

Recruiting and Retaining Teachers: What Matters Most and What Can Government Do?

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With increased recognition that expert teachers are perhaps the most fundamental resource for improving student learning, there is growing interest in figuring out how to recruit and retain strong teachers, especially in high-need schools. Unfortunately, unlike other industrialized nations, especially those that are the highest-achieving, **the United States lacks a systematic approach to recruiting, preparing, and retaining teachers.** With few governmental supports for preparation or mentoring, teachers in the U.S. enter:

- with dramatically different levels of training -- with those least prepared teaching the most educationally vulnerable children,
- at sharply disparate salaries -- with those teaching the neediest students earning the least,
- working under radically different teaching conditions – with those in the most affluent communities benefiting from class sizes under 20 and a cornucopia of materials, equipment, specialists, and supports, while those in the poorest communities teach classes of 40 or more without adequate books and supplies,
- with little or no mentoring or on-the-job coaching in most communities to help teachers improve their skills.

Meanwhile, higher-achieving countries that rarely experience teacher shortages (such as Finland, Sweden, Norway, Netherlands, Germany, France, Australia, New Zealand, Japan, Taiwan, Singapore) have made substantial investments in teacher training and equitable teacher distribution in the last two decades. These include:

- High-quality graduate-level teacher education, at government expense, including a year of practice teaching in a clinical school connected to the university,
- Mentoring for all beginners in their first year of teaching from expert teachers, coupled with other supports like a reduced teaching load and shared planning,
- Equitable salaries (often with additional stipends for hard-to-staff locations) which are competitive with other professions, such as engineering,
- Ongoing professional learning embedded in 10 or more hours a week of planning and professional development time.

In order to make headway on the issue of recruiting and retaining teachers where they are needed most, a systemic approach is needed. There are a number of states and districts that have undertaken successful approaches that should be emulated. Ultimately, a national teacher supply policy is critically needed.¹ To begin, the **nature of the problem** must be understood. In particular,

- 1) **There is not an overall shortage of teachers in the United States.** In fact there are many more certified teachers in the nation than there are positions.²

There is, however, a maldistribution of qualified teachers across states and districts – and a shortage of teachers willing to work for low wages under poor working conditions. Thus, part of the problem is how to equalize conditions across districts and schools and attract teachers to the places where they are needed. **The strategies of states and districts that have turned around shortages are detailed below. They include increased salaries alongside increased standards, stronger pipelines to teacher preparation, and improved teaching conditions, including mentoring and professional development.**

2) **There are specific fields, such as mathematics, science, special education, and teaching of English as a second language, which have real shortages and where strategic recruitment incentives are needed.** Unlike medicine, where the federal government funds medical schools to grow programs in high-need fields and provides service scholarships for candidates to go to into these fields and practice in high-need locations, there is currently no such national policy in teaching. Usually, preparation standards are lowered instead, which contributes to higher attrition (see below), thus exacerbating rather than solving the problem. **It is critical to develop programs, like those described below, that increase the probability recruits will succeed and stay in the places they are needed, rather than adding to the revolving door of in-and-out recruits.**

3) **Retaining teachers is a far larger problem than recruiting new ones—and a key to solving teacher “shortages.”** The main problem is an exodus of new teachers from the profession, with more than 30% leaving within five years, and higher rates of turnover in lower-income schools. An additional problem is the flight of teachers from less-affluent schools to more-affluent schools. This is strongly tied to **working conditions** – including administrative support and strong colleagues as well as tangible teaching conditions and **salaries**. Research also finds that teachers leave the profession much faster if they have less preparation before they enter and less mentoring support when they arrive. **The costs of teacher attrition are very high – estimated at \$15,000 on average per recruit who leaves, or at least \$2 billion annually.³ These funds should be spent strategically on stronger teaching supports, rather than wasted on a fast-spinning revolving door.**

Below I describe specific programs that have been successful in addressing these issues. States and urban districts that have successfully transformed their teaching forces have used a comprehensive approach, including increasing salaries and standards simultaneously, pursuing aggressive recruitment and hiring, using subsidies to underwrite teacher preparation, creating teacher education pipelines, ensuring mentoring for beginners, and supporting professional development and improved teaching conditions. Several examples of these successes are included in Appendix A. Finally, I outline a proposal for a Marshall plan to improve teaching, which, for the price of less than 1% of the costs of the intervention in Iraq, could solve teacher shortages and establish the foundation for a teaching quality system in the United States that would provide a reliable stream of well-prepared teachers to the places they are most needed.

Recruiting Well-Prepared High-Need Teachers Who Stay In Teaching

One of the most successful teacher recruitment initiatives over two decades is the **North Carolina Teaching Fellows program**. Funded by the state legislature since 1986, the Fellows program provides \$26,000 in service scholarships (\$6500 per year for four years) to 500 high-ability high school seniors a year who enroll in intensive four-year teacher education programs throughout the state, selected for their quality and augmented with additional training. The Fellows must teach for at least four years in North Carolina schools. The program has supplied over 8,000 teachers for the state's schools, a disproportionate share of whom are males, members of underrepresented minority groups, and in high-need fields like math and science. An evaluation following fellows over seven years found that 75% were still teaching in the public schools in the state, and many of the remainder had advanced to educational leadership positions in schools or districts (Norris, 1998). Fellow felt very well-prepared, and principals reported that the Fellows' first year classroom performance far exceeded that of other new teachers in every area assessed (Berry, 1995).

A similar program in California, the **Governor's Teaching Fellowships**, targeted \$20,000 service scholarships for high-ability college graduates who would prepare to teach in under-performing schools in particular, and recruited candidates entering one-year graduate level teacher education programs. This program was successful in providing a supply of high-ability, well-trained candidates to high-need schools in a short time period.

Recruiting Expert Veteran Teachers to Hard-to-Staff Schools

California also has launched a program to attract **National Board Certified teachers to high-need schools** by paying a \$20,000 bonus – paid out over 4 years – to teachers who become Board-Certified and teach in underperforming schools. This has drawn a number of accomplished teachers to these schools. Like the Connecticut BEST program, teachers who achieve the high standards set on the National Board's assessment of teacher performance have been found in most studies to be more effective in producing student achievement gains.⁴

Many studies find that districts paying less than the market wage in their local labor market tend to experience continual shortages, and that **raising salaries** to market levels can quickly transform the hiring pool if there is also a well-functioning hiring system. (See the examples of specific initiatives in San Diego, New Haven, CA, and New York City in the Appendix.) Some states have eliminated shortages in urban and poor rural areas by **equalizing salaries** so that poorer districts can compete in the labor market for teachers. (See the example of Connecticut's strategy in the Appendix.) Some districts have sought to use **salary incentives to attract teachers to hard-to-staff schools**, a strategy that has had mixed success in the few places that have tried it. In some places, this has proved a modestly productive approach. In others where overall salaries are inadequate and working conditions are poor, bonuses have not been enough to change the district pool or entice teachers to schools that are poorly run and dysfunctional. However, **redesigning schools** so that they are much more supportive of teaching and

learning – including creating small, innovative high schools to replace failing factory model schools -- and **improving working conditions** in hard-to-staff schools (by reducing class size, improving leadership, infusing resources for strong, curriculum innovations) has been successful in many districts. California created the **Teachers as a Priority Program, providing funding for improved working conditions in hard-to-staff schools** to attract and keep qualified teachers in these schools. The program supported class size reduction, curriculum reforms, mentoring, bonuses and other interventions to redistribute teachers.

Creating High-Quality Teacher Education Programs in High-Need Areas

Most important are models that can simultaneously improve teacher competence and retention and meet pressing supply needs. Because many teacher candidates choose to teach where they grew up or went to college, it is important to have strong programs in hard-to-staff urban and rural locations. This is why alternative programs, when they are well-designed and offer sufficient training, are useful for building teacher supply, since they recruit and train candidates specifically for the districts that sponsor them.

However, many alternative programs, and some traditional programs, fail to provide one of the most important elements of preparation – the opportunity to learn under the direct supervision of expert teachers working in schools that serve high-need students well. Teaching cannot be learned from books or even from being mentored periodically. Teachers must see expert practices modeled and must practice them with help. However, student teaching is too often reduced or omitted, or it is in classrooms that do not model expert practice, or it is in classrooms that do not serve high-need students – and what is learned does not generalize to other schools. This fundamental problem has to be tackled and solved if we are to prepare an adequate supply of teachers who will enter urban or poor rural classrooms competent to work effectively with the neediest students and confident enough to stay in teaching in these areas.

Poorly designed alternatives do not keep teachers in teaching. Studies find that teachers leave at much higher rates if they lack key elements of preparation. For example, teachers without student teaching experience or preparation in curriculum, teaching methods, learning, and child development leave at twice the rate as teachers who have had this kind of training.⁵ A recent study⁶ that documented these outcomes in New York City showed that students achieved less when taught by new uncertified or alternatively certified teachers and that these teachers left at higher rates. For example, between 2000 and 2004, more than 50% of New York City Teaching Fellows and other nontraditional entrants had left by their fourth year, along with 85% of Teach for America teachers. This compared to only 37% of college prepared teachers. Given the costs of attrition, these high turnover rates cost the city more than \$50 million.

There are two kinds of initiatives that have tackled this problem successfully. One alternative is the **Urban Teacher Residency** designed in Chicago that has created new schools or completely restaffed existing schools with highly expert mentor teachers and then placing mid-career recruits *in the classrooms* of these mentor teachers for a year while they complete coursework in curriculum, teaching, and learning at local

universities. Rather than trying to teach without seeing good teaching in a sink or swim model, these recruits watch experts in action and are tutored into accomplished practice. These recruits receive a \$30,000 salary during this year and a masters degree and credential at the end of the year. They are selected because they want to commit to a career in urban public school teaching and they pledge to spend at least four years in city schools. This model has already shown high retention rates in teaching and strong performance by graduates, who now staff other turnaround schools in the city.

A similar model, launched by a number of universities is the **professional development schools model**. Like teaching hospitals in medicine, these models partner universities with school sites that exhibit state-of-the-art practice and train novices in the classrooms of expert teachers while they are completing coursework that helps them learn to teach diverse learners well. Many of these new models are located in urban schools, creating a pipeline of teachers well-prepared to teach in these districts. Highly-developed models have been found to increase teacher effectiveness and raise student achievement.⁷

Such programs can solve several problems simultaneously – creating a pipeline of committed teachers who are well-prepared to engage in best practice for children in for high-need schools, while creating demonstration sites that serve as models for urban teaching and teacher education.

High Quality Mentoring

Retention is at least as important to solving teacher supply as recruitment. With 30% of new teachers leaving within 5 years (and more in urban areas), the revolving door cannot be slowed until the needs for beginning teacher support are addressed. Other high-achieving countries invest heavily in structured induction for beginning teachers: they fund schools to provide released time for expert mentors and they fund other learning opportunities for beginners, such as seminars, visits to other teachers' classrooms, and joint planning time. Such strategies have been also been found effective in reducing beginning teacher attrition in the U.S. A critical component is strong mentoring, which includes on-the-job observations and coaching in the classroom as well as support for teacher planning by expert veterans.⁸ If even half of the early career teachers who leave teaching were to be retained, the nation would save at least \$600 million a year in replacement costs.

Districts like Cincinnati, Columbus, and Toledo, Ohio, Rochester, New York, and Seattle, Washington have launched **Peer Assistance and Review Programs**, which have sharply reduced attrition rates of beginning teachers by providing expert mentor teachers with release time to coach beginners in their first year on the job and evaluate them at the end of the year. Each program was established through collective bargaining and is governed by a panel of teachers and administrators. The governing panel selects consulting teachers through a rigorous evaluation process that looks for teaching skills and mentoring abilities. These mentors, or consulting teachers, work in the same subject area as those that they are assisting. They visit, observe, and consult with the beginning teachers at least weekly, and they meet regularly with one another to develop their skills

as mentors and to share resources and ideas. In all of these districts, beginning teacher attrition has fallen as a result of this program: In each case, first year teachers leave at rates of no more than 5 percent – most because they have been discontinued through the evaluation process rather than because have become discouraged. Some of the districts previously experienced beginning teacher attrition rates as high as 30 percent or more.⁹

The additional benefit of these and other mentoring programs is the new lease on life for many veteran teachers as well. Expert veterans need ongoing challenges to remain stimulated and excited about staying in the profession. Many say that mentoring and coaching other teachers creates an incentive for them to remain in teaching as they gain from both learning from and sharing with other colleagues.

On the state level, induction programs that are tied to high quality preparation can be doubly effective. **California’s Beginning Teacher Support and Assessment (BTSA) Program**, which provides mentors and other supports for beginning teachers in their first two years, has shown that carefully designed mentoring systems can produce rates of beginning teacher retention exceeding 90% in the first several years of teaching. The state provides \$3000-\$4000 in matching funds per beginning teacher to support this program.

Connecticut’ Beginning Educator Support and Training (BEST) program for beginning teachers has also stemmed attrition and improved competence. It requires districts who hire beginning teachers to provide them with mentors who are also trained in the state teaching standards and portfolio assessment system that were introduced as part of reforms launched in 1986. (See Appendix A for a fuller discussion of the reforms, which also greatly boosted supply and quality through subsidies for preparation, increased salaries and standards, and extensive professional development.) Beginning teachers must demonstrate that they can teach through a performance assessment modeled after the National Board for Professional Teaching Standards assessment. Studies in Connecticut have reported that teacher education and induction programs have improved because of the feedback from the assessment; beginning teachers and mentors also feel the assessment has helped them improve their practice as they become clearer about what good teaching is and how to develop it. Beginning teacher scores on the BEST portfolio have been found to predict teacher effectiveness in terms of influence on student learning gains.¹⁰ Thus, the program enhances teacher competence and effectiveness as it shapes and improves preparation and mentoring.

Although requirements for beginning teacher induction have proliferated, with more than 30 states now requiring some kind of induction program, many are not funded and do not provide the kind of mentoring and coaching described here.¹¹ Two recent analyses of a large-scale national teacher survey revealed that the most important predictor of teacher’s ongoing commitment to the profession is the quality of the mentoring and support they receive, rather than the mere existence of a program, which often does not provide intensive coaching or planning support.¹²

What Can the Federal Government Do? **A Marshall Plan for Teaching**

A strategic federal role is needed to create an infrastructure for strong teaching across the country. Individual innovative programs at the local level will not alone solve the problems we face. Federal strategies for enhancing the supply of teachers have precedents in the field of medicine as well as teaching. Since 1944, Washington has subsidized medical training to meet the needs of underserved populations, to fill shortages in particular fields, and to build teaching hospitals and training programs in high-need areas. This consistent commitment has contributed significantly to America's world-renowned system of medical training and care.

Intelligent, targeted subsidies for preparation coupled with stronger supports at entry and incentives for staying in high-need schools are needed to ensure that all students have access to teachers who are indeed highly qualified. A serious national teacher quality and supply policy could be accomplished for \$3 billion annually, less than 1% of the more than \$300 billion spent thus far in Iraq, and, in a matter of only a few years, could build a strong teaching force that would last decades.

In the long run, these proposals would save far more than they would cost. The savings would include the more than \$2 billion dollars now wasted annually because of high teacher turnover, plus the even higher costs of grade retention, summer school, remedial programs, lost wages and prison costs for dropouts¹³ (increasingly tied to illiteracy and school failure) – all of which could be substantially lowered if we committed to ensuring strong teachers in the schools that most need them. Such a plan should focus on:

- **Increasing the supply and quality of teachers** targeted to high-need fields and locations through
 - 1) Service scholarships for entering teachers, with special focus on high-need fields and locations (40,000 @ \$25,000 each = \$1 billion annually)
 - 2) Recruitment incentives for expert, experienced teachers to teach in high-need schools (50,000 teachers x \$10,000 stipends (\$500 million) + \$300 million to improve teaching conditions in high-need schools = \$800 million)
 - 3) Improved preparation for teaching high-need students and for programs in high-need areas (\$500 million, including \$200 million for state-of-the-art “teaching schools” partnered with universities in hard-to-staff communities)
- **Improving retention and mobility of well-qualified teachers** through
 - 4) Mentoring for all beginning teachers through investments in state and district mentoring programs (150,000 @ \$4000 each = \$600 million)

- 5) A high-quality, nationally available teacher performance assessment to guide training, improve quality, and facilitate interstate mobility (\$100 million)

Increasing Teacher Supply and Quality in High-Need Fields and Locations

While most states have long had surpluses of candidates in elementary education, English, and social studies, there are inadequate numbers of teachers trained in high-need areas like mathematics, physical science, special education, bilingual education and English as a Second Language (ESL), and there are problems getting well-prepared teachers to where they are most needed. Shortages in poor urban and rural schools are usually met by lowering standards – an especially dysfunctional response because the students in these schools need the most highly skilled teachers if they are to close the gap, and because high turnover rates for untrained teachers cost urban districts hundreds of millions of dollars in attrition costs. Because fully prepared beginning teachers are twice as likely to stay in teaching as those who enter without complete training, district shortages could be reduced rapidly if such districts could hire better prepared teachers (as fewer would need to be hired each year to replace those who left and a more adequate supply would be available). Two kinds of targeted incentives are needed to attract qualified teachers to schools and areas that historically have been underserved.

1) First, the federal government should maintain a substantial, sustained program of **service scholarships** that completely cover training costs in high-quality pre-service or alternative programs at the undergraduate or graduate level for those who will teach in a high-need field or location for at least 4 years. (After three years, candidates are much more likely to remain in the profession and to make a difference for student achievement.) While some federal grants are currently available, there are too few of them and they are too small in scope to serve as an adequate incentive to candidates.

Service scholarships (as opposed to post hoc forgivable loans) can be targeted to high-ability candidates who might not otherwise enter teacher preparation. These incentives can be used proactively to recruit candidates to the fields and locations where they are needed. Nearly all of the vacancies currently filled with emergency teachers could be filled with talented, well-prepared teachers if 40,000 service scholarships of up to \$25,000 each were offered annually. These should be designed to cover up to two years of undergraduate or graduate teacher education, including alternative programs for mid-career recruits, and should be:

- Allocated on the basis of academic merit and indicators of potential success in teaching, such as perseverance, capacity and commitment;
- Targeted especially to areas of teaching shortage as defined nationally and by individual states, and
- Awarded in exchange for teaching for four years in priority schools, defined on the basis of poverty rates and educational needs (e.g. language minority status).

(2) Second, **recruitment incentives for high-need schools** are also needed to attract and keep expert, experienced teachers in the schools where they are most needed, both to teach and to mentor other teachers. This requires a combination of salary

incentives and improvements in working conditions, including the redesign of dysfunctional school organizations to support smaller pupil loads, and time for teachers to work and plan together.

Federal matching grants to states and districts should provide incentives for the design of innovative approaches to attract and keep accomplished teachers in priority low-income schools, through compensation for accomplishment and for additional responsibilities, such as mentoring and coaching. \$500 million would provide \$10,000 in additional compensation for 50,000 teachers annually to be allocated to expert teachers in high-need schools through state- or locally-designed incentive systems, recognizing teacher expertise through such mechanisms as National Board Certification, state or local standards-based evaluations, and carefully assembled evidence of contributions to student learning. (Matched by state and local contributions, this program would provide incentives to attract 100,000 accomplished teachers to high-poverty schools.)

To keep high-quality teachers in high-poverty communities, schools need to offer working conditions that support teacher and student success. An additional \$300 million should be allocated on a state / district matching grant basis to improve teaching conditions, including, as warranted, smaller classes and pupil loads, administrative supports for necessary materials and supplies, and time for teacher planning and professional development – all of which attract and keep teachers in schools.

3) Third, just as the federal government has undertaken in medicine, the Marshall plan should fund **improved preparation** for teaching high-need students and for programs in high-need areas. For this purpose, the plan would allocate \$300 million to improve preparation for teaching reading and literacy skills at all grade levels, mathematics and science, special education, and English language learners.

An additional \$200 million of these funds should be targeted for state-of-the-art teacher education programs in hard-to-staff communities that incorporate “teaching schools” partnered with universities, including **urban teaching residencies** and **professional development school models**. In these programs, candidates would take coursework focused on teaching challenging content to diverse learners while engaged in practice teaching in schools staffed by expert teachers and designed to model state-of-the-art practice. Since many teachers have a strong preference to teach close to where they grew up or went to school, this approach would also enhance the pool of local college graduates prepared to teach in their communities. Funding for 200 programs at \$1,000,000 per year per program (for 5 years), each serving an average of 150 candidates annually, would supply 30,000 exceptionally well-prepared recruits to urban teaching each year who would provide long-term commitment and leadership in these districts.

Improving Teacher Retention and Mobility

Most of the teacher supply problem in the United States is actually a problem of retention. Attrition is highest in the early years of teaching: About one-third of new teachers leave within 5 years, and the rates are much higher for teachers who enter with

less preparation and those who do not receive mentoring. Current estimates average about \$15,000 per teacher who leaves, totaling at least \$2 billion each year. Because beginning teachers are generally less effective than those with 3 or more years of experience, continual high turnover of beginning teachers also significantly reduces educational productivity. Stemming this attrition is critical, as recruitment efforts are otherwise like pouring water into a leaky bucket, rather than repairing it.

4) Providing **mentoring for all beginning teachers** would reduce attrition and increase competence. A matching grant program could ensure support for every new teacher in the nation through investments in state and district mentoring programs. Based on the funding model used in California's Beginning Teacher Support and Assessment Program, a federal allocation of \$4000 for each beginning teacher, matched by states or local districts, would fund a mentor for every 10-15 beginning teachers. At 125,000 new teachers each year,¹⁴ an investment of \$500 million could ensure that each novice is coached by a trained, accomplished mentor with expertise in the relevant teaching field.

5) Finally, this preparation and mentoring can be strengthened if they are guided by a high-quality, nationally-available **teacher performance assessment**, which measures actual teaching skill in the content areas, and which can facilitate interstate mobility. Current examinations used for licensing and for federal accountability typically measure basic skills and subject matter knowledge in paper-and-pencil tests that demonstrate little about teachers' abilities to practice effectively. Furthermore, in many cases these tests evaluate teacher knowledge *before* they enter or complete teacher education, and hence are an inadequate tool for teacher education accountability.

The Interstate New Teacher Assessment and Support Consortium (INTASC), sponsored by the Council of Chief State School Officers, created teacher licensing standards adopted by most states and piloted performance assessments tied to the standards; several states, including Connecticut and California, have incorporated such performance assessments in the licensing process. These assessments have been found to be strong levers for improving preparation and mentoring, as well as determining teachers' competence. Federal support of \$100 million for the development of a nationally available, performance assessment for licensing would not only provide a useful tool for accountability and improvement, but it would also facilitate teacher mobility across states, if it were part of an effort to unify the current medieval system of teacher testing that has resulted in 50 separate "fiefdoms" across the country. Because teacher supply and demand vary regionally, teachers need to get easily from states with surpluses to those with shortages, which requires license reciprocity.

With a purposeful focus, a Marshall Plan for Teaching could help ensure within only a few years that the U.S. has developed an infrastructure comparable to those in other countries for providing highly-qualified teachers to all children in all communities.

APPENDIX A

LESSONS FROM STATE AND DISTRICT EXPERIENCES¹⁵

A number of states and local school districts have fashioned successful strategies for strengthening their teaching forces. A few are outlined here.

A. State Approaches

Beginning in the 1980s, Connecticut and North Carolina enacted some of the nation's most ambitious efforts to improve teaching. On the heels of these efforts, these states, which serve sizable numbers of low-income and minority students,¹ registered striking gains in overall student learning and narrowed achievement gaps between advantaged and disadvantaged pupils. During the 1990s, for example, North Carolina posted the largest student achievement gains of any state in math and sizable advances in reading, putting it well above the national average in 4th grade reading and math, although it had entered the decade near the bottom of state rankings. Of all states during the 1990s, it was also the most successful in narrowing the minority-white achievement gap (National Education Goals Panel, 1999). In Connecticut, also following steep gains throughout the decade, 4th graders ranked first in the nation by 1998 in reading and math on the NAEP, despite increased poverty and language diversity among its public school students. Its minority-white achievement gap, too, narrowed notably. The proportion of Connecticut 8th graders scoring at or above proficient in reading was first in the nation. In the world, moreover, only top-ranked Singapore could outscore Connecticut students in science (Baron, 1999).

Among the reforms that contributed to such gains were the significant improvements in both states' teaching forces, including in inner cities and rural areas. How did they accomplish this? With ambitious teacher initiatives that introduced standards, incentives and professional learning for teachers, along with curriculum and assessment reforms for schools (Darling-Hammond, 2000a; Wilson, Darling-Hammond, & Berry, 2000).

Both states strengthened teacher education and licensure. For a teaching license, for example, Connecticut insisted on additional preparation at entry, meaning a major in the content area taught and more pedagogical training as well as learning to teach reading and special-needs pupils and passing basic skills and content tests before entry to teaching. The state also eliminated emergency licensing and toughened requirements for temporary licenses. Teachers must complete a master's degree and a rigorous performance assessment modeled on that of the National Board for Professional Teaching Standards to gain a professional license.

¹ In the fall of 1999, Connecticut had 30% students of color, including the 12th largest Hispanic enrollment in the nation, and in 2002, 36% of students attended Title I schools. In the same years, North Carolina had 38% students of color, including the 8th largest enrollment of African Americans, and 38% of students attended Title I schools (NCES, 2001, table 42; NAEP State Data, 2002, retrieved from <http://nces.ed.gov/nationsreportcard/statedata>).

North Carolina likewise increased licensing requirements for teachers and principals, in the form of increased coursework in content and pedagogy as well as licensing tests, required schools of education to undertake professional accreditation through the National Council for Accreditation of Teacher Education (NCATE), invested in improvements in teacher education curriculum, and supported creation of professional development schools connected to schools of education. Both states also developed mentor programs for beginning teachers that extended assistance and assessment into the first year of teaching, and both introduced intensive professional development for veteran teachers.

These efforts were successful because both states created strong labor market incentives linked to their teacher standards. Among measures they adopted:

- **Increased and Equalized Salaries, Tied to Standards.** Both states coupled major statewide increases in teacher salaries with improved pay equity across districts. In Connecticut, for example, the average teacher salary climbed from \$29,437 in 1986 to \$47,823 in 1991, with the equalizing nature of the state aid making it possible for urban districts to compete for qualified teachers. Because Connecticut's state teacher salary assistance could be spent only for fully certified teachers, districts had greater incentives to recruit those who had met the high new standards, and individuals had greater incentives to meet these standards. North Carolina created standards-based incentives by adopting notable salary increases for teachers to pursue National Board Certification, so that North Carolina now has more teachers certified by the National Board than any other state.
- **Recruitment Drives and Incentives.** To attract bright young candidates, both states initiated programs to subsidize teacher education in return for teaching commitments. The highly selective North Carolina Teaching Fellows program, for example, paid all college costs, including an enhanced and fully funded teacher education program, for thousands of high-ability students in return for several years of teaching. After seven years, retention rates for these teachers exceeded 75%, with many of the remaining alumni holding public school leadership posts (NCTAF, 1996). Connecticut's service scholarships and forgivable loans similarly attracted high-quality candidates and provided incentives to teach in high-need schools and shortage fields, while the state also took steps to attract well-trained teachers from elsewhere. By 1990, nearly a third of its newly hired teachers had graduated from colleges rated "very selective" or better in the Barron's Index of College Majors, and 75% had undergraduate grade point averages of "B" or better (Connecticut State Board of Education, 1992, p. 3).
- **Support Systems.** Both states bolstered support systems that make a difference in stemming teacher turnover. North Carolina launched a mentoring program for new teachers that greatly increased their access to early career support (National Education Goals Panel Report, 1998). Connecticut provided

trained mentors for all beginning teachers and student teachers as part of its staged licensing process. For existing teachers, North Carolina created professional development academies, a North Carolina Center for the Advancement of Teaching, and teacher development networks such as the National Writing Project and analogous institutes in mathematics. This was in addition to its incentives for National Board Certification. Connecticut, among other things, required continuing professional development, including a master's degree for a professional license.

Such teacher reforms began paying off early on. After Connecticut's \$300 million 1986 initiative, for instance, the higher salaries and improved pay equity, combined with the tougher preparation and licensing standards and an end to emergency hiring, swiftly raised teacher quality. An analysis found, in fact, that within three years, the state not only had eliminated teacher shortages, even in cities, but also had created surpluses (Connecticut State Department of Education, 1990). Even as demand increased, the pool of qualified applicants remained solid. A National Education Goals Panel report (Baron, 1999) found that in districts with sharply improved achievement, educators cited the high quality of teachers and administrators as a critical reason for their gains and noted that "when there is a teaching opening in a Connecticut elementary school, there are often several hundred applicants" (p. 28).

These teacher initiatives occurred alongside other education changes—increased investments in early childhood education and in public schools generally, as well as wide-ranging, standards-based reform—which also contributed to the states' student achievement gains. There is little doubt, however, that higher-quality teachers supplied to all schools were substantial contributors to these other reforms as well as to the overall achievement increases. Both states sought to increase not only salaries and the quality of preparation for teachers, but also the incentive structure for distributing teachers to fields and locations. Both sharply reduced hiring of unlicensed and underprepared staff. Most notably, both held to the course of teacher improvement over a sustained period—more than 15 years in each case. They demonstrate what state policy in support of good teaching can accomplish.

B. District Approaches

District success stories reflect the importance of recruiting, inducting and supporting qualified teachers using policy tools available at the local level and leveraging state assistance. Following are four examples of what urban districts have done.

New York City. New York City illustrates how a focus on recruiting qualified teachers, coupled with necessary salary increases, can have a large effect in a brief period. The city long had hired thousands of underprepared teachers, typically filling as many as half of its vacancies with uncertified applicants, many well after September. The state, however, pressured the city to hire qualified teachers and mandated that uncertified teachers could no longer teach in low-performing schools. This, plus awareness of pending NCLB requirements, led to the improvements. The district focused on more aggressive recruiting and hiring of qualified teachers and implemented a steep increase in

salaries—averaging 16% overall and more than 20% for beginning teachers—to make them more competitive with surrounding suburban districts. With these policies, 2002-2003 vacancies were filled by July, and 90% of new hires were certified, up from 60% the year before. The remaining 10% were in programs that would lead to certification by the end of the school year (Hays & Gendar, 2002).

Community School District #2. Much earlier, New York City’s Community District #2 was an oasis widely heralded as a turnaround story, with a strategic emphasis on professional development for teachers and principals. But student achievement gains clearly relied on both a development *and* recruitment strategy (Elmore & Burney, 1999). In 1996, after a decade of reforms focused on strengthening teaching, this “majority minority” district—which serves large numbers of low-income and immigrant students—realized sharp achievement gains that ranked it 2nd in the city in reading and math.

Sweeping changes instituted by Superintendent Anthony Alvarado stressed continuing professional development for teachers and principals, coupled with a relentless concentration on instructional improvement. At the same time, Alvarado recognized the need for more talented and committed teachers and principals. Backed by the teachers’ union, he replaced nearly half the teacher workforce and two-thirds of principals over a period of years through a combination of retirements, pressure and inducements. Meanwhile, the central office carefully managed the recruitment, hiring and placement of new teachers and principals. It ended the hiring of unprepared teachers and sought recruits from several leading teacher education programs in the city, forging partnerships for student teaching and professional development with these institutions as well. Similar programs for developing principals were launched. The district’s growing reputation for quality also attracted other teachers. Salary changes were not within the district’s purview. Its strategies, rather, involved recruiting aggressively, creating university partnerships to develop a pipeline of well-prepared teachers, and supporting teachers with strong mentoring and professional development.

New Haven, California. California success stories are particularly notable because that state in recent years has ranked first in the nation in the number of unqualified teachers. In this high-demand context, with state policies that were, until recently, relatively unsupportive (e.g., low expenditures, lack of reciprocity with other states, restricted teacher education options), some districts have nonetheless achieved significant staffing improvements. New Haven Unified School District, just south of Oakland in Union City, which enrolls 14,000 mostly low-income and minority students, is one that has succeeded while neighboring districts have not. New Haven combined high salaries, aggressive recruiting and close mentoring with a high-quality training program worked out with area universities. Although not a top-spending district, it invested its resources in teacher salaries and good teaching conditions. In 1998, for example, New Haven’s salaries were more than 30% higher than nearby Oakland’s, where large numbers of unqualified teachers were hired, even though New Haven’s per-pupil spending was below Oakland’s (Snyder, 2002).

Thus, over an extended period it built a well-prepared, highly committed and diverse teaching staff. For the 2001-2002 school year, 10 of its 11 schools had no uncredentialed teachers. The district averaged 0.1% uncredentialed teachers—while some neighboring districts averaged more than 20% (Futernick, 2001). New Haven uses advanced technology and a wide range of teacher supports to recruit from a national pool of exceptional teachers and to hire them quickly. The district was one of California's first to implement a Beginning Teacher Support and Assessment Program that assists teachers in their first two years in the classroom; all beginning teachers get help from a trained mentor, who is given release time for the purpose. In addition, New Haven collaborated with California State University-Hayward on the right kind of alternative-certification program, combining college coursework and an internship, including student teaching, conducted under the close supervision of university- and school-based educators. As a result of these initiatives, the district has a teacher surplus in the midst of general shortages.

San Diego, California. Using similar strategies, San Diego City Schools recently overhauled its teacher recruitment and retention system, aggressively recruiting well-trained teachers, collaborating with universities on new training programs in high-need fields, and creating smooth pathways with local schools of education. It offers contracts to well-prepared teachers as early as possible (sometimes as much as a year in advance of hiring) and reaches out to teachers in other states. In addition, the district streamlined the hiring process, putting the entire system online, improving its capacity to manage hiring data, vacancy postings and interviews that had slowed the process and caused many candidates to give up and go elsewhere. In the fall of 2001, districts like San Francisco and Los Angeles hired hundreds of uncredentialed teachers, and the state as a whole hired more than 50% of novices without full credentials. But San Diego filled almost all of its 1,081 vacancies with credentialed teachers, eliminating all but 11 of the hundreds of previously hired emergency permit teachers who had been assigned largely to high-minority, low-income schools.

¹ For a fuller treatment of the design of a national teacher supply policy, see L. Darling-Hammond and G. Sykes (2003). Wanted: A national teacher supply policy for education: The right way to meet the 'highly qualified teacher' challenge. *Educational Policy Analysis Archives*, 11 (33). <http://epaa.asu.edu/epaa/v11n33/>.

² In California, for example, there are about 1.3 million credentialed teachers and about 280,000 teaching positions. Nationally, of the estimated 200,000 teachers hired annually, no more than 125,000 are hired from the new teacher pool; the remainder are individuals who are moving or returning to teaching from the reserve pool. The number of new teachers currently prepared each year – roughly 190,000 – is more than enough to satisfy this demand. Furthermore, despite shortfalls in some areas, the United States annually produces many more new teachers than its schools hire. Only about 70 % of newly prepared teachers enter teaching jobs immediately after they graduate, and many report that they cannot find jobs.

³ A 2000 study in Texas, estimated the costs of turnover at between least \$8,000 and \$48,000 per recruit who leaves, depending on the cost model used (Texas Center for Educational Research, 2000). The organizational costs include those for termination, substitutes, searching, managing the selection process, new training, and lost skills. The study found that only 17% of this attrition was due to retirement. More recent estimates from personnel administrators put the range of costs between \$12,000 and 20,000, with

most around \$15,000. National turnover rates are about 6-8% annually, with about 20% of that due to retirements. This amounts to about 150,000 non-retirees leaving a year, at a cost of about \$2.25 billion.

⁴ Bond, L., Smith, T., Baker, W., & Hattie, J. (2000). The certification system of the National Board for Professional Teaching Standards: A construct and consequential validity study (Greensboro, NC: Center for Educational Research and Evaluation); Cavaluzzo, L. (2004). Is National Board Certification an effective signal of teacher quality? (National Science Foundation No. REC-0107014). Alexandria, VA: The CNA Corporation; Goldhaber, D., & Anthony, E. (2005). Can teacher quality be effectively assessed? Seattle, WA: University of Washington and the Urban Institute; Smith, T., Gordon, B., Colby, S., & Wang, J. (2005). An examination of the relationship of the depth of student learning and National Board certification status (Office for Research on Teaching, Appalachian State University). Vandevoort, L. G., Amrein-Beardsley, A., & Berliner, D. C. (2004). National Board certified teachers and their students' achievement. *Education Policy Analysis Archives*, 12(46), 117.

⁵ For a review, see Darling-Hammond, L. & Sykes, G. (2003). Wanted: A national teacher supply policy for education: The right way to meet the 'highly qualified teacher' challenge. *Educational Policy Analysis Archives*, 11 (33). <http://epaa.asu.edu/epaa/v11n33/>; Henke, R., Chen, X., & Geis, S. (2000). Progress through the teacher pipeline: 1992-93 college graduates and elementary/secondary school teaching as of 1997. Washington, DC: National Center for Education Statistics, U.S. Department of Education.

⁶ Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2006). How changes in entry requirements alter the teacher workforce and affect student achievement. Education Finance & Policy, 1 (2); 176-216.

⁷ For a summary of studies, see L. Darling-Hammond & J. Bransford, *Preparing Teachers for a Changing World: What Teachers should Learn and Be Able to Do*. San Francisco: Jossey-Bass, 2005, pp. 415-416.

⁸ A number of studies have found that well designed mentoring programs improve retention rates for new teachers along with their attitudes, feelings of efficacy, and their range of instructional strategies (California Commission on Teacher Credentialing, 1992; Karge and Freiberg, 1992; Kolbert and Wolff, 1992; Darling-Hammond & Sykes, op. cit.; Luczak, op. cit.)

⁹ National Commission on Teaching and America's Future, *What Matters Most: Teaching for America's Future*. NY: Author, 1996.

¹⁰ Wilson, M. & Hallum, P.J. (2006). Using Student Achievement Test Scores as Evidence of External Validity for Indicators of Teacher Quality: Connecticut's *Beginning Educator Support and Training Program*. Berkeley, CA: University of California at Berkeley

¹¹ (NCTAF, 2003).

¹² Ingersoll, 1997b; Luczak, 2005.

¹³ The costs of dropouts, in terms of lost wages and taxes, health and social welfare costs, plus incarceration costs (most inmates are high school dropouts and more than half are functionally illiterate) are estimated to exceed \$50 billion annually.

¹⁴ About 250,000 teachers are hired each year, but typically only 40-60% of them are new to teaching. The others are experienced teachers changing schools or returning teachers who are re-entering the labor force.

¹⁵ This is drawn from L. Darling-Hammond and G. Sykes (2003). Wanted: A national teacher supply policy for education: The right way to meet the 'highly qualified teacher' challenge. *Educational Policy Analysis Archives*, 11 (33). <http://epaa.asu.edu/epaa/v11n33/>. Citations to research about these programs can be found there.