

DOCUMENT RESUME

ED 454 165

SP 040 032

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TITLE Career-Long Teacher Development: Policies That Make Sense. Knowledge Brief.
INSTITUTION WestEd, San Francisco, CA.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE 2000-00-00
NOTE 10p.; Draws from presentation by Linda Darling-Hammond to the WestEd Board of Directors, March 2000.
CONTRACT RJ96006901
AVAILABLE FROM WestEd, 730 Harrison Street, San Francisco, CA 94107-1242. Tel: 415-565-3000 or 877-493-7833 (Toll Free).
PUB TYPE Reports - Descriptive (141)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; *Academic Standards; Beginning Teacher Induction; *Educational Policy; Educational Quality; Elementary Secondary Education; *Faculty Development; Higher Education; Inservice Teacher Education; Knowledge Base for Teaching; Preservice Teacher Education; Teacher Competencies; Teacher Recruitment; Teaching Skills
IDENTIFIERS Teacher Knowledge

ABSTRACT

States experiencing success in raising student achievement are likely to be taking two key policy steps: identifying teaching standards that articulate what teachers should know and be able to do at different points in their careers and using those standards to develop more thoughtful certification and licensing systems, more productive teacher education and induction programs, and more effective professional development. This report examines progress toward a standards-based system of teacher development; the relationship between teacher knowledge and student achievement; and how to get knowledge to teachers through teacher development (effective systems of recruitment, preparation, induction and professional development). It concludes that student success hinges on good teaching, and states must institute a comprehensive teacher development system based on broad agreement about what teachers need to know and be able to do at different stages of their careers. Piecemeal teacher development policies, not connected by a common vision, are roadblocks to teaching and learning. A cohesive, comprehensive approach aimed at aligning policies and incentives for recruitment, certification, preparation, induction, and professional development under the same set of standards is needed. A sidebar discusses what teachers need to know and do. (SM)

**Career-Long Teacher Development:
Policies That Make Sense.
Knowledge Brief.**

Joan McRobbie

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Career-long TEACHER DEVELOPMENT: Policies that Make Sense

As policymakers struggle to determine what kinds of interventions make the greatest difference in student learning, a growing body of research is confirming what common sense has long contended: The smartest investment is to ensure high-quality teaching. But what is high-quality teaching for today's classrooms? And what does it take to get it? Many researchers point out that "we know what works," but the "we" has generally been confined to those engaged in the professional discourse. Among those left out are the very people who most need best-practice knowledge: classroom teachers.

Written by Joan McRobbie

This brief draws from a presentation by Linda Darling-Hammond to the WestEd Board of Directors in March 2000. Darling-Hammond, professor of education at Stanford University, is Executive Director of the National Commission on Teaching and America's Future.

While good teacher preparation programs do exist, there has been no systematic way to ensure that all teachers acquire and continue to develop the knowledge and skills they need. That reality disadvantages teachers and students alike, seriously impeding progress toward achievement goals. The solution, says Linda Darling-Hammond, lies in a transformation — and extension — of teacher preparation and development.

What's needed is a standards-based reform of teaching, analogous to standards-based reform of schooling. States must enact a system of teacher development anchored in agreed-upon expectations for what teachers should know and be able to do. Equally important, that system must encompass the entire teaching continuum, from recruitment through preparation, certification, induction, and the rest of a teacher's career.

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From her research, Darling-Hammond concludes that states experiencing progress in raising student achievement are likely to be taking two key policy steps:

- identifying teaching standards that articulate what teachers should know and be able to do at different points in their careers; and
- using these standards to develop more thoughtful certification and licensing systems; more productive teacher education and induction programs; and more effective professional development.

In examining these steps, this brief reports on:

- progress toward a standards-based system of teacher development;
- the relationship between teacher knowledge and student achievement; and
- how to get knowledge to teachers — effective systems of recruitment, preparation, induction, and professional development.

Progress Toward a Standards-Based System of Teacher Development

Teaching in the United States is now at a juncture where the medical profession stood at the dawn of the 20th century, Darling-Hammond believes. Back then, one could prepare to be a doctor by undertaking a rigorous, science-based program of medical training at one of the few good programs available or, instead, qualify by taking a three-week course and memorizing a list of symptoms and a set of cures. In 1910, however, a landmark study made it clear that, though much was known about the sound practice of medicine, most doctors did not have access to that knowledge. That revelation resulted, over time, in the creation of the now-familiar system of study, internships, residencies, and career-long continuous learning requirements.

Darling-Hammond sees the teaching profession today as characterized by “motley” notions of the preparation and ongoing development needed for teachers. New expectations for student learning are clashing with old

conceptions of teaching and outmoded approaches and structures for teacher learning. This picture is gradually and purposefully changing as we aim toward a coherent system akin to that of medicine, intended to ensure that:

- more attention is paid to recruiting those candidates most likely to succeed as teachers;
- teacher education programs are held accountable for offering access to an agreed-upon body of knowledge and providing teacher candidates with practical experience to complement theory;
- licensing, or credentialing, is tied to standards-based performance;
- standards are embedded in an induction process that includes mentoring;
- performance assessment at the end of a probationary period is grounded in the same standards as the preservice work; and
- ongoing professional development targets the kind of accomplished practice that’s recognized and rewarded by the National Board for Professional Teaching Standards.¹

Undergirding this nascent system is an evolving series of standards, all closely aligned to those developed by the National Board to embody a broad consensus about the knowledge and skills that characterize accomplished teaching. Drawing from this seminal set of teaching standards, a 34-state consortium developed beginning teacher licensing standards,² which, in turn, are now guiding teacher preparation policies in other states. The National Board standards have also been infused into the National Council for Accreditation of Teacher Education’s (NCATE’s) standards for accrediting schools of education — and some 47 states now have partnerships with NCATE.

Teacher Knowledge and Student Achievement

Is knowledge important to teaching? The answer may seem obvious, but under the industrial model that characterized U.S. teaching through much of the 20th century, teachers were viewed as semiskilled workers who needed to know very little. Experts at the top “teacher-proofed” it by handing teachers texts from

which to teach. Today, as we move toward new forms of schooling and new expectations for results, the teacher's role is far too unpredictable to be scripted. To prepare students to participate in the knowledge economy, teachers must practice in very sophisticated ways.

Research shows that teacher knowledge profoundly affects student achievement. Darling-Hammond says flatly that teachers who lack knowledge of content and/or teaching strategies cannot offer their students adequate learning opportunities. In today's high stakes education climate, those students may then be penalized — for example, held back or not allowed to graduate — when, in fact, the problem is the system's failure to provide them with qualified teachers.

Darling-Hammond recently analyzed data from all 50 states to shed light on how teacher qualifications and other school inputs are related to student achievement.³ Her findings make a compelling argument for focusing on improved teacher preparation and development:

- *The strongest and most consistent predictor of a state's average student achievement level is the proportion of well-qualified teachers in the state. As measured by percentage of teachers with full certification and a major in the field they teach, teacher quality appears to be more strongly related to student achievement than do class size, overall spending levels, teacher salaries (at least when unadjusted for cost-of-living differentials), or the statewide proportion of school staff who are teachers.*
- *The connection between teacher qualifications and student achievement persists even when student poverty and limited-English proficiency, as well as selected school resource measures, are taken into account.* Even though adverse conditions facing students are linked to how well they perform in school, the effects of well-prepared teachers on student achievement can be stronger than these background conditions.
- *While class-size reduction (CSR) appears to contribute to student learning, particularly in fields like elementary reading, the gains are most likely realized when accompanied by the hiring of well-qualified teachers.* The large-scale hiring of under-qualified teachers, as has occurred with CSR in

What Teachers Need to Know and Do

Decades of research findings are encapsulated in the National Board standards, which embody what accomplished teachers know and can do. As the standards point out,

Teachers need to know:

- child development;
- how students learn, including, for example, how language and literacy develop at each age and grade level;
- subject matter content and how to make it accessible to diverse learners; and
- a broad repertoire of instructional strategies, for example, direct and indirect instruction, experience-based and skill-based approaches, lecture and small group work

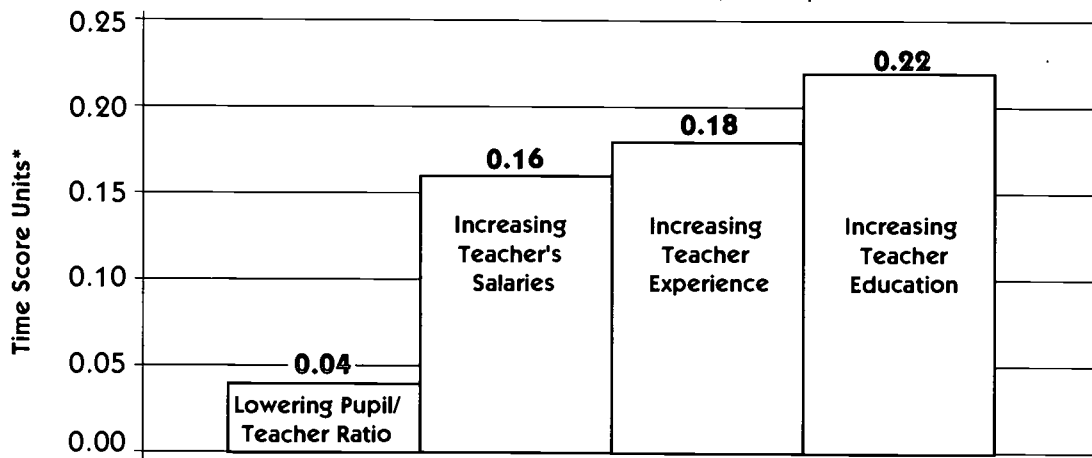
...and be able to:

- teach diverse learners with a keen diagnostic eye and apply a range of instructional approaches skillfully;
- systematically organize the learning process, for example, structure curriculum so each lesson relates to lessons in future weeks and months;
- present critical ideas and materials in powerful ways;
- adapt instruction to the differing learning styles and backgrounds of their students;
- look at, evaluate, and assess learning and student progress;
- serve in new kinds of roles prompted by new school designs, for example, California teachers are now required to do peer assistance and review; and
- inquire reflectively and systematically into the nature of learning and the effects of teaching.

California, would likely offset achievement gains that could otherwise result from smaller classes.

These findings echo and expand on other research in recent years. In 1991, for example, Ronald Ferguson analyzed test score variations in 900 Texas school districts (see figure 2) and compared test results with teacher quality, as measured by teacher education, licensing examination scores, and experience.⁴ He found that teacher expertise accounts for about 40 percent of the variance in student test scores in both math and

Figure 1
Effects of Educational Investments:
Size of Increase in Student Achievement for Every \$500 Spent on:



*Achievement gains were calculated as standard deviation units on a range of achievement in the 60 studies reviewed.

Source: Greenwald, R., Hedges, L. V., & Laine, R. D. (1966). The effect of school resources on student achievement. *Review of Education Research*, 66(3), 361-393.

reading across grades 1 through 11. He also found that when teacher expertise is coupled with small class size in elementary grades, the combination matches and exceeds the influence of the external home environment in predicting learning gains.

Similar results have come from studies in Alabama, Tennessee, New York City, and California. Moreover, a 1996 review of 60 studies (Greenwald, Hedges, & Laine, see figure 1) pinpointed the importance of teacher quality from the perspective of productive use of resources. If the goal is to increase student learning, say the authors, the single most productive use of additional education dollars is to improve teacher education.

The states that lead the nation in student achievement in mathematics and reading (as measured by scores on the National Assessment of Educational Progress) have among the most highly qualified teachers in the country. Not coincidentally, the long-time leaders — Minnesota, North Dakota, and Iowa — have made long-standing investments in upgrading teacher qualifications and capacities. They have a long history of professional teacher policy and are among the 12 states where professional standards boards have enacted high standards for entering teaching. More recently,

Wisconsin, Maine, and Montana have moved to the top of the achievement distribution. Each has enacted rigorous teaching standards and rarely hires unqualified teachers on substandard licenses.

How to Get Knowledge to Teachers: The Continuum of Teacher Development

In every teaching field — from mathematics to science to early childhood, vocational, or gifted education — those who are fully prepared, certified in education and in their discipline, and supported with solid induction programs are more successful with students than those less prepared. They are also much more likely to stay in the profession and do well.

What can state policymakers do to ensure that increasing numbers of their classroom teachers match that description? They can: encourage or require the use of NCATE or similarly rigorous standards for pre-service programs; create statewide incentives and sanctions that encourage the hiring and support of well-qualified individuals; create bodies that establish

and enforce teaching standards; and, finally, work with their state's education agencies and institutions of higher education to promote a continuum of teacher development that starts with recruitment and continues throughout a teacher's career. Across the continuum, learning opportunities must be coherent and always guided by commonly held standards of accomplished teaching.

Recruitment. Given that quality teachers are the key variable in student success, given the complexity of the work, and given the increasing expectations for what teachers will accomplish, recruitment of teacher education candidates is pivotal. We must search out those who appear to have the vision, motivation, and disposition to work effectively with children, particularly those in underperforming schools. Typically, prospective education students are screened on the basis of their prior academic record, but more effective programs interview candidates individually and in groups to assess the probability that a candidate will become a good teacher (Mitchell et al., 2000; Darling-Hammond & McDonald, in press; Zeichner, in press). It is more cost effective — and less harmful to everyone involved — to recruit the right people into

the profession and sustain them rather than having to counsel out either preservice or practicing teachers.

Preparation. Not all teacher education programs are created equal. Among the traditional shortcomings of such programs are: uncertain goals, for example, lack of clarity about what the program aims for with student teaching; individually determined course content, rather than a coherent program of relevant studies; disjunctures among areas of knowledge; and, uninspired pedagogy, for example, faculty who give lectures about groupwork. In many programs, candidates learn theory out of context and experience the idiosyncrasies of practice without adequate theory to make sense of them. In the same vein, there tends to be front-loading of coursework, with a dollop of student teaching tacked onto the end of the program, allowing insufficient time for practice to take root.

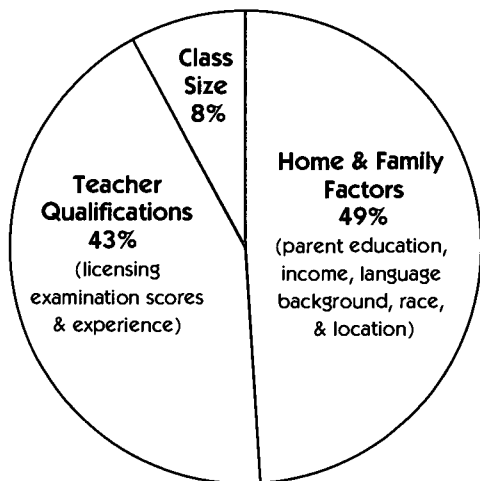
Extraordinary teacher preparation programs, by contrast, involve these elements:

- strong grounding in content areas to be taught and in how to teach them to children at particular ages;
- focus on curriculum development in the subject area, that is, on how concepts fit together and add up;
- emphasis on learning and the use of assessment to understanding how and what students are learning and what to do if they are not getting it;
- commitment to a broad repertoire of strategies to meet different needs of learners;
- connection of theory and practice, that is, courses and clinical experience are integrated;
- extended study (18-30 weeks of supervised student teaching) with expert mentors in a model setting, for example, professional development schools, which are state-of-the-art settings, similar to teaching hospitals, where all the pieces are in place to allow candidates to emulate good practice; and
- a well-developed relationship with schools.

Induction. Research shows that beginning teachers who have mentoring and other kinds of support are more likely to stay in the profession, will continue to learn during this critical transition time, and will be more

Figure 2

Influence of Teacher Qualifications on Student Achievement: Proportion of Measured Variance in Math Test Score Gains (from Grades 3 to 5) Explained by:



Developed from data presented in Ronald F. Ferguson, Paying for Public Education: New Evidence of How and Why Money Matters, *Harvard Journal on Legislation*, 28 (Summer 1991): 465–98.

effective in helping students learn. In the ideal, new-teacher programs provide newly minted professionals with feedback, opportunities for guided reflection, and encouragement to experiment with and modify strategies. Good induction programs may include a variety of elements, among them sustained support by veteran mentors during the early years and a standards-based analysis of practice. They may also incorporate peer observation; coaching; local study groups and networks for specific subject matter areas; teacher academies that provide ongoing seminars and courses tied to practice; and school-university partnerships that enrich collaborative research and learning opportunities.

Ongoing professional development. To help practicing teachers improve and become increasingly expert over the course of their careers, we must start by recognizing that teaching is a lifelong journey of learning rather than a final destination of “knowing” how to teach. Our policies must then ensure that teachers have the support needed to make this journey.

Supporting a different concept of teacher learning. Unfortunately, well over half of U.S. teachers get less than a day’s worth of professional development annually, as contrasted with teachers in many other countries who work on professional development for 10-20 hours a week. Many U.S. professional development experiences focus on general “training” delivered en masse to large groups of teachers on a given day. There is little or no follow-up that might enable teachers to incorporate what they’ve just learned into their own classroom settings — to continue learning and, in the process, transform their new skills and knowledge into deep understanding and more effective teaching. In Germany, France, Luxembourg, Switzerland, and Japan, teachers have time in each day or week when they do not work with children but, instead, plan curriculum and lessons and evaluate one another’s teaching.

Professional development strategies that succeed in improving teaching tend to be:

- experiential, engaging teachers in concrete tasks of teaching, assessment, and observation that illuminate the processes of student learning and development;
- grounded in participants’ questions, inquiry, and experimentation, as well as research;
- collaborative, involving a sharing of knowledge among educators;
 - connected to and derived from teachers’ work with their students, as well as to examinations of subject matter and teaching methods;
- sustained and intensive, supported by modeling, coaching, and problem solving; and
- connected to other aspects of school change.

Supporting high-quality professional development initiatives and removing constraints so that schools can implement them. Professional development policies also need to attend to school structures that stifle teachers’ continual growth. The most critical change for supporting high-quality professional development is to structure teachers’ workweek so they

do not spend virtually all their time teaching, but instead have adequate preparation, consultation, and collaboration time. Regular time for teacher collaboration can help ensure that lessons are more highly polished, students’ needs are better met, and curriculum is cohesive from year to year.

This structural change calls for a radical rethinking of how professional development fits in the organization of schooling, but it can be made without added costs. For instance, instead of having pullouts and aides for Title I and special education, these positions can be turned into classroom teacher slots to lower teacher-to-student ratios, spread workloads more evenly, and provide students more individualized attention.

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Such changes at school sites, however, require removing state policy barriers. For example, schools are often hobbled by state mandates to offer dozens of small categorical programs that fragment funding and staffing and make it difficult to organize school efforts coherently.

Conclusion

Student success pivots on good teaching. Policymakers nationwide have begun to focus on how to help teachers learn increasingly sophisticated methods for engaging diverse students in mastering challenging content and skills. To get this high-quality teaching requires that states institute a comprehensive teacher development system based on broad agreement about what teachers need to know and be able to do at different stages in their careers. The first steps toward such a standards-based system are being taken in many states, and states that have invested most heavily in teacher quality top the nation in terms of student achievement.

Piecemeal teacher development policies, not connected by a common vision, are roadblocks to teaching and learning. What's needed is a cohesive and comprehensive approach aimed at aligning policies and incentives for recruitment, certification, preparation, induction, and professional development under the same set of standards. Do that well, says Linda Darling-Hammond, and extraordinary results from students will follow.

Endnotes

1 For information on the National Board for Professional Teaching Standards, go to <www.nbpts.org>.

2 The Interstate New Teacher Assessment and Support Consortium (INTASC) convenes under the auspices of the Council of Chief State School Officers. For further information, go to <www.ccsso.org> and click on Council Projects.

3 Darling-Hammond, L. (2000). "Teacher Quality and Student Achievement: A Review of State Policy Evidence," *Education Policy Archives*, Volume 8. <<http://epaa.asu.edu>>. In her review, Darling-Hammond examined student achievement trends, case studies of state policymaking, and the distribution of state achievement scores and resources, taking student characteristics into account.

4 David Berliner, Dean of Education at Arizona State University (ASU) and WestEd Board of Directors member, followed Darling-Hammond's presentation by pointing to a dynamic, reciprocal relationship between the pieces of this pie chart. If you can improve a school because you've changed the preparation and development of teachers, he noted, you can change the nature of the neighborhood and its families as well. He cited the example of Tempe, Arizona, where ASU converted one of the lowest performing elementary schools into a professional development school, a concept similar to that of medicine's teaching hospital. The agenda was to achieve school improvement by improving teacher development and, therefore, teacher retention and expertise. As student test scores went up, the community became more stable, with fewer people migrating in and out. Parent involvement, as well as parent education levels, increased. Better yet, he said, is to have a deliberate, companion agenda to improve neighborhoods and communities, since working only on the school itself is "a little like trying to clean the air on one side of a screen door."

Selected Reading

Additional articles by Linda Darling-Hammond:

Professional Development for Teachers: Setting the Stage for Learning from Teaching, Center for the Future of Teaching and Learning, Initiative on Teaching and California's Future, 1999.

Teacher Quality and Student Achievement: A Review of State Policy Evidence, Center for the Study of Teaching and Policy, University of Washington, December 1999. www.ctpweb.org (click on publications)

With Deborah Loewenberg Ball, *Teaching for High Standards: What Policymakers Need to Know and Be Able to Do*, National Commission of Teaching & America's Future and the Consortium for Policy Research in Education, 1998. www.upenn.edu/gse/cpre/

"Target Time Toward Teachers," *Journal of Staff Development*, Spring 1999. (Vol. 20, No. 2) <http://www.nsd.org> (click on library)

Other WestEd Publications

Kendyll Stansbury and Joy Zimmerman, *Designing Support for Beginning Teachers*, 2000. www.WestEd.org

Joy Zimmerman, *When the Journey Is Its Own Reward: Supporting National Board Candidates*, 2000. www.WestEd.org

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