12. A variety of other award programs, including bonuses for teachers meeting the National Board for Professional Teaching Standards and teachers selected by the Milken recognition programs, also fit into this area.

Florida teachers remains to be seen, but it is clearly one of the most exciting policy initiatives of the decade.

Research on past experiences has asserted that “merit pay” has not and cannot work.<sup>13</sup> There are two things, however, worth noting about these studies. First, the merit pay plans analyzed involved quite small amounts of money. Second, most evaluations have judged the effectiveness of merit pay based on its ability to get more effort out of the existing teachers, as opposed to its ability to enhance the selection of good teachers. By only rewarding those who do well in the classroom, the hope is that most of those who do poorly will choose to exit. Thus, the effectiveness of STAR program will depend on the answers to two questions. Are the rewards large enough to lead to a strong response on the part of teachers? A five percent reward amounts on average to about a \$2,000 bonus each year. And, does this bonus lead to the right retentions and exits?

The STAR compensation plan is just one of the many components that Florida has put in place in order to improve the quality of its teachers. It should be viewed, for example, as an add-on to the expanded entry into teaching (see Moe). With the alternative entry programs a larger number of people will be able to try teaching. The high-performers will be rewarded, while the low-performers will

13. The standard reference on merit pay is David K. Cohen and Richard J. Murnane, “Merit Pay and the Evaluation Problem: Understanding Why Most Merit Pay Plans Fail and a Few Survive,” *Harvard Educational Review* 56, no. 1 (1986). The range of available evidence on teacher merit pay can be seen in Elizabeth Lueder Karnes and Donald D. Black, *Teacher Evaluation and Merit Pay: An Annotated Bibliography* (New York: Greenwood Press, 1986), David K. Cohen and Richard J. Murnane, “The Merits of Merit Pay,” *Public Interest* 80 (1985), Ballou and Podgursky, *Teacher Pay and Teacher Quality*, Dale Ballou and Michael Podgursky, “Teachers’ Attitudes toward Merit Pay: Examining Conventional Wisdom,” *Industrial and Labor Relations Review* 47, no. 1 (1993), Elchanan Cohn, “Methods of Teacher Remuneration: Merit Pay and Career Ladders,” in *Assessing Educational Practices: The Contribution of Economics*, ed. William E. Becker and William J. Baumol (Cambridge, MA: MIT Press, 1996), and James A. Brickley and Jerold L. Zimmerman, “Changing Incentives in a Multitask Environment: Evidence from a Top-Tier Business School,” *Journal of Corporate Finance* 7 (2001).

hopefully be weeded out. Of course, these policies could usefully be reinforced by a more active decision making by schools and districts about who stays and who does not.

Another way of strengthening the current plan would be to explicitly reward principals and administrators based on student performance. The STAR program deals with teachers in subjects not tested by the FCATs by having them evaluated by their principals and/or peers.<sup>14</sup> If principals are not also rewarded on student outcomes, they may not make decisions with student outcomes in mind. The legislation authorizes, but does not require, paying performance rewards to principals. The actions of districts in this regard should be carefully evaluated.

In subjects currently not tested under the Florida accountability system, the STAR legislation calls for districts to develop objective systems of performance measurement that identifies growth of students in these areas (including, for example, music and art). This requirement clearly presents significant challenges, and the state can usefully act as a clearing house on the best approaches for doing this across the districts.

In order to improve the quality of the teachers available to disadvantaged students, the current package of Florida programs provides some financial support for teachers in schools with concentrations of disadvantaged students. It is unclear, however, that these financial incentives are sufficient to retain teachers in these schools. Detailed studies on teacher mobility suggest that teachers are not very sensitive to salary changes when making their move decisions.<sup>15</sup> Possibly out

14. Indeed, many people believe that, even in FCAT subjects, other information such as the evaluations of supervisors should enter. These arguments come largely from concerns about the quality and breadth of the current tests and about other aspects of teaching that should be evaluated and rewarded.

15. Don Boyd, Hamilton Lankford, Susanna Loeb, and James Wyckoff, "The Draw of Home: How Teachers' Preferences for Proximity Disadvantage Urban Schools," *Journal of Policy Analysis and Management* 24, no. 1 (2005); Hanushek, Kain, and Rivkin, "Why Public Schools Lose Teachers."

of concern that pay incentives were likely to be insufficient, Florida has put in place other regulatory policies to ensure that low income and minority students do not systematically get inexperienced or poorer teachers. It is important, however, that these policies are monitored to ensure that they promote the retention of *high quality teachers* in these schools, not just lower turnout rates alone. Recent work on teacher mobility in other places has shown that the teachers leaving the disadvantaged schools are not always the best.<sup>16</sup> In fact, they are on average similar or worse than those staying in terms of student achievement gains.

Rewarding the top performers does not ensure that all subjects are covered with high quality teachers. The shortage of teachers with knowledge in math, science, and languages, for example, remains a concern. Maintaining a single salary structure based just on teacher experience and graduate education in the face of very different market conditions across fields does not seem reasonable. The A++ legislation permits differentiated pay to deal with shortage areas, but it remains to be seen how districts use this possibility.

Finally, the appropriate investment in both pre-service and in-service training is a perennial issue. The standard approach has been heavily regulatory. Florida has begun loosening up on the pre-service end of things by allowing for alternative paths into teaching. An integrated approach would, however, provide large rewards to teachers for their performance in the classroom and would let them decide on the appropriate training. Thus, teachers would gravitate towards only those training and professional development programs known to provide high value. Again, by concentrating on outcomes, it is possible to get behavior that reinforces student achievement. But, by focusing on program inputs and attempting regulatory solutions, there is no assurance that the investments are well-made.

16. Eric A. Hanushek, John F. Kain, Daniel M. O'Brien, and Steve G. Rivkin, "The Market for Teacher Quality," Working Paper No. 11154, National Bureau of Economic Research (February 2005).

### Recommendations

Florida has made tremendous strides in focusing attention where it should be—on student achievement. The STAR program is particularly important. Indeed it is likely to become the most important policy innovation of the decade. At the same time, additional policies can move the achievement agenda even farther forward.

- Florida should ensure that school administrators—particularly principals and superintendents—are rewarded strongly for their school’s or district’s effectiveness in raising student achievement. This policy, permitted under the STAR legislation, would align the administrators’ behavior with the student performance objectives.
- Florida should closely monitor the size and distribution of performance rewards to ensure that they help keep high quality teachers within the classroom.
- With the expansion of teacher entry programs, Florida should ensure that retention decisions of new teachers are based on classroom performance. Teachers who do not perform at a high level should not be retained past a probationary period.
- Programs aimed at increasing the quality of teaching in schools with high concentrations of disadvantaged students have been introduced. The state should work to ensure that experienced teachers are kept in those schools, but *only* if they have demonstrated high performance in the classroom.
- Teacher compensation must be competitive with outside earnings opportunities, and teachers in shortage areas (math and science, language, etc.) should receive bonuses that reflect their scarcity.
- Finally, because the teacher compensation programs are so inno-

## Teacher Compensation

163

vative, every effort should be made to institute a thorough evaluation of the program so that other states can learn from Florida experiences. This evaluation includes the impact of differentiated pay, of assignment policies for disadvantaged schools, and for performance pay outside of the currently tested subjects.