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ABSTRACT

This issue is the second in a three-part series on quality teaching. The other two issues in the series focus on teacher recruitment and teachers' career structures and work environment. This issue examines research and expert consensus on teacher preparation, looking at: the importance of subject matter knowledge to effective teaching and teaching skills; characteristics of effective teacher preparation programs (though there is no conclusive research on effective program characteristics, it appears that solid field experience under good supervision results in teachers who stay in the profession longer and are more effective); program incentives and accountability mechanisms; and effective induction program characteristics (e.g., such programs are adequately funded, include a good evaluation process of new teachers, are based upon well-define program standards, and go beyond the first year of a teacher's career). (SM)





The Progress of Education Reform 1999-2001

Teacher Preparation and Induction

Vol. 2, No. 3, October-November 2000

What's inside

- The importance of subject knowledge
- Characteristics of good training programs
- Incentives and accountability

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New Imperatives for Teacher Preparation

The changing face of education in the United States spells the end of "business as usual" for teacher preparation

programs. The growing shortage of well-qualified teachers nationwide requires such programs to increase teacher candidates' rate of completion and entry into the profession, train candidates specifically to teach in the subjects and schools in greatest need, and help stem the troubling exodus of young teachers from the profession. Teacher preparation programs also must find ways to accommodate the growing interest in teaching among mid-career professionals. And they must respond to the growing focus on student achievement standards, and ensure that all of their graduates are qualified and able to teach to the standards.

Improving teacher preparation programs, however, is only part of the solution. New teachers are not finished products. Districts and schools that hire new teachers bear responsibility for making sure that they are provided good mentoring and a strong induction program during the first few years of their career to bolster their preparation. Induction programs also have become a key strategy to address the teacher shortage because of their promise for increasing the retention of new teachers.

> This issue of *The Progress of Education Reform: 1999-2001* is the second of a three-part series on quality teaching. The first installment of the series focused on teacher recruitment. The final installment will focus on teachers' career structures and work environment.

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The Key Questions There is much debate about the essential elements of effective

essential elements of effective teacher preparation. This debate

gives rise to a number of specific questions, including the following:

- To what extent does effective teaching involve subject-matter knowledge?
- To what extent does it involves skill and knowledge specifically related to teaching?
- What are the most effective ways to prepare new teachers?
- What kinds of incentives and accountability mechanisms are effective in ensuring the quality of teacher preparation programs?
- What are the characteristics of effective induction programs?

While there is some research to draw upon to address these questions, little of it is undisputed. To some extent, these disputes reflect philosophical and ideological points of view, but in many cases they also reflect the fact that the research results are inconclusive and open to different interpretations. Here is what can be ascertained from research and expert consensus on teacher preparation.



In her review of the research (*Teacher Quality and Student Achievement: A Review of State Policy Evidence*, available at

http://epaa.asu.edu/epaa/v8n1/), Linda Darling-Hammond points out that while the research shows subjectmatter knowledge is important, it apparently is important only up to a point. The depth of subject-matter mastery necessary to make a difference in student performance may vary depending upon the grade level taught and the students' sophistication. A 1999 study by Dan D. Goldhaber and Dominic J. Brewer (Teacher Licensing and Student Achievement, available at http://www.edexcellence.net/better/aol dhab.pdf) confirms the importance of strong subject-matter knowledge for high school math and science teachers. A more recent study by Harold Wenglinsky (How Teaching Matters: Bringing the Classroom Back Into Discussions of Teacher Quality, available at

www.ets.org/research/pic/teamat.pdf) finds that the only teacher qualification that had a significant impact on increased achievement of 8th-grade math and science students was whether the teacher had a subject major or minor.

Subject-Matter Knowledge and Teaching Skill

There is a strong consensus that good subject-matter knowledge is critical to effective teaching. A growing number of states are eliminating the undergraduate education degree and requiring teachers to have majors in an academic subject as a prerequisite for initial certification.

Although the research supports the consensus on subject-matter knowledge, several issues are unresolved:

- The importance of an academic subject major is much more obvious for secondary school teachers than primary school teachers. It is not clear how deep elementary school teachers' subject-matter knowledge needs to be, although experts on all sides insist that a subject major even on that level is important in addition to coursework in elementary education.
- Some educators believe that the kind of subject-matter knowledge teachers need which includes understanding the subject in a way that makes it teachable to others is not gained in a traditional arts and sciences curriculum. It is not clear, however, if this implies the need for special subject-matter courses in schools of education or simply the need to ensure that teachers are trained to teach effectively the subject-matter knowledge they already have. In either case, the situation argues for the kind of cooperative effort between the arts and sciences and education faculties that many experts advocate. (See, for example: Goodlad, J. (1998). Educational Renewal: Better Teachers, Better Schools. San Francisco: Jossey Bass; and American Council on Education (1999). To Touch the Future: Transforming the Way Teachers Are Taught. Washington, DC: ACE.)

There is significantly more controversy regarding the extent to which specific skill and knowledge of pedagogy are important to successful teaching. The dominant point of view – that of the National Commission on Teaching and America's Future, among others – is that teachers need rigorous training in both education theory and pedagogical skills. An opposing viewpoint, most strongly identified with the Thomas B. Fordham Foundation, holds that teaching skill is best acquired through on-the-job experience and that new teachers need only minimal pedagogical knowledge. (For a detailed summary of the differences between the National Commission and Fordham positions, see ECS' *Two Paths to Quality Teaching: Implications for Policymakers, at* http://www.ecs.org/clearinghouse/12/22/1222.htm.)

Nevertheless, there is some relevant research in this area:

- A recent study based on 8th-grade National Assessment of Educational Progress scores found a correlation between high student performance and teachers who emphasized hands-on learning, higher-order thinking skills and individualized instruction. (See *How Teaching Matters: Bringing the Classroom Back Into Discussions of Teacher Quality*, available at <u>www.ets.org/research/pic/teamat.pdf</u>.)
- Another recent comparative study of teachers certified by the National Board for Professional Teaching Standards (NBPTS) suggested that board-certified teachers, who demonstrate a high degree of pedagogical skill, are better able than nonboard-certified teachers to promote in-depth student understanding. (See NBPTS' Accomplished Teaching Validation Study, available by calling 703-465-2700. For a summary, see <u>http://www.nbpts.org/Press/exec_summary.pdf</u>.)
- Several studies indicate that, of all pedagogical training, training in subject-specific pedagogy (e.g., how to teach mathematics or reading), is the most helpful. (See Linda Darling-Hammond's *Teacher Quality and Student Achievement: A Review of State Policy Evidence*, available at <u>http://epaa.asu.edu/epaa/v8n1/</u>.)



The Characteristics of Effective Teacher controversy regarding the characteristics of an effective Preparation

There is also significant

teacher preparation program, particularly whether five- or four-year preparation programs are better, whether alternative

routes to certification provide adequate preparation and how much field experience is optimal in a teacher preparation program. What does the research show?

- There is no definitive research that justifies a sweeping conclusion that fiveyear programs are superior to four-year programs. Indeed, the differences among the various four- and five-year programs make generalizations impossible.
- It also is impossible to make sweeping conclusions about alternative routes to certification because the quality of alternative programs is so variable. Moreover, there are no conclusive studies comparing alternative and traditional programs. Internal studies commissioned by some alternative programs - which, because they are internal, are not completely reliable indicate their students compare favorably to traditionally prepared students in terms of classroom effectiveness and retention in the profession. (For a summary of research on alternative certification programs, see Debating Alternative Teacher Certification: A Trial By Achievement, at http://www.edexcellence.net/better/kwiat.pdf.)
- There is, however, a growing consensus among experts that a solid alternative preparation program with good candidate screening, supervision of beginning teachers and collateral coursework can be as effective as other programs. Moreover, alternative programs often enroll a high percentage of minority students, and many train their graduates specifically to teach in hard-to-staff schools.

In the absence of conclusive research, it does appear, however, from studies of teacher preparation programs that programs – whether four-year, five-year or alternative - which include solid field experience under good supervision produce teachers who tend to stay in the profession longer and are more effective in the classroom than teachers whose preparation lacks a strong experiential component. A 1996 survey of teachers by the National Center for Education Information (NCEI) indicated that teachers themselves found their own teaching experience and the influence of other teachers to be a far more significant factor in their development than formal teacher preparation. (NCEI [1996]. Profiles of Teachers in the U.S. Washington, DC: NCEI; www.ncei.com.)



Program Incentives and Accountability Traditional quality-control strategies directed at teacher preparation programs base hypothesis tate Mechanisms and/or external accreditation based on

compliance with certain program criteria or

standards. Such an input-based approach does not guarantee superior teachers, and there has been no definitive correlation between program inputs, such as curriculum and faculty, and teacher guality.

Recently, however, the National Council for the Accreditation of Teacher Education (NCATE) adopted new performance-based standards that evaluate teacher education programs on their success in installing strong subject-matter knowledge, understanding of state student achievement standards and pedagogical skills. A competing accrediting body, the Teacher Education Accreditation Council (TEAC), requires its client programs to undertake an internal evaluation under the assumption that the process itself will improve the program. As of yet, there are no solid data to confirm the effectiveness of either approach or determine which one is superior.

Whatever the promise of such external accreditation strategies, several states' internal accreditation procedures require teacher preparation programs to demonstrate that high percentages of their students pass teacher licensure examinations and, in a few cases, demonstrate effectiveness in the classroom once they graduate. One state, Georgia, guarantees that teachers who graduate from state institutions will be effective, or the state will provide remedial training. Again, it remains to be seen what kind of impact such outcomes-based accreditation efforts will have.

Effective Induction A number of studies have **Programs** programs are valuable in enhancing the effectiveness and increasing the retention rate of

shown that induction new teachers. Reviews of such programs indicate that successful programs

- Use experienced, well-trained teachers as mentors
- Are based upon well-defined program standards
- Are adequately funded

contain the following features:

- Include a good evaluation process of new teachers
- Go beyond the first year of a teacher's career
- Are part of a larger effort that includes reduced teaching loads, appropriate class placements, ample opportunity for observation of other teachers and targeted professional development.

A good source of information about induction: Bozeman, L.A., and Serpell, Z. (1999). Beginning Teacher Induction: A Report on Beainnina Teacher Effectiveness and Retention. Washington, DC: National Partnership for Excellence and Accountability in Teaching (NPEAT). Also see: Feiman-Nemser, S., et al. (1999). A Conceptual Review of Literature on New Teacher Induction. Washington, DC: NPEAT. Both are available at http://www.npeat.org/Professional D evelopment.htm.



Conclusion

While the available evidence and expert consensus indicate the importance of various features in a quality

teacher preparation program, little of the evidence is definitive, and the experts do not agree on all points. More research needs to be done, and existing research needs to be scrutinized through disinterested eyes. Thorough, long-term evaluations of traditional, alternative and clinical model teacher preparation programs are needed to correlate specific program components with teachers' skills, impact on student learning and retention in the profession (although the latter is a function of a number of factors, not all related to teacher preparation).

Many issues relating to teacher preparation, however, are as much political in nature as they are scientific. Policymakers must wrestle with some very real economic considerations. Preparation programs with extensive field experience, for example, carry a higher price tag than more traditional programs. Yet this greater short-term cost may be more than offset in the long term if such programs graduate more successful and longer-lasting teachers. Similarly, while alternative certification, in the best of all possible worlds, may be a compromise solution to the teacher shortage, it may be imperative in today's world of limited funding for teacher preparation, low teacher salaries and urgent need for teachers.



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