

# Securing the Right to Learn: Policy and Practice for Powerful Teaching and Learning

## DeWitt Wallace-Reader's Digest Distinguished Lecture

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America's schools are among the most unequal in the industrialized world in terms of both inputs and outcomes. Inequalities in spending, class sizes, textbooks, computers, facilities, curriculum offerings, and access to qualified teachers contribute to disparate achievement by race and class, which increasingly feeds the "school-to-prison pipeline"—a function of many young people's lack of adequate skills for joining the labor market. This creates an enormous drain on national resources, which, in turn, reduces the capacity to invest in education, social services, and employment. To reverse this situation, the nation must create a coherent system that can provide well-trained teachers in all communities so that all children can be skillfully taught and ultimately successful in a knowledge-based economy. This article describes the kind of preparation and policy system needed to achieve this goal.

When Thomas Jefferson conceived our public education system, he argued that America's capacity to survive as a democracy would rely not only on free public education but on the kind of public education that arms people with an intelligence capable of free and independent thought. We have had many occasions over the last two centuries to remember the centrality of such an education to the success of the democratic experiment. In the darkening days of the early McCarthy era, W. E. B. Du Bois (1949/1970) wrote eloquently on the subject:

Of all the civil rights for which the world has struggled and fought for 5000 years, the right to learn is undoubtedly the most fundamental. . . . The freedom to learn . . . has been bought by bitter sacrifice. And whatever we may think of the curtailment of other civil rights, we should fight to the last ditch to keep open the right to learn, the right to have examined in our schools not only what we believe, but what we do not believe; not only what our leaders say, but what the leaders of other groups and nations, and the leaders of other centuries have said. We must insist upon this to give our children the fairness of a start which will equip them with such an array of facts and such an attitude toward truth that they can have a real chance to judge what the world is and what its greater minds have thought it might be. (pp. 230–231)

### THE STRUGGLE FOR DEMOCRATIC EDUCATION

Providing most Americans with such an education has always been a struggle, and it remains one today. From the time Southern states made it a crime to teach an enslaved person to read, through decades of separate and unequal schooling which continue to the

present, the right to learn in ways that develop both individual competence and a democratic community has been a myth rather than a reality for many Americans. African Americans have faced de facto and de jure exclusion from public schools throughout the nation, as did Native Americans and Mexican Americans (Bond, 1934; Kluger, 1976; Meier, Stewart, & England, 1989). The struggle for children's minds and opportunities was articulated in the great debates between Du Bois and Booker T. Washington about whether Black children must be trained as laborers or might be educated in ways that could allow them to think for a living; it was also enacted in the ideological battles that shaped urban schools for the children of immigrants at the turn of the century (Tyack, 1974), and it is reenacted today.

International assessments reveal that America's schools are among the most unequal in the industrialized world in terms of spending, curriculum offerings, teaching quality, and outcomes (McKnight et al., 1987; Educational Testing Service, 1991), and are only slightly less disparate today than when Arthur Wise wrote *Rich Schools, Poor Schools* more than three decades ago (Wise, 1972). There is a 10-to-1 ratio in spending between the highest-spending and lowest-spending schools in the nation, and a 3-to-1 ratio within most states, with rich districts getting richer and the children of the poor more seriously disadvantaged each year.

In 1991 Jonathan Kozol documented the effects of these disparities in *Savage Inequalities*. This past year, he published *The Shame of a Nation* (2005), recording the tenacity of America's commitment to educational inequality. In 1991, Kozol contrasted schools such as Goudy Elementary School, serving an African American student population in Chicago, using "15-year-old textbooks in which Richard Nixon is still president," offering "no science labs, no art or music teachers. . . . [and] two working bathrooms for some 700 children," with schools in the neighboring town of New Trier (more than 98% White), where students had access to "superior labs . . . up-to-date technology . . . seven gyms [and] an Olympic pool" (pp. 63–65). More than a decade later, school spending in New Trier, at nearly \$15,000 per student, still far exceeded the \$8,500 per student available in Chicago for a population with many more special needs—a pattern found in urban-suburban comparisons across the country (Kozol, 2005, pp. 321–324).

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## The Origins of Inequality

Whereas most other nations fund schools centrally and equally, U.S. schools typically are funded by a combination of highly unequal local property taxes and state revenues that only partly redress differences in local wealth. Furthermore, within large districts, inequalities in resource allocations are often tied to student race and class. Recent analyses of data prepared for school finance cases in Alabama, California, Massachusetts, New Jersey, New York, Louisiana, South Carolina, and Texas have found that on every tangible measure—from qualified teachers and class sizes to textbooks, computers, facilities, and curriculum offerings—schools serving large numbers of students of color have significantly fewer resources than schools serving mostly White students (Darling-Hammond, 2004a; Oakes, 2004). This description of one San Francisco school serving African American and Latino students is typical of those described in the *Williams v. California* complaint, filed in June of 2000:

At Luther Burbank, students cannot take textbooks home for homework in any core subject because their teachers have enough textbooks for use in class only. . . . For homework, students must take home photocopied pages, with no accompanying text for guidance or reference, when and if their teachers have enough paper to use to make homework copies. . . . Luther Burbank is infested with vermin and roaches and students routinely see mice in their classrooms. One dead rodent has remained, decomposing, in a corner in the gymnasium since the beginning of the school year. The school library is rarely open, has no librarian, and has not recently been updated. The latest version of the encyclopedia in the library was published in approximately 1988. Luther Burbank classrooms do not have computers. Computer instruction and research skills are not, therefore, part of Luther Burbank students' regular instruction. The school no longer offers any art classes for budgetary reasons. . . . Two of the three bathrooms at Luther Burbank are locked all day, every day. . . . Students have urinated or defecated on themselves at school because they could not get into an unlocked bathroom. . . . When the bathrooms are not locked, they often lack toilet paper, soap, and towels, and the toilets frequently are clogged and overflowing. . . . Ceiling tiles are missing and cracked in the school gym, and school children are afraid to play basketball and other games in the gym because they worry that more ceiling tiles will fall on them during their games. . . . The school has no air conditioning. On hot days classroom temperatures climb into the 90s. The school heating system does not work well. In winter, children often wear coats, hats, and gloves during class to keep warm. . . . Eleven of the 35 teachers at Luther Burbank have not yet obtained regular, nonemergency teaching credentials, and 17 of the 35 teachers only began teaching at Luther Burbank this school year. (pp. 22–23)

Luther Burbank, like the schools described by Kozol, represents a growing number of “apartheid” schools that serve racial/ethnic minority students exclusively—schools that have little political clout and are extraordinarily impoverished. In California, for example, many such schools are so severely overcrowded that they run a multitrack schedule offering a shortened school day and school year, lack basic textbooks and materials, do not offer the courses students would need to be eligible for college, and are staffed by a parade of untrained, inexperienced, and temporary teachers (Oakes, 2004). In a number of these districts, qualified teachers have not been hired even when they are available, because they cost more money (Darling-Hammond, 2003).

Such profound inequalities in resource allocations are supported by the increasing resegregation of schools over the decades of the 1980s and '90s. In 1999, 70% of the nation's Black students attended predominantly minority schools, up significantly from the low point of 63% in 1980. The proportion of students of color in intensely segregated schools also increased. Nearly 40% of African American and Latino students attended schools with a minority enrollment of 90–100%. Furthermore, for all groups except Whites, racially segregated schools are almost always schools with high concentrations of poverty (Orfield, 2001).

Most urban schools are now “majority minority” and are significantly less well funded than those in surrounding suburbs. In addition, schools with high concentrations of students of color receive fewer resources than other schools within these districts. And tracking systems exacerbate these inequalities by segregating many “minority” students within schools, allocating still fewer educational opportunities to them at the classroom level—they receive lower-quality teachers, materials, and curriculum (Eckstrom & Villegas, 1991; Gamoran & Mare, 1989; Oakes, 2005; Slavin, 1990; Talbert, 1990). These compounded inequalities explain much of the achievement gap that Bell Curve proponents (Herrnstein & Murray, 1994) have attributed to genetic differences in intelligence, deficient child rearing, or a “culture of poverty.”

## The Social Effects of Educational Deprivation

Because the economy can no longer absorb many unskilled workers at decent wages, lack of education is increasingly linked to crime and welfare dependency. Women who have not finished high school are much more likely than others to be on welfare, while men are much more likely to be in prison. In 1996, a recent school dropout who was Black had only a one-in-five chance of being employed, whereas the odds for his White counterpart were about 50% (NCES, 1998, p. 100). While graduation rates are now above 95% in most European and Asian nations, they have hovered between 75% and 80% in the United States for more than two decades, and have begun to decline in some states that have introduced exit examinations, especially for Black and Latino students (Jacob, 2002; National Center for Education Statistics [NCES], 2001). Those who do not succeed in school are becoming part of a growing underclass, cut off from productive engagement in society.

The failure of many states to invest adequately in their neediest students contributes to the large number who experience school failure and are encouraged to drop out, joining the “school-to-prison pipeline” that is increasingly well oiled in many states (Wald & Losen, 2003). Increased incarceration is a function not only of criminal justice policies (see, e.g., Miller, 1997) but also of lack of access to the education that could lead to literacy, needed skills, and employment. More than half the adult prison population has literacy skills below those required by the labor market (Barton & Coley, 1996), and nearly 40% of adjudicated juvenile delinquents have treatable learning disabilities that went undiagnosed and untreated in the schools (Gemignani, 1994). This is, then, substantially an educational problem, associated with the sustained underinvestment in central city and poor rural schools that deprives many students of skilled teachers and other resources that could enable them to become literate and, ultimately, gainfully employed.

National investments in the last two decades have tipped heavily toward incarceration rather education. Nationwide, during the 1980s, federal, state, and local expenditures for corrections grew by over 900%, and for prosecution and legal services by over 1000% (Miller, 1997), while prison populations more than doubled (U.S. Bureau of the Census, 1996, p. 219). During the same decade, per pupil expenditures for schools grew by only about 26% in real dollar terms, and by much less in cities (NCES, 1994). Meanwhile, the economic costs of dropouts exceed \$50 billion annually in lost wages and social costs in addition to incarceration.

These social choices increasingly undermine America’s competitive standing in the world. While the highest-achieving nations are making steep investments in both K–12 and higher education systems, we are trading off resources for education with spending on prisons. By 2001, state correctional expenditures had grown to \$38.2 billion (up from \$15.6 billion in 1986), a rate of increase nearly double that of higher education spending. By 2005, two states—California and Massachusetts—spent more on prisons than they spent on higher education. As just one symptom of these trends, between 1980 and 2000, three times as many African American men were added to the nation’s prison systems as were added to colleges (Justice Policy Institute, 2002). Ultimately, the price of educational inequality is the loss of opportunity and progress both for individuals and for the society as a whole.

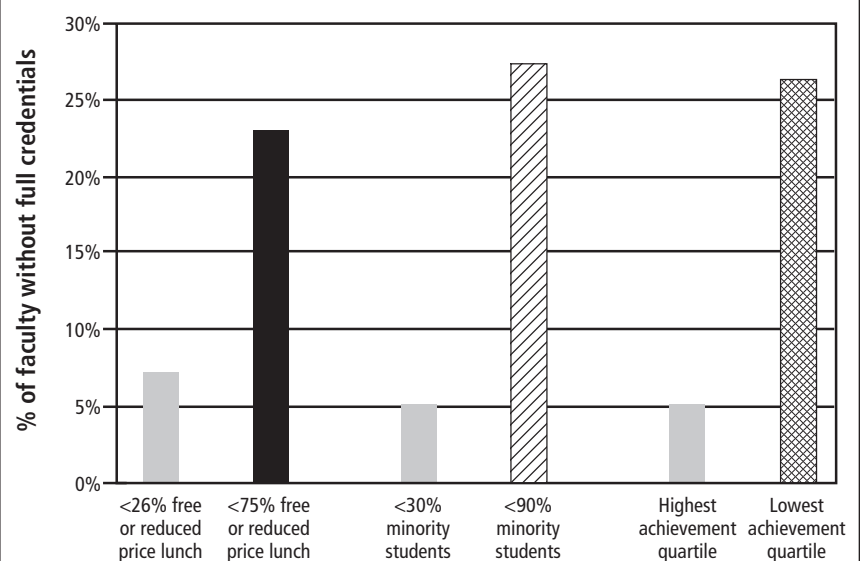
No society in a knowledge-based world can long prosper without supporting a thinking education for all of its’ people. A societal infrastructure disintegrates, both economically and socially, when large numbers of individuals cannot become productive citizens. As just one example, although there were 20 workers for every individual on Social Security in 1950, there will be only three by the year 2020. If one of these three is on welfare or in prison because

he lacks the skills to engage the economy, the social bargain cannot stand. While many U.S. citizens are too poorly educated to gain employment in the new economy, high-tech firms must import workers with science and technology training from other parts of the world. And while the U.S. has sent many of its low-skilled jobs abroad, it is falling behind other nations that once supplied cheap, unskilled labor, who are now developing a highly educated workforce that will soon direct the work of others. I believe that either the United States will confront the need to make sustained and serious investments in the education of all of its citizens, or we will, within a short time, witness the contemporary equivalent of the Fall of Rome.

### WHAT IS NEEDED TO BUILD A 21st-CENTURY EDUCATION SYSTEM?

Despite ongoing hand-wringing about the persistence of the achievement gap, much is known about critical components of schools that make a difference in achievement. These include the quality of teachers and teaching, especially teachers’ abilities to teach content to diverse students in ways that carefully attend to the learning process (e.g., Darling-Hammond & Bransford, 2005); access to challenging curriculum, which ultimately determines a greater quotient of students’ achievement than their initial ability levels (Gamoran & Berends, 1987; Oakes, 2005); and schools and classes that are organized so that students are well known and well supported (Lee & Smith, 1995; Newmann & Wehlage, 1995). Today, however, students of color and low-income students have the least qualified teachers and limited access to intellectually challenging curriculum, and are most likely to be in large classes in

Figure 1. Distribution of unqualified teachers in California in 2001.



From data presented in Shields et al., 2001 (pp. 24–26). Reprinted with permission. Copyright 2001 by Center for the Future of Teaching and Learning.

large, impersonal schools where the cracks they can fall into have become chasms (Darling-Hammond, 2004a).

### **Inequality in Access to Teachers**

Disparities in access to well-qualified teachers are large and have worsened throughout the 1990s. In 2001, for example, students in California's most segregated minority schools were more than five times as likely to have uncertified teachers as students in predominantly White schools (see Figure 1). In some high-minority schools, more than 50% of teachers were inexperienced and unqualified (Darling-Hammond, 2003; Shields et al., 2001). Similar inequalities have been documented in lawsuits challenging school funding in Massachusetts, South Carolina, New York, and Texas, among other states. By every measure of qualifications—state certification, content background for teaching, pedagogical training, selectivity of college attended, test scores, or experience—less-qualified teachers are found disproportionately in schools serving low-income and minority students. And solutions to the shortages created by unequal funding and poor working conditions rush more under-prepared teachers into these classrooms, at a significant cost to student learning (Darling-Hammond & Sykes, 2003).

Some observers—especially expert witnesses fending off school reform lawsuits—say that this does not matter because teacher qualifications and other resources do not matter (e.g., Hanushek, 1996, 2003). Yet a number of studies in California, Massachusetts, New York, North Carolina, South Carolina, Texas, and elsewhere have found significant relationships between teachers' preparation, their certification, and student achievement (Darling-Hammond, 2003, 2004a). For example, Strauss and Sawyer (1986) found that a 1% increase in teacher quality (as measured by National Teacher Examinations scores evaluating content and pedagogical knowledge) was associated with a 3–5% decline in the percentage of students failing the exam. This influence remained after taking into account per-capita income, student race, district capital assets, student plans to attend college, and pupil-teacher ratios. The authors concluded:

Of the inputs which are potentially policy-controllable (teacher quality, teacher numbers via the pupil-teacher ratio and capital stock), our analysis indicates quite clearly that improving the quality of teachers in the classroom will do more for students who are most educationally at risk, those prone to fail, than reducing the class size or improving the capital stock by any reasonable margin which would be available to policy makers. (p. 47)

Although defenders of the status quo argue that money doesn't matter, in part because student attributes such as race and income account for much of the variance in student achievement, their argument assumes that the availability of resources—also highly correlated with student socioeconomic status—makes little difference. Starting from the perspective that student characteristics are the primary determinants of achievement, these analysts typically argue that, after controlling for student background, school

resources explain relatively little additional variance in achievement. Yet, if one starts from an alternative perspective—that deficiencies do not reside primarily in the students themselves and that school resources matter for learning—resources such as teacher quality and class size are often found to explain about as much of the variation in achievement as race or poverty (see Ferguson, 1991; Ferguson & Ladd, 1996).

For example, in an analysis that I conducted in South Carolina, measures of teacher qualifications alone accounted for 64% of the total variance in student outcomes (Darling-Hammond, 2004a). Adding the proportion of low-income and minority students in each district increased the variance explained to 84%. As found in other studies (e.g., Betts, Rueben, & Danenberg, 2000; Darling-Hammond, 2000; Fetler, 1999; Fuller, 1998, 2000; Goe, 2002), among the strongest predictors of student failure on the state tests were the proportion of uncertified teachers and a measure of teacher shortages.

Similarly, in a recent study in Houston, colleagues and I found that, controlling for prior achievement and student background, students of certified teachers outperformed uncertified teachers in reading and mathematics across six tests over a period of 6 years (Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005). The effect of an uncertified teacher reduced achievement growth for a student by up to 3 months per year. With many high-minority schools having a third or more of their teachers inexperienced and uncertified, a student who received three such teachers over the course of elementary school could lose a full year of achievement. Similarly, a recent study in New York City found that uncertified teachers and not-yet-prepared alternative-route teachers were less effective than beginning teachers who entered with preparation (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2005). In these and other studies, the least prepared teachers, who were disproportionately assigned to high-minority schools, also left at much higher rates, creating more instability for the schools serving the neediest students.

### **Preparing Teachers to Succeed With All Students**

Although many who enter teaching believe they do not need specialized training before they enter, most learn quickly that teaching is much more difficult than they thought, and they either desperately seek out additional training, construct a teaching style that focuses on control—often by “dumbing down” the curriculum to what can be easily managed—or leave in despair. Some, such as this recruit who started teaching after a few weeks of summer training (and later entered a teacher preparation program at the University of California, Berkeley), find that they end up blaming the students for their own lack of skills:

I stayed one year. I felt it was important for me to see the year out but I didn't necessarily feel like it was a good idea for me to teach again without something else. I knew if I wanted to go on teaching there was no way I could do it without training. I found myself having problems with cross-cultural teaching issues—blaming my kids because the class



was crazy and out of control, blaming the parents as though they didn't care about their kids. It was frustrating to me to get caught up in that . . . Even after only  $\frac{3}{4}$  of a semester at Berkeley I have learned so much that would have helped me then. (Darling-Hammond, 2006, pp. 13–14)

As another recruit from the same quick-entry program, who left in the first year and did not return, remarked:

I could maybe have done a bad job at a suburban high school. I stood to do an awful job at a school where you needed to have special skills. I just didn't have the tools, and I didn't even know I needed them before I went in. I felt like, OK, I did the workshops; I know science; and I care about these kids. . . . You know, I had the motivation to help, but I didn't have the skill. It's sort of like wanting to fix someone's car and not having any idea how to fix a car. I wasn't equipped to deal with it, and I had no idea. (Darling-Hammond, 2006, p. 30)

Studies have consistently found that, with little knowledge of learning or child development to guide them, teachers who lack preparation rely more on rote methods of learning; are more autocratic in the ways they manage their classrooms; are less skilled at managing complex forms of instruction aimed at deeper understanding; are less capable of identifying children's learning styles and needs; and are less likely to see it as their job to do so, blaming students when their teaching is not successful (Darling-Hammond, 2000, 2003). Preparation is also linked to teacher attrition. Entrants who have had student teaching and courses such as child development and learning theory are more than twice as likely to stay in teaching (Henke et al., 2000; National Commission on Teaching and America's Future [NCTAF], 2003).

Contrary to much conventional wisdom, it is possible to prepare teachers effectively for urban teaching. The comments of the under-prepared recruits just quoted stand in sharp contrast with the comments of two other young teachers in the tough urban district of Oakland, California. The first graduated from a teacher education program at Mills College in Oakland, a program that had been referred to my colleagues and me for our study of exemplary teacher education programs; the second attended one of the programs we studied. The Mills graduate had this to say:

I arrived at my first teaching job five years ago, mid-year. . . . The first grade classroom in which I found myself had some two-dozen ancient and tattered books, an incomplete curriculum, and an incomplete collection of outdated content standards. Such a placement is the norm for a beginning teacher in my district. I was prepared for this placement, and later came to thrive in my profession, because of the preparation I received in my credential program. The concrete things Mills College gave me were indispensable to me my first year as they are now: the practice I received developing appropriate curricula; exposure to a wide range of learning theories; training in working with non-English speaking students and children labeled "at risk." . . . It is the big things,

though, that continue to sustain me as a professional and give me the courage to remain and grow: My understanding of the importance of learning from and continually asking questions about my own practice, the value I recognize in cultivating collegial relationships, and the development of a belief in my moral responsibility to my children and to the institution of public education. . . . I attribute this wholly to the training, education, and support provided to me by Mills. (Darling-Hammond, 2006, pp. 14–15)

The other Oakland teacher, a graduate of the Developmental Teacher Education (DTE) program at the University of California, Berkeley, remarked:

I'm miles ahead of other first year teachers. There are five other first year teachers here this year. I am more confident. I had a plan for where I was trying to go. The others spent more time filling days. . . . I knew what I was doing and why—from the beginning. (Darling-Hammond, 2006, p. 15)

In our study of powerful teacher education programs, we observed this second recruit in action (Darling-Hammond et al., 2006; paraphrased from Snyder, 2000):

Mary Gregg teaches in a portable classroom at Wilson Elementary School in an urban California district. Wilson's 850 students, most of them language minority, are the largest population of Title I-eligible students in the district. Mary's room, a smaller than usual portable with a low ceiling and very loud air fans, has one kidney shaped teacher table and 6 rectangular student tables with 6 chairs at each. Mary has 32 first graders (14 girls and 18 boys) and no teacher's aide. Twenty-five are children of color, including recent immigrants from Southeast Asia, African-American students and Latino students.

Despite the small size of the room, Mary fosters an active learning environment with her active group of students. She has plastered the walls from floor to ceiling with student work—math graphs, group experience stories, a student collage from *Bringing the Rain to Kapiti Plain*. The ceiling provides another layer of learning. Hanging down so that adults have to duck when walking through the room are student-constructed science mobiles and a variety of What We Know and What We Want to Know charts. In one corner, a reading area is set up with books and a carpet.

On a February noon with the Bay Area fog beginning to lift, Mary eats lunch with two other first grade teachers in a classroom within the main building, discussing the afternoon's science activity. The other two teachers, while not enamored with the pre-packaged activity, have decided to use the materials pretty much as directed. The DTE graduate describes the activity she will use instead. "It doesn't make any sense to me. There is no active engagement, nothing particularly grabbing." She explains her own "sink or float" activity that teaches the same concepts as the pre-packaged lesson

and uses the same materials. Unlike the pre-packaged lesson, Mary's re-design engages students in both the recording of data and the generation and testing of hypotheses based on the data. The other teachers laugh and ask if she "woke up with this one." "No," she responds, "It was in the shower this time." On the way back to the classroom, she explains that the packaged curriculum, like many packaged curricula, dumbs down the content and "leaves out the kids entirely." In order to introduce higher order skills and strategies that can engage her students, Mary explains how she has replaced the language arts program, tweaked the math program, and created a new science curriculum.

Once in the classroom, she groups the students in mixed language and gender cohorts and introduces the science activity she has designed. The room is full of materials needed for the lesson. There are cups in large tote trays, 2 trays filled with salt water; 2 with regular tap water; small totes full of small plastic bears, different kinds of tiles, quarters, rocks, and paper clips. The activity is to experiment with how many objects it takes to sink the cup in the different types of water.

The 30 students conduct experiments, record on yellow stickies how many objects it takes to sink the cup, and then place the yellow stickies on a large piece of chart paper Mary has labeled in two columns, salt water and tap water. Before starting the activity she reads the labels and asks students to read the labels. She has the students point out interesting language and spelling features. Two children excitedly point out, "That's the same weird spelling we saw this morning," referring to an earlier activity that introduced the vocabulary they will use. While organizing the groups Mary gives directions for students to go to their assigned table and sit on their hands. She points out that they will be unable to put their hands in the water if they are sitting on them. This is one of many "management techniques" she uses to assure students the opportunity to engage in the work.

Once into the science activity, management appears invisible. There is, of course, some splashing and throwing things into the water, but yellow stickies start to show up on the class chart and the students regulate themselves. Soon Mary brings the class together to discuss the recorded information. Students generate their own hypotheses and then, with teacher encouragement, match their hypotheses with the data. When the language becomes more abstract, she asks students to come to the front of the room and demonstrate their idea with the materials all had used. In California, this is one component of what is called "specially designed academic instruction in English" (SDAIE), a pedagogical reform focused on making content accessible to English language learners. Other SDAIE components visible in Mary's teaching include her skillful use of cooperative groups that enable communication and peer teaching; alternative assessments such as performance tests, projects, portfolios and journals;

the development of products and research projects; extensive use of visuals such as slides, posters, videotapes, and real-world artifacts like classroom aquariums and terrariums; integration of first language and culture into class activities; inclusion of community members as conduits of language and culture; and well-developed scaffolding techniques.

Instead of the impoverished environments we are accustomed to seeing in urban classrooms—with little teaching and mountains of worksheets, assignments to read the chapter and answer the questions at the end, students socializing or with heads on their desks—all of Mary's students were learning in ways expected of much older students in much more affluent school settings.

We saw beginning teachers such as Mary teaching in Milwaukee, Boston, San Antonio, New York City, and Charlottesville—well prepared to teach all students from their first days in the classroom and taking leadership early in their careers. Their programs engaged them in intensive study of learning, child development, curriculum, assessment, cultural contexts, and subject-specific teaching methods while they were undergoing at least a year of student teaching in carefully selected placements with expert teachers who could model excellent teaching in diverse urban classrooms. Many of the programs had developed strong relationships with local schools—some were formal professional development schools that partnered closely with the university—and some had even helped to start new schools that were models of state-of-the-art practice.

## **POLICY FOR POWERFUL AND EQUITABLE TEACHING AND LEARNING**

A growing consensus about the importance of teaching has led to reforms of teacher education, the development of professional teaching standards, and insistence under No Child Left Behind that schools hire "highly qualified teachers." Many innovative teacher education programs are producing more successful teachers than ever before. At the same time, however, budget crises have caused many poor districts to fill teacher vacancies with teachers who have had little or no training. At least 50,000 individuals enter teaching each year without preparation, most of them assigned to teach the nation's most vulnerable students in the highest-need schools (Darling-Hammond & Sykes, 2003). Because many states have lowered standards to fill vacancies rather than increasing incentives to teaching, teachers' access to knowledge and students' access to well-qualified teachers have become more unequal than ever before.

It is possible to create strong teaching on a wide scale in urban schools, as some states and districts have done, and evidence suggests that such investments can produce impressive gains in student achievement (see, for example, Darling-Hammond et al., 2005, on San Francisco; Elmore & Burney, 1997, on New York City's Community District 2; Wilson, Darling-Hammond, & Berry, 2001, on Connecticut). But these examples are currently

exceptions to the rule. The decentralized nonsystem of U.S. education tends to produce both exciting innovations and enormous inequality, in contrast to other nations that have taken a more systemic approach to the development of teacher knowledge and skill, making well-trained teachers available to all students.

How might we, as a nation, develop strong teaching for all students at scale? I would argue that there are two kinds of policy that need to be enlisted toward this end: professional policy, which is the vehicle best used to improve the quality of preparation, and governmental policy, which is needed to make access to high-quality preparation widely available to all teachers on behalf of all students.

### Professional Policy

In organized professions, the major levers for profession-wide transfer of knowledge and continual improvement of practice is the development and enforcement of professional standards through (a) accreditation of preparation programs; (b) state licensing, which grants permission to practice; and (c) certification (such as Board certification in medicine, psychology, and, now, teaching), which is a professional recognition of high levels of competence (Darling-Hammond, Wise, & Klein, 1999). Such efforts represent “professional policy”—an approach relying on standard—setting by professional bodies rather than direct regulation by the state. The assumption is that, because knowledge is always growing and its appropriate application is contingent on many different factors, the process of developing and transmitting a complex knowledge base and ensuring its appropriate use is better managed by members of the profession itself (Darling-Hammond, Wise, & Klein, 1999; Thompson & Zeuli, 1999). Richard Elmore and Susan Fuhrman (1993) note:

As equality of opportunity comes to rest more squarely on the need for quality instruction, issues of how to enhance the professional competence of educators become more important. To ensure equal opportunity in today’s context means enhancing, not limiting, the professional nature of teaching, and for that task state policy as it has been conceived in the past is hardly the best instrument. . . . We need new ways of conceiving the state role and the strategies at the state’s disposal. (p. 86)

“Professional policy” holds a profession accountable for developing shared expertise among all of its members, rather than imposing standardized prescriptions for practice that would fail to meet clients’ different needs. Together, standards for program accreditation, candidate licensing, and advanced certification comprise a “three-legged stool” (NCTAF, 1996) that supports quality assurance in the mature professions. Although this three-legged stool has historically been quite wobbly in teaching, during the 1990s substantial efforts were made on all of these fronts. These included the creation of new standards and a performance assessment for certifying accomplished teaching by the National Board for Professional Teaching Standards, the related standards for licensing beginning

teachers developed by the 30 states associated with the Interstate New Teacher Assessment and Support Consortium, and the move to incorporate these standards into a new performance-based approach adopted by the National Council for Accreditation of Teacher Education for accrediting teacher education programs.

These standards—and the performance assessments that have been developed to evaluate them—greatly raise the expectations for teachers. They incorporate deep understanding of content and how to teach it, a strong appreciation for the role of culture and context in child development and learning, and an insistence on ongoing assessment and adaptation of teaching to promote learning for all students. By examining teaching in the light of learning, these new standards put considerations of effectiveness at the center of practice—a shift from the behaviorist approach which has viewed teaching as the implementation of set routines, whether or not they actually produce success.

In our study of exemplary teacher education programs, we witnessed the importance of these standards in shaping practice as they were translated into courses, performance tasks, and assessment tools used to guide prospective teachers in developing much stronger teaching skills for a much wider range of students than was once expected (Darling-Hammond et al., 2006). We also witnessed the importance of accreditation in driving institutional changes that strengthened programs. As in the transformation of medical education at the turn of the 20th century, accreditation based on higher standards proved critical in creating greater programmatic coherence, reshaping courses and clinical work, and securing greater resources for supervising and supporting teachers-in-training. As in all other professions, meeting serious accreditation standards must become mandatory if individual programs and the standards themselves are to continually improve.

Licensing standards for teachers also need to improve so that they routinely evaluate aspects of preparation that are directly tied to successful teaching. Among other things, this means that licensing should emphasize more performance-based assessments of teaching ability. Despite a proliferation of teaching tests—candidates must often pass 3 or more tests to be licensed in a given state—most are multiple choice tests of basic skills or subject matter knowledge that do not measure much of what candidates learn in teacher education and do not provide any evidence of whether they can actually teach. We found these tests meaningless in the work of the programs we studied. Being held accountable for such test scores does little or nothing to improve the quality of preparation for teaching practice, other than affecting entry and exit standards, sometimes in dysfunctional ways that have undermined programs in historically Black colleges and diversity in the teaching force (see, e.g., Irvine, 2003).

However, a few states require beginning teachers to complete subject-specific portfolios or other performance assessments to earn a teaching license. These assessments, modeled on those of the National Board for Professional Teaching Standards, more authentically measure candidates’ ability to integrate knowledge of content, students, and context in making instructional decisions.

One of these initiatives, the Performance Assessment for California Teachers (PACT), was launched by the University of California campuses with Stanford University, Mills College, San José State University, and San Diego State University in response to a state requirement that colleges use a teacher performance assessment as a basis for the initial license recommendation.

The assessment requires student teachers or interns to plan and teach a week-long unit of instruction mapped to the state standards; to reflect daily on the lesson they've just taught and revise plans for the next day; to analyze and provide commentaries of videotapes of themselves teaching; to collect and analyze evidence of student learning; to reflect on what worked, what didn't and why; and to project what they would do differently in a future set of lessons. Candidates must show how they take into account students' prior knowledge and experiences in their planning. Adaptations for English language learners and for special needs students must be incorporated into plans and instruction. Analyses of the range of student outcomes are part of the evaluation of teaching. Faculty and supervisors score these portfolios using standardized rubrics in moderated sessions following training, with an audit procedure to calibrate standards. Faculties use the PACT results to revise their curriculum. In addition, both the novice teachers and the scoring participants describe benefits for teacher education and for learning to teach from the assessment and scoring processes. For example, in a 2005 survey of PACT participants (Chung, Pechone, & Stansbury, 2005), a prospective teacher commented:

I think for me the most valuable thing was the sequencing of the lessons, teaching the lesson, and evaluating what the kids were getting, what the kids weren't getting, and having that be reflected in my next lesson . . . the "teach-assess-teach-assess-teach-assess" process. And so you're constantly changing—you may have a plan or a framework that you have together, but knowing that that's flexible and that it has to be flexible, based on what the children learn that day.

The following came from a teacher education faculty member:

This [scoring] experience . . . has forced me to revisit the question of what really matters in the assessment of teachers, which—in turn—means revisiting the question of what really matters in the preparation of teachers.

A cooperating teacher observed:

[The scoring process] forces you to be clear about "good teaching"; what it looks like, sounds like. It enables you to look at your own practice critically/with new eyes.

This came from an induction program coordinator:

As an induction program coordinator, I have a much clearer picture of what credential holders will bring to us and of what they'll be required to do. We can build on this.

In addition to selecting teachers who can, indeed, teach, these kinds of standards and assessments can help teachers learn to teach

more effectively, improve the quality of preparation programs, and create standards and norms that are widely shared across the profession so that good teaching is no longer a magical occurrence.

## Governmental Policy

Though much stronger preparation programs will make a difference in children's opportunities to learn, teacher education programs alone cannot transform teaching. Governments need to ensure that all teachers can get access to high-quality training by insisting on quality preparation, underwriting the costs of training for candidates, and ensuring an adequate supply of teachers for all communities by providing adequate salaries and working conditions.

As I noted earlier, studies of some states and urban districts have shown how they have gone from shortages to surpluses of teachers—and to steeply improving student achievement—with a set of purposeful reforms. States such as Connecticut and North Carolina, and cities such as San Diego and New Haven, California, and New York City's District 2, have adopted similar strategies to improve teaching (Darling-Hammond, 2000, 2004b). They have raised and equalized teacher salaries; raised standards and created stronger pathways for teacher education, so that teachers have more content and pedagogical knowledge, and more knowledge of how to teach reading, develop language, and support students with special needs; instituted teacher mentoring tied to performance assessment; created an infrastructure for ongoing intensive professional development; streamlined hiring so that good teachers are hired faster and more expeditiously; and created subsidies for preparing teachers who will work in high-need fields and high-need locations.

These supports for teaching are routine in other countries. Indeed, most governments in high-achieving nations in Europe, Scandinavia, and Asia subsidize all costs of teacher education for prospective teachers—typically a graduate-level program that includes at least a year of supervised practice in a school associated with the university (Darling-Hammond, 2005). In the 2003 international assessments sponsored by PISA, Finland was the most-watched success story, showing sharp increases in its standing in all subject areas to become top-ranked in the world in reading and scientific literacy and second, behind Hong Kong, in mathematics. The many articles that have since been written about Finland's "secret" describe its dramatic overhaul of teacher education and teaching since the early 1990s, in a series of ongoing reforms based on continuous evaluations of its preparation system. Finland educates all of its teachers in 3-year master's degree programs that include strong content preparation and pedagogical preparation, especially focused on learning to teach diverse learners well, including those with special needs, and developing a reflective, inquiry-oriented approach to teaching.

Finnish universities sponsor "model schools," as well as other partnership schools where extended practica take place. All teachers complete a master's thesis that involves them in research on practice. Programs aim to cultivate "highly developed problem



solving capacity” that derives from teachers’ deep understanding of the principles of learning and allows them to create “powerful learning environments,” which continually improve as they learn to engage in a “cycle of self-responsible planning, action and reflection/evaluation” (Buchberger & Buchberger, 2004, p. 10). Spots in teacher education are highly competitive, and the government invests substantial funding both in teacher education and in research on teaching and teacher education (Mikkola, 2001). Salaries for teachers are equal across schools, with the exception of additional incentives for teachers who teach in hard-to-staff regions of the country.

Finland—like Sweden, Norway, Switzerland, the Netherlands, Germany, Australia, New Zealand, China, Japan, Singapore, South Korea, and other educationally successful nations—sees no advantage in constructing a fundamentally unequal system in which a large share of the teaching force is poorly prepared and assigned to educate the most needy students, whose schools are routinely underfunded.

## AN AGENDA FOR DEVELOPING A SYSTEM OF QUALITY TEACHING

Based on the experiences of other nations and of successful states in the United States, there are several key actions needed to make a substantial, immediate difference in the capacity of this country to educate its students well. These include strategies for recruiting well-prepared teachers to all schools and creating the conditions for teaching that will allow them to stay and become increasingly successful.

### Recruiting and Retaining Teachers Where They Are Needed

First, as it has in medicine for over 40 years, the federal government should launch a substantial, sustained program of *service scholarships* to underwrite teacher preparation for individuals who will teach in high-need fields and areas. Those who prepare to teach mathematics in an inner-city school, for example, should be prepared entirely at government expense in high-quality programs. These service scholarships for preparing in either undergraduate or graduate programs should be forgiven over a period of 4 or 5 years, in exchange for teaching in high-need fields, and in high-priority schools serving large proportions of low-income students, students of color, and language minority students. Because the chances of staying in teaching increase significantly after 3 years, the length of the service required would be important to the initiative’s success. Virtually all of the positions currently filled by unqualified teachers could be filled in this way for only \$800 million a year—less than what the United States currently spends in a single week in Iraq.

Second, a federal grant program should be designed to *create high-quality programs* where candidates are most needed. Teacher labor markets are in many ways still resolutely local. In many states, most teachers still teach in schools near where they grew

up or went to college (Boyd, Lankford, Loeb, & Wyckoff, 2005), and these locations are disproportionately suburbs or small towns. Urban and rural schools must either lure applicants from other areas or enhance the pool of college graduates who grew up or went to school in these neighborhoods, suggesting a “grow-your-own” strategy for developing teachers to meet their needs. Some cities have many higher education opportunities, but not all are affordable to local residents, nor do they necessarily have close ties with the district to facilitate an easy pathway from preparation to hiring. Thus, many programs train candidates who have difficulty making their way through the cumbersome hiring morass that turns many recruits away from city schools (NCTAF, 1996). The value of many alternate-route programs is that they finance and prepare candidates explicitly for a given district and streamline their hiring; thus the district reaps the investment’s benefits, and candidates know they will have a job. When these are high-quality programs, the bargain is a good one. Where they are not, such pathways do not provide adequately prepared teachers who stay and succeed.

Federal grants, like those used in medicine to create “centers of excellence” and to develop community-based health facilities, could be offered to create or expand new model teacher preparation programs within cities where the problems are most severe.

These programs would need to ensure a high-quality teacher preparation experience, attract local residents to the programs, and ensure a pipeline from preparation to hiring. Funding would be used for program development and for tuition and living subsidies for candidates tied to a service requirement in the local district. Ideally, these programs would enable candidates to engage in practice teaching in professional development schools that are particularly successful with urban and minority students, so that they would learn effective practices rather than mere survival. And some programs might target both local residents and long-time paraprofessionals already knowledgeable about and committed to their communities, combining strong training targeted at local talent with strong incentives for hiring and retention in the district. The costs of such an initiative would be modest. To create 100 such programs located in the nation’s largest cities, for example, by allocating \$1 million to each program for each of 5 years, the annual cost would be only about \$100 million—a small fraction of the cost of poor education and high attrition that these cities normally experience (Darling-Hammond & Sykes, 2003).

Third, in addition to incentives for teachers to become prepared for teaching, it is critical to *improve teacher retention*, the lack of which creates the lion’s share of teacher supply problems (NCTAF, 2003). About one-third of beginning teachers leave within 5 years, and the proportions are higher in many low-income urban and rural schools. Increasing the numbers of teachers prepared without addressing these high attrition rates is like pouring water into a leaking bucket.

The costs of teacher attrition are enormous. One recent study estimated that, depending on the cost model used, districts spend between \$8,000 and \$48,000 in costs for hiring, placement,

induction, separation, and replacement for each beginning teacher who leaves (Benner, 2000). This study estimated that these costs in Texas alone ranged between \$300 million and \$2 billion per year. On a national scale, it is clear that teacher attrition costs billions annually that could more productively be spent on preparing teachers and creating better teaching conditions. States can support mentoring programs that fund mentor time and training as some, such as California, have done. The federal government can encourage the creation and expansion of these programs by cost sharing in ways that leverage state programs.

Finally, equitable teacher distribution will be enhanced both by state *equalization* of funding and salaries and by the creation of specific *incentives* to make teaching in high-need schools attractive. For example, California implemented \$10,000 bonuses for National Board-certified teachers, with an additional \$20,000 paid over 5 years for such teachers who taught in low-performing schools. This strategy has reduced inequalities in the distribution of highly accomplished Board-certified teachers (Humphrey et al., 2005).

California also enacted the Teachers as a Priority Program, which sent resources to high-need schools to recruit and retain fully certified teachers through improving working conditions, adding mentors, reducing class sizes, and providing hiring bonuses. Clearly, unless these and other kinds of incentives are vigorously pursued, improvements in teacher education are not likely to influence the education of students in the schools where prepared teachers are not hired. As Gideonse (1993) has noted in an analysis of teacher education policy,

As long as school systems are permitted to hire under-prepared teachers through the mechanism of emergency certificates and their equivalent, teacher preparation institutions and the faculty in them will have reduced incentives to maintain standards by preventing the advancement of the marginally qualified to licensure. All the hype in the world about raised standards and performance-based licensure is meaningless absent a real incentive working on school districts to recruit the qualified through salary and improved conditions of practice, rather than being allowed to redefine the available as qualified. (p. 404, italics in original)

Although it needs some fine-tuning, the “highly-qualified teacher” provisions of No Child Left Behind have already supported important changes in this regard, causing states to focus on developing plans to recruit and distribute qualified teachers more equitably.

### **Making Schools Good Places for Teaching and Learning**

More is needed, however, if we are to equalize educational opportunities to learn. Schools have to be places that support good teaching, and the work that students are asked to do has to be work worth doing. Much more systematic effort is needed to create schools designed for serious learning by adults and children. Instead of the isolated, egg-crate classrooms offered by the factory-model schools developed in the United States, schools in

most other high-achieving countries ensure that teachers have time—generally 10 to 20 hours per week—for collaboration, collective planning, lesson study, peer coaching, developing curriculum and assessments, and jointly examining student work. In addition to working in teams so that they can be more effective, these teachers generally stay with their students for 2 to 4 years, so that they come to know their learners well. They also engage in learning and assessment that require students to construct and organize knowledge, consider alternatives, apply what they are learning, and present and defend their ideas, rather than focusing largely on multiple-choice tasks.

U.S. schools that have been redesigned around these principles have been more successful, especially with high-need students for whom a personalized, coherent, and meaningful experience at school is most essential if they are to achieve (Darling-Hammond, 1997; Lee & Smith, 1995; Lee, Smith, & Croninger, 1995; Newmann & Wehlage, 1995; Newmann, 1996). Sharp decreases in dropout rates and dramatic increases in student achievement and college-going rates have been achieved in low-income urban schools where collaborative teaching and learning environments, along with strong relationships between adults and students, support intellectually ambitious instruction (Darling-Hammond, Aness, & Ort, 2002; Wasley et al., 2000). Such schools are also much more able to attract and retain well-qualified teachers, as they are satisfying places to learn and work. Ultimately, teachers want most of all to be efficacious, which is why these kinds of professional working conditions are so important in predicting who will come to and stay in schools.

And, of course, if schools are to provide good conditions for teaching and learning, we need, as a nation, to bite the bullet on resource allocation. Progress in equalizing resources to students will require attention to inequalities at all levels—between states, among districts, among schools within districts, and among students differentially placed in classrooms, courses, and tracks that offer substantially disparate opportunities to learn. Currently, as a consequence of systematic inequalities at each of these levels, minority and low-income students are frequently “at risk” from the major shortcomings of the schools they attend.

Adding special supplementary, compensatory education programs to under-resourced schools serving high-needs students will never be effective at remedying underachievement as long as these services are layered on a system that poorly educates such children to begin with. The presumption that “the schools are fine, it’s the children who need help” is flawed. The schools serving large concentrations of low-income and minority students are generally not fine, and many of their problems originate with district and state policies and practices that fund them inadequately, send them incompetent staff, require inordinate attention to arcane administrative requirements that fragment educational programs and drain resources from classrooms, and preclude the adoption of more promising curriculum and teaching strategies.

Current initiatives to create special labels and programs for “at-risk” children and youth—including mass summer school programs

and mandatory Saturday classes for the hundreds of thousands of students who are threatened with grade retention under new promotion rules—are unlikely to succeed if they do not attend to the structural conditions of schools that place children at risk in the first place. In the pursuit of equity, useful strategies will improve the core practices of schooling rather than layering additional poorly constructed programs on foundations that are already faulty. The pressures to respond to special circumstances with special categorical programs are great, and the tradition of succumbing to those pressures in an add-on fashion is well established. But add-on programs, with all their accoutrements of new rules and procedures, separate budgets, and fragmented, pull-out programs, will be counterproductive as long as the status quo remains unchanged in more significant ways.

While states and the federal government are establishing new standards for students, teachers, and schools to meet, they must also enact standards that guarantee students the opportunity to learn. Current conceptions of accountability hold children accountable to the government for achieving specific levels of test score performance, but they do not hold the government accountable to students, their families, or their schools for providing the basic foundation for learning. The idea of opportunity-to-learn standards was first developed by the National Council on Education Standards and Testing (NCEST), which argued that student performance standards would result in greater inequality if they were not accompanied by policies ensuring access to resources, including appropriate instructional materials and well-prepared teachers (NCEST, 1992, pp. E12–E13). The Commission’s Assessment Task Force proposed that states collect evidence on the extent to which schools and districts provide opportunity to learn the curricula implied by standards as a prerequisite to using tests for school graduation or other decisions (NCEST, pp. F17–F18).

Opportunity-to-learn standards would establish, for example, that if a state’s curriculum frameworks and assessments outline standards for science learning that require laboratory work and computers, certain kinds of coursework, and particular knowledge for teaching, resources must be allocated and policies must be fashioned to provide for these entitlements. Such a strategy would leverage both school improvement and school equity reform, providing a basis for state legislation or litigation where opportunities to learn were not adequately funded. In addition, such standards—and the indicators used to measure them—would provide information about the nature of the teaching and learning opportunities made available to students in different districts and schools across the state, and would create incentives for states and school districts to create policies that ensure adequate and equitable resources, curriculum opportunities, and teaching to all schools.

To survive and prosper, our society must finally renounce its obstinate commitment to educational inequality and embrace full and ambitious opportunities to learn for all of our children. As John Dewey (1900/1968) put it a century ago:

What the best and wisest parent wants for his own child, that must the community want for all of its children. Any other ideal for our schools is narrow and unlovely; acted upon, it destroys our democracy. (p. 3)

In terms of students’ school success, their later employability, and their ultimate contributions to society, the benefits of investing in strong preparation for all teachers and in adequately resourced schools for all students will repay the costs many times over. With carefully crafted policies that rest upon professional standards, invest in serious preparation, and make access to knowledge a priority for all teachers, it is possible to imagine a day when all students will have access in every classroom to a “caring, competent, and qualified teacher working in a school organized to support his or her success” (NCTAF, 1996). And when that occurs, children will be substantially closer to securing what should be their inalienable right—the right to learn.

## References

- Barton, Paul E., & Coley, R. J. (1996). *Captive students: Education and Training in America’s prisons*. Princeton, NJ: Educational Testing Service.
- Benner, A. D. (2000). *The cost of teacher turnover*. Austin, TX: Texas Center for Educational Research.
- Betts, J. R., Rueben, K. S., & Danenberg, A. (2000). *Equal resources, equal outcomes? The distribution of school resources and student achievement in California*. San Francisco: Public Policy Institute of California.
- Bond, H. M. (1934). *The education of the Negro in the American social order*. Englewood Cliffs, NJ: Prentice-Hall.
- Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2005). How changes in entry requirements alter the teacher workforce and affect student achievement. *Education Finance and Policy*, 1(2), 176–216.
- Boyd, D., Lankford, H., Loeb, S., & Wyckoff, J. (2006). The draw of home: How teacher preferences for proximity disadvantage urban schools. *Journal of Policy Analysis and Management*, 24(1), 113–132.
- Buchberger, F., & Buchberger, I. (2004). Problem solving capacity of a teacher education system as condition of success? An analysis of the “Finnish case.” In F. Buchberger & S. Berghammer (Eds.), *Education policy analysis in a comparative perspective* (pp. 222–237). Linz, Austria: Trauner.
- Chung, R., Pecheone, R., & Stansbury, K. (2005). *Survey of participants in the Performance Assessment for California Teachers (PACT)*. Stanford, CA: Stanford University.
- Darling-Hammond, L. (1997). *The right to learn: A blueprint for creating schools that work*. San Francisco: Jossey-Bass.
- Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives*, 8(1). Retrieved from <http://epaa.asu.edu/epaa/v8n1>.
- Darling-Hammond, L. (2003). Access to quality teaching: An analysis of inequality in California’s public schools. *Santa Clara Law Review*, 43, 101–239.
- Darling-Hammond, L. (2004a). The color line in American education: Race, resources, and student achievement. *W E B. Du Bois Review: Social Science Research on Race*, 1(2), 213–246.
- Darling-Hammond, L. (2004b). Standards, accountability, and school reform. *Teachers College Record*, 106(6), 1047–1085.

- Darling-Hammond, L. (2005). Teaching as a profession: Lessons in teacher preparation and professional development. *Phi Delta Kappan*, 87(3), 237–240.
- Darling-Hammond, L. (2006). (In collaboration with Fickel, L., Koppich, J., Macdonald, M., Merseth, K., Miller, L., Ruscoe, G., Silvernail, D., Snyder, J., Whitford, B. L., & Zeichner, K.) *Powerful teacher education: Lessons from exemplary programs*. San Francisco: Jossey-Bass.
- Darling-Hammond, L., Aneess, J., & Ort, S. (2002). Reinventing high school: Outcomes of the Coalition Campus School Project. *American Educational Research Journal*, 39(3), 639–673.
- Darling-Hammond, L., & Bransford, J. (2005). *Preparing teachers for a changing world: What teachers should learn and be able to do*. San Francisco: Jossey-Bass.
- Darling-Hammond, L., Holtzman, D., Gatlin, S. J., & Heilig, J. V. (2005). Does teacher preparation matter? Evidence about teacher certification, Teach for America, and teacher effectiveness. *Education Policy Analysis Archives*, 13(42). Retrieved from <http://epaa.asu.edu/epaa/v13n42/>.
- Darling-Hammond, L., & Sykes, G. (2003). Wanted: A national teacher supply policy for education: The right way to meet the “highly qualified teacher” challenge. *Education Policy Analysis Archives*, 11(3). Retrieved from <http://epaa.asu.edu/epaa/v11n33/>.
- Darling-Hammond, L., Wise, A. E., & Klein, S. (1999). *A license to teach: Building a profession for 21st century schools*. San Francisco: Jossey-Bass.
- Dewey, J. (1968). *The school and society*. Chicago: University of Chicago Press. (Original work published 1900)
- Du Bois, W. E. B. (1970). The freedom to learn. In P. S. Foner (Ed.), *W.E.B. Du Bois Speaks* (pp. 230–231). New York: Pathfinder. (Original work published 1949)
- Eckstrom, R., & Villegas, A. M. (1991). Ability grouping in middle grade mathematics: Process and consequences. *Research in Middle Level Education*, 15(1), 1–20.
- Educational Testing Service. (1991). *The state of inequality*. Princeton, NJ: Educational Testing Service.
- Elmore, R., & Burney, D. (1997). *Investing in teacher learning: Staff development and instructional improvement in Community School District #2, New York City*. New York: National Commission on Teaching and America’s Future.
- Elmore, R., & Fuhrman, S. (1993). Opportunity to learn and the state role in education. In *The debate on opportunity-to-learn standards: Commissioned papers*. Washington, D.C.: National Governors Association.
- Ferguson, R. F. (1991, Summer). Paying for public education: New evidence on how and why money matters. *Harvard Journal on Legislation*, 28(2), 465–498.
- Ferguson, R. F., & Ladd, H. F. (1996). How and why money matters: An analysis of Alabama Schools. In H. Ladd (Ed.), *Holding schools accountable* (pp. 265–298). Washington, D.C.: Brookings Institution.
- Fetler, M. (1999). High school staff characteristics and mathematics test results. *Education Policy Analysis Archives*, 7(9). Retrieved from <http://epaa.asu.edu/epaa/v7n9>.
- Fuller, E. (1998, November). *Do properly certified teachers matter? A comparison of elementary school performance on the TAAS in 1997 between schools with high and low percentages of properly certified regular education teachers*. Austin, TX: Charles A. Dana Center, University of Texas at Austin.
- Fuller, E. (2000, April). *Do properly certified teachers matter? Properly certified Algebra teachers and Algebra I achievement in Texas*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.
- Gamoran, A., & Berends, M. (1987). The effects of stratification in secondary schools: Synthesis of survey and ethnographic research. *Review of Educational Research*, 57, 415–436.
- Gamoran, A., & Mare, R. (1989). Secondary school tracking and educational inequality: Compensation, reinforcement or neutrality? *American Journal of Sociology*, 94, 1146–1183.
- Gemignani, R. J. (1994, October). Juvenile correctional education: A time for change. Update on research. *Juvenile Justice Bulletin*. Washington, D.C.: U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention.
- Gideonse, H. (1993). The governance of teacher education and systemic reform. *Educational Policy*, 7(4), 395–426.
- Goe, L. (2002). Legislating equity: The distribution of emergency permit teachers in California. *Education Policy Analysis Archives*, 10(42). Retrieved from <http://epaa.asu.edu/epaa/v10n42/>.
- Hanushek, E. (1996). *School resources and achievement in Maryland*. Baltimore: Maryland State Department of Education.
- Hanushek, E. (2003). *The structure of analysis and argument in plaintiff expert reports for Williams v. State of California*. Retrieved September 18, 2006, from [http://www.decentschools.org/expert\\_reports/hanushek\\_report.pdf](http://www.decentschools.org/expert_reports/hanushek_report.pdf).
- Henke, R. R., Chen, X., Geis, S., & Knepper, P. (2000). *Progress through the teacher pipeline: 1992–93 College graduates and elementary/secondary school teaching as of 1997* (NCES 2000–152). Washington, D.C.: National Center for Education Statistics.
- Herrnstein, R. J., & Murray, C. (1994). *The bell curve: Intelligence and class structure in American life*. New York: Free Press.
- Humphrey, D. L., Koppich, J., & Hough, H. (2005). Sharing the wealth: National Board certified teachers and the students who need them most. *Education Policy Analysis Archives*, 13(3). Retrieved December 21, 2005, from <http://epaa.asu.edu/epaa/v13n3>
- Irvine, J. J. (2003). *Educating teachers for diversity: Seeing with a cultural eye*. New York: Teachers College Press.
- Jacob, B. A. (2002). The impact of high-stakes testing on student achievement: Evidence from Chicago. Working paper, Harvard University.
- Justice Policy Institute. (2002). Cellblocks or classrooms? Retrieved September 16, 2006, from <http://www.justicepolicy.org/article.php?id=14>
- Kluger, R. (1976). *Simple justice*. New York: Alfred A. Knopf.
- Kozol, J. (1991). *Savage inequalities*. New York: Crown.
- Kozol, J. (2005). *The shame of a nation*. New York: Crown.
- Lee, V. E., & Smith, J. B. (1995). Effects of high school restructuring and size on early gains in achievement and engagement. *Sociology of Education*, 68(4), 241–270.
- Lee, V. E., Smith, J. B., & Croninger, R. G. (1995, Fall). Another look at high school restructuring. *Issues in Restructuring Schools*, 9, 1–10.
- McKnight, C. C., Crosswhite, F. J., Dossey, J. A., Kifer, E., Swafford, S. O., Travers, K. J., et al. (1987). *The underachieving curriculum: Assessing U.S. school mathematics from an international perspective*. Champaign, IL: Stipes Publishing.
- Meier, K. J., Stuart, J., Jr., & England, R. E. (1989). *Race, class and education: The politics of second-generation discrimination*. Madison: University of Wisconsin Press.
- Mikkola, A. (2001). Finnish teacher education and research. In P. Erixon, G. Franberg, & D. Kallos (Eds.), *The role of graduate and post-graduate studies and research in teacher education reform policies in the European Union*. Umea Universitet, Sweden: European Network on Teacher Education Policies.



- Miller, J. G. (1997). African American males in the criminal justice system [Kappan special report]. *Phi Delta Kappan*, 78, K1–K12.
- National Center for Education Statistics. (1994). *Digest of education statistics, 1994*. Washington, D.C.: U.S. Department of Education.
- National Commission on Teaching and America's Future. (1996). *What matters most: Teaching for America's future*. New York: Author.
- National Center for Education Statistics. (1998). *The condition of education, 1998*. Washington, D.C.: U.S. Department of Education.
- National Center for Education Statistics. (2001). *Common core of data*. Washington, D.C.: U.S. Department of Education.
- National Commission on Teaching and America's Future. (2003). *No dream denied: A pledge to America's children*. New York: Author.
- National Council on Education Standards and Testing. (1992). *Raising standards for American education*. Washington, D.C.: Government Printing Office.
- Newmann, F. M. (1996). *Authentic achievement: Restructuring schools for intellectual quality*. San Francisco: Jossey-Bass.
- Newmann, F. M., & Wehlage, G. G. (1995). *Successful school restructuring: A report to the public and educators*. Madison, WI: Center on Organization and Restructuring of Schools.
- Oakes, J. (2004). Investigating the claims in *Williams v. State of California*: An unconstitutional denial of education's basic tools? *Teachers College Record*, 106(10), 1889–1906.
- Oakes, J. (2005). *Keeping track: How schools structure inequality* (2nd ed.). New Haven, CT: Yale University Press.
- Orfield, G. (2001). *Schools more separate: Consequences of a decade of resegregation*. Cambridge, MA: The Civil Rights Project, Harvard University.
- Shields, P. M., Humphrey, D. C., Wechsler, M. E., Riel, L. M., Tiffany-Morales, J., Woodworth, K., et al. (2001). *The status of the teaching profession, 2001*. Santa Cruz, CA: Center for the Future of Teaching and Learning.
- Slavin, R. E. (1990). Achievement effects of ability grouping in secondary schools: A best evidence synthesis. *Review of Educational Research*, 60(3), 471–500.
- Snyder, J. (2000). Knowing children, understanding teaching: The Developmental Teacher Education Program at the University of California-Berkeley (pp. 97–172). In L. Darling-Hammond (Ed.), *Studies of excellence in teacher education: Preparation at the graduate level*. Washington, D.C.: American Association of Colleges for Teacher Education and National Commission on Teaching and America's Future.
- Strauss, R. P., & Sawyer, E. A. (1986). Some new evidence on teacher and student competencies. *Economics of Education Review*, 5(1), 41–48.
- Talbert, J. E. (1990). *Teacher tracking: Exacerbating inequalities in the high school*. Stanford, CA: Center for Research on the Context of Secondary Teaching, Stanford University.
- Thompson, C. L., & Zeuli, J. S. (1999). The frame and the tapestry: Standards-based reform and professional development. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: A handbook of policy and practice* (pp. 341–375). San Francisco: Jossey-Bass.
- Tyack, D. (1974). *The one best system*. Cambridge, MA: Harvard University Press.
- U.S. Bureau of the Census. (1996). *Statistical abstract of the United States: 1996* (116th ed.). Washington, D.C.: U.S. Department of Commerce.
- Wald, M., & Losen, D. (2003). *Deconstructing the school-to-prison pipeline*. San Francisco: Jossey-Bass.
- Wasley, P. A., Fine, M., King, S. P., Powell, L. C., Holland, N. E., Gladden, R. M., et al. (2000). *Small schools: Great strides. A study of new small schools in Chicago*. New York: Bank Street College of Education.
- Wilson, S. M., Darling-Hammond, L., & Berry, B. (2001). *Teaching policy: Connecticut's long-term efforts to improve teaching and learning*. Seattle: Center for the Study of Teaching and Policy, University of Washington.
- Wise, A. E. (1972). *Rich schools, poor schools: The promise of equal educational opportunity*. Chicago: University of Chicago Press.

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