Teacher Education and the American Future

Linda Darling-Hammond[1]

Abstract

For teacher education, this is perhaps the best of times and the worst of times. It may be the best of times because so much hard work has been done by many teacher educators over the past two decades to develop more successful program models and because voters have just elected a president of the United States who has a strong commitment to the improvement of teaching. It may be the worst of times because there are so many forces in the environment that conspire to undermine these efforts. In this article, the author discusses the U.S. context for teacher education, the power of teacher preparation for transforming teaching and learning, and the current challenges for this enterprise in the United States.

Keywords

teacher education, teaching quality, clinical preparation, professional development schools

For teacher education, this is perhaps the best of times and the worst of times. It may be the best of times because so much hard work has been done by many teacher educators over the past two decades to develop more successful program models and because we have just elected a president of the United States who has a strong commitment to the improvement of teaching. It may equally be the worst of times because there are so many forces in the environment that conspire to undermine these efforts. I discuss these forces and the response I believe teacher educators should make to them in what follows.

I have titled this article "Teacher Education and the American Future" because I believe the two are inextricably linked. In the knowledge-based economy we now inhabit, the future of our country rests on our ability, as individuals and as a nation, to learn much more powerfully on a wide scale. This outcome rests in turn on our ability to teach much more effectively, especially those students who have been least well supported in our society and our schools.

President Obama has articulated an integrated approach to alleviating poverty, providing health care and other supports for children and families, ensuring early childhood education, redesigning schools, and upgrading teaching. He has proposed to spend $6 billion annually for investing in the teaching profession, through service scholarships for preparing those who will teach in high-need fields and communities, investments in improved teacher education, stronger accountability (including performance-based assessments for teachers and performance-based accreditation), mentoring for all beginning teachers, professional development and collaboration time, and career ladder programs, both to reward expert teachers and to share teaching expertise. The stimulus package enacted in early 2009

includes some elements of this agenda, including teacher residencies and strengthened clinical training, to which I return later.

There is also the chance that this agenda—and the broader project to improve teaching and schooling—will be hijacked or waylaid and that we will continue sliding down the slippery slope we have been on as a nation since the 1980s. Since then, we have advanced little in achievement, especially in international comparisons, with no real reduction in the achievement gap after the large gains made in the 1960s and 1970s; we have lost ground on graduation rates and college-going, and we have expanded inequality in access to school resources. Meanwhile, many other nations like Finland, the Netherlands, Singapore, Korea, China (in particular, Hong Kong and Macao), New Zealand, and Australia have been pulling ahead, making intensive and sustained investments in teaching—the major policy strategy our nation has been unwilling to try (for a review, see Darling-Hammond, 2009).

If the political will and educational conditions for strengthening teaching are substantially absent, I do not believe it is an overstatement to say we will see in our lifetimes the modern-day equivalent of the fall of Rome. I argue here that colleges of teacher education have a major responsibility for which path the nation travels—and that getting our act together—finally, seriously, and collectively—is

[1]Stanford University, Palo Alto, CA, USA

essential to the nation's future. In this article, I discuss the U.S. context for teacher education, the power of teacher preparation for transforming teaching and learning, and the current challenges for this enterprise in the United States.

The Context of Teacher Education

The past two decades have witnessed a remarkable amount of policy directed at teacher education—and an intense debate about whether and how various approaches to preparing and supporting teachers make a difference. Beginning in the mid-1980s with the report of the Carnegie Task Force on Teaching as a Profession, the Holmes Group (1986, 1990), and the founding of the National Board for Professional Teaching Standards (NBPTS; 1989, 2002), a collection of analysts, policy makers, and practitioners of teaching and teacher education argued for the centrality of expertise to effective practice and the need to build a more knowledgeable and skillful professional teaching force. A set of policy initiatives was launched to design professional standards, strengthen teacher education and certification requirements, increase investments in induction mentoring and professional development, and transform roles for teachers (see e.g., National Commission on Teaching and America's Future [NCTAF]; 1996).

Evidence of Improvements in Teacher Education

Significant headway was made on this agenda: Many schools of education undertook successful transformations—using the standards to redesign their programs; creating stronger clinical practice; strengthening coursework around critical areas like student learning and development, assessment, subject matter pedagogy, and teaching of English language learners and special needs students; and connecting this coursework directly to practice in much more extensive practicum settings. At the heart of much of this progress has been an effort to tap the wisdom of practice through the involvement of strong practitioners and to connect theory to practice, both through well-designed clinical experiences, often in professional development schools, and through the use of case methods, action research, and performance assessments.

There is a growing body of evidence that graduates of these kinds of programs feel better prepared, are rated as more effective by their supervisors, and contribute more to student learning (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2008; Darling-Hammond, 2006; Darling-Hammond & Bransford, 2005). The programs I studied with colleagues, reported in *Powerful Teacher Education*, stood out in their local communities for the qualities of their graduates. Employers told us:

> In Boston: Wheelock does a better job of preparing early childhood teachers than any place I know.
>
> In New York City: I have sought out Bank Street graduates in all my positions in the last ten years.

> In Milwaukee: As I look for teachers, I most immediately look for Alverno applicants. . . . I'll take ten more teachers like the two I've had this year.
>
> In San Francisco: I take all the DTE [UC-Berkeley Developmental Teacher Education program] grads I can get. . . . They are the best teachers—outstanding, dedicated. It is a program that stands out.
>
> In Charlottesville, Virginia: U VA's five-year program has made a huge difference. All of the student teachers we have had have been excellent.
>
> In Portland, Maine: ETEP [University of Southern Maine's Extended Teacher Education Program] graduates are sought out for interviews. [They] have an excellent success rate in our district.
>
> In San Antonio, Texas: When I hire a Trinity graduate, I know he or she will become a school leader. These people are smart about curriculum; they're innovative. They have the torch. (Darling-Hammond, 2006, pp. 3-4)

I return later to a discussion of what these programs and others do to prepare their graduates so well. Meanwhile, however, a competing agenda has been introduced to replace the traditional elements of professions—formal preparation, licensure, certification, and accreditation—with market mechanisms that encourage more open entry to teaching without expectations of training. In some proposals, open entry is accompanied by greater ease of termination through elimination of tenure and greater power in the hands of principals to hire and fire teachers with fewer constraints (Fordham Foundation, 1999). Some have argued that teaching does not require highly specialized knowledge and skill and that such skills as there are can be learned largely on the job (e.g., Walsh, 2001). Others see in these "systematic market attacks" a neoliberal project that aims to privatize education, reduce the power of the teaching profession over its own work, and allow greater inequality in the offering of services to students (Barber, 2004; Weiner, 2007).

Attacks on Teacher Education

Particularly contentious has been the debate about whether teacher preparation and certification are related to teacher effectiveness. For example, in his *Annual Report on Teacher Quality* in 2002 (U.S. Department of Education, 2002), Secretary of Education Rod Paige argued for the redefinition of teacher qualifications to include little specific preparation for teaching. Stating that current teacher certification systems are "broken" and that they impose "burdensome requirements" for education coursework comprising "the bulk of current teacher certification regimes" (p. 8), the report suggested that certification should be redefined to emphasize verbal ability and content knowledge and to deemphasize requirements for education coursework, making student teaching and attendance at schools of education optional and eliminating "other bureaucratic hurdles" (p. 19).

Some commentators have argued that certification of teachers should be abandoned entirely by states in order to remove "regulatory barriers" to teaching. They argue that requirements for teacher preparation are unlinked to teacher performance (see e.g., Walsh, 2001, pp. 1-2, and response by Darling-Hammond, 2002) and that professionalization of teaching is an unnecessary barrier to school choice (Ballou & Podgursky, 1997). Rarely do these arguments address the implications for schools that are largely staffed by underprepared teachers and the children they serve.

Alternative Certification

Associated policy initiatives, encouraged by the federal government under No Child Left Behind, have stimulated alternative certification programs that often admit recruits before they have completed, or sometimes even begun, formal preparation for teaching. The search for strong alternative programs has, despite concerns, been important and necessary: Such programs were initially created to provide alternatives to 4-year undergraduate programs, which were, until fairly recently, the only route to certification in many states. This approach was inadequate for attracting recruits across life stages from various life paths. The first alternatives were Master of Arts in Teaching (MAT) programs, started in the 1970s; a wave of other postgraduate programs was stimulated by incentives during the 1990s. In addition, high-need districts need to be able to attract recruits directly into their districts, especially in hard-to-staff schools—and there are too few direct pathways from traditional universities that are designed to do this. And universities do not always provide an adequate supply of teachers in all of the fields where they are needed because most states and the federal government do not manage supply and demand by monitoring needs and providing necessary incentives.

However, the range of quality is quite wide. On one hand, districts like Elk Grove, California, have created effective models in collaboration with local universities. Elk Grove's program was found to be the only one of seven alternatives evaluated by SRI to produce strong value-added gains in knowledge for its candidates (Humphrey, Wechsler, & Hough, 2008). Operated in collaboration with Sacramento State University, the internship features careful selection of recruits and well-designed coursework wrapped around a semester of supervised student teaching and—for those then evaluated as ready to teach—intensive mentoring for intern teachers completing their remaining courses while teaching part-time.

On the other hand, programs that provide only a few weeks of summer training followed by sink-or-swim teaching are also widespread. Quite often these programs end up disrecruiting potentially great teachers instead of recruiting them. For example, in 2001, the *St. Petersburg Times* (Hegarty, 2001) reported on the loss of nearly 100 area recruits in the first few months of the school year, most of them alternative certification candidates who had entered without training and were supposed to

learn on the job. Microbiologist Bill Gaulman, a 56-year-old African American former Marine and New York City firefighter, left before midyear; his comments reflected the experiences of many:

> "The word that comes to mind is 'overwhelmed,'" said Gaulman, "People told me 'Just get through that first year.' I was like, 'I don't know if I can get through this week.' I didn't want to shortchange the kids," Gaulman said. "I didn't want to fake it. I wanted to do it right." (Hegarty, 2001)

Erika Lavrack, a 29-year-old psychologist without education training who was assigned to teach special education resigned on her second day. "'The kids were nice enough,' Lavrack said, 'but they were running all over the place. There was no way I could teach them anything if I couldn't get them to sit down. I didn't know what to do'" (Hegarty, 2001).

While traditional university-based programs also exhibit a very wide range of quality, research indicates that on average, the distribution of outcomes—in terms of teachers' preparedness, effectiveness, and retention—is significantly more positive among preservice programs than programs that offer less preparation prior to entry (see e.g., Boyd et al., 2006, 2008; Darling-Hammond, Chung, & Frelow, 2002; Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005).

Teachers' preparation matters in two ways: It can both enhance initial effectiveness and increase the likelihood of staying on the job long enough to become more experienced and effective, as teachers' effectiveness improves significantly after the 3rd year of experience (Boyd, Lankford, Loeb, Rockoff, & Wyckoff, 2007; Clotfelter, Ladd, & Vigdor, 2007). Whereas about 30% of new public school teachers leave the profession over their first 5 years of teaching, attrition rates are much lower for teachers with greater initial preparation. A nationwide study by the National Center for Education Statistics (NCES) found, for example, that among recent college graduates who entered teaching, 49% of uncertified entrants left the profession within 5 years, more than triple the 14% of certified entrants who left in this period of time (Henke, Chen, & Geis, 2000). An analysis of the Schools and Staffing Surveys showed that new teachers who lacked student teaching and teacher education coursework left teaching in their 1st year at rates double of those who had had student teaching and coursework (NCTAF, 2003).

Some, like this recruit who entered teaching after a few weeks of summer training, 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. . . . After only ¾ of a semester at UC-Berkeley, I have already learned so much that I wish I had known then. (Darling-Hammond, 2006, p. 13-14)

Implications for Teaching Quality and Equity

Debates about the value of teachers' preparation have often revolved around technical interpretations of research studies, but the implications are much larger: There are substantial social, political, and economic implications of how teacher education is treated by policy. These include implications for school funding and allocations of teaching resources to students of different socioeconomic backgrounds, as well as for the nature of the teaching career.

This issue comes up in school finance reform cases on a regular basis because the unequal access more and less advantaged students have to qualified teachers is linked to differential school district funding, which leads in turn to unequal salaries and working conditions. On any measure of qualifications—extent of preparation, level of experience, certification, content background in the field taught, advanced degrees, selectivity of educational institution, or test scores on college admissions and teacher licensure tests—studies show that students of color and low-income and low-performing students, particularly in urban and poor rural areas, are disproportionately taught by less qualified teachers (Darling-Hammond, 2000; Darling-Hammond et al., 2005; Jerald, 2002; Lankford, Loeb, & Wyckoff, 2002). Frequently, in the growing number of apartheid schools serving more than 90% students of color, a majority of teachers are inexperienced and uncertified.

Plaintiffs' arguments that students are entitled to equitable funding and to equally well-qualified teachers are routinely rebutted by claims that teacher qualifications such as certification and training don't matter for student achievement; thus, defendants insist, it is not a problem that students are taught by untrained teachers or that the structural inequities in school funding lead to these disparities on a predictable basis.

The highly differential training of teachers also has enormous implications for the nature of professional work and of the teaching career. Even as the demands of a knowledge-based society call for more sophisticated teaching of much more complex skills, we have seen a return to the factory model of the early 19th century, with the hiring of underprepared teachers linked to the use of scripted curriculum intended to compensate for their lack of skills. Such curriculum mandates fail to improve student learning because they cannot meet the individual needs of diverse learners or address higher order skills; furthermore, they often drive out skilled teachers who refuse to have their effectiveness compromised by requirements that undermine their ability to teach well. Some proponents of externally managed teaching believe there is no reason to try to develop a long-term, stable, highly skilled teaching force.

The result of these forces has been the creation of as many fast-track, low-quality pathways into teaching as there are high-quality, state-of-the-art programs. Ironically, these are often offered within the same university. (I should also note that there are also many slow-track, low-quality programs into teaching. The quality differential is not only associated with speed.) There are few incentives offered by federal or state governments or higher education institutions to drive weak programs toward the stronger, more successful models. High-quality programs have often been swimming against the tide, while in some states, the politics of low-cost, quick-entry programs has enforced a virtual race to the bottom.

This problem is exacerbated by a lack of consensus in the profession about internal quality control. Unlike other professions, which manage reform through strong mandatory accreditation and licensing processes, professional accreditation of teacher education programs is not required. State approval processes are so weak that they almost never result in the closure of programs, no matter how poor, and they rarely drive improvement. Because accreditation is voluntary, the standards cannot ever push the field far forward; they must stay easily within reach for most existing programs, or programs will be unwilling to attempt the process. Disputes within the teacher education community about accreditation generally and about the value of the two existing vehicles—NCATE and TEAC—have slowed progress toward universal high-quality teacher education. And because the profession does not control licensure assessments as other professions do, these also do not serve to leverage substantial change of the kind needed.

For at least 2 decades, teaching has been poised where medicine was in 1910 before the Flexner report, with some high-quality programs counterbalanced against an array of weak ones. At that time, doctors could be prepared in a 3-week program featuring memorized lists of symptoms and cures or, at the other extreme, in a graduate program of medicine like that created at Johns Hopkins University, featuring extensive coursework in the sciences of medicine along with clinical training in the newly invented teaching hospital.

In his introduction to the Flexner report, Henry Pritchett, president of the Carnegie Foundation for the Advancement of Teaching, noted that although there was a growing science of medicine, most doctors did not get access to this knowledge because of the great unevenness in the medical training they received. He observed that:

Very seldom, under existing conditions, does a patient receive the best aid which it is possible to give him in the present state of medicine . . . [because] a vast army of men is admitted to the practice of medicine who are untrained in sciences fundamental to the profession and quite without a sufficient experience with disease. (Flexner & Pritchett, 1910, p. x)

He attributed this problem to the failure of many universities to incorporate advances in medical education into their curricula.

As in teaching today, there were those who argued against the professionalization of medicine, including those who felt that medicine could best be learned by following another doctor around in a buggy. Flexner's identification of universities that were, in his view, successful in conveying new knowledge about the causes and treatment of disease and in creating strong didactic and clinical training for the practice of medicine was the stimulus for the reform of medical education. Despite resistance from many would-be doctors and from weaker training sites, the enterprise was transformed over the subsequent two decades as a common curriculum was adopted by the accrediting bodies that approved all programs and was incorporated into the licensing tests used to admit all candidates to practice.

While there has been some progress in teaching, many universities still struggle with constraints that haven't been fully resolved in the 50 years since normal schools were brought into universities: the loss of tight connections to the field, issues of status within the university, problems with the qualifications of those who teach in teacher education—in particular their knowledge of how disciplinary principles translate into good teaching—fragmentation of courses, and treatment as a cash cow. This last issue—the lack of adequate financial support for teacher education—ceased to be the case in research universities by the 1990s (Howard, Hitz, & Baker, 1998) and is not true today in places that operate strong programs, but it is still a problem in many universities. Because of these fundamental issues with how universities typically function, some societies have pulled teacher education out of universities entirely (France) and others have completely overhauled all programs (Finland).

The bottom line is that we need highly effective, adequately resourced models of preparation for all teachers, without exception. Programs that do not prepare all of the teachers they train extremely well and cannot transform themselves to do so need to get out of the business of teacher education—and they need to so quickly. Accreditation should set a clear goal of leveraging improvements based on the practices of successful models and of ending the practice of poor preparation by so-called traditional and alternative programs alike. Teaching as a profession will not move forward until we settle on some fundamentals about what teachers should have the opportunity to learn and how they should learn it—and until we reshape or create programs— no matter who runs them—so that they can do it well.

The Potential Power of Teacher Education

Despite our societal ambivalence about preparing expert teachers, there is considerable evidence that teacher education can be quite powerful and the influence of teacher expertise can be quite large. In the early 1990s, Ronald Ferguson's seminal study of 900 Texas districts found that teacher expertise—as measured by the teacher scores on a licensing examination, along with teachers' experience and education—had more powerful effects on student achievement than socioeconomic status (Ferguson, 1991). Since then, many studies have confirmed the importance of teachers' access to knowledge about teaching (for reviews, see Darling-Hammond, 2000; Wilson, Floden, & Ferrini-Mundy, 2001).

A recent study estimating the effects of several kinds of teacher qualifications on the learning gains of high school students in North Carolina found that teachers are more effective if they are certified in the specific field they teach, have higher scores on the teacher licensing test, are fully prepared when they enter, have taught for more than 2 years, have graduated from a competitive college, and have become National Board Certified by completing a performance assessment documenting their teaching (Clotfelter et al., 2007). Furthermore, the combined influence of having a teacher with most of these qualifications—like many of the teachers in affluent suburbs—as compared to one having few of them—like many in poor urban schools—is larger than the effects of race and parent education combined, that is, the average difference in achievement between a typical White student with college-educated parents and a typical Black student with high school–educated parents. The strongest negative effects on student achievement were produced by teachers who entered as "lateral entry recruits" without prior teacher preparation, those who lacked certification in the field being taught, and those who were inexperienced.

A similar study of teachers in New York City also found that teachers' certification status, pathway into teaching, teaching experience, graduation from a competitive college, and math SAT scores were significant predictors of teacher effectiveness in elementary and middle grades mathematics (Boyd et al., 2007). A student's achievement was most enhanced by having a fully certified teacher who had graduated from a university preservice program, who had a strong academic background, and who had more than 2 years of experience. Students' achievement was hurt most by having an inexperienced teacher on a temporary license—again, a teaching profile most common in high-minority, low-income schools. In combination, improvements in these qualifications reduced the gap in achievement between the schools in deciles serving the poorest and most affluent student bodies by 25%.

What Effective Programs of Preparation Do

Further analyses of the New York City database found that some teacher education programs have much more positive effects than others (Boyd et al., 2008). This study, like a recent Louisiana Board of Regents (2008) study, found that certification is a significant predictor of student achievement. However, some programs produce graduates who support stronger value-added learning gains for students than do other teachers. The New York

City team of researchers has been exploring what these programs do, producing findings very similar to those from previous studies of exemplary programs. These features include:

- programs' careful oversight of the quality of student teaching experiences;
- the match between the context of student teaching and candidates' later teaching assignments, in terms of grade levels, subject matter, and type of students;
- the amount of coursework in reading and mathematics content and methods of teaching;
- a focus in courses on helping candidates learn to use specific practices and tools that are then applied in their clinical experiences;
- candidates' opportunities to study the local district curriculum;
- a capstone project (typically a portfolio of work done in classrooms with students);
- programs' percentage of tenure-line faculty, which the researchers viewed as a possible proxy for institutional investment and program stability.

These findings are similar to those of researchers who have conducted case studies of effective programs (e.g., Darling-Hammond, 2006; Zeichner, 1993), who have found that powerful teacher education programs have a clinical curriculum as well as a didactic curriculum. They teach candidates to turn analysis into action by applying what they are learning in curriculum plans, teaching applications, and other performance assessments that are organized around professional teaching standards. These attempts receive detailed feedback, with opportunities to retry and continue to improve, and they are followed by systematic reflection on student learning in relation to teaching.

When teachers complain that university work has often been "too theoretical," they usually mean that it is too abstract and general, in ways that leave teachers bereft of specific *tools* to use in the classroom. The theoretically grounded tools teachers need are many, ranging from knowledge of curriculum materials and assessment strategies to techniques for organizing group work and planning student inquiries—and teachers in training need opportunities to *practice* with these tools systematically.

Furthermore, recent research suggests that to be most productive, these opportunities for analysis, application, and reflection should connect to both the subject matter and the students whom candidates teach. In this way, prospective teachers learn the fine-grained stuff of practice in connection to the practical theories that will allow them to adapt their practice in a well-grounded fashion and to innovate and improvise to meet the specific classroom contexts they later encounter.

I would argue that learning from the wisdom of practice is perhaps *the* central issue for both traditional teacher education and alternate routes. Traditional versions of teacher education have often required students to take batches of front-loaded coursework in isolation from practice, then adding a short dollop of student teaching to the end of the program, often in classrooms that do not model the practices previously described in abstraction. Often, the clinical side of teacher education has been fairly haphazard, depending on the idiosyncrasies of loosely selected placements with little guidance about what happens in them and little connection to university work. Many alternative programs skip student teaching altogether—giving their recruits no opportunity to receive direct modeling from expert teachers.

By contrast, the most powerful programs require students to spend extensive time in the field throughout the entire program, examining and applying the concepts and strategies they are simultaneously learning about in their courses. Candidates work alongside teachers who can show them how to teach in ways that are responsive to learners while they take interwoven coursework. Such programs typically require at least a full academic year of student teaching under the direct supervision of one or more teachers who model expert practice with students who have a wide range of learning needs. As candidates gradually assume more independent responsibility for teaching, they can grow roots on their practice. This is especially important if they are going to learn to teach in learner-centered ways that require diagnosis, adaptations to learners' needs, intensive assessment and planning, and a complex repertoire of practices, judiciously applied.

One thing that is clear from current studies of strong programs is that learning to practice *in* practice, with expert guidance, is essential to becoming a great teacher of students with a wide range of needs. Many programs create this possibility through professional development schools (PDS) that, like teaching hospitals, offer yearlong residencies under the guidance of expert teachers. These PDS sites seek to develop 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. These schools also engage in intensive professional learning for veteran teachers and may become hubs of professional development for their districts.

In highly developed PDS models, curriculum reforms and other improvement initiatives are supported by the school and often the district; school teams involving both university and school educators work on such tasks as curriculum development, school reform, and action research; university faculty are typically involved in teaching courses and organizing professional development at the school site and may also be involved in teaching children; school-based faculty often teach in the teacher education program. Most classrooms are sites for practica and student teaching placements, and cooperating teachers are trained to become teacher educators, often holding meetings regularly to develop their mentoring skills. Candidates learn in all parts of the school;

they receive more frequent and sustained supervision and feedback and participate in more collective planning and decision making among teachers at the school.

Studies of highly developed PDS have suggested that teachers who graduate from such programs feel more knowledgeable and prepared to teach and are rated by employers, supervisors, and researchers as better prepared than other new teachers. Veteran teachers working in highly developed PDS describe changes in their own practice and improvements at the classroom and school levels as a result of the professional development, action research, and mentoring that are part of the PDS. Some studies have documented gains in student performance tied to curriculum and teaching interventions resulting from PDS initiatives (for a summary, see Darling-Hammond & Bransford, 2005, pp. 415-416).

Recently developed urban teacher residency programs in Chicago, Boston, and Denver have placed carefully screened recruits as paid apprentices in similar teaching schools. There they learn and coteach in the classrooms of expert mentor teachers for a year while they complete credential coursework in curriculum, teaching, and learning with local partnering universities. When they become teachers, these recruits also receive 2 years of mentoring. In exchange for this high-quality preparation, candidates pledge to spend at least 4 years in the district's schools. This model has already shown teacher retention rates of more than 90% after 4 years for graduates (Keller, 2006).

The Effects of Strong Preparation on Practice

Contrary to much conventional wisdom, it *is* possible to prepare teachers effectively, even for teaching in high-need communities. The comments of underprepared recruits cited earlier stand in sharp contrast with the observations of two other young teachers in the tough urban district of Oakland, California. The first attended 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, and the second attended one of the programs we ultimately studied (Darling-Hammond, 2006):

> 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. (pp. 14-15; A graduate of Mills College's teacher education program)

> 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. (A graduate of University of California at Berkeley's teacher education program; p. 15)

In our study of powerful teacher education programs, we observed this second candidate, a graduate of the University of California at Berkeley's Developmental Teacher Education program, in action. As researcher Jon Snyder (2000) described her teaching:

> Maria 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. Maria'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. Maria 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, Maria 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, Maria 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, Maria's re-design engages students in both the recording of data and in 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, Maria 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 Maria 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 Maria 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 Maria 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 Maria's teaching include 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; 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; and well-developed scaffolding techniques (adapted from pp. 101-105; see also Darling-Hammond, 2006).

Instead of the impoverished environments we are accustomed to seeing in urban classrooms, where students encounter mountains of mind-numbing worksheets designed largely to keep them quiet, all of Maria's students were learning to inquire and think in ways expected of much older students in much more affluent school settings.

We saw beginning teachers like Maria 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. It can be done. The question is: Can we do this universally?

The Challenges for Teacher Education

The central issue I believe teacher education must confront is how to foster learning about and from practice *in* practice. The kinds of strategies I have described for connecting theory and practice cannot succeed without a major overhaul of the relationships between universities and schools—one that ultimately also produces changes in the content of schooling as well as of teacher training. It is impossible to teach recruits how to teach powerfully by asking them to imagine what they have never seen or to suggest they "do the opposite" of what they have observed in the classroom. No amount of coursework can, by itself, counteract the powerful experiential lessons that shape what teachers actually do. It is impractical to expect to prepare teachers for schools as they should be if teachers are constrained to learn in settings that typify the problems of schools as they have been—where isolated teachers provide examples of idiosyncratic, usually atheoretical practice that rarely exhibits a diagnostic approach and infrequently offers access to carefully selected strategies designed to teach a wide range of learners well.

It was for similar reasons that the medical profession invented the teaching hospital and ultimately insisted that it become a feature of every medical school's training system. It is essential that settings that model state-of-the-art practice become training grounds for new recruits to the profession. However, these settings simply do not exist in large numbers—and where individual teachers have created class-room oases, there have been few long-lasting reforms to leverage transformations in whole schools.

Developing sites where state-of-the-art practice is the norm is a critical element of strong teacher education, and it has been one of most difficult. Quite often, if novices are to see and emulate high-quality practice, especially in schools serving the neediest students, it is necessary not only to seek out individual cooperating teachers but also to develop the quality of the schools so that prospective teachers can learn productively and to create settings where advances in knowledge and practice can continue to occur. Seeking diversity by placing candidates in schools serving low-income students or students of color that suffer from the typical shortcomings many such schools face can actually be counterproductive. As Gallego (2001) noted:

> Though teacher education students may be placed in schools with large, culturally diverse student popula-tions, many of these schools . . . do not provide the kind of contact with communities needed to overcome negative attitudes toward culturally different students and their families and communities. Indeed, without connections between the classroom, school, and local communities, classroom field experiences may work to strengthen pre-service teachers' stereotypes of chil-dren, rather than stimulate their examination, and ultimately compromise teachers' effectiveness in the classroom. (p. 314)

It will be critical for all universities to model what some have pioneered by creating relationships with schools that are working explicitly on a quality and equity agenda. Some universities have done this by developing new schools designed to provide more equitable access to high-quality curriculum for diverse learners; others have created partnerships in schools where faculty are actively confronting issues of tracking while transforming curriculum and teaching (see e.g., Darling-Hammond, 2006; Guadarrama, Ramsey, & Nath, 2002). In these schools, student teachers or interns are encouraged to participate in all aspects of school functioning, ranging from special education and support services for students; to parent meetings, home visits, and community outreach; to faculty discussions and projects aimed at ongoing improvement in students' opportunities to learn. This kind of participation helps prospective teachers understand the broader institutional context for teaching and learning and begin to develop the skills needed for effective participation in collegial work around school improvement throughout their careers. Creating high-quality professional development schools that construct state-of-the art practice in communities where students are typically underserved is critical to transforming teaching.

Leveraging Change in Teacher Education Quality

We need to raise our expectations for the teacher education enterprise as a whole, requiring in every program a common vision that informs a tightly integrated program of high-quality clinical work married to a supportive learning-focused cur-riculum. This will require hard work within institutions to secure needed supports from administration and to reshape faculty and coursework. It will require equally hard work with schools, not only to create partnerships but also to help create settings where equitable, state-of-the-art practice is possible. The key levers needed to accomplish this work include, as in other professions, the much more effective use of accreditation and of licensing for new entrants.

The proposed merger of NCATE and TEAC provides a new opportunity to reshape accreditation and to create a new model for evaluating programs. Such a model should focus closely on the critical design features that have been found to be associated with more effective programs, rather than on the assembly of evidence not clearly associated with the production of effective graduates. In doing this, accredi-tors should stop approving institutions in which any program cuts critical corners for effective preparation. This would include, for example, programs that exempt candidates from carefully selected and supervised student teaching; fail to prepare candidates to develop effective curriculum plans that they implement, under review, in the classroom; or omit teaching candidates how to diagnose and respond to stu-dents' learning needs, including those with disabilities.

This proposal suggests that despite all of the recent focus on outcome-based accreditation, it is equally important to examine a focused set of important inputs. Just as we cannot now imagine accreditors approving a medical school that lacks an appropriate teaching hospital, omits the internship for some of its candidates, fails to provide oversight from skilled doctors, or neglects to teach pathology, we should demand an accreditation process that is more clearly atten-tive to the essential ingredients of a responsible preparation for teaching.

As noted earlier, it is now possible to track the contribu-tions to student learning gains of program graduates, a practice that will provide important information about pro-gram quality as data sets become more available in the future. However, this approach will provide only one kind of information about outcomes; it will not directly inform pro-grams or licensing authorities about what graduates can actually do in the classroom.

Thus, equally important will be the development of a high-quality, nationally available teacher performance assessment for beginning teachers. An assessment that measures actual teaching skill would dramatically raise the bar on the quality of preparation by informing candidates, programs, and accreditors about candidate competence. In states like California, Connecticut, and Oregon that have already used them, such assessments have been strong levers for improving preparation and mentoring, as well as determining teachers' competence. Despite a proliferation of teaching tests over the past two decades (often three or more tests are required for licensure in a given state), most are multiple choice tests of basic skills or subject matter knowledge that measure little of what candidates learn in teacher education and provide no evidence of whether they can actually teach.

In contrast, the new performance assessments require teachers to document their plans and teaching for a unit of instruction, videotape and critique lessons, and collect and evaluate evidence of student learning. Like the National Board portfolios, they can be scored reliably, and they have been found not only to measure features of teaching associated with later value-added effectiveness, but actually to help develop effectiveness at the same time—both for the participants and for those involved in mentoring and assessing these performances (Pecheone & Chung, 2006; Pecheone & Stansbury, 1996; Wilson & Hallum, 2006).

Because these assessments require the practices teachers need to learn to be effective with diverse students, they are particularly valuable targets for professional policy. For example, the Performance Assessment for California Teachers (PACT) requires student teachers or interns to plan and teach a week-long unit of instruction mapped to the state standards; reflect daily on the lesson they've just taught and revise plans for the next day; analyze and provide commentaries of videotapes of themselves teaching; collect and analyze evidence of student learning; reflect on what worked, what didn't, and why; and 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 education students must be incorporated into plans and instruction. Analyses of a 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 (Darling-Hammond, 2006, 326-327). For example:

> 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. (Prospective teacher)

> 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. (Teacher education faculty member)

> [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. (Cooperating teacher)

> 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. (Induction program coordinator)

An updated version of the PACT is currently being piloted by 15 additional states and more than 30 schools of education as part of the development of a nationally available teacher performance assessment that can be used to inform licensure and accreditation decisions in more valid and useful ways. 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 norms that are widely shared across the profession so that good teaching is no longer a magical or haphazard occurrence.

Leveraging Equity in Access to Learning

Although much stronger preparation programs will make a difference in children's opportunities to learn, teacher education programs cannot transform teaching alone. 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.

Some states and urban districts have shown how to do this, as they have gone from shortages to surpluses of teachers—and to steeply improving student achievement—with a set of purposeful reforms. States like Connecticut and North Carolina; cities like San Diego and New Haven, California; and New York City's District #2 adopted similar strategies (Darling-Hammond, 2000, 2004). They raised and equalized teacher salaries; raised standards and created stronger pathways for

teacher education, so that teachers have both more content and pedagogical knowledge; 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. The federal government, states, districts, and universities will need to work together to accomplish this set of comprehensive reforms.

This lesson has been well learned by societies that top the international rankings in education. The highest achieving countries around the world have poured resources into teacher training and support over the past decade. These countries routinely prepare their teachers more extensively, pay them well in relation to competing occupations, and provide them with lots of time for professional learning. They also distribute well-trained teachers to all students—rather than allowing some to be taught by untrained novices—by offering equitable salaries, sometimes adding incentives for harder-to-staff locations (Darling-Hammond, 2009).

In Scandinavian countries like Finland, Sweden, Norway, and the Netherlands, all teachers now receive 2 to 3 years of graduate-level preparation for teaching, generally at government expense, plus a living stipend. Typically, this includes a full year of training in a school connected to the university, like the professional development school partnerships created by some U.S. programs, along with extensive coursework in pedagogy and a thesis researching an educational problem in the schools. Unlike the United States, where teachers either go into debt to prepare for a profession that will pay them poorly or enter with little or no training, these countries made the decision to invest in a uniformly well-prepared teaching force by recruiting top candidates and paying them to go to school. Slots in teacher training programs are highly coveted and shortages are unheard of.

Finland has been a poster child for school improvement since it rapidly climbed to the top of the international education rankings after it emerged from the Soviet Union's shadow. Leaders in Finland attribute these gains to their intensive investments in teacher education. Over 10 years, the country overhauled preparation to focus more on teaching for higher order skills like problem solving and critical thinking. Teachers learn how to create challenging curriculum and how to develop and evaluate local performance assessments that engage students in research and inquiry on a regular basis. Teacher training emphasizes learning how to teach students who learn in different ways—including those with special education needs. The egalitarian Finns reasoned that if teachers learn to help students who struggle, they would be able to teach all students more effectively and would indeed leave no child behind. The bet has paid off as educational achievement has soared.

Top-ranked Singapore, by contrast, is more centralized, but it treats teaching similarly. The National Institute of Education—the country's only teacher training institution—is strongly focused on preparing teachers to teach a curriculum focused on critical thinking and inquiry—the 21st-century skills needed in a high-tech economy. To get the best teachers, students from the top one third of each graduating high school class are recruited into a fully paid 4-year teacher education program (or, if they enter later, a 1- to 2-year graduate program) and immediately put on the Ministry's payroll. When they enter the profession, teachers' salaries are higher than those of beginning doctors.

As in other highly ranked countries, novices are not left to sink or swim. Expert teachers are given released time to serve as mentors to help beginners learn their craft. The government pays for 100 hours of professional development each year for all teachers in addition to the 20 hours a week they have to work with other teachers and visit each others' classrooms to study teaching. Currently teachers are being trained to undertake action research projects in the classroom so that they can examine teaching and learning problems and find solutions that can be disseminated to others.

We now have in the United States the possibility of dramatically reforming teacher education and development. With a president who has pledged $1 billion in service scholarships to prepare teachers in high-need fields and locations, who has already increased funding for clinical preparation and residencies for beginning teachers, who has promised investments in teacher education improvements and beginning teacher mentoring, including supports for professional accreditation and teacher performance assessments, we have an opportunity to make substantial headway on this important agenda.

To take advantage of this potentially fleeting opportunity, however, schools of education must hold themselves to a higher standard. Teacher educators must be prepared to create partnerships with schools in their communities, confront and dismantle those regularities of the university that prevent investments in strong academic and clinical training, and behave as members of a profession. This will mean embracing a new form of professional accountability that leverages universally strong practice in all programs that prepare teachers. This is a tall order, to be sure, but it is perhaps the last best chance for dramatically improving educational opportunity in the United States of America.

Declaration of Conflicting Interests

Funding

References

Ballou, D., & Podgursky, M. (1997). *Teacher pay and teacher quality*. Kalamazoo, MI: W. E. Upjohn Institute for Employment Research.

Barber, B. R. (2004). Taking the public out of education: The perverse notion that American democracy can survive without its public schools. *School Administrator*, *61*(5), 10-13.

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 and Policy*, *1*(2), 178-216.

Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2008). *Teacher preparation and student achievement* (NBER Working Paper No. W14314). Cambridge, MA: National Bureau of Economic Research.

Boyd, D., Lankford, H., Loeb, S., Rockoff, J., & Wyckoff, J. (2007). *The narrowing gap in New York City teacher qualifications and its implications for student achievement in high-poverty schools*. Washington, DC: National Center for the Analysis of Longitudinal Data in Education Research.

Clotfelter, C., Ladd, H., & Vigdor, J. (2007). *How and why do teacher credentials matter for student achievement?* (NBER Working Paper 12828). Cambridge, MA: National Bureau of Economic Research.

Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Educational Policy Analysis Archives*, *8*(1). Retrieved June 10, 2008, from http://epaa.asu.edu/epaa/v8n1

Darling-Hammond, L. (2002). Research and rhetoric on teacher certification: A response to "Teacher Certification Reconsidered." *Education Policy Analysis Archives, 10* (36). http://epaa.asu.edu/epaa/v10n36.html

Darling-Hammond, L. (2004). Standards, accountability, and school reform. *Teachers College Record*, *106*(6), 1047-1085.

Darling-Hammond, L. (2009). *The flat world and education: How America's commitment to equity will determine our future*. New York: Teachers College Press.

Darling-Hammond, L., & Bransford, J. (Eds.). (2005). *Preparing teachers for a changing world: What teachers should learn and be able to do*. San Francisco: Jossey-Bass.

Darling-Hammond, L., Chung, R., & Frelow, F. (2002). Variation in teacher preparation: How well do different pathways prepare teachers to teach? *Journal of Teacher Education*, *53* (4), 286-302.

Darling-Hammond, L. (with Fickel, L., Macdonald, M., Merseth, K., Miller, L., Ruscoe, G., Silvernail, D., Snyder, J., Whitford, B. L., & Zeichner, K.). (2006). *Powerful teacher education: Lessons from exemplary programs*. San Francisco: Jossey-Bass.

Darling-Hammond, L., Holtzman, D. J., 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 June 10, 2008, from http://epaa.asu.edu/epaa/v13n42/

Ferguson, R. F. (1991). Paying for public education: New evidence on how and why money matters. *Harvard Journal on Legislation*, *28*(2), 465-498.

Flexner, A., & Pritchett, H. S. (1910). *Medical education in the United States and Canada: A report to the Carnegie Foundation for the Advancement of Teaching*. New York: Carnegie Foundation for the Advancement of Teaching.

Fordham Foundation. (1999). *The teachers we need and how to get more of them*. Washington, DC: Author.

Gallego, M.A. (2001). Is experience the best teacher? The potential of coupling classroom and community-based field experiences. *Journal of Teacher Education*, *52*(4), 312-325.

Guadarrama, I.N., Ramsey, J. & Nath, J.L. (Eds.). (2002). *Forging alliances in community and thought: Research in professional development schools*. Greenwich, CT: Information Age Publishing.

Hegarty, S. (2001, January 21). Newcomers find toll of teaching is too high: Among those quitting are non-education majors thrust into challenging classrooms. *St. Petersburg Times*. Retrieved June 20, 2009, from http://www.sptimes.com/News/012101/TampaBay/Newcomers_find_toll_o.shtml

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.

Holmes Group. (1986). *Tomorrow's teachers: A report of the Holmes Group*. East Lansing, MI: Author.

Holmes Group. (1990). *Tomorrow's schools: Principles for the design of professional development schools: A report of the Holmes Group*. East Lansing, MI: Author.

Howard, R.D., Hitz, R., & Baker, L. (1998). A National Study Comparing the Expenditures of Teacher Education Programs by Carnegie Classification and with Other Disciplines. *Action in Teacher Education, 20* (3), 1-14.

Humphrey, D. C., Wechsler, M. E., & Hough, H. J. (2008). Characteristics of effective alternative teacher certification programs. *Teachers College Record*, *110*(4), 1-63.

Jerald, C. D. (2002). *All talk, no action: Putting an end to out-of-field teaching*. Washington, DC: Education Trust.

Keller, B. (2006, November 1). Residencies set up to train urban teachers at school sites. *Education Week*. Available at http://www.edweek.org/login.html?source=http://www.edweek.org/ew/articles/2006/11/01/10residencies.h26.html&destination=http://www.edweek.org/ew/articles/2006/11/01/10residencies.h26.html&levelId=2100

Lankford, H., Loeb, S., & Wyckoff, J. (2002). Teacher sorting and the plight of urban schools: A descriptive analysis. *Educational Evaluation and Policy Analysis*, *24*(1), 37-62.

Louisiana Board of Regents. (2008). *Regents study shows teacher certification matters*. Baton Rouge, LA: Author.

National Board for Professional Teaching Standards. (1989). *Toward high and rigorous standards for the teaching profession*. Detroit, MI: Author.

National Board for Professional Teaching Standards. (2002). *What teachers should know and be able to do*. Detroit, MI: Author.

National Commission on Teaching and America's Future. (1996). *What matters most: Teaching for America's future*. Washington, DC: Author.

National Commission on Teaching and America's Future. (2003). *No dream denied*. Washington, DC: Author.

Pecheone, R., & Chung, R. R. (2006). Evidence in teacher education: The performance assessment for California teachers. *Journal of Teacher Education*, *57*(1), 22-36.

Pecheone, R., & Stansbury, K. (1996). Connecting teacher assessment and school reform. *Elementary School Journal*, *97*(2), 163-177.

Snyder, J. (2000). Knowing children—Understanding teaching: The developmental teacher education program at the University of California, Berkeley. In L. Darling-Hammond (Ed.), *Studies of excellence in teacher education: Preparation at the graduate level* (pp. 97-172). Washington, DC: American Association of Colleges for Teacher Education.

United States Department of Education. (2002). *Meeting the highly qualified teachers challenge: The secretary's annual report on teacher quality*. Retrieved August 25, 2009, from http://www.ed.gov/news/speeches/2002/06/061102.html

Walsh, K. (2001). *Teacher certification reconsidered: Stumbling for quality*. Baltimore: The Abell Foundation.

Weiner, L. (2007). A lethal threat to U.S. teacher education. *Journal of Teacher Education*, *58*, 274-286.

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: University of California at Berkeley.

Wilson, S. M., Floden, R. E., & Ferrini-Mundy, J. (2001). *Teacher preparation research: Current knowledge, gaps, and recommendations: A research report prepared for the U.S. Department of Education*. Seattle: Center for the Study of Teaching and Policy.

Zeichner, K. M. (1993). Traditions of practice in U.S. preservice teacher education programs. *Teaching and Teacher Education*, *9*(1), 1-13.

About the Author

Linda Darling-Hammond is Charles E. Ducommun Professor of Education at Stanford University where she has also served as the faculty sponsor of the Stanford Teacher Education Program.