Better Teachers, Better Schools

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Editors

With a Preface by Eugene W. Hickok
Secretary of Education for Pennsylvania and
Chairman of the Education Leaders Council

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Concern over the quality of U.S. teachers has renewed interest in the ways they are prepared and licensed. Today’s most prevalent prescription for boosting teacher quality follows a regulatory approach: more clinical training, less alternative certification, more rigorous exams of pedagogical knowledge, and universal accreditation of teacher education programs. Podgursky and Ballou conclude that such policies are misguided. The knowledge base upon which the required training would be built is not scientifically grounded. Nor have the self-policing organizations of the education profession proven that they maintain rigorous criteria in assessing teacher performance. Although testing prospective teachers is popular, the choice of a cutoff score is essentially arbitrary and denies schools the opportunity to consider otherwise strong candidates. In light of these drawbacks, the authors suggest that hiring decisions should be vested in local school officials whose opportunity to assess candidates’ skills is superior to that of a remote licensing agency. The best policy is to hold schools accountable for their pupils’ performance while removing unnecessary encumbrances on their ability to recruit widely and hire the ablest persons they can find to teach their students.

Overview of Teacher Training and Licensure

In 1983, the National Commission on Excellence in Education issued a report on the state of American education entitled A Nation at Risk. This report called attention to a number of serious problems in our public schools, among them the quality of teaching.

Fifteen years later, teachers are again the focus of public attention. The continuing growth of the school-age population and the press for smaller classes, combined with the impending retirement of a substantial share of the current workforce over the coming decade, has fueled concerns about the nation’s ability to staff its classrooms without a reduction in teacher quality. The National Commission on Teaching and America’s Future, a private organization funded by the Carnegie and Rockefeller Foundations, has issued two well-publicized reports critical of teacher preparation, calling for a national crusade to reform it. The quality of education schools was also
at the forefront of debates surrounding reauthorization of the Higher Education Act. Amendments were offered to set specific performance targets for any teacher training program receiving federal support. In Massachusetts, 59 percent of candidates failed the state’s first examination of prospective teachers in 1998. This set off an acrimonious public debate about professional standards that led to the resignation of the commissioner of education and to an ongoing debate about the role of schools of education in teacher preparation.

To teach in a public elementary or secondary school, it is normally necessary to hold a state license (often, though inaccurately, termed a certificate). The purpose of the license is to assure the public that the teacher has met certain minimum standards of proficiency. Accordingly, when professional quality appears to be low, as it does today in public education, the solution seems obvious to many: raise the standards for a license. Hence the many proposals to enforce stricter licensing standards and to demand more of teachers before they are permitted to practice.

In this paper we review these proposals. The rest of this introduction comprises a brief overview of the current system of licensing and the reasons that teachers are licensed in the first place. In the second section, we take up proposals to reform teacher education. We first consider whether the training offered prospective teachers is grounded in a solid research base, as it is in professions like medicine. We then turn to specific reform proposals involving the accreditation of teacher education programs, subject matter preparation and teaching methods. We conclude that the evidence does not support many of the reforms currently underway.

In the third section, we look at an alternative approach to teacher licensure, based on testing teachers’ knowledge and skill. We review the arguments for and against subject matter testing and the growing use of authentic or performance-based assessment. While teacher testing serves some valuable purposes, we conclude that imperfections in our test instruments make it unwise to give too much weight to test results in deciding who should be permitted to teach.

In the final section, we describe the role that teacher licensing should play within a broader set of policy initiatives designed to enhance school accountability.

**The Current Licensing Regime**

Licensing requirements vary considerably from state to state, although some reciprocity exists between states. In most states, authority for licensing teachers and approving teacher training programs rests with the state board of education or state education agency. However, the National Education Association (NEA) has long proposed that such regulatory authority be vested in independent professional
boards whose membership is predominantly practitioners, such as those in medicine or law. NCTAF has made a similar recommendation. There has been considerable movement in this direction. Fifteen states now have such boards, with ten established since 1990.

Table 1 displays information on the variety of licensing regulations. Every state requires new teachers to hold a bachelor's degree. In some states, this degree must be earned in education from an approved teacher training program. In others, prospective teachers must complete education courses while majoring in an academic discipline such as English or history, or acquire a master’s degree in education afterwards. In either case, an approved program involves a minimum number of credit hours in education courses (usually about a semester of work) plus student teaching (a second semester). Many programs have added requirements of their own to the minimum set by the state, so that it can take more than a year to satisfy all professional education requirements.

All states have some mechanism for approving teacher training programs. In professions such as medicine or law, licensure requires that the practitioner graduate from a program accredited by a recognized private professional association. For example, in order to sit for medical board exams, a medical student must be enrolled in a program accredited by the Liaison Committee on Medical Education. In education, by contrast, most state-approved teacher training programs are not accredited by the profession’s dominant private accrediting group, the National Council for Accreditation of Teacher Education (NCATE). Fewer than ten states mandate NCATE

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<thead>
<tr>
<th>Licensing Requirement</th>
<th>Number of States</th>
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<tbody>
<tr>
<td>BS/BA awarded by an accredited or state-approved institution</td>
<td>50</td>
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<tr>
<td>BS/BA with education major</td>
<td>13</td>
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<tr>
<td>BS/BA in academic discipline (e.g., history, English)</td>
<td>12</td>
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<tr>
<td>Required course work in pedagogy</td>
<td>50</td>
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<tr>
<td>Field experience/Student teaching required</td>
<td>39</td>
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**Teacher Testing**

<table>
<thead>
<tr>
<th>Teacher Testing</th>
<th>Number of States</th>
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<tr>
<td>Basic Skills Prior to Teacher Training&lt;sup&gt;a&lt;/sup&gt;</td>
<td>25</td>
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<tr>
<td>Basic Skills Prior to Certification&lt;sup&gt;a&lt;/sup&gt;</td>
<td>22</td>
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<td>Pedagogy Prior to Certification&lt;sup&gt;a&lt;/sup&gt;</td>
<td>25</td>
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<tr>
<td>Subject Matter Prior to Certification&lt;sup&gt;a&lt;/sup&gt;</td>
<td>22</td>
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<sup>a</sup>Tests required of some or all applicants

accreditation, although others have entered into arrangements whereby NCATE participates in the state’s own review of its programs.

Most states also require prospective teachers to pass one or more tests before they are admitted into a teacher education program or granted a license (or both). There are four types of tests: basic skills, general knowledge, pedagogical knowledge, and content knowledge. The last focuses on subject knowledge relevant to the teacher’s field (e.g., music for music teachers).

The system of certificates and endorsements that states use is detailed and complex. Missouri, a typical state in this regard, confers certificates in 73 different subject areas and 119 vocational areas.

Not surprisingly, given this complex system, it is virtually impossible for every teacher in every classroom for every hour of the day to be in compliance with all these regulations. As a consequence, every state has provisions for emergency or temporary licensure. Critics like the NCTAF allege that districts use these emergency or provisional licenses in an opportunistic way to staff their courses, covering up lax or irresponsible management and an unwillingness to raise teacher pay. Other policies have lowered entry barriers for non-traditional teachers (e.g., Teach for America, Troops to Teachers). Even so, in 1993-94, 92 percent of teachers reported that they were fully certified in their main teaching assignment.2

Why Do We License Teachers?

Occupational licensing is a policy by which the government prevents practitioners of a trade from selling their services to the public if they do not hold a license. The usual justification for this type of restriction is that licensing protects the public from incompetent or unscrupulous practitioners. In these markets, it is argued, consumers do not have the expertise to judge the quality of the services they are buying. Transactions may be infrequent, and the costs of making a mistake may be very great. Doctors and lawyers, for example, know far more about the quality of their services than the typical buyer, and mistakes can be very costly for the consumers. In this type of situation, unregulated markets work poorly or not at all. Government intervention to establish standards of minimum quality may therefore serve the public interest.

Teacher licensing is different. Parents do not buy services from teachers as they do from doctors or lawyers. Teachers are hired by school administrators, not by the public at large. These administrators ought to be expert judges of teaching ability: after all, hiring staff is one of their most important functions. Administrators are also in a good position to acquire information about the teachers they might hire—indeed, they are generally better positioned to evaluate teachers than either the
public or a state licensing agency. Among the information administrators rely on are
college transcripts, letters of recommendation, impressions formed during interviews
and sample lessons, and even classroom observations (when applicants have done
student or substitute teaching in the district).

However, there is no assurance that administrators will use the information at their
disposal to make good hiring decisions. The public needs to be protected from cor-
rump and incompetent administrators and from the pressure school boards can put
on superintendents and principals to hire friends or relatives of board members.
Political patronage, sheer incompetence, laziness, and bureaucratic red tape have all
had adverse effects on teacher selection. By requiring districts to hire teachers who
have demonstrated at least a minimum level of competence, licensing protects the
public from administrators and school boards that would engage in such abuses.

Advocates of licensing reform have not quantified the amount of nepotism, corrup-
tion, incompetence, and the like in American school systems. We suspect that gross
abuses are not widespread. Most administrators care about the quality of the teach-
ers they hire. They do not knowingly prefer inferior candidates. However, hiring
policies are imperfect: in particular, there is systematic evidence that school adminis-
trators do not attach enough importance to the quality of an applicant’s academic
record and other indicators of cognitive ability. Thus, while it is doubtful that the
majority of administrators consciously hire inferior applicants, there is compelling
evidence that many overlook valuable predictors of teaching performance and often
fail to hire the best person available. The case for licensing reform turns on whether
hiring decisions will improve if administrators are constrained to offer employment
only to teachers who have met the proposed licensing standards.

In addition, it must be shown that licensing reform is a better way of dealing with
the problem of professional quality than the alternatives. This point is particularly
relevant to teacher licensing. Usually the state issues occupational licenses to practi-
tioners who work in the private sector, selling their services to private buyers (house-
holds, firms, non-profit organizations). In public education, by contrast, both the
teachers who are licensed and the licensed administrators who hire them are state
employees. This raises the possibility that more direct remedies for administrative
failure are available to the state, an important point to which we return in the final
section. It represents another difference between teacher licensure and licensure in
professions dominated by private practice, such as medicine and law.

Proposals to Reform Teacher Education

Licenses are awarded to professionals who present evidence of minimal competence.
Almost always, this evidence includes proof that the practitioner has completed an
approved program of study or training at an accredited institution. Policies that set
standards for the training of professionals are therefore an important part of a licen-
sure system, and as we will see, reform of teacher education is a major focus of current debate about teacher licensure.

In 1986, an organization of deans of leading schools of education, the Holmes Group, issued a report calling for significant restructuring of teacher education. In the view of these deans, traditional programs completed in the course of a four-year undergraduate degree were seriously deficient. Prospective teachers, many of whom majored in education rather than an academic discipline, did not acquire sufficient command of the subjects they were to teach. The courses they took in professional education (e.g., teaching methods) lacked rigor and often failed to incorporate approaches based on up-to-date research. The Holmes Group recommended that would-be teachers complete an academic major as undergraduates and that teacher education be a post-baccalaureate program of study (as in the medical and legal professions). These post-graduate programs would involve one or two years of classroom study, followed by a year-long internship in a professional development school (analogous to a teaching hospital) where newly trained teachers would work under the supervision of expert mentor teachers.

The recommendations of the Holmes Group have been endorsed by other organizations that have been prominent advocates for licensing reform, notably the National Commission on Teaching and America’s Future. In its 1996 report, the commission added a recommendation of its own: that all licensed teachers complete their preservice training in programs accredited by the National Council for Accreditation of Teacher Education (NCATE). Although NCATE does not require accredited programs to follow all the recommendations of the Holmes Group, NCATE approval would nonetheless become an enforcement mechanism to compel college administrators to upgrade underfinanced and poorly designed programs of teacher education.

In addition, the NCTAF has sought to close loopholes that permit unlicensed teachers to be hired on waivers (temporary and emergency certificates), a practice used to fill vacancies in districts that have trouble finding enough licensed instructors. The commission also opposes alternative certification (alternate route) programs that streamline entry by reducing preservice training. While nominally supportive of alternate programs for individuals making mid-career changes, the commission opposes any relaxation of requirements that would, in their view, put untrained teachers in the classroom. The model of alternative certification supported by the commission calls for spending a year in a master’s program before teaching. Since this is an option that has always been available to college graduates seeking to become teachers, the commission is effectively opposed to alternate routes in all but name.

While the NCTAF claims that effective programs of teacher education equip teachers with strategies and techniques that result in high levels of student achievement, it is rather vague on what these strategies and techniques are.
The Knowledge Base for Professional Education

In the vernacular of teacher educators, the research identifying best teaching practices constitutes the profession’s knowledge base. Drawing an explicit parallel between education and medicine, the Holmes Group and the National Commission have argued that licensing and accreditation standards should reflect the best research on what teachers need to know and do, just as medical research provides the underpinning for the training and licensing of physicians.

The following passage from the 1996 NCTAF report typifies this view.5

Students will not be able to achieve higher standards of learning unless teachers are prepared to teach in new ways and schools are prepared to support high-quality teaching....Teaching in ways that help diverse learners master challenging content is much more complex than teaching for rote recall or low-level basic skills. Enabling students to write and speak effectively, to solve novel problems, and to design and conduct independent research requires paying attention to learning, not just to covering the curriculum. It means engaging students in activities that help them become writers, scientists, mathematicians, and historians, in addition to learning about these topics. It means figuring out how children are learning and what they actually understand and can do in order to plan what to try next. It means understanding how children develop and knowing many different strategies for helping them learn.

Teachers who know how to do these things make a substantial difference in what children learn. Furthermore, a large body of evidence shows that the preparation teachers receive influences their ability to teach in these ways. However, many teachers do not receive the kind of preparation they need.

While the commission claims that effective programs of teacher education equip teachers with strategies and techniques that result in high levels of student achievement, this passage is rather vague on what these strategies and techniques are. Effective teachers are said to “engage students in activities” and “figure out how children learn,” but just how these things are done is not specified. Instead, numerous citations appear to a research literature that, in the commission’s view, has established a knowledge base for professional education analogous to the scientific foundation for the practice of medicine.

The first citation to the literature that accompanies this passage is to an article by three prominent educators at Vanderbilt University, which contains the following assessment of the research literature.6

Because the research reviewed examined a broad range of teacher behaviors, and because measures of effectiveness are not specifically tied, in most cases, to those behaviors, the available evidence does not allow identification of how differences in teachers’ capabilities that might be related to their preservice preparation accounted for differences in their performance. Quite clearly,
teachers learn to do some things through their education courses
that might reasonably be expected to improve student achievement.

In other words, prospective teachers learn to do something in their
education courses that we think helps them later, but we aren’t sure
just what it is. The experts cited here expressly deny that education
research has identified which state-of-the-art pedagogical practices
make teachers more effective in the classroom.

Although it is surprising to find this admission in a paper cited by the
National Commission, those who have watched the succession of
innovations coming out of the nation’s schools of education will have
surely anticipated this conclusion. Practices that are successful in one
setting turn out not to work equally well elsewhere, for reasons which
are often difficult to identify. Widely different methods sometimes suc-
cceed with similar kinds of students. The lack of a solid foundation for
many pedagogical innovations is evident in the large number that turn
out to be passing fads. It also hampers efforts to establish rigorous standards for
teaching training and licensure. Indeed, this much is admitted by those who are
closely involved in this effort, as evident in the following remarks by the president
of the newly formed Teacher Education Accreditation Council, an organization that
seeks to provide an alternative to NCATE. 7

At the moment, most professional educational standards are formulated at
fairly abstract levels so it has not been possible to really test and prove them.
Others are quite specific and prescriptive—for example, about how teacher
education should be administered and organized. These also have not been
tested empirically and their opposites might work just as well…. More to the
point, the current standards, upon close reading, give teacher educators little
guidance on key questions—like the relative roles of phonics and calculators in
reading and mathematics instruction, for example. The teaching profession
does not have, despite the pronouncement of standards, a clear conception of
educational malpractice. Until we do, the noble standards we enact are some-
what premature. They certainly await confirmation by further research…. We
simply do not have the evidence for many standards at this time. Few stan-
dardized educational practices and innovations are grounded in solid
research….

NCTAF’s claims notwithstanding, there is no knowledge base for pedagogical practice
comparable to that underlying medicine. Consider, for example, the findings of the
process-product research carried out in the 1970s and early 1980s. Psychologists and
educators involved in this effort claimed that they had at last identified what effective
teachers should do. We excerpt some of these findings from an article by one of the
leading researchers in this area. 8
Students achieve more in classes where they spend most of their time being taught or supervised by their teachers rather than working on their own or not working at all... Students learn more when their teachers’ presentations are clear rather than vague or rambling... and when they are delivered with enthusiasm... Students also learn more when the information is well structured...and when it is sufficiently redundant and well sequenced.... Achievement is maximized when teachers structure the material by beginning with overviews, advance organizers, or reviews of objectives; outline the content and signal transitions between parts; call attention to main ideas; summarize parts of the lesson as they are completed; and review the main ideas at the end.

Some of the prescriptions in this passage are obvious (e.g., presentations should be clear rather than vague or rambling). But others suggest useful practices that might not have occurred to a beginning teacher unaided. However, it would be a mistake to suppose that there exists a professional consensus on the behaviors described here. The teaching practices identified by the process-product research are at odds with the current enthusiasm for child-centered or discovery learning, in which students work cooperatively in groups, with the teacher playing a limited role as facilitator of students’ development of their own knowledge. (More on this below.) Moreover, many of the prescriptions based on the process-product literature are very general (be organized, don’t make questions too hard or too easy) and offer little guidance in concrete situations. Good teaching (as these researchers recognize) depends very much on making right choices within the broad guidelines. Often this will be a matter of applying common sense. In other situations the reasons for making one choice over another will be so subtle and context-specific (depending on the personalities of teachers and students) that effective practice will be very hard to learn anywhere but on the job.

There is reason to question whether students can learn and effectively transfer to practice all or even much of the pedagogical knowledge and skills that would be taught in extended programs. Considerable evidence exists that experienced teachers think differently about their work than do novices.... Teachers may learn some things best, such as cooperative learning strategies, once they have an experiential base upon which to build.9

One of the curious aspects of insisting that new teachers be trained in state-of-the-art methods is that the state of the art changes every few years. Teachers who were trained to do one thing must therefore learn to do another when the winds of education thinking change direction. Indeed, it is a commonplace among education reformers that public officials rarely provide sufficient funds to retrain teachers in new methods and new curricula, and that many reforms consequently fail to alter classroom practices. If this is truly the problem (and not that the reforms themselves

One of the curious aspects of insisting that new teachers be trained in state-of-the-art methods is that the state of the art changes every few years.
are ill-conceived), then policy ought not be so greatly concerned with making sure teachers have been trained in the latest techniques, but rather with guaranteeing that prospective teachers are flexible, open-minded, and able to learn. The focus should be on recruiting reasonably intelligent people into the profession, not on pedagogical training.

We have mentioned the possibility that reforms are ill-conceived. The weakness of the knowledge base for teacher education has allowed many bad ideas to flourish. As noted by the president of the Teacher Education Accreditation Council:

> Few standardized educational practices and innovations are grounded in solid research and yet so many of them have had the support of the profession. If only because some have proven demonstrably harmful to students and their teachers, we should be cautious about standards that are based on little more than the consensus of large segments of the profession.¹⁰

Poor ideas secure a following in part because the scientific foundation for pedagogical prescriptions is weak. However, ideology also plays a large role in shaping the views of educators, as shown by the influence of the constructivist theory of learning on the teaching practices endorsed by leading schools of education. In the teaching methods inspired by this theory, teachers do not function as authoritative sources of knowledge, imparting facts and ideas directly to students. Rather, they are supposed to act as facilitators of students’ discovery and production of their own knowledge. Unfortunately, this attempt to make education child-centered often means that students are deprived of the general knowledge required to make sense of the natural and social worlds. As a result, they are in no position to produce their own theories or test their own hypotheses. They show less interest in school work, particularly as they grow older, and they learn less.¹¹

The influence of the constructivist paradigm is evident in extreme versions of whole language reading instruction, wherein children are denied systematic instruction in phonics. Proponents of this method hold that, if the language environment is sufficiently rich, children will discover on their own how to decode words, or decoding itself will be supplanted by whole word recognition. As it has turned out, this is one of the areas in which education research has produced definitive guidance on pedagogical practice: children need to be given instruction in phonics. Summarizing these findings, the National Research Council has determined that reading instruction must include systematic teaching of phonics. Yet the resistance of many advocates of the whole language approach to these findings indicates that controversies of this kind will surely be repeated as teacher educators espouse pedagogical practices for ideological reasons rather than because the evidence indicates they best promote student learning. Indeed, since the measurement of student achievement is itself an ideologically charged issue, it is difficult to confront educators with factual data on learning outcomes that will persuade them to change their minds.¹²
Constructivist-inspired pedagogical approaches are not restricted to English, but have also influenced teaching practices in the hard sciences and mathematics. Guidelines issued by the National Council for Teachers of Mathematics also reflect the predilection for student-centered learning popular in schools of education. Their application in the classroom has too often resembled whole language reading instruction, in which the teacher stands by while the student tries to guess what the word is. Worse, students can easily become confused about the very nature of mathematics, as the authors of a recent study of state mathematics standards explain.\textsuperscript{13}

Constructivism, a theoretical stance common today, has led many states to advise exercises in having children discover mathematical facts, or algorithms, or strategies. Such a mode of teaching has its values, in causing students better to internalize what they have thereby learned; but wholesale application of this point of view can lead to such absurdities as classroom exercises in discovering what are really conventions and definitions, things that cannot be discovered by reason and discussion, but are arbitrary and must merely be learned.

Students are also sometimes urged to discover truths that took humanity many centuries to elucidate, the Pythagorean theorem, for example. Such discoveries are impossible in school, of course. Teachers so instructed will necessarily waste time, and end by conveying a mistaken impression of the standing of the information they must surreptitiously feed their students if the lesson is to come to closure.

Another example of pedagogical innovation driven by ideology is the use that teacher educators have made of the theory of multiple intelligences developed by Howard Gardner of the Harvard Graduate School of Education.\textsuperscript{14} This theory posits the existence of several types of human intelligence, each operating in its own distinctive domain: linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal, and intrapersonal. This theory has been seized upon by educators eager for a more egalitarian alternative to the view that there is one general intelligence. The existence of multiple intelligences provides obvious support for teachers who believe that building student self-esteem is the key to further achievement. No student need feel smart or dumb compared to others: rather, all are intelligent in their own distinctive way. Numerous pedagogical approaches have been inspired by this theory, and many hundreds of references to Gardner’s work have appeared in the education literature.

The research support for Gardner’s theory is not, however, very convincing.\textsuperscript{15} Yet even if this were not the case, it is unclear what pedagogical prescriptions should be based on this view of intelligence. Some educators have argued that the school curriculum needs to be more balanced, including activities that engage each intelligence. But,
as an astute critic of this theory has written, the notion that there are eight intelli-
gences does not imply that school should be the institution responsible for develop-
ing all of them.\textsuperscript{16} The curriculum should be based on an assessment of what students
need to learn and be able to do. The desire to accommodate multiple intelligences
can easily lead to situations in which important skills are de-emphasized in the name
of balance.

To summarize, prospective teachers are introduced to some good ideas in their
education classes. They are also exposed to bad ones. The profession has not
demonstrated that it can reliably weed out the bad ideas over time, converging on a
set of practices that represents the best of what is known about how to teach. Thus,
while it is plausible that better preservice training will improve teachers’ subsequent
performance, it cannot be taken for granted that teacher educators know how to
make good use of an extra year of teacher preparation—if that should be required—
or that they can be trusted to police themselves by accrediting programs of teacher
education. This is all the clearer when we look at the activities of the National
Council on Accreditation of Teacher Education (NCATE).

**Accreditation of Teacher Education**

NCATE bases accreditation decisions on evidence that teacher education programs
have met standards concerning program content, student quality, faculty quality,
and program autonomy.\textsuperscript{17} In each of these areas, the Council’s efforts fall far short
of ensuring that accredited programs are in fact of high quality. We focus on the
first two.

Although NCATE requires that programs recruit candidates who demonstrate poten-
tial for professional success, it does not require any particular admissions test or
specify a passing score. Criteria for successfully completing training are just as vague.
NCATE standards require that institutions ensure the competency of their graduates
before recommending them for licensure, but competency is left undefined. Instead,
NCATE indicates that a program can meet this standard by assessing graduates
through the use of multiple sources of data such as a culminating experience, portfo-
lios, interviews, videotaped and observed performance in schools, standardized tests,
and course grades.\textsuperscript{18} This is a requirement that program administrators use various
methods of assessment, not that graduates be held to any particular standard of
achievement.

The results of teacher licensing examinations indicate that student quality makes little
difference to accreditation decisions. Figure 1 displays pass rates on the National
Teacher Examination (NTE) for graduates of teacher training institutions in Missouri.\textsuperscript{19}
Each bar represents an institution. An N above the bar denotes an NCATE-accredit-
ed program. As the figure shows, NCATE schools are to be found at the top, mid-

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Figure 2 displays results for teacher licensing examinations recently administered in Massachusetts. (To improve comparability of results, we use scores on the Communications and Literacy Skills test taken by all students in each program.) As in Missouri, NCATE-accredited programs are not concentrated at the upper end of the distribution. Performance at four of the seven accredited institutions was distinctly mediocre.

Further evidence on NCATE standards comes from Pennsylvania, where there are large numbers of both accredited and non-accredited programs. Although the state would not identify the college attended by a given test-taker, it did indicate whether the institution was accredited by NCATE or not. On this basis we have plotted the (smoothed) distribution of test scores for all teachers seeking elementary certification between 1994 and 1997 in Figure 3. There is no substantial difference between the two distributions. Figure 4 presents analogous distributions for Missouri. In this case, scores from NCATE-accredited programs are distinctly inferior. Compared to the non-NCATE distribution, there are fewer NCATE test-takers in the center of the distribution and more in the left-hand tail, creating an NCATE bulge among the lowest scores.

NCATE standards for the content of professional education are also vague. Here is the council’s first standard in this area.20

![Figure 1. Pass Rates on NTE Exams in Missouri by Institution](image)

coherent, consistent with the unit and/or institutional mission, and continuously evaluated.

Several indicators follow that are meant to provide suggestions on how the program can meet this standard. These indicators are scarcely more precise, though some contain phrases that are code words within education circles, signaling the kind of program NCATE is apt to find acceptable. Typical of the indicators are these two:²¹

The framework(s) reflects multicultural and global perspectives which permeate all programs.

The framework(s) and knowledge bases that support each professional education program rest on established and contemporary research, the wisdom of practice, and emerging education policies and practices.

NCATE’s standard on professional and pedagogical studies for initial teacher preparation is even more nebulous.²²

The unit ensures that teacher candidates acquire and learn to apply the professional and pedagogical knowledge and skills to become competent to work with all students.

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**Figure 2. Pass Rates by Teacher Training Institution: Massachusetts**

*Source: Massachusetts State Department of Education. Pass rates for Communications and Literacy Skills Test. All programs with at least 15 test takers. “N” denotes NCATE accreditation.*
This is followed by indicators that this standard can be met if candidates complete studies that deal with different student approaches to learning, individual and group motivation, instructional strategies for developing critical thinking, verbal, nonverbal, and media communications for fostering active inquiry, and so forth. At no point in these standards and indicators does the council endorse particular strategies for developing critical thinking that it believes superior to others. Teachers are to learn how to motivate students, but the council expresses no views on which motivational techniques are best.

This inspires little confidence that institutions accredited by NCATE offer superior training. Still, it is possible to test this hypothesis. If the claim is correct, then once we control for the general academic achievement or ability of students entering a teacher-training program (inputs), performance on licensing exams (output) should be higher in NCATE than in non-NCATE institutions. We have conducted such an analysis using our sample of Missouri teachers. The results fail to support the claim that graduates of NCATE-accredited institutions learn more between the start of teacher

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**Figure 3. Distribution of NTE Elementary Education Test Scores: Pennsylvania**

training and their graduation. Indeed, the estimated effect of attending an accredited institution is negative, although statistically insignificant.

Scores on licensing examinations represent only one indicator of program quality. NCATE’s defenders have argued that graduates of accredited programs excel in other ways. Because they are better prepared for the challenges of the classroom, they are less likely to quit during the early years of their careers, when attrition is notoriously high. It is also alleged that teachers trained in accredited programs exhibit more professionalism in their relations with students and colleagues.

Data from two surveys conducted by the U.S. Department of Education permit us to test these claims. By most measures, there is little difference between graduates of accredited and non-accredited programs.²⁴ Virtually identical percentages sought teaching jobs after graduating (Table 2). Of those who obtained a job, a substantial majority (80 percent in both groups) expressed no regret at having chosen teaching as a career, saying they would make the same choice again. More than half of both groups intended to spend their entire careers as teachers. Fewer than a fourth (and

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**Figure 4. Distribution of ETS Elementary Education Test Scores: Missouri**

more NCATE than non-NCATE graduates) indicated that they sometimes felt it was a waste of time to do their best in the classroom. NCATE teachers spent somewhat more time during the week preceding the survey on instruction-related activities outside school (preparing lessons, grading papers, etc.). However, the difference between the two groups was not significant at conventional levels. A slightly larger proportion of NCATE teachers moonlighted during the school year, but again, the difference was not statistically significant.

In short, there is little evidence that teachers trained in NCATE-accredited schools conduct themselves more professionally, are more likely to continue teaching, or experience more satisfaction with their career choice. Perhaps more revealing, there is no evidence that those hiring new teachers think so either. The percentage of non-NCATE applicants who found a teaching job was as high as among NCATE applicants. The jobs they obtained paid as well.

**Subject Matter Preparation**

Both the Holmes Group and the NCTAF have recommended that teachers complete more college course work in the subjects they will teach, urging that teachers earn a major, or at least a minor, in their fields. Well-intentioned as this proposal is, the amount of subject matter preparation it would require is often excessive. For example, guidelines for NCATE accreditation prepared by the National Council of Teachers of Mathematics (NCTM) recommend that teachers of mathematics in grades 5 to 8 should understand fundamental concepts of calculus. This is a demanding requirement for someone who will be teaching arithmetic. The council's pur-

<table>
<thead>
<tr>
<th>Indicator</th>
<th>NCATE</th>
<th>Non-NCATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied for a teaching job (%)</td>
<td>92.0</td>
<td>90.0</td>
</tr>
<tr>
<td>Certainly or probably would become a teacher, if given the chance to start over again (%)</td>
<td>80.2</td>
<td>79.7</td>
</tr>
<tr>
<td>Plan to spend full career as teacher (%)</td>
<td>58.6</td>
<td>58.4</td>
</tr>
<tr>
<td>Sometimes feel it is a waste of time to do a good job (%)</td>
<td>24.4</td>
<td>18.9</td>
</tr>
<tr>
<td>Time spent after school on lesson preparation, grading, parent conferences (hrs. in the most recent week)</td>
<td>10.4</td>
<td>9.7</td>
</tr>
<tr>
<td>Moonlight in a non-teaching job during the school year (%)</td>
<td>13.2</td>
<td>12.0</td>
</tr>
<tr>
<td>Received an offer, conditional on having applied (%)</td>
<td>82.0</td>
<td>84.0</td>
</tr>
<tr>
<td>Mean teaching salary</td>
<td>$19,843</td>
<td>$20,076</td>
</tr>
</tbody>
</table>

1 Source: Baccalaureate and Beyond Longitudinal Study, First Follow-Up, 1993-94. Sample restricted to certified teachers.

2 Source: Schools and Staffing Survey, 1993-94. Sample restricted to persons who earned their bachelor's degrees in 1990 or later and who started teaching no earlier than 1992.
pose is understandable: to ensure that all teachers of mathematics, at whatever level, grasp basic mathematical concepts and share an aptitude for quantitative reasoning. By requiring advanced training in the subject, the council hopes to screen out the incompetent from teaching even low level math courses, where they can do considerable damage. Yet people who haven’t studied calculus can still be effective teachers of mathematics at lower levels. A better screening device would recognize this. Instead, the NCTM erects a high barrier that will exacerbate the shortage of qualified math teachers.

Ironically, this policy fails on its own terms: to ensure that teachers of mathematics (or any other subject) will have mastered the material they will be teaching. Standards in many American colleges are so low that requiring teachers to major or minor in their subjects is no guarantee that they will actually understand them. This is evident in the number of prospective teachers who cannot pass relatively low level examinations in the subjects they have studied.26

Sadly, standards in higher education may fall still further if the reform of teacher licensing requires a history teacher, for example, to major in history rather than social studies education. Well-intentioned though this regulation is, it cannot ensure that prospective teachers bound by it will be as well-trained and enthusiastic about their subject as teachers who majored in history before it became a requirement. An influx of relatively weak students into courses they would not have chosen for themselves will put pressure on academic standards and may dilute the education once offered history majors.

All this said, requiring secondary school teachers to earn a major or a minor in their subjects might still make sense, if there were not a clearly superior policy that could be adopted instead: requiring teachers to pass a test of subject knowledge. We return to this issue in the next section.

Training in Teaching Methods

At present, most prospective teachers complete their courses in professional education and their student teaching within the conventional four-year undergraduate degree. The Holmes Group and other proponents of reform would instead require would-be teachers to spend two to three years in post-graduate professional study and internships. As previous discussion has shown, teacher educators are by no means agreed that an extended program of this kind will significantly improve classroom practice. Additional objections have been raised by educators from liberal arts colleges, who argue that combining the study of education with the liberal arts in a traditional four-year undergraduate program offers important opportunities for intellectual synthesis and personal development.27
In the face of such doubts, the evidence offered to support the proposed reform is not strong. In its 1996 report the National Commission cites a study purporting to show that graduates of five-year programs are better prepared than teachers who completed teacher education within the traditional four-year degree. The investigators followed 1,400 teachers from a consortium of eleven teacher preparation programs, seven of which had five-year programs. They found that more graduates of the five-year programs became teachers (90 percent to 80 percent) and that they remained in teaching longer. Yet differences of this kind are to be expected even if the extra year of training per se had no effect. Individuals who enroll in a five-year degree program are likely to have a stronger initial commitment to teaching for the simple reason that they will have lost an extra year if teaching turns out to be the wrong career decision. Moreover, this investment of an extra year may make them more willing to persevere even if their initial experience in the classroom is unsatisfactory. In short, while the National Commission claims that the greater success of five-year graduates demonstrates the superiority of the training they received, there is every reason to think that these groups differed before they enrolled in teacher education.

What of these teachers’ performance in the classroom, a matter of presumably greater concern? The only indicator of effectiveness available to researchers was a survey completed by supervising principals. There was no statistically significant difference between the two groups in the ratings teachers received.

Many states have adopted alternative certification programs that streamline entry into the profession by reducing preservice training. In most states, private schools (and, in some, charter schools) are permitted to hire unlicensed teachers who may never have taken an education course. This makes alternative certification a valuable test case: if education courses are critically important for new teachers, teachers who come through alternative route programs but otherwise lack prior training should be demonstrably inferior to those who have graduated from teacher education programs.

Although the best way to answer this question would be to compare conventionally trained teachers to alternative teachers on the basis of student achievement, this has seldom been done. The small set of studies that exist do not afford a strong basis for generalization. We therefore turn to other, less direct indicators.

The first of these is the fact that so many teachers without standard licenses are hired. In the states that have most actively promoted alternative certification, more than ten percent of new teachers have entered through alternate routes. (In New Jersey, which has done the most, the share has ranged from 23 to 40 percent.) This kind of evidence may seem to beg the question, of course: such patterns of hiring...
might merely exemplify the poor decision-making that creates the need for licensing in the first place. However, this is not credible, given the large number of districts, ranging from affluent suburbs to poor inner cities, that have sought alternate route teachers. The New Jersey case is especially revealing. The percentage of districts with high socioeconomic rankings that hire alternate route teachers has regularly exceeded the percentage among low-ranking districts.\(^{30}\) The former serve communities where parents are well-educated and closely monitor school performance. Such systems also have their pick of applicants who have obtained licenses by the traditional route. It is not likely that so many would mistakenly prefer alternate route teachers.

This argument applies still more forcefully to private schools, which operate in a competitive marketplace with a clear incentive to hire the best teachers available. As shown in Table 3, private schools employ many unlicensed instructors. Although most Catholic school teachers are certified, barely half of the teachers in other private schools are. The proportion of unlicensed teachers is particularly high among secular schools, which cannot rely on a clientele attracted by religious instruction but must compete primarily on the basis of educational quality. By hiring unlicensed teachers, these schools have increased the proportion of faculty who graduated from selective colleges and universities, as shown in Table 4.

It may be wondered whether private schools hire so many unlicensed teachers because their salaries (about 60 percent of those in the public sector) are too low to attract enough licensed applicants. This is not the case. In fact, the highest share of unlicensed faculty is found in the secular schools, which generally pay more than private schools with a religious affiliation.

All this might show only that unlicensed and alternate route teachers do well in schools serving an affluent clientele. Whether an untrained teacher should be put in

| Table 3. Teachers Certified in Primary Teaching Field as a Percent of All Teachers\(^a\) |
|---|---|---|---|
| Public School Teachers | Private School Teachers | Catholic | Other Religious | Non-Religious |
| All Teachers | 95.9 | 73.6 | 50.2 | 55.9 |
| Elementary | 96.7 | 77.1 | 51.9 | 49.2 |
| Secondary | 94.8 | 67.7 | 46.4 | 35.1 |
| Combined | 96.0 | 72.2 | 49.6 | 62.8 |

\(^a\) Source: Ballou and Podgursky, 1997. Catholic school teachers who have never been married are excluded from these calculations, in order to avoid counting members of religious orders.
a classroom where the disciplinary and pedagogical challenges are greater is another matter. However, many of the staunchest supporters of alternative certification are found in urban school systems. Administrators and educators familiar with the needs of these students are adamant in insisting that the great majority of the graduates of teacher education programs are ill-prepared to work in these systems and that alternative routes are a vital source of supply.

Teach for America is an alternate route program that places liberal arts graduates without education course work in public school systems facing a shortage of conventionally prepared applicants. Each year 450-500 Teach for America corps members enter public school classrooms, most in poor rural communities or inner cities. The response of administrators in these schools has been extremely positive. Three-quarters of the principals responding to a 1997 survey rated TFA instructors superior to other beginning teachers. Almost two-thirds rated them above average in comparison to all faculty, including veteran teachers. Almost nine out of ten indicated they would hire a TFA instructor again. Responses on parent and student surveys were also very positive.

Several other studies have compared alternate route instructors to conventionally licensed teachers on the basis of assessments by supervisors or classroom observers. None of these studies is definitive: some do not carefully control for other factors that could influence ratings, and sample sizes are often small. The preponderance of the evidence shows, however, that supervisors and other observers judge alternate route teachers to be at least as effective as conventionally trained instructors. Other investigators have compared scores on teacher examinations. Most studies show no difference between alternate route and conventionally trained instructors; where there is a difference, it tends to favor teachers who entered through the alternative programs.

Texas is another state that has made extensive use of alternative certification. In 1996-97, 14 percent of the newly certified teachers in the state came through alter-
nate routes. Average scores on the state’s licensing examination were higher among the alternate route candidates, and a greater percentage passed on the first try. Alternate certification was a particularly important source of minority teachers. Thirteen percent of the alternate route teachers were black and 28 percent Hispanic. (The corresponding figures for traditionally trained teachers were 6 and 21 percent, respectively.)

Opponents have disparaged the professionalism of teachers who enter by alternate routes. Again, however, the data fail to support these claims. Attrition among alternate route teachers has generally been no greater than among other new teachers in the same systems. Attitudes toward teaching expressed by alternate route teachers compare favorably with those held by conventionally trained instructors. In a 1992 survey of persons who had inquired at the U.S. Department of Education (and selected other sites) about alternative certification, nearly seven out of ten indicated that value or significance of education to society was one of the three main reasons they wanted to teach. By contrast, only 32 percent of public school teachers who participated in a comparable 1990 survey cited this as a reason for entering teaching, and only 38 percent indicated it was an important factor in their decision to remain a teacher. Conventionally prepared teachers were substantially more likely to respond that job security and long summer vacations had influenced their choice of career.

To summarize, the evidence on alternative certification and employment practices in the private sector fails to support the notion that preservice professional education is an indispensable prerequisite for successful teaching. It may help; indeed, nearly half the respondents to the aforementioned survey indicated that education courses were fairly useful in training people how to teach or instruct students. Another 18 percent found them very useful. However, nearly three-quarters believed that the ability to teach had more to do with natural talent than with college training. The percentage was higher still among those who were actually teaching (80 percent).

**Costs of Regulation**

As the foregoing discussion shows, reforming teacher education in line with the recommendations of the Holmes Group and the NCTAF is unlikely to improve teacher preparation significantly. Still, as there is some evidence that teachers find education courses useful, why not proceed with reform in the hope that something good will come of it? What harm can it do to try?

The answer is twofold. First, licensing and accreditation erect barriers to entry that discourage talented individuals from becoming teachers. These barriers deter teachers now, under the current licensing regime. The deterrent will be greater still if it becomes more costly and time-consuming to acquire a license. Second, reforms that empower organizations of professional educators to determine accreditation and licensing standards can stifle innovation and increase the likelihood—already great—that teacher education will be shaped by ideology rather than solid research.
NCATE presently denies accreditation to 18 percent of programs on a first application. Although many of these programs are later approved on appeal or a subsequent review, it is reasonable to suppose that if graduation from an accredited program is made a condition of licensure, some of these programs will be forced to close. Students who would have enrolled in these institutions will have to go elsewhere if they wish to teach. Some no doubt will. But the capacity of other programs to absorb them may be constrained, particularly if accredited programs are expected to meet other expensive standards established by NCATE regarding the ratio of students to faculty, the presence of full-time tenured faculty engaged in research, and program autonomy (which requires hiring more administrators, staff, etc.). In addition, some of those who now study education will not seek new schools, in part because their latent interest in teaching is never awakened. A teacher education program serves more functions than the delivery of training. It is a source of information for students who want to know more about teaching careers. It provides counseling and advising. Activities of education faculty and students may arouse the curiosity of other students who had not initially considered careers in teaching: a certain amount of word-of-mouth recruitment that occurs on a campus with a teacher education program will not take place if that program shuts down.

Even if the programs denied accreditation are uniformly weak, closing them can cost the profession some talented teachers. Student populations are heterogeneous: the dispersion of licensing examination scores within most teacher education programs in Missouri is nearly as great as the dispersion over the entire state. In the college with the highest failure rate, the dispersion in scores actually exceeds that for the state as a whole. Thus, even in this program an appreciable number of students did well on the exam. There are capable prospective teachers in the poorest programs.

Obviously, the harm is greater when good programs are forced to close. The principal culprit here is cost. Complaints about the cost of preparing documentation for NCATE are common. However, it is probably the expense of modifying or restructuring a program to make it acceptable to NCATE that is more threatening to small liberal arts colleges. In such institutions, education methods courses are often taught by adjunct faculty with no responsibilities for research. There may be no department of education, only a non-degree program staffed by faculty from other departments (e.g., psychology). Such institutions have difficulty meeting NCATE standards concerning the qualifications and responsibilities of professional education faculty and the autonomy of the program.

In the past, faced with the opposition of liberal arts colleges and other small institutions, NCATE has backed off proposals to require minimum faculty-student ratios or expenditures per student. This may change if accreditation becomes mandatory,
but even if it does not, the views of organizations like the National Commission and the Holmes Group could influence NCATE’s examining teams. Programs that are not prepared to spend heavily on teacher education might therefore be in jeopardy.

This is more likely given the special interest groups represented in NCATE. The two major teacher unions are particularly influential. They provide financial support and through their positions in the governance structure help to shape the council’s policy. The unions have a clear interest in restricting entry to the profession, creating shortages of licensed personnel that can be used to pressure states and local school boards to raise salaries. Recent history shows that the unions will use their influence to reduce the number of accredited programs. In the mid-1970s, the NEA obtained more power within NCATE’s governing bodies and greater representation of teachers on examining teams. The proportion of programs denied accreditation subsequently doubled, from one in ten before 1973 to one in five throughout the rest of the decade.

NCATE revised its standards for accreditation in 1987 and again in 1995. The council has announced that still another revision is underway (“NCATE 2000”). Under the new system, organizations representing subject disciplines will have a greater role in accreditation decisions. These organizations include the National Council of Teachers of English (NCTE), a constituent member of NCATE that has been a vigorous proponent of child-centered instruction, including whole language instruction for reading in the primary grades. The NCTE’s recommendations for language instruction represent the virtual antithesis of current efforts to set clear, attainable standards for student achievement and to hold students and their teachers accountable for meeting these goals. For example, at its 1993 annual meeting, the NCTE approved a resolution calling on English teachers to refrain from grading student writing. The rationale offered by one of the sponsors shows both the influence of the child-centered philosophy and the categorical thinking of the true believer.

Grading serves no educational purpose. Students have to learn to take responsibility for deciding what they want to do with their own writing, and the whole relationship is undermined if in the end you say, ‘B.’

As part of the Goals 2000 education initiative, the federal government solicited national standards for English-language arts curricula from the NCTE and the International Reading Association (another NCATE member organization). Public reaction to the resulting guidelines, issued in 1996, was one of dismay mixed with scorn. As a New York Times editorial put it:

Given their professional credentials, these two groups could have produced a clear, candid case for greater competence in standard English, with its ample vocabulary and its simple yet supple grammar. Instead, the guideline writers...
quickly vanished into a fog of euphemism and evasion. Nowhere in their list of 12 basic rules will you find the prescriptive verbs “should” or “ought.” Simple declarative sentences are equally hard to find. The rules ooze with pedagogical molasses, as in No. 5: “Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.” What, pray tell, are “writing process elements”?44

Another NCATE constituent organization is the National Council for Teachers of Mathematics, which, as we have seen, has issued controversial standards for the teaching of mathematics. California, which adopted a curriculum based on the NCTM standards in the 1980s, subsequently replaced it with a more traditional program. The state’s action was due in large part to the dismal performance of students on the state’s mathematics assessment. Requiring that teacher preparation programs be accredited by NCATE could put organizations like the NCTE and the NCTM in a position to insist that English and mathematics teachers be trained in methods of dubious educational value. The result may be to stifle innovation by denying educators the opportunity to try alternative ideas. Instead, the prevailing orthodoxy within organizations like the NCTE and the NCTM would acquire the force of law, reducing the pressure on these bodies to support their prescriptions with solid research.

The reforms advocated by the Holmes Group and the NCTAF raise entry barriers to the profession by making it more time-consuming and expensive to acquire a license. It has been estimated that even a modest increase in preservice training—requiring a fifth year of study—would double the cost of becoming a teacher.45 These reforms will deter many individuals from pursuing teaching careers.

Consider first the impact on alternative certification programs. There is no question that prolonged preservice training would deter many if not most of the individuals who now enter through alternate routes. In the aforementioned survey on alternative certification, prospective teachers working outside education cited traditional licensing requirements more often than any other reason for not seeking a teaching position. When asked why they had not applied to a traditional teacher education program, time and expense were the most common answers.46

Career-changers are not the only prospective teachers who will be affected. Prolonging teacher education will deter undergraduates who are wavering between teaching and other options, since any increase in the requirements for a teaching license leaves less time for courses that will be helpful if they end up pursuing other careers. This reform will therefore tend to screen out (by their own choice) prospective teachers with the interest and ability to enter other professions. The effect is precisely the opposite of other reforms intended to improve teacher recruitment, notably increases in teachers’ salaries. It is the purpose of a pay increase to induce capable persons wavering between two careers to choose teaching. By contrast,
raising licensing requirements has the perverse effect of discouraging individuals with attractive alternatives to teaching.

Teach for America shows that many young people are drawn by the prospect of teaching without first spending a year or two taking professional education courses. Only 22 percent of the corps members who arrived for summer training in 1997 indicated that they would have pursued a teaching career through the traditional route, had they not joined Teach for America. Moreover, many Teach for America corps members remain in teaching after their two-year enlistment period ends. Of the 784 former corps members who responded to a 1998 alumni survey, 53 percent were employed in education, the great majority as classroom teachers. This shows the importance of giving talented persons an opportunity to find out whether teaching is the right career for them without putting high barriers to entry in their way. Prolonged preservice training discourages individuals who want to try teaching before making a lifelong commitment to it, even though high rates of attrition from the profession make this an eminently rational strategy.

Finally, there are some individuals who, intending from the first to teach only for a few years, are clearly discouraged by the requirement that they earn a credential that has no value outside the teaching profession. Yet writing off their contribution because they will not spend their entire careers as teachers would be a mistake, as researchers at the Harvard Graduate School of Education have noted.

In a society with abundant opportunities for talented college graduates and a tradition of labor market mobility, it will never be possible to persuade two million of them to teach their whole lives. Public rhetoric that implies personal failure when a teacher leaves the classroom after successfully teaching for a number of years may deter many of them from ever setting foot in a classroom.

According to a consortium of teacher educators from sixteen of the most prestigious colleges and universities in the northeast, terminating undergraduate programs in education and replacing them with post-baccalaureate programs would significantly reduce the number of students entering teaching from selective liberal arts colleges. The consortium therefore opposed the recommendations of the Holmes Group, supporting instead certification options for students desiring to teach directly upon graduation.

Organizations that would play a leading role in accreditation have endorsed educational methods of dubious value.

Implications for Policy

The preservice training required of teachers represents a barrier to entry that deters many from pursuing a career in education. This is true under the current system; the problem will certainly grow worse if regulatory reform raises the bar. Thus,
any improvement among teachers who complete the new requirements must be weighed against the lost talents of those who would have become teachers under the current system but are deterred from pursuing teaching careers when additional hurdles are put in their way. Too much is unknown about the impact of reform to quantify these things with precision. But the evidence strongly suggests that the costs may be substantial compared to the benefits.

First, there is little indication that the reforms under consideration would significantly improve teacher training. Graduates of NCATE-accredited programs appear to be no better than teachers who have graduated from other programs. There are doubts about students’ capacity to benefit from longer preservice programs, given the importance of learning on the job. Organizations that would play a leading role in accreditation have endorsed educational methods of dubious value, raising further questions about the benefits of reform. In addition, teaching ability appears to be much more a function of innate talents than the quality of education courses. Teachers themselves tell us that this is so. We come to similar conclusions when we examine the determinants of scores on teacher-licensing examinations. Finally, teachers who enter through alternative certification programs seem to be at least as effective as those who completed traditional training, suggesting that training does not contribute very much to teaching performance, at least by comparison with other factors.

In these circumstances, the primary focus of policy should be the recruitment of capable persons into teaching. It is more important how teachers are selected than how they are trained. Schools of education have not demonstrated that they are able to turn mediocre students into effective teachers. If they could, our conclusion might be different. As matters are, efforts to improve teacher training should not interfere with the more critical task of raising the quality of the pool of prospective teachers.

This is precisely where the reforms under consideration fail. They offer little protection to the public from incompetent or corrupt local school administration. For example, even if it were true that programs accredited by NCATE were superior to non-accredited programs, many graduates of the former have weak preparation in their subjects and receive low (albeit passing) scores on licensing tests. Requiring NCATE accreditation would do nothing to prevent an undiscerning school district from hiring the weakest graduates of the weakest programs that meet NCATE’s undemanding standards.

On the other hand, districts that seek out better teachers will find the pool of promising applicants reduced, not merely in size but in quality, as new barriers to professional entry discourage persons of above-average ability from pursuing careers in education. As a result, the limited benefits realized by these reforms come at too great a price. Public schools are deprived of the chance to hire capable individuals who are deterred by the high costs of obtaining a license, solely to ensure that the teachers they do hire have completed an “improved” program of professional education of comparatively modest value. This is not an appealing trade-off, particularly if
there exist other policies that can achieve reformers’ legitimate goals at lower cost.

**Testing Teachers**

Organizations that advocate the reform of teacher education, such as the National Commission on Teaching and America’s Future, also endorse the use of examinations and other assessments to determine when teachers are ready to enter the classroom. Their support for a hybrid system should not obscure the fact that the two approaches to licensure are conceptually and practically distinct. Licensing on the basis of test results represents an important alternative to transcript-based licensing. In a test-based system, course work would become subsidiary to the examinations. Smarter students and born teachers could get through faster. By eliminating superfluous requirements—if in fact that also happens—licensing based on demonstrated competence could significantly lower the entry barriers that deter capable persons from becoming teachers.

Testing teachers’ knowledge of their subjects is not a new idea: twenty-two states already assess subject knowledge, mostly through standardized, multiple-choice tests. Some of these tests are not rigorous and the scores required to pass are low. However, these are not objections to testing per se. With decades of experience developing similar tests for student achievement, test-makers have acquired the expertise to construct examinations that provide an accurate, comprehensive appraisal of teachers’ subject knowledge. Sophisticated methods are available to screen items for cultural bias. Compared to the alternative—counting course credits—standardized tests afford a much more uniform, consistent basis for determining whether prospective teachers know their subjects.

In addition, testing provides a flexible, relatively inexpensive way for teachers to demonstrate knowledge of subjects in which they do not hold a college major or minor. As a result of the proliferation of interdisciplinary studies and the overlap between traditional fields, many college students receive substantial training in subjects in which they neither major nor minor. Area studies and foreign language majors study a great deal of history. Economics majors learn a lot of applied mathematics. Students of international relations receive a background in history, geography, and comparative political systems. Communications studies majors, depending on their area of concentration, may have learned a great deal about journalism, psychology, sociology, and current events. This blurring of boundaries between traditional fields poses considerable practical problems for transcript-based licensing. By contrast, the maker of a subject examination can be indifferent to what graduates have studied, focusing instead on what they are expected to teach. Although the tests in use have not reached this level of specificity, in principle there could be a test for each school subject. Thus, a teacher who sought to teach beginning algebra could demonstrate
the required competency in the subject by passing a suitably designed algebra test. An English teacher with a knowledge of history (whether or not there is anything identifiable as a history course on her transcript) could qualify for a license by passing the history exam.

Teachers’ interests change and develop over the course of their careers. A licensing system should be flexible enough to recognize new areas of expertise. In 1986, the Carnegie Forum on Education and the Economy articulated a vision of a profession marked by deep intellectual curiosity and ambition. Teachers should have a good grasp of the ways in which all kinds of physical and social systems work; a feeling for what data are and the uses to which they can be put, an ability to help students see patterns of meaning where others see only confusion…. They must be able to learn all the time, as the knowledge required to do their work twists and turns with new challenges and the progress of science and technology…. We are describing people of substantial intellectual accomplishment.

When public schools succeed in recruiting teachers of this caliber, the licensing system should not erect obstacles that prevent them from teaching subjects in which they have developed knowledge and expertise, solely because they have not earned the right college credits.

The more difficult issue in subject matter testing is where to draw the cutoff score. Everyone agrees that teachers must know something about the subjects they teach: the hard question is, how much? Research shows that there is a positive correlation between teachers’ knowledge of their subjects and the achievement of their students, but the correlation is not very high. Many things affect teaching performance besides how well the teacher understands the subject. Given the modest correlation between test scores and teaching performance, it is inevitable that there will be individuals with mediocre test scores who would nonetheless be effective in the classroom. (And, conversely, some who pass the exam should not teach.) The problem with an examination-based licensing system is that it does not permit school systems to consider all of the relevant information when filling vacancies. If a prospective teacher falls even one point short of a cutoff score on an examination, districts are not allowed to consider any other factors to determine whether this individual might be an effective teacher.

Proponents of subject matter testing often argue that the purpose of the test is only to screen out teachers whose knowledge of the subject falls below the minimum level necessary to teach effectively. They acknowledge that there is more to teaching than subject matter knowledge, but they maintain that below some minimum knowledge of the subject a teacher cannot be effective, no matter what his or her other
qualities. They are right, of course. Someone who knows nothing at all about a subject cannot teach it. But this does not answer the question: what is the minimum necessary for effective teaching? In fact, no one knows. This is not surprising. It is exceedingly difficult to specify this cutoff, for in drawing such a line, we are saying that no one who scores below it can be an effective teacher, that there is no possibility of compensating with resourcefulness, charisma, energy, humor, or any of the other personal traits that can contribute to good teaching. The difficulty of establishing such a cutoff has led many educators to argue that licensing decisions should not rest on the results of any one assessment, but that subject matter tests must be weighed with other factors in deciding whom to license. Whether this is a better policy depends, however, on the quality of the other information available to the licensing authority.

Assessments of Teaching Performance

Until recently, knowledge of how to teach has been assessed in the same way as knowledge of what to teach: through standardized written examinations. Such tests of pedagogical knowledge have come in for a great deal of well-deserved criticism. Because so many teaching decisions are highly context-specific, test items regularly fail to assess examinees’ knowledge in a meaningful way. Either the situation is so simplified that context is relatively unimportant—but then the answer is obvious—or important contextual facts are omitted and the correct answer is unclear.

In response, the Educational Testing Service, which produces the National Teacher Examination and the Praxis series, has begun development of more open-ended, constructed response questions on teaching knowledge.53 As envisioned, these questions will pose a richly described problem situation to which test takers will respond by writing a short essay. Trained readers will then grade these essays. Still, many questions remain about the consistency of graders’ scores and the relationship between test results and eventual teaching performance. Even at best, examinations of this type provide only a partial measure of teaching ability. They assess professional knowledge. They do not measure affective traits. Thus, when such examinations are used for licensing teachers, they exhibit the same drawbacks as subject matter tests. Because they measure only some of the attributes of a good teacher, licenses may be denied teachers who have other, compensating attributes and abilities.

Proponents of licensing reform, concerned about the triviality and irrelevance of written examinations, have argued the need for authentic assessments based on performance under classroom conditions. With this goal in mind, one of the leading organizations in the reform movement, the National Board for Professional Teaching Standards (NBPTS), has issued standards for what effective teachers should know and be able to do. Among these standards are the following representative examples:54
• Teachers use a variety of methods and materials to promote individual development, meaningful learning, and social cooperation.

• Teachers use their knowledge of child development and their relationships with children and families to understand children as individuals and to plan in response to their unique needs and potentials.

• Accomplished teachers create a caring, inclusive and challenging environment in which students actively learn.

As the examples show, the language of the board’s standards is very general. The lack of specificity is, to some extent, a reflection of the very problem that makers of standardized tests confront: teaching decisions are highly context-specific. Were the standards of the National Board more precise, they would run the risk of being overly prescriptive. The difficult task of translating these vague guidelines into performance-based assessments for new teachers has been taken up by another organization, the Interstate New Teacher Assessment and Support Consortium (INTASC). Examples of these assessments are portfolios, laboratory exercises and simulations, and classroom observations.

Performance-based assessments have become extremely popular in education circles. NCATE has announced its intention to use performance-based assessment to judge the quality of a program’s graduates in the next revision of its accreditation standards. It is naive, however, to suppose that these instruments are popular solely because they correct defects in traditional standardized tests. Assessment instruments like portfolios answer a host of other fashionable concerns, such as the desire for examinees to become active discoverers and producers of their own knowledge (an echo of the constructivist paradigm). Such assessments are also significantly less threatening to examinees. Standards are fuzzy; there is the comforting thought that no one right answer exists; allowances are made for different cultural perspectives. Teachers are likely to be given the opportunity to portray themselves in the best possible light by choosing the materials for their portfolios or the lessons they will be observed teaching.

In addition, authentic assessment is time-consuming and expensive. There are doubts about the objectivity of evaluators and the reliability of their ratings. When assessments are conducted in the field, it is difficult to control for a variety of factors that affect performance. Yet the high cost of conducting laboratory trials means that subjects are typically evaluated on a relatively small number of tasks, also compromising reliability. In addition, little is known about the predictive validity of these types of assessments and whether they are superior in this regard to more traditional ways of testing teachers.

Because the results of performance assessments are confidential and the methods used by the National Board are proprietary information, it is difficult to learn much about the details of performance-based assessment. Fortunately, there are a few
exceptions. One is a pilot project undertaken in Maine to explore the feasibility of replacing transcript-based licensing with a competency assessment. Following the lead of the National Board and INTASC, participating teacher educators established standards for what a beginning K-12 teacher should know and be able to do. Supervisors of student teachers were then asked to write up classroom observations, indicating whether these standards had been met. Several of these assessments were included in a report on the pilot program to the State Board of Education.

As the following excerpts show, supervisors found it difficult to fit their observations into the framework of the standards. Often the connection between the standard and the teacher’s actions was unclear. Fairly trivial actions were accepted as evidence that the standard was met. Supervisors tended to write about things they liked even if the behavior was unrelated to the standard in question. In some cases they grasped for something that seemed to apply, however tangentially.

For example, the following report was submitted to show that a student teacher had met Standard VIII: *Understands and uses a variety of formal and informal assessment strategies to evaluate and support the development of the learner.* (All excerpts are from State of Maine Advisory Committee on Results-based Initial Certification of Teachers, *Final Report to the State Board of Education and the Commissioner of Education*, 1997.)

The setting for this description is an art classroom in an urban high school in southern Maine. At the beginning of class, Janice, an Art Education intern... hands out a media literacy pop quiz consisting of a magazine advertisement and a blank sheet of paper to pairs of students as they settle in at their tables. She directs their attention to questions written on the board: Before you get started on your masks, work with your partner to answer these questions. They relate to the lesson on advertising. Put the finished papers here on my desk. This quiz is a test of knowledge gained in a previous media literacy lesson.

This teacher has merely administered a pop quiz on material covered earlier. There is only one assessment strategy in evidence here, not a variety, and nothing to indicate that the quiz was particularly well-constructed or contributed to student learning, as stipulated by the standard. Students were allowed to prepare answers in pairs, suggesting that this teacher was trained to use a pedagogical method currently in fashion, cooperative learning. But if the pop quiz is intended as an assessment rather than merely a learning experience, her judgment is questionable. Even staunch proponents of cooperative learning usually stress the importance of maintaining individual student accountability.

The following report was offered to show that a student teacher met Standard I: *Demonstrates a knowledge of the central concepts, tools of inquiry, and structures of the discipline(s) she or he teaches.*
Student teacher, J.N., taught science, specifically five microorganisms [sic], to a heterogeneous grade 5/6. She included in her instruction guidelines: scientific journaling (emphasis on precision, accuracy of drawing and writing), how to share materials in a manner that respects both the things themselves and the people using them, and several opportunities to work with five self-selected and interested first grade partners (emphasis in original). J.N. developed an equitable and innovative rubric including clear guidelines for group work, clearly defined outcomes for the two and one-half hour laboratory which used microscopes, slides, live one celled organisms, and an electron microscope that J.N. had obtained from her own home school district through a successful co-authored grant application. Using a previously developed learning style profile of the class, J.N. made sure that every student had an opportunity to succeed based on lesson objectives that she developed from a wide variety of assessed student strengths.

The writer is clearly impressed with the performance of this student teacher, and indeed, this may have been an excellent lesson. But the things that have impressed the supervisor have little to do with the standard, which concerns mastery of subject matter. Instead, the supervisor focuses on teaching methods (how clear the instructions were, how the students worked cooperatively, how all students had a chance to succeed) and the materials used in the lesson. The only part of this description that relates to the standard is the second sentence, where the supervisor remarks that students were taught the importance of keeping precise, accurate records in scientific work.

The following submission pertains to Standard II: Demonstrates the ability to integrate other disciplines, their concepts, tools of inquiry, and structures of other disciplines with the discipline she or he teaches.

Student teacher, G.H., taught social studies to an eighth grade class, developed in concert with his mentor teacher, a unit on immigration. G.H. asked students to design and illustrate family shields...of the countries from which the students were traveling to the U.S. Students researched their countries of origin, presented oral reports on their reasons for leaving, wove together fact and fiction into powerful stories of courage and pride in who they were. G.H. feels that eighth graders, particularly, grow from imagining themselves to be what they may not yet be in reality; for example, one day students were creating their visas. A boy barely 5'2" described himself as a 6'4" 229 lb Russian from the Ukraine. G.H. also has begun an inventory of what motivates these students and which of the multiple intelligences (proposed and described by Howard Gardner and his team) best fits their emerging intellectual and social strengths. Linked to those multiple intelligences inventories G.H. has produced a list of choice opportunities for each student to use in developing and presenting knowledge of their (sic) native culture.
In addition, immigrants/students kept a journal of the events of their journey. In the journal they answered teacher-generated questions about conditions of passage, problems and dilemmas encountered, and joys and sorrows witnessed and lived through.

Apparently the writer believes the student teacher has met Standard II because he has integrated art (designing shields) and creative writing (stories, journals) into the teaching of social studies. These may have been sound teaching devices, but their relation to the standard is not clear, as neither appears to be a concept or tool of inquiry from another discipline. For example, were any literary concepts introduced? Did the teacher even check student journals for grammar, punctuation or style? Successful integration of methods from other disciplines also requires that they not be overused. But this question slips between the cracks in this report: we cannot tell if the teacher relied too much on student-produced art and fiction at the expense of more conventional materials.

Our comments are not meant to disparage the performance of these new teachers or the conscientious efforts of supervisors to carry out the complex task they were given. Rather, this discussion is meant to bring out two things: how hard it is to make standards like those of the National Board the basis for meaningful performance assessments, and how difficult it is for outsiders reading these reports to ascertain whether teachers truly possess the desired competency. Supervisors had trouble determining the kind of teaching behavior to which each standard applied. There was no yardstick to measure whether a standard had been met. If the supervisor could identify something that seemed to fall under the right heading, that was good enough. Ultimately, supervisors used the standards as a very loose framework for describing things the student teachers did that the supervisors liked. As a result, procedures of this kind are only too likely to reproduce the flaws of the present education system. Teachers who use trendy pedagogical techniques will be applauded. Ideological biases will enter supervisors’ assessments and influence licensing decisions.

There is no reason to think that this is an isolated example, somehow atypical of performance-based assessments. Standards were patterned on those of INTASC and the National Board; evaluations were carried out by experienced teachers. Given the nebulousness of the standards, much depends on how these guidelines are interpreted, the perspicacity and professional judgment brought to the supervisory task, and the ability to convey in writing a full picture of the candidate’s strengths and weaknesses. Authentic assessments are apt to be perfunctory and superficial unless evaluators have both the talent and motivation to look beyond the vague standards given them and conduct a truly probing analysis of a candidate’s performance.
**Implications for Policy**

Performance-based teacher assessments are still in the process of development and it is premature to conclude that they cannot play a useful role in teacher licensing. Clearly, a comprehensive, dependable assessment of teaching ability could be of great value. It would create the possibility of placing teacher licensing on an entirely different basis: if competency could be assessed directly, states could (and should) dispense with all education prerequisites (save, perhaps, that teachers hold a college degree). Teaching positions would be open to those who demonstrate the ability to do the job. To the extent that education courses help prospective teachers acquire the skills and knowledge that a competent teacher should possess, schools of education would continue to attract students and play an important role in teacher preparation. But school districts would also be free to hire teachers with unconventional backgrounds: born teachers as well as individuals who learned to teach in other settings, such as private schools, the military, tutoring centers, and the human resource departments of large corporations.

At present, however, we are not in this best of worlds. The available instruments for assessing teachers’ knowledge and skills are incomplete: they measure some things that contribute to effective teaching but not all of them. Subject knowledge can be measured with considerable accuracy (even if some of the tests in current use do not). Tests of professional knowledge do not possess the same validity. Other important attributes of a good teacher, including a wide range of affective characteristics, are not measured at all.

For all their imperfections, it is better to use these tests than to allow grossly incompetent or corrupt administrators to hire anyone they like. The problem with high-stakes testing becomes apparent when we consider the districts—presumably the majority—in which conscientious administrators seek to hire the best available applicants. As noted above, there is evidence that hiring procedures are flawed and that often the best choices are not made. But this is not to say that administrators are wholly inept. They are using some of the information available to them to decide who will be an effective teacher, even if they are not using all of the information in the most efficient way. The crux of the problem is this: when teacher tests are used for licensing decisions, districts are effectively compelled to discard information about prospective teachers who scored below the cutoff. Yet districts enjoy substantial advantages over outside authorities when it comes to assessing teaching ability. Many teachers are hired in districts where they have done student teaching or served as substitutes. In such cases, principals will often have first-hand knowledge of teaching performance based on classroom observation as well as feedback from other teachers, parents, and students. This puts the principal in a position to make judgments about aspects of teaching performance that licensing exams measure.
poorly, if at all. To a lesser extent, the same is true when schools have candidates teach a sample lesson and put them through a rigorous set of interviews. On top of this, school officials will have knowledge of local needs and circumstances bearing on an applicant’s suitability that external examiners cannot begin to match.

We have come back to a problem discussed above in connection with the reform of teacher education. Licensing restricts districts’ choices. This is socially beneficial when a district would otherwise make extremely poor hiring decisions. But to achieve this goal, state licensing ties the hands of all other districts as well. The impact is most adverse where administrators have the greatest trouble recruiting in the first place. These districts, often serving poor and working class children, hire many teachers who are unable to obtain jobs in systems with higher salaries and better working conditions. Such teachers will, on average, lie closer to the cutoff on any licensing examinations that are given: they are the marginal candidates who just get by. Since the licensing test is an imperfect indicator of teaching ability, a school system that hires such teachers will find it beneficial to be allowed to consider applicants who did not pass the licensing test, who are marginal on the other side of the line. Because the district has information about teaching ability that differs from that provided by the test alone, it will correctly find some of the marginal (but failing) applicants superior to the marginal (but passing) applicants it must otherwise hire. This other information need not be perfect—indeed, districts might not be much better than the test at identifying who will teach effectively. The key point is that this information differs from that provided by the test. Teacher recruitment is impaired when administrators are compelled to ignore this information and hire teachers instead for the sole reason that their test scores are slightly higher.

Advocates of stricter testing might admit that this is correct, yet argue that it misses the point. A licensing system will inevitably screen out some candidates who would have been effective, but it is worth paying this price to ensure that all teachers meet an acceptable minimum standard of proficiency. Thus, if the standards are set high enough, we can be assured that districts will be hiring good teachers—perhaps not as good as some might have obtained if standards were relaxed, but good nonetheless.

The flaw in this argument is the assumption that policymakers can set a floor on teacher quality using the imperfect instruments available. They cannot. Licensing on the basis of a subject matter test ensures only that teachers know their subjects, not that they are able to do all the other things required of an effective teacher. If we raise the passing score on the exam, we will get teachers who know more and more about their subjects, but there is not much reason to think they will be better in other respects. Meanwhile, as the passing score rises, we eliminate from considera-
tion a growing number of teachers who are effective by virtue of other, untested characteristics.

**Policy Directions**

In many respects, the conclusions of the preceding section echo those of this section. Teacher licensing is not a powerful tool for upgrading the work force: the information available to a licensing board or agency does not allow it to predict with sufficient accuracy who will be an effective teacher and who will not. Because local administrators are in a better position to evaluate teacher candidates, the principal focus of policy should be improving their performance, not revising standards for statewide licensing.

In some respects, this is hardly a surprising conclusion. The purpose of licensing is to protect the public from poor decisions by school administrators. Yet unlike other licensed occupations, where practitioners in the private sector sell their services to private individuals, both teachers and administrators are state employees. Thus, teacher licensing amounts to a curious situation in which the state licenses some of its employees (teachers) because it does not trust other employees (administrators) to carry out their jobs properly. One might well suspect there are better solutions to this problem.

**Improving Accountability**

Public school administrators must face appropriate incentives and sanctions to ensure that staffing decisions (indeed, all decisions) are made in the best interests of the public. Generally speaking, there are two ways this can be achieved. In the private sector, poor performance is disciplined by the market, as parents exercise their right to choose another school. Strengthening parental choice is one way to enhance accountability within public education. Alternatively, schools can be held accountable by setting standards for student achievement and monitoring school performance through curriculum-based examinations. Recently, there has been growing interest in a third way, in which school districts contract with vendors for the provision of educational services, an approach that combines market competition (among vendors) with accountability, represented by the contract and its possible non-renewal. Charter schools also represent a hybrid of this type. They are subject to market discipline, but they are also held accountable through their charters, which may not be renewed if the school fails to achieve its objectives.

Establishing meaningful accountability is not easy. As critics of school choice have pointed out, choice disciplines schools only to the extent that parents are willing
and able to exercise it responsibly. In addition, without a large number of options to choose from, many students will remain in poor systems where the absence of a significant competitive threat will perpetuate business as usual. Holding administrators accountable for student achievement also raises difficult practical issues. How is allowance to be made for factors over which administrators have no control? Who is accountable for the achievement of students who change schools in mid-year, a frequent occurrence in urban systems?

Real as these difficulties are, they are not insurmountable. Evidence from experiments in education reform indicates that both mechanisms can be used to enhance accountability and that schools change as a result.

Systematic study of the impact of choice on the performance of traditional public schools has only begun. However, anecdotal evidence confirms what has often been observed in other sectors of the economy: faced with competition, even rigid institutions change. An interesting demonstration of this phenomenon occurred in Albany, New York, where a philanthropist offered $2000 toward private school tuition for any child attending the Giffen Memorial primary school, a chronically underperforming school. A sixth of the school’s students accepted. The Albany Board of Education, which had initially ridiculed the offer, ended up replacing Giffen’s principal, hiring nine teachers, adding two assistant principals, and spending more on books, equipment, and teacher training. This example demonstrates a point that economists have long made about competition: it is not necessary that all consumers be informed decision-makers for market discipline to work. Rather, it is necessary only that a critical minimum of consumers turn to other suppliers. When this happens, firms (or, in this case, a school) will begin to take corrective action. Here the critical minimum was reached by the time one-sixth of the students had chosen other schools.

One of every ten elementary and secondary students today attends a private school. Many of these schools could accommodate more students. More schools would start up if parents received vouchers that could be used to send their children to the school of their choice, public or private. The rapid growth of private tutoring in the form of after-school programs and contracted-out instructional services (Sylvan Learning Centers, Huntington, etc.) shows that entrepreneurs are ready to respond in varied ways to parents’ dissatisfaction with public schools. This entrepreneurial activity is also evident in the charter school movement. From the first school, which opened in 1992, the number of charter schools has grown to 1,100. There would be still more, were it not for inadequate start-up financing, caps on the number of schools written into the enabling legislation, and impediments put in the way by hostile host districts. If all the groups interested in providing an alternative to tradi-
tional public education were given an opportunity to compete on equal footing with the public schools, there are many urban and suburban communities in which public schools would face a substantial competitive threat. If market discipline fails to improve school accountability in these communities, it is not likely to be the result of an inadequate response by the providers of services or an inadequate demand for alternatives, but rather because artificial barriers are erected to protect the jobs of those who work in traditional public schools.

Educators in the public schools have long resisted efforts to hold them personally accountable and professionally responsible for student achievement. Even modest merit pay plans are resisted on grounds that too many factors beyond their control influence student achievement. Requiring educators to produce results if they want to keep their jobs would provoke far greater opposition. Nonetheless, there is evidence that high-stakes accountability works. Since 1995, Chicago has pursued an aggressive policy of holding students and schools accountable for performance on tests of basic skills. Students who fail the exams are required to attend summer classes and to repeat grades if their performance does not improve. Junior and senior high schools in which an unacceptably high percentage of students fails basic skills tests are placed on probation and threatened with reconstitution, a process in which administrators and teachers lose their automatic right to stay in the school by virtue of seniority. An outside review board decides who is to stay: the rest lose their jobs and new teams of educators replace them.60

This approach has brought results.61 Test scores have risen for three straight years. Forty percent of Chicago elementary pupils are now at or above the national norm in mathematics, an increase of ten percentage points from 1995. Gains have been almost as great in reading. It is noteworthy that these results have been achieved even though the city’s indicators for monitoring performance are the very sort that seem most unfair to educators. No allowance is made for students’ incoming level of skills. City officials rejected such a policy on the grounds that schools would then be able to evade accountability. This may be correct. Yet under the current system, a teacher of low-achieving students who manages to improve their test scores (but not enough) can be penalized, while an instructor fortunate enough to have high-achieving students may teach them nothing at all without being held to account. A more balanced approach that puts some weight on students’ net gains and some on their absolute level of achievement would provide a better set of incentives.62

Holding schools accountable for student achievement strengthens the incentive for school administrators to hire wisely, putting to good use the advantage they enjoy over licensing agencies in evaluating prospective teachers. Such a policy correctly aligns incentives with information: administrators who are in the best position to judge should have the authority to decide who will teach in their schools, reaping rewards if the decisions are sound and suffering consequences if they are faulty.
Although the misalignment of policy is apparent in the way teachers are initially licensed, it is even more evident in policies that protect veteran teachers from dismissal, a clear instance in which the information available to a local administrator is not used. Most public school systems award tenure to teachers after a few years’ continuous service. In addition, as public employees teachers are protected against arbitrary dismissal. Districts are required to show “just cause” before teachers can be fired, a stipulation that typically entitles teachers to an administrative hearing with judicial review. Most teacher contracts specify that layoffs be conducted on the basis of seniority. As a result, teachers who have completed a few years of service enjoy an extraordinary degree of job protection.

The number of public school teachers dismissed for incompetence is exceedingly small. The cost of such efforts is a major deterrent: for example, a 1993 survey by the New York State School Boards Association found that the average disciplinary proceeding against a tenured teacher or administrator cost taxpayers $176,000. As a result, it appears that most school districts take such steps only in extreme cases. A review of employment records for all public school teachers in Washington state between 1984 and 1987 turned up only forty-two whose contracts were officially terminated. This is consistent with statistics from other states. Fewer than 6 percent of the teachers in 141 medium-sized California districts surveyed in 1982-1984 were dismissed for incompetence.

By contrast, administrators in the private sector have much greater authority in personnel matters. With the exception of some unionized Catholic high schools, teacher contracts are written for one year and can be renewed or not as the school chooses. There is no tenure. While nonrenewals for unsatisfactory performance are not common, they do occur. Of equal importance is the way private schools handle reductions in staff. With the exception, again, of some Catholic dioceses where contracts are collectively bargained, layoffs are never based solely on seniority. For obvious reasons, private schools seek to retain their most effective teachers, whether senior or not. Over time, this can have a substantial effect on the quality of the workforce. For example, in a single year (1990), the contracts of 1.3 percent of private school teachers were not renewed because of budget limitations, declining enrollments, or elimination of courses. If this year is typical, then over a decade some 10 percent of the private school workforce, many of whom have been deemed less effective than their peers, are put through a competitive screening process in which they must prove themselves to other employers or leave teaching.

Finally, union contracts in many large cities permit senior teachers to transfer into schools with vacancies whether the principal of the receiving school wants them or not. This practice is damaging for two reasons. First, it disrupts efforts to build a cohesive team of teachers at the school level, impeding efforts to hold principals accountable for student achievement in their schools. Second, because transferring teachers generally must have acceptable ratings from their current supervisor, these internal transfer systems create further disincentives for principals to document pro-
fessional malfeasance. Instead, it is easier to award satisfactory ratings in the hope (or with the understanding) that an ineffective teacher will go elsewhere in the system.

**Policy Recommendations**

State teacher licensing is a substitute for local accountability. As local accountability improves, licensing becomes less important. Indeed, if school administrators make wise personnel decisions, licensing loses its positive function and merely constrains managerial prerogatives, preventing administrators from hiring the best teachers they might otherwise find.

Proponents of stricter licensing have suggested that it would serve other purposes. For example, some argue that, without high standards for professional training, prospective teachers will choose the easiest route into the profession, attending weak programs with low standards rather than a quality program. But this ignores the incentives facing would-be teachers. Unlike administrators, who are acting on behalf of the public and who must be held accountable in some fashion, prospective teachers represent only themselves. If administrators seek to hire the best available teachers, good training provides its own reward by improving teachers' chances of obtaining the most attractive jobs. Regulations compelling prospective teachers to act in their own interest are unnecessary.

This does not mean that weak programs of teacher education will necessarily disappear. Many of these programs are in weak colleges serving, for the most part, weak students. But the fact that some of these students major in education is of no greater concern than the fact that others major in business administration. Public schools are not obliged to hire the former any more than businesses are compelled to put the latter in managerial positions. There is a problem here, of course, but it is not one that teacher licensing can solve. More rigorous licensing and accreditation standards might lead some of these programs to close, but if districts hire wisely, this protection is redundant: either way, weak graduates of these programs will fail to find teaching jobs.

Some proponents of stricter licensing standards have also argued that more capable individuals will be attracted to a profession that is seen to have rigorous entry requirements. If regulations make it harder to become a teacher, the stature and prestige of the profession will rise, which in turn will attract more talented persons. However, those who make this claim have offered no evidence to support it, and the argument appears to be based on wishful thinking. Although teachers regularly complain about the lack of respect accorded them, their biggest concerns in this regard are relationships with students and parents and the amount of time they are required to devote to tasks they consider non-professional. We are aware of no evidence indicating that many capable persons are deterred from teaching careers.
because they do not have to pass rigorous entry examinations or complete protracted programs of professional education.

Some light is shed on this question by a 1985 Louis Harris survey of the teaching work force, in which teachers were asked whether various reforms would help to attract good people into teaching. Although this was the wrong group to ask (the question should have been put to non-teachers), nearly two-thirds replied that requiring new teachers before certification to pass rigorous examinations comparable to other licensed professionals would help a little or not at all. By contrast, nearly 80 percent said that providing compensation to beginning teachers comparable to other professions that require similar training would help a lot. Almost three-quarters were as positive about reducing the amount of time teachers spend in non-teaching duties.

In summary, if school administrators make wise personnel decisions, there is little to be said for stricter licensing standards, or indeed, for licensing at all. Because administrators have better access than licensing agencies to information about job candidates, the best policy is, first, to ensure that administrators will use this information in the public interest by holding them accountable for school performance, then to remove unnecessary encumbrances on their ability to recruit widely and hire the finest teachers they can find. Moreover, in a system that holds administrators responsible for student achievement, it would make little sense to entrust others with the task of screening teacher candidates. No one else, including a licensing agency, will have the same strong incentive to ensure that appropriate decisions are made. As we have seen, this is of particular concern when licensing relies on the results of performance-based assessments, in which the quality of information is highly dependent on the skill and motivation of third-party evaluators.

However, policy often fails to achieve the best outcomes, forcing us to consider what might be second-best. Clearly, this is the situation we face in public education today. Although there has been progress in empowering administrators and holding them accountable for student achievement, there is a long way still to go. Many institutional barriers remain. Many administrators have developed little skill in teacher selection and appraisal. In many states, new standards for student achievement are too vague or too weak to ensure meaningful accountability. Teacher unions vigorously resist policies that strengthen administrators’ powers. Past efforts to enhance accountability have often been highly disruptive, putting school systems through a great deal of turmoil only to achieve, in the end, rather meager results. This has made political leaders reluctant to repeat them. The efforts of several states in the 1980s to test veteran teachers and dismiss those with low scores is a case in point. Even in Chicago, where early indications suggest that reform has had positive effects, city officials have announced that there will be no reconstitutions of schools in 1998-99.
A Policy Mix

For the present, then, it is wisest to rely on a mix of different policies, strengthening accountability and incentives where possible, but not omitting other measures that would also improve the quality of the work force. In this policy mix, what is the role for teacher licensing?

We begin with what licensing policy should not be. It should not increase the already substantial power and influence of private organizations of education practitioners. Such organizations include teacher unions as well as bodies like the National Council of Teachers of English and the National Council of Teachers of Mathematics, constituent members of NCATE. Given the clear interest of incumbent teachers in limiting teacher supply, organizations in which unions play a prominent role, such as NCATE, should not be placed in a position in which they can effectively shut down programs of teacher education. Subject specialty organizations like the NCTE and the NCTM have endorsed approaches to teaching that are controversial and of doubtful educational value. Simple prudence suggests that it is unwise to require every teacher education program in the country to meet standards set by these organizations. Instead, policy should promote a vigorous competition in ideas that compels educators to present solid research defending their views on teaching and learning.

In addition, before policymakers resort to regulations that tie the hands of school administrators, they should make full use of less restrictive measures that serve the same ends. For example, mandatory accreditation is seen as a way to compel teacher education programs to improve. Indeed, some policymakers who do not support NCATE accreditation have also proposed measures intended to force improvement. These include denying federal funds to programs when too many of their graduates fail teacher licensing exams or, in more extreme versions, shutting such programs down.

Such measures do not protect the public from poor hiring decisions by school districts. Districts are already prevented from hiring teachers who fail the licensing test. Rather, these penalties are directed at the institutions that train teachers, to goad them into raising their admissions or exit standards or improving their program content. But closing programs, for reasons we have described, reduces the supply of teachers and impairs recruitment. Before taking such drastic steps, policymakers ought simply to publicize scores on licensing examinations by institution. This would make the information available to school districts and to prospective teachers, who are likely to respond in ways that will pressure programs of teacher education to improve. To date, this kind of information has not been readily available. Indeed, states maintain administrative records from which it is possible to derive even more revealing information, such as the percentage of a program’s graduates that are teaching in the state’s public schools, the types of districts in which they are employed, how long they continue in teaching, and the salaries, on average, that they earn. At present the public knows none of this.
Information is concealed even from those who would appear to have a clear claim to it. In states that use licensing examinations developed by the Educational Testing Service (including the National Teachers Examination and the Praxis series), it is current policy to deny school districts access to teachers’ scores. Instead, districts find out only whether an applicant passed the test (i.e., received a license). Districts may not learn the scores of those who passed for purposes of deciding whom to hire.

It is the Educational Testing Service that insists on this policy. The reason offered by the ETS is that these tests have been validated for licensing purposes only, not for such other purposes as employment. In these validation studies, panels of educators were asked what proportion of minimally qualified candidates would be able to answer a particular item correctly. Thus the tests are said to contain information only about minimal qualifications, not about qualifications of applicants above that level.

This is a specious argument. First, it has never been established that the educators asked this question are able to answer it—i.e., that they can compartmentalize professional knowledge, distinguishing the knowledge that makes a teacher minimally competent from that which contributes to performance at higher levels. Indeed, since there is no external standard, the process is entirely circular: minimal competence is whatever these experts say it is.

Second, scores on these examinations have been found to be highly correlated with scores on other tests of academic aptitude or achievement, such as college entrance examinations. Research has shown that scores on achievement and aptitude tests (particularly tests of verbal ability) are positively related to teacher effectiveness. The research has not shown that there are ceilings in this relationship—levels above which higher scores make no difference to performance. It would be surprising, then, if the NTE and the Praxis examinations did not contain information about teaching performance beyond the knowledge required to be minimally qualified.

In addition, states have set different passing scores. This puts ETS in the untenable position of claiming that, in one state, it is relevant to know whether an examinee was able to score at least 85 out of 100, but in another state (where the passing threshold is only 80), information in the 80 to 85 range is of no value to prospective employers. This is nonsense. School districts should have access to the scores of teacher applicants. If ETS is unwilling to validate its tests for this purpose, states should find test-preparers that will.71

In summary, policymakers who want to upgrade teacher education or who desire that school districts do a better job of screening job applicants have a variety of other instruments they can employ apart from licensing regulations. It is important that these tools of policy be used and that licensing be limited to the narrow function it best serves: to protect the public from the worst abuses of incompetent or corrupt administrators. With this in mind, we offer the following recommendations for licensure policy.
I. Expand alternative certification.
States that do not have alternate routes for entering teaching should establish them. Those that do should remove restrictions that limit the size and scope of these programs for reasons unrelated to teacher quality. For example, because alternative certification programs are often designed to facilitate mid-career changes, many will not accept individuals who recently graduated from college. This precludes the participation of a younger, more mobile part of the workforce. Given that age is not used to determine who may enter a traditional teacher education program, there is no reason to erect this artificial barrier to alternate route teachers.

Many other restrictions have been placed on alternate routes that prevent them from being used to their full potential. In some states, districts may hire alternatively certified teachers only after declaring that no regularly certified teacher could be found. This makes sense only if any regularly licensed teacher is superior to all teachers who enter by alternate routes. This is patently false, as shown by hiring patterns in states that do not impose such restrictions. Elsewhere, there is a major focus on recruiting minority teachers for urban schools. This is a laudable goal; however, there is no reason to limit alternate routes to this function, rather than the more general objective of recruiting better teachers for all schools. Some states cap the number of teachers who may enter by alternate routes. In other cases, program size is constrained by easily identified bottlenecks—for example, a limited number of places in a required summer workshop. These restrictions should be lifted.

II. Streamline entry into professional development schools.
The Holmes Group and the National Commission have advocated internships in professional development schools for all new teachers. Unfortunately, they would delay this clinical experience until prospective teachers had completed one or two years of education courses. We recommend that applicants instead be selected for internships on the basis of undergraduate transcripts and examination results and that they begin to work at once. Essential courses can be taken concurrently with their clinical training. This would reduce the time teachers are required to spend in preservice courses and allow them to begin immediately the kind of training that they are likely to find most interesting and useful. States will be even more successful in attracting able teachers if trainees receive a stipend for the work they perform in the professional development school.

Teacher training that is structured in this manner will be similar to a model of on-the-job training that has been successfully used in more than one hundred independent private schools. These schools hire new college graduates with no prior training in education to serve in internships at half-pay. Interns work for one year under the supervision and with the assistance of an experienced teacher. At the end of that year, they may be offered a regular position in the same school, should there be a vacancy, although the more usual outcome is for the intern to move on to another
school on the strength of recommendations from the first. The internship model
gives private schools an opportunity to hire bright new graduates who are eager for
a real teaching opportunity (as we know from the response to Teach for America)
while at the same time making sure they are not sent unaided into the classroom.
Although compensation is very modest (50 percent of a starting salary that is already
low by public school standards), it is clearly superior to the prospect of taking out
student loans to finance two or three years in a post-baccalaureate teacher education
program.

III. Relax licensure requirements for teachers employed in charter schools.

Teacher licensing involves a trade-off: protection from poor administrative decisions
versus the good that results when competent administrators are given a freer hand.
Licensing regulations should strike the right balance between these objectives.
Regulations that are set correctly for the traditional public school will over-regulate a
school where accountability has been enhanced by other means. This is clearly the
case in charter schools. These schools must satisfy their customers and the authori-
ties that review their charters. Both are mechanisms for accountability lacking in the
traditional public school. Because they check abuses of administrators’ prerogatives,
charter schools should be granted greater freedom to employ teachers who seem
right for the school, even if those instructors have not met all the standards required
by the licensing agency.

Some states have pursued just this kind of policy by permitting charter schools to
hire unlicensed teachers. In other states, a predetermined percentage of charter
school teachers may be unlicensed. Both policies are consistent with this principle.
However, in some states the permitted share of unlicensed teachers is small (e.g., 20
percent). Should it become apparent that many schools reach this ceiling, these states
should raise the limit.

IV. Give schools meeting standards for student achievement the freedom
to hire unlicensed instructors if they desire.

Many states are now in the process of establishing standards for student achieve-
ment. Political and practical obstacles remain before these efforts result in a clear
set of guidelines for public schools. However, when (and if) this process is complete,
schools will know what is expected of them and the public will have ways of moni-
toring whether those goals have been achieved. When this occurs, schools that are
achieving the goals set for them should have freedom to hire faculty as they see fit.
There is no justification for constraining the decisions of administrators who are
performing to the public’s expectations. Rather, the record of superintendents and
principals in such schools entitles them to the presumption that decisions to employ
unlicensed teachers are made for good reasons.
This proposal will encounter opposition, not least from education schools eager to preserve their role in teacher training. If it should prove politically impossible to enact this reform, there would still be considerable benefit if schools meeting performance standards could employ teachers who are unlicensed when first hired, allowing them to earn their licenses over time, as many parochial schools do now. This policy would give schools access to applicants who want to try teaching before committing the time and money required to earn a license, while at the same time preserving the role of schools of education in the preparation of teachers.

V. Complement subject-matter tests with policies to enhance local accountability and expand the applicant pool.

For capable persons, testing raises fewer barriers to entry than does the requirement that all teachers complete lengthy programs of preservice training. It is also a more flexible and accurate way of assessing subject knowledge than requiring a specified number of course credits. For these reasons, we recommend that states move away from transcript-based licensing toward a testing-based system.

Tests currently available are not comprehensive measures of teaching effectiveness. As a result, no matter where the passing score is set, errors will occur. Some who pass will not be effective teachers; some who might have taught well will fail. As the cutoff score is raised, the probability of the second kind of error increases. As the cutoff score is lowered, the probability of the first type of error increases. Choice of the cutoff must therefore take into account the frequency and seriousness of errors of both types.

However, the two errors are not symmetric, a fact with important policy implications. Ineffective teachers who pass the test will receive licenses, but this does not imply that any of them will ever teach. The mistake made by the licensing agency may be caught at a subsequent stage as these individuals seek jobs. The better local school administrators are at screening job applicants, the more likely this is, and the less harm is done by the initial error. On the other hand, if the licensing agency rejects someone who would have made an effective teacher, there is no later opportunity to correct this mistake (if schools must hire licensed teachers). Because of this asymmetry, we recommend that licensing agencies err in the direction of leniency, particularly as policies are put in place to enhance local accountability.

Improving hiring practices at the district level cushions the system against the consequences of setting the licensing standard too low. How can we protect against the possibility that the cutoff score will be set too high? The answer in this case is to expand the teacher applicant pool (a good idea in its own right, provided it is done.
cost-effectively). High cutoff scores are a problem for districts that must hire marginal applicants—teachers who scored just well enough to pass but are not very good in other respects. These districts would benefit from the chance to hire a candidate who scored a few points lower on the test but is stronger in other ways. The advantage of expanding the applicant pool is that fewer districts are put in a position where they must hire marginal candidates at all. When there are more applicants who are strong in all regards, licensing can serve its central function without substantial unwanted side effects. It protects the public from administrators who would make very poor hiring decisions without unduly constraining decisions in the remaining schools.

It may seem obvious that the way to expand the applicant pool is to raise teachers’ salaries. However, raising pay alone is not likely to produce significant improvements in teacher quality. Capable college graduates with attractive options outside teaching need to be able to enter teaching without first completing a long preservice training program. The latter requirement poses a barrier to entry that works at cross-purposes to higher salaries. In addition, new incentives are needed to induce school districts to focus on recruiting teachers with strong academic backgrounds. Higher salaries are therefore more likely to produce an improvement in teacher quality if complementary reforms of the type under discussion—flexible licensing policies and enhanced accountability—are adopted as well.

**Conclusion**

Recommendations that public school teachers meet stricter licensing standards are an understandable reaction to low levels of achievement in American public schools. However, policymaking in this area must be tempered by the recognition that the state has limited means to compel improvement in teacher quality through licensure regulations. Accreditation of teacher education programs by an organization of professional educators has not improved the quality of the workforce in any way that we can detect; moreover, there is much potential for harm if the power to withhold accreditation is used to promote untested and ill-conceived educational ideas. Licensing on the basis of teacher tests serves some useful purposes, but the assessment instruments available to date offer only an imperfect and incomplete measure of teaching performance.

We are persuaded that real progress will be made only if local school administrators—not licensing agencies or accrediting bodies—are made the focus of policy. The reasons can be summed up in two words: information and incentives. No one in public education is in a better position to decide which teacher is right for which school than local administrators. Principals and superintendents have access to better...
information about teacher candidates and school needs than distant licensing agencies. If they do not use this information as well as they might, the solution is not to hem them in by turning control over key aspects of teacher recruitment to external accrediting, licensing, or assessment agencies. Rather, it should be the object of policy to increase the accountability of local administrators for student achievement, thereby enhancing incentives to make personnel decisions—indeed, all decisions—in the public interest.

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1 While some states nominally require private school teacher to hold licenses, our own analysis of Department of Education data on private schools suggest that such requirements are not vigorously enforced. See Dale Ballou and Michael Podgursky, "Teacher Recruitment and Retention in Public and Private Schools," Journal of Policy Analysis and Management (Summer 1998): 393-418. As a consequence, private schools hire large numbers of unlicensed teachers. Several states allow charter schools to hire unlicensed teachers as well.

2 Robin Henke et al., Schools and Staffing in the United States: A Statistical Profile, 1993-94 (Washington D.C.: U.S. Department of Education), 58. The figure of 92 percent includes teachers with advanced, regular, and probationary certificates. Probationary certificates are awarded to new teachers who are in the first stage of the regular certification process. Omitted are teachers with alternative, temporary, emergency, provisional, or no certificates. Subtotals in these last categories should be regarded with caution, since many teachers appear to be confused about whether they hold one type of non-standard certificate or another. (See Dale Ballou, "Alternative Certification: A Comment," Educational Evaluation and Policy Analysis, forthcoming.)


5 Ibid, 27.


7 Frank Murray, “Questions and Answers about TEAC,” remarks before the Education Leaders Council in San Jose, California, 12 September 1998, 8.

8 Jere Brophy, “Teacher Influences on Student Achievement,” American Psychologist 4, no. 10: 1070-1071. Citations that appeared in the original have been deleted.


12 The influence of ideology on pedagogy is evident in this recent defense of whole-language instruction and critique of the phonics-based alternative (Gerald Coles, “No End to the Reading Wars,” Education Week, 2 December 1998, 38, 52):

   Accompanying the call for the direct instruction of skills is a managerial, minimally democratic, predetermined, do-as-you’re-told-because-it-will-be-good-for-you form of instruction…. It is a scripted pedagogy for producing compliant, conformist, competitive students and adults…. [O]ne reason political conservatives love skills-first instruction: It makes no challenges to the distribution of wealth and power, and the resources available to schools, classrooms, children, and their families. Research on skills teaching with poor children takes poverty as a “given” and seeks a minimally expensive “bootstrap” solution to a better life in a presumed meritocracy.


16 Ibid, 387.


18 Ibid, 23.

19 We eliminated a small number of records with out-of-state institutions or for which the institution code was missing. When a test-taker repeated the same test more than once, only the first test score is used in the analysis. The classification of institutions was based on a May, 1997, list of accredited programs obtained from NCATE.

20 Ibid, 15.

21 Ibid.
Data consisted of outcomes on the state’s licensing test (1 if pass, 0 if fail) and scores on a set of examinations given to all students entering teacher education. The relationship estimated was a simple linear probability model for the sample of Missouri teachers on which we had complete data:

$$\text{PASS} ' a + b \text{PRETEST} + c X + d \text{NCATE} + e$$

where PASS is the dummy variable indicating the outcome of the licensing test, PRETEST is a vector of examination scores required of all entrants into teacher training programs, $X$ is a set of demographic controls (age, race, sex), and NCATE is a dummy variable taking the value one if the student was trained in an NCATE-accredited program. If NCATE is associated with higher value-added we would expect $d > 0$.

The estimates of this model are available from the authors. The individual and composite test scores for entering candidates were strong predictors of performance on the licensing exam. After controlling for these pre-test scores, however, we found an insignificant, negative coefficient on NCATE. Thus, we found no evidence that the value-added in NCATE-accredited programs is higher than in non-accredited institutions.

Because NCATE accreditation procedures changed in 1987, the sample was restricted to individuals who graduated in 1990 or later and who began teaching no earlier than 1992.

Years of teaching undergraduates have convinced us that most students complete calculus without understanding the fundamental concepts of limit, continuity, and differentiability. This is not very surprising. It is harder to understand these ideas than to memorize the rules, which is how most students get through the course. Thus, the NCTM’s guidelines require mathematics teachers in grades 5 through 8 to understand concepts that most people who have taken calculus do not understand.

In Kentucky, more than 40 percent of college mathematics majors were unable to pass the state’s licensing examination in mathematics. Twenty percent of majors taking examinations in chemistry and biology failed (Lexington Herald Leader, 1 April 1998). In New Jersey, teachers entering by the state’s alternate certification route have outscored traditionally certified teachers on the National Teacher Examination, even though fewer of them have majored in the subjects they teach. See Vicky S. Dill, Alternative Teacher Certification, in John P. Skula, ed., Handbook of Research on Teacher Education (New York: Macmillan, 1996), 951. Teachers of mathematics who have majored in the subject often do not know how to explain algorithms used to solve problems and are unable to reason through problems. Their approach to mathematics is to memorize rules (G. Williamson DiMiciom and Suzanne M. Wilson, “An Exploration of the Subject Matter Knowledge of Alternate Route Teachers: Can We Assume They Know Their Subject?” Journal of Teacher Education 42, no. 2 (1991): 93-103).

Lynn Olsen, “Group Says Reforms May Dissuade Some From Career in Teaching”, Education Week, 18 March 1993. The views in question were expressed by faculty from teacher education programs in a consortium of sixteen of the nation’s leading liberal arts colleges.

Michael D. Andrews and Richard L. Schwab, “Has Reform in Teacher Education Influenced Teacher Performance? An Outcome Assessment of Graduates of an Eleven-University Consortium,” Action in Teacher Education 14, no. 7 (1995): 43-54. The study included no controls for institutional characteristics (apart from program length) or for characteristics of teachers or the schools in which they were employed.

Studies of student performance in Texas that controlled for student demographic characteristics and socioeconomic status found that students of alternate route teachers did as well or better than those of traditionally licensed teachers. See Stephen D. Goebel, Karl Romacher, and Kathryn S. Sanchez, An Evaluation of HISD’s Alternative Certification Program of the Academic Year: 1988-1989 (Houston: Houston Independent School District Department of Research and Evaluation, no date), ERIC Document No. 322103. In a study of mathematics achievement in North Carolina, students of licensed teachers outperformed students of unlicensed teachers (Parmalee P. Hawk, Charles R. Cable, and Melvin Swanson, “Certification: Does It Matter?” Journal of Teacher Education 36 [May-June 1985]: 13-15). But the number of teachers in the study was extremely small (18) and there were no controls for teachers’ math knowledge (licensed teachers had more).


The notion that education classes prepare teachers for such students is hard to take seriously, given the results of a 1997 survey of education school faculty. See “Public Agenda Foundation,” Different Drummers (New York: Author, 1997). Education school professors attached much less importance to issues of classroom management like the maintenance of discipline than did practicing classroom teachers, and were far less likely to believe it was the role of the school to teach values that contribute to an orderly classroom environment.

Martin Haberman, “Preparing Teachers for the Real World of Urban Schools,” Educational Forum 58 (Winter 1994): 162-168. The point is not that urban schools face a shortage of conventionally trained applicants (though this is sometimes true). Rather, those they hire are simply not effective.


Dill, 1996, is an exhaustive survey of this literature.


The statewide standard deviation on the elementary school certification test was 63.1. Of the nineteen programs that produced at least 100 test-takers during the sample period, fourteen showed standard deviations of 50 or more. In three programs the dispersion exceeded that for the state as a whole.

38 Alan R. Tom, “External Influences on Teacher Education Programs: National Accreditation and State Certification,” in Ken Zeichner, Susan Melnick, and Mary Louise Gomez, eds., Currents of Reform in Preservice Teacher Education (New York: Teachers College Press, 1996). Our own conversations with the deans of education schools confirm that the amount of paperwork required by NCATE is sufficiently burdensome to dissuade some schools from seeking accreditation.


45 Educational Testing Service.

46 Feistritzer, 1992. Specifically, 34 percent gave as their reason that they did not want to go back to college to take requisite courses to meet requirements for teaching credentials. To this should be added the 27 percent who said they could not find/got into an alternative teacher certification program. Since survey participants could give more than one answer, the total must be reduced by the percentage of overlapping responses (not reported). Licensing requirements were probably also responsible for deterring some of the additional 12 percent who said that it was too much trouble to find out what was required to become a teacher, as well as the 15 percent who cited too much red tape, though these responses may also show that initial interest was not very strong.

47 Personal communnication from Rebecca Berreras of Teach for America, 28 January 1998. The small size of Teach for America has led some to wonder whether it holds any lessons for public education. However, the program has been kept small as a matter of policy. Between 1990 and 1997, five times as many persons applied to Teach for America as were accepted for training and placed in schools. In addition, because the program provides teachers for school districts that have trouble attracting applicants, there are almost certainly many other liberal arts graduates with an interest in teaching who have not applied to Teach for America because they are reluctant to take jobs in poverty-stricken rural and urban systems.

48 These data should not be taken to imply that half of all Teach for America volunteers make their careers as teachers. There is almost certainly some sampling bias in these responses: alumni who have remained active in education are probably more likely to respond to mail from Teach for America than those who have lost interest in teaching and gone on to other careers. Nonetheless, it is clearly a mistake to assume that volunteers’ involvement in teaching is invariably of short duration.


50 Olson, 1987.


56 The National Board for Professional Teaching Standards, which has promulgated standards for the purpose of conducting performance-based assessments, has undertaken no studies of predictive validity.


60 Teachers who are dismissed have a year to find employment elsewhere in the system. If they fail to do so (and no school is obliged to take them), they are terminated outright. Chicago Tribune, 15 May 1998, 15.


66 Virtually all of the school heads we interviewed for our book, *Teacher Pay and Teacher Quality*, indicated that they had dismissed an ineffective teacher on at least one occasion.


68 See, for example, Arthur E. Wise, “Choosing Between Professionalism and Amateurism,” *Educational Forum* 58 (Winter 1994): 140:

69 If teacher salaries are so low that districts have no choice but to hire graduates of inferior programs, then the market will not produce the kind of teachers districts desire, but rather the kind they can afford. This is clearly a problem, but just as clearly, licensing is not the solution. Rather, teacher pay should be raised. To adopt stricter licensing standards at a time when salaries are too low to induce enough capable people to teach would only make matters worse.


71 The ETS has refused to take steps that would provide more solid evidence of validity, for example, correlating teachers’ scores with achievement test scores of their students. According to one ETS official whom we questioned on this point, the opposition of teacher unions was a prominent reason for this decision.

72 Feistritzer, 1997.


74 In Missouri up to 20 percent of a charter school’s faculty may be hired without licenses. North Carolina allows 25 percent of elementary and 50 percent of secondary teachers to be unlicensed (Center for Education Reform, 1998).

75 A full discussion appears in Ballou and Podgursky, 1997.