EDUCATING SCHOOL TEACHERS

BY ARTHUR LEVINE

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The Education Schools Project

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PREFACE

This report, the second in a series of policy reports on the results of a four-year study of America's education schools, focuses on the education of classroom teachers, the people who have the greatest impact on our children's learning in school.

Teacher education has taken on a special urgency because the United States needs to raise both the quantity and quality of our teacher force. The country is experiencing an acute shortage of teachers. At the same time, we are asking teachers to increase student achievement to the highest levels in history in a new standards-based, accountability-driven system of education.

The nation is deeply divided about how to prepare large numbers of high-quality teachers.

To address both demands simultaneously is an enormous challenge, made even more difficult because the nation is deeply divided about how to prepare large numbers of high-quality teachers. We don't agree about what skills and knowledge teachers need or how and when teachers should learn them.

This is the context for the second report. The first report focused on the education of school administrators. The third report will examine the quality of education research and the preparation of the scholars and researchers who conduct it. The final report will be an overview of America's schools of education, where the overwhelming majority of our school leaders, teachers, and scholars are educated.

The nation's 1,206 schools, colleges, and departments of education constitute a sprawling enterprise that is located at 78 percent of all four-year colleges and universities.[1] They award one out of every 12 bachelor's diplomas; a quarter of all master's degrees; and 15 percent of all doctorates, more than any other branch of the academy.[2]

They have been the subject of mounting criticism over the past decade from

academics, foundations, think tanks, professional and scholarly associations, and government. This four-part study is intended to go beyond the usual, untested assertions of education school critics and the too-often defensive posture of the schools themselves. The simple fact is that education schools have strengths that go unrecognized by their detractors and they have weaknesses that they are unwilling to acknowledge.

This is neither the defense desired by some, nor the attack sought by others. It is an effort to produce a candid assessment rooted in extensive data.

This study began with the belief that an insider and president of a well-known school of education could speak candidly to the education school community and that, while there would be disagreement with what was said, it could not be dismissed as the work of a know-nothing or an ideologue.

I asked an education journalist whose work has focused on higher education to join me in the project in order to counter any impression that the study was an insider's whitewash and to give credibility to my positive findings. Alvin Sanoff, former *U.S. News and World Report* assistant managing editor and senior staffer on the magazine's annual rankings projects, served as project manager, but the writing and analysis are mine.

This study is unlike any other I have conducted. It quickly became apparent that in today's heavily charged environment, there was less interest in "truth telling" by those interviewed than in defending their positions. Repeatedly, members of the education school community asked for a compelling defense of their schools; people outside the academy requested a stirring condemnation. Insiders worried that any criticism would provide fodder for their opponents and outsiders feared that any praise would protect the status quo.

This is neither the defense desired by some, nor the attack sought by others. It is an effort to produce a candid assessment rooted in extensive data collected for this study, supplemented by past research and years of personal experience in the field. The aim is to let the data speak for themselves and to allow the chips to fall where they may.

A number of studies, described in Appendices 1 and 2, were carried out in the course of this research, including national surveys of deans, chairs, and directors of education schools (referred to in this report as the "Deans Survey"); education school faculty members (referred to as "Faculty Survey"); education school alumni (referred to as "Alumni Survey"); and school principals (referred to as "Principals Survey").

Research included case studies of 28 schools and departments of education, which were chosen to reflect the diversity of the nation's education schools by region, control, religion,

racial composition, gender, and Carnegie Foundation institutional classifications, the traditional typology used to categorize institutions of higher education.[3] (See Appendix 3 for a fuller description of the Carnegie classifications.) The participating schools were promised anonymity and those individuals interviewed were promised confidentiality. Only in instances of good practice are the names of schools mentioned.

Under the auspices of the Northwest Evaluation Association, researchers studied the relationship between teacher characteristics and educational experiences and their students' achievement in math and reading (referred to as "NWEA Study," which is discussed in Appendix 2.)

In addition, the project team oversaw a series of studies on the characteristics of education schools (referred to as "Demographic Study"), the programs they offer, the credentials of their faculty, and the degrees they award, as well as an examination of doctoral student dissertations. This research was supplemented by databases from other organizations.

It is clear that there is no such thing as a typical education school. Their diversity is extraordinary. They are both free-standing institutions and subunits within larger colleges and universities. They are for-profit and not-for-profit, public and private, sectarian and non-sectarian. They are large and they are small; undergraduate, graduate, and combinations of both. Some are departments of education that offer only programs to prepare teachers. Others are colleges of education with scores of programs in a cornucopia of subject areas, covering education in the broadest sense of the term—in and out of the classroom and across the lifespan. They differ in their emphasis on teaching and research. Some model themselves after professional schools; others favor the graduate school of arts and sciences model; and most try to blend both.

Throughout this research, deans, professors, and others familiar with the nation's colleges, schools, and departments of education told the researchers the challenge would be to make sense of the diversity of programs and settings that are lumped together under the banner of schools of education. In truth, the title conceals as much as it reveals.

Education schools include a very small number of specialized and free-standing institutions such as the Bank Street College of Education and Teachers College, Columbia University. There are also a small, but increasing number of for-profit and on-line institutions such as the University of Phoenix and Kaplan's

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The study began with the belief that it made no sense to study the nation's 1,206 education schools as a uniform entity without acknowledging their differences.

new education school. None of these was included in the research because they are anomalies that differ from traditional education schools, which are not-for-profits and subunits within larger universities.

It was also useful to omit Teachers College from this study to eliminate the appearance of bias on the part of the author. This study focuses on the rest of America's departments, schools, and colleges of education located in non-profit institutions of higher education.

The study began with the belief that it made no sense to study the nation's 1,206 education schools as a uniform entity without acknowledging their differences or to view them separately without recognizing their commonalities. The Carnegie Foundation typology makes it possible both to distinguish among colleges and universities and to group them according to their shared characteristics. (A description of education schools by Carnegie Classification is found in Appendix 3 and summarized in Table 1 on page 9.)[4]

Readers will notice that throughout the text that follows, I use the pronoun "we" rather than "I." This is because the study was the work of many—a project team and thousands of participants in the research. The project had the support of the Annenberg, Ford, and Kauffman Foundations. The Wallace Foundation provided additional funding for the dissemination of this report, as discussed in Appendix 5. I am grateful to them all.

Since beginning this study, I have moved from the presidency of Teachers College, Columbia University, to the presidency of the Woodrow Wilson National Fellowship Foundation. The foundation provides an opportunity to continue and expand on this study of education schools and to develop strategies for implementing its findings and recommendations.

Arthur Levine
Princeton, New Jersey

TABLE 1

Definitions and Characteristics of the Six Carnegie Types of Colleges and Universities

Throughout this report, schools of education are differentiated according to the "Carnegie type" of the college or university to which they belong. (See Appendix 3 for a full explanation of types.) In the table below, definitions of Carnegie types are on the right; information on education programs is on the left.

Baccalaureate Granting Colleges

401 departments of education are located at baccalaureate colleges, which are schools primarily engaged in undergraduate education. These departments tend to be small, graduating just 13 percent of the country's school teachers annually.

Baccalaureate General
- 268 schools of education
- up to half of all degrees awarded are in the liberal arts

Baccalaureate Liberal Arts
- 133 schools of education
- more than half of degrees awarded are in the liberal arts

Master's Granting Universities

562 schools and departments of education, constituting 47 percent of the nation's education schools, are located at master's level institutions. They graduate 54 percent of school teachers earning degrees each year.

Masters I
- 467 schools of education
- predominantly regional public universities
- award 40+ master's degrees per year across 3+ disciplines
- tend to be much larger in enrollment than the Masters IIs

Masters II
- 95 schools of education
- mostly private, tuition-dependent colleges
- grant at least 20 master's degrees annually without regard to field

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Doctorate Granting Universities

228 schools and departments of education are located at doctorate-granting universities. They award 34 percent of the degrees granted annually to school teachers.

Doctoral Extensive
- 138 schools of education
- award 50+ doctoral degrees per year in at least 15 disciplines

Doctoral Intensive
- 90 schools of education
- award at least 10 doctorates across three disciplines annually (or at least 20 doctorates overall, regardless of field)

TEACHER EDUCATION *in* FLUX

More than ever before, it is imperative to have high-quality teachers. In today's information economy, education has become the engine driving the future of the country and of our children. To obtain a decent job and support a family, children need higher levels of skill and knowledge than ever before. To compete in a global marketplace and sustain a democratic society, the United States requires the most educated population in history. For these reasons, the future is in the hands of the nation's teachers. The quality of tomorrow will be no better than the quality of our teacher force.

This is a report about the education of those teachers in America's colleges and universities at a time when the country needs more and better teachers. Quantitatively, estimates are that the United States is facing nearly 200,000 teacher vacancies a year at a cost to the nation of $4.9 billion annually, owing to high attrition rates among new teachers and the retirement of baby boomer teachers, as well as increases in student numbers due to immigration, population redistribution, and regional growth.[5] Qualitatively, teacher skills and knowledge have to be raised if we are to substantially increase student achievement to the levels needed for an information economy. Ordinarily, increasing teacher quality necessitates a reduction in quantity, and increasing quantity requires a trade-off in quality. Our teacher education programs are facing the challenge of doing both at once.

Estimates are that the United States is facing nearly 200,000 teacher vacancies a year at a cost to the nation of $4.9 billion annually.

But their challenge is even larger because today's teachers need to know and be able to do things their predecessors did not. They have to be prepared to *educate all* of their students to achieve *the highest learning outcomes* in history. This is a fundamentally different job than that of past generations of teachers.

Perhaps the most important difference is the meaning ascribed to *educate*.

Current teacher education programs are largely ill equipped to prepare current and future teachers for new realities.

Industrial societies focus on achieving common processes and information societies seek common outcomes. Reflecting this change, the focus of schooling has shifted from teaching to learning—to the skills and knowledge students must master, rather than the skills and knowledge teachers must teach. This is not a rhetorical difference. It turns education on its head as the focus shifts from assuring common processes for all schools (e.g. 12 grades, 180-day school years, and five major subjects a semester) to assuring common outcomes for all students.

The emphasis on *learning outcomes* mirrors this change. The states now set minimum acceptable achievement levels, the *highest* in history, that students must attain, and mandate testing regimens to assess whether students are actually meeting state standards. Teachers must ensure that their students meet those standards and demonstrate mastery on the appropriate exams.

The fact that *all* students are expected to achieve these outcomes means that drop-outs, once viewed as the cost of doing business in schools, can no longer be tolerated. The low-skilled jobs once available to them have moved abroad. So teachers must now be able to educate every child in the class to achieve the same learning outcomes at a time in which the student body has changed economically, racially, geographically, linguistically, and academically.

Most of our current teachers are unprepared for these changes. They were educated for classrooms that existed when they earned their teaching credentials. While they were doing their jobs, these classrooms were quietly transformed around them due to the same dramatic forces—economic, demographic, technological, and global—that rocked the country. Current teacher education programs are largely ill equipped to prepare current and future teachers for these new realities. This report focuses on those programs.

The Teacher Education Reform Conundrum

The task before us is to redesign teacher education for a new era—to produce a greater number of high-quality teachers with the skills and knowledge necessary to raise student achievement to the highest levels in history. Unfortunately, educators and policy makers disagree fundamentally about how to accomplish the task at hand. There are conflicting and competing beliefs on issues as basic as when and where teachers should be educated, who should educate teachers, and what education is most effective in preparing teachers. These differences undermine successful teacher education reform.

How and When Teachers Should Be Educated

There is a schism over the how's and when's of teacher education between those who believe teaching is a profession like law or medicine, requiring a substantial amount of education before an individual can become a practitioner, and those who think teaching is a craft like journalism, which is learned principally on the job.

This debate drew national attention in 2002 when U.S. Secretary of Education Rod Paige, a former school superintendent and education school dean, embraced the craft position. In his annual report that year, he wrote that there "was little evidence that education school course work leads to improved student achievement."[6] He drew this conclusion from a study by the Abell Foundation, entitled *Teacher Certification Reconsidered: Stumbling for Quality*, This study characterized 50 years of teacher education research as "flawed, sloppy, aged, and sometimes academically dishonest."[7] Like the foundation, Paige recommended that teachers be hired on the basis of their subject matter knowledge and verbal ability; education school course work should be made optional and student teaching should be eliminated as a requirement for new teachers.

Those who believed teaching is a profession responded loudly, stating that rigorous preparation was essential to educating teachers. They said reductions in pre-service course work in education would diminish student learning in schools, increase teacher attrition, and disproportionately affect the most disadvantaged children in America. The same half-century of studies dismissed by Abell were offered in evidence. The work of the Abell Foundation was criticized for being "littered with inaccuracies, misstatements, and misrepresentations."[8]

The Abell Foundation replied in kind. In the words of the trade newspaper *Education Week,* the exchange was a battle royale—"the charges flew like chairs on the 'Jerry Springer Show.'" Using words like "shameful" and "dishonest," the parties accused each other of hypocrisy and of harboring ulterior motives."[9]

This was no ordinary clash. Try to imagine the same thing happening in medicine. It is difficult to conceive of a debate over whether medical school study by physicians improves patient health. Would national health care be enhanced if physician licensure were awarded to people with subject mastery of the basic sciences and high verbal ability and if study in medical school were made optional?

But the debate did occur in teacher education. Today, both sides view their positions as matters of

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faith; the rhetoric is white hot; and there is no room for compromise. The clash of beliefs is reshaping the world of teacher education, driving it headlong in opposing and incompatible directions.

On one hand, reflecting the position that teaching is a profession, states have created a more regulated and regimented environment that strives to improve teacher quality, demands higher standards of the people entering the teaching profession, and seeks greater accountability from teachers and the institutions that prepare them.[10]

Integral to this has been increased teacher testing for certification in the areas of basic skills, subject matter, and pedagogy.[11] The states have also adopted accountability measures for education schools, including the publication of institutional pass rates for graduates on teacher licensing exams, identification of low-performing schools of education, and experimentation with accountability based on student achievement in classes taught by alumni.[12]

On the other hand, the belief that teaching is a craft, compounded by pressure to find enough teachers to fill empty classrooms, has resulted in many states' deregulating entry requirements for teachers, creating a more open marketplace for teacher education. There is now greater variability in what is required to enter teaching, multiplication in the number of pathways into teaching, and a diminished role for university-based teacher education programs. Today 47 states and the District of Columbia have adopted alternative route programs, designed to speed entry of teachers into the classroom and reduce or eliminate education school course work. In the past quarter-century, they have permitted more than a quarter million people to earn teaching credentials, most within the past decade.[13]

The rise of divergent routes into the classroom has been accelerated by the federal government. The "No Child Left Behind" (NCLB) law defines "highly qualified" teachers as persons with subject matter mastery, but without traditional university-based teacher education classes.

The bottom line is that the U.S. lacks a common vision of how to prepare teachers to meet today's new realities, leading to the rise of divergent and opposing approaches to reform.

Where Should Teachers Be Educated?

The profession/craft debate also raises the question of where teachers should be educated: in traditional university-based programs or via an expanding number of non-university alternative route programs, which

TABLE 2

Teacher Education Programs by Institutional Type

	Number	Percentage of type
Baccalaureate- General	268	82%
Baccalaureate- Liberal Arts	133	59%
Masters Granting I	467	94%
Masters Granting II	95	83%
Doctoral Research- Intensive	90	81%
Doctoral Research- Extensive	138	91%
Total	**1,191***	

*Based on colleges and universities listed under Carnegie Classification in 2000. Retrieved from http://www.carnegiefoundation.org/classifications/index.asp on July 31, 2006.

Source: Demographic Study

tend to be mirror images of one another? The traditional programs, relying on professors as their primary faculty, can be characterized as more theoretical and academic, while the non-university programs, utilizing practitioners as their principal instructors, emphasize practice and field work. The course of studies is also longer in university programs, reflecting differences in the amount of preparation believed necessary to enter a classroom.

For those preparing for a profession, pre-service teacher education generally takes place in one of nearly 1,200 colleges and universities, found at78 percent of the nation's four-year schools. In 2002-03, these programs produced almost 106,000 teacher education baccalaureate degrees, more than 64,000 master's degrees, nearly 1,000 doctoral degrees, and over 4,000 certificates in teacher education.[14]

The greatest commonality among university-based teacher education programs is their diversity. The institutions housing them vary from open admission baccalaureate granting colleges to the most selective doctoral awarding universities (Table 2).[15] The programs educate teachers at the undergraduate and graduate levels. They award baccalaureate degrees, master's degrees, and certificates (Table 3). They may require majors in education, majors in the liberal arts, majors in the liberal arts and education, and minors in teacher education or the liberal arts.[16]

Those being prepared for a craft reach the classroom through an equally diverse array of programs,

TABLE 3

Percentage of Colleges and Universities with Various Teacher Education Programs by Carnegie Type

Program Type	Overall	Baccalaureate General	Baccalaureate Liberal Arts	Masters I	Masters II	Doctoral Intensive	Doctoral Extensive
Baccalaureate programs	95%	98%	96%	96%	97%	95%	82%
Five year B.A./ M.A.T. program	6%	2%	2%	6%		8%	21%
Post-baccalaureate non-degree programs	40%	25%	24%	50%	38%	68%	56%
Master of Arts in Teaching (M.A.T.)	25%	9%	13%	33%	23%	36%	48%
Master of Arts/ Science (M.A., M.S.)	67%	29%	22%	96%	73%	98%	95%
Certificate of Advanced Study	28%	1%	3%	43%	13%	74%	64%

Source: Demographic Study

offered under the banner of alternative routes to teacher certification, a term referring to a collection of programs linked more by what they *are not* than what they are.

They are everything under the sun except traditional university teacher preparation programs. Emily Feistritzer, president of the National Center for Education Information, has studied a variety of alternative programs around the country.[17] She has reported wide variation in program content. While 90 percent of the participants teach full time during their studies, only 61 percent take college education courses.[18] If they do take courses, the number of credits ranges from fewer than six (14 percent) to more than 41 (8 percent).[19] The median range is 13 to 18 credits.

The staffing of the programs follows the same pattern. Most commonly, students work with mentor teachers (90 percent) and school dis-

trict staff members (85 percent). Less frequently, they study with professors on college campuses (54 percent) and college faculty members in their schools (36 percent).[20]

The providers of non-collegiate teacher education run the gamut from for-profit companies such as the education school of the online Kaplan University (owned by the *Washington Post)* to non-profits such as Teach for America; from community colleges to school systems; and from regional education services to individual public schools. Their numbers are booming. (These providers are described in more detail in Appendix 4).

In conclusion, the divergences in belief regarding where teachers should be prepared once again leads to conflicting and inconsistent directions for improving teacher education. We are divided about whether the primary faculty should be academics or practitioners. We disagree about whether the curriculum should be largely course work or field experience. And, of course, we differ regarding the amount of education students require before entering the classroom. The enormous diversity of practices within university and non-university teacher education muddles the path further.

What makes this situation especially troubling is the likelihood of systematic differences in how teachers are educated for differing types of schools, subjects, and students. For instance, it seems that teachers in urban schools would more likely be prepared for a craft than their counterparts in suburban schools. Hard-to-staff subjects would also be more likely to employ teachers educated via alternative routes.[21] Low-income children of color would more likely be taught by teachers educated for a craft than their more affluent white peers. School systems concerned principally with increasing the number of teachers would be more likely to hire faculty prepared for a craft, while school systems emphasizing qualitative improvement would more likely be inclined to recruit teachers prepared for a profession. In short, teachers are likely to be taking dramatically different courses of study to prepare to teach in the same school districts.

What Is the Most Effective Way to Educate Teachers?

The divides over whether teaching is a profession or a career, whether teacher education should be the province of schools of education or alternative providers, and whether teachers should learn their jobs before entering a classroom or in the classroom while on the job, are exacerbated by the changing expectations for P-12 schools. The shift in focus

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from common processes for all schools to common outcomes for all children changes the measure of success for teachers. Process-based school systems, rooted in what students are taught, assesses education success in terms of issues such as teacher knowledge and credentials, curriculum design and organization, and reliable and valid assessment methods. In contrast, outcome-based systems, concerned with what students learn, have a single measure of success—student achievement.

Therein lies the problem. The voluminous body of research on teaching was produced largely before the shift to common outcomes. As a result, we don't know enough about the impact of teacher education on student achievement. We do not know whether university-based or non-university-based teacher education is superior. We don't know whether educating teachers for a profession or a craft is more effective in raising student achievement.

Study after study has reported limitations in the existing research. With regard to university-based teacher education, a Michigan State University meta-study found: "There is no research that directly assesses what teachers learn in their pedagogical preparation and then evaluates the relationship of that pedagogical knowledge to student learning or teacher behavior."[22] There is also "no research that directly assesses prospective teachers' subject matter knowledge and then evaluates the relationship between teacher subject matter preparation and student learning."[23]

Unfortunately, critics of university-based teacher education often treat the absence of research as a negative finding. That is, instead of concluding that we don't yet know about the impact of university-based teacher education on student classroom achievement, they have acted as if the absence of research is the equivalent of finding that the university-based programs have at best no impact or may actually reduce student achievement. This has fueled the expansion of alternative routes and encouraged alternative providers.

The state of research on the efficacy of alternative route programs is no better. Few studies exist, and most of those rely on satisfaction surveys and a basketful of anecdotes. Indeed, Zeichner and Conklin carried out a meta-study of the peer reviewed empirical research comparing traditional and alternative route programs. They compared both approaches in a variety of settings and reported serious methodological flaws in the research, very little difference in the outcomes, and inconclusive findings.[24]

The bottom line is that we lack empirical evidence of what works in

preparing teachers for an outcome-based education system. We don't know what, where, how, or when teacher education is most effective. This means the education our teachers receive today is determined more by ideology and personal predilection than the needs of our children.

An Assessment of University-Based Teacher Education Programs

Faced with an urgent need to reform teacher education and competing visions of how this should be accomplished, this report examines university-based teacher education, where an overwhelming proportion of our teachers are prepared. It asks how well these programs educate teachers to meet the needs of today's children and our changed expectations for schools. A decade ago, the Holmes Group, a coalition of deans of graduate schools of education, issued a report entitled *Tomorrow's Schools of Education.*[25] It criticized the gap between education schools and the world of practice, the mix of excellent and shoddy teacher education programs, top research professors who spent little time with practitioners and held schools and teacher education in disdain, instruction in outmoded conceptions of teaching and learning, the split between theory and practice, and poor student field placements.

This study was designed to illuminate what, if any progress has been made and to identify outstanding programs that might provide guidance to the field in the face of today's complex pressures. This report asks two sets of questions.

The first concerns the effectiveness of teacher education. What is the relationship between a teacher's preparation for the classroom and the achievement of his or her students? Where was the teacher educated? Did the teacher graduate from an undergraduate or graduate teacher education program? What classes did the teacher take? While there is a body of compelling research demonstrating that teacher quality makes a significant difference in student learning, there has been a dearth of systematic research documenting the impact of teacher education programs on the students their alumni teach.

For this project, with the assistance of the Northwest Evaluation Association (NWEA), a study was conducted of the teacher education program characteristics of more than 2,000 teachers and the achievement of their students. (See Appendix 2 for a description of this study.)

The second set of questions grows from the first. To relate teacher preparation to student achievement, we must look to the process of

There has been a dearth of systematic research documenting the impact of teacher education programs on the students their alumni teach.

This study offers a nine-point template for judging the quality of teacher education programs. A model program is one that substantially meets all nine criteria.

teacher education. What is the quality of the nation's teacher education programs? Do they have the capacity to educate teachers in the skills and knowledge necessary to educate today's students? This study offers a nine-point template for judging the quality of teacher education programs.[26]

1. Purpose: The program's purpose is explicit, focusing on the education of teachers; the goals reflect the needs of today's teachers, schools, and children; and the definition of success is tied to student learning in the graduates' classrooms.

2. Curricular coherence: The curriculum mirrors program purposes and goals. It is rigorous, coherent, and organized to teach the skills and knowledge needed by teachers at specific types of schools and at the various stages of their careers.

3. Curricular balance: The curriculum integrates the theory and practice of teaching, balancing study in university classrooms and work in schools with successful practitioners.

4. Faculty composition: The faculty includes academics and practitioners, ideally combined in the same individuals, who are expert in teaching, up to date in their field, intellectually productive, and have their feet planted in both the academy and the schools. Taken as a whole, faculty numbers and their fields of expertise are aligned with the curriculum and student enrollment.

5. Admissions: Admissions criteria are designed to recruit students with the capacity and motivation to become successful teachers.

6. Degrees: Graduation standards are high, students are adequately prepared for the classroom, and the degrees awarded are appropriate to the profession.

7. Research: Research carried out in the program is of high quality, driven by practice, and useful to practitioners and/or policy makers.

8. Finances: Resources are adequate to support the program.

9. Assessment: The program engages in continuing self-assessment and improvement of its performance.

Throughout this study, terms such as "model," "strong," "inadequate," or variations thereof are used to describe programs. A model or exemplary program is one that substantially meets all nine criteria. A strong program is one that substantially satisfies most of the criteria. An inadequate program is defined as one

that fails to achieve most of the criteria or has a fatal flaw such as poorly preparing students for the classroom.

Four themes emerge from this report. First, teacher education currently and throughout its history has been faced with enormous challenges that have shaped the field. Second, teacher education is a troubled field, characterized by curricular confusion, a faculty disconnected from practice, low admission and graduation standards, wide disparities in institutional quality, and weak quality control enforcement. Third, nonetheless there are excellent teacher education programs around the country at diverse types of institutions. Though the programs differ substantially, they exhibit a common set of characteristics that provide a model for the field to emulate. Fourth, concrete steps can be taken to improve teacher education in America and raise the quantity and quality of the teacher work force. Further, it is critical to recognize that weaknesses in teacher education are not the primary reason we do not have more and better teachers. Schools and government bear a larger responsibility: for low salaries, which cause most of our best and brightest to reject teaching as a career, and for an absence of teacher induction programs, low hiring standards, and poor working conditions, which cause high teacher turnover.

With a Little Help from Our Friends

Although placing blame for problems is a national pastime, teacher education programs are not solely responsible for their current troubled state. By establishing low salaries for teachers, state and local governments have discouraged most of the best and brightest from becoming teachers. Again and again, we heard from students at highly selective universities that they enrolled in teacher education programs despite the misgivings of their families, friends, and professors, who said "don't waste your education."

In deregulating teacher preparation by opening alternative routes and supporting alternative providers, the states and the federal government did away with quality ceilings and floors. This change eliminated any notion that there were subjects that needed to be studied and experiences that needed to be had before one stepped into a classroom. Moreover, differing standards were established for teachers coming through the various routes.

The strategy adopted by the states and school districts to link salary increases to time spent in further course work or other professional development activities, rather than to the demonstrated acquisition of new and necessary skills and knowledge, has spurred a

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growing market for cheap, easy degrees in teacher education to garner raises for teachers and to meet liberalized alternative route license requirements.

Disparities in state funding between urban and suburban school districts have translated into the cities having to hire less-well-prepared teachers and the suburbs being able to lure away top urban teachers.

Neither the states nor the accreditation process has been able to assure minimum quality standards in teacher education programs.

The urban concentration of weaker teachers, less likely to be certified or to be graduates of traditional teacher education programs, and the low achievement rates of inner city children have helped to create the impression that education schools are preparing an endless stream of poor teachers.

Elected officials, the media and the schools had unrealistic expectations of what teacher education programs were capable of doing: raising the quality of our teacher force, turning around failing schools, slashing the achievement gap, and preparing teachers with the same skills on day one as 20-year veterans. When teacher education programs could not do these things, their critics pronounced them failures and turned to alternative routes and providers.

Philanthropies created their own problems by funding teacher education programs to undertake the fad du jour: the subject matter, pedagogy, or professional development fashion of the moment. Priorities changed quickly; funding was available largely for start ups; and little effort was made to scale up successful approaches.

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Most universities, after a barrage of reports over the past two decades on the need to strengthen teacher education, did little or nothing. In some cases, they actually have worsened the situation by using teacher education as a cash cow—forcing their programs to enroll more students than was desirable, lowering admissions standards, and employing too many adjunct professors because they are cheaper than full-time professors. This enables universities to generate additional revenues for academic units with higher status than education.

For all of these reasons, the nation's teacher education programs are now unable to produce the quantity and quality of teachers our children need.

THE PURSUIT *of* IRRELEVANCE

Many of the problems facing teacher education programs today are current versions of tensions that have plagued them since their beginnings. From their inception, America's schools of education have engaged in a continuing quest to gain acceptance in the academy. It's a story of unending accommodation to win the approval first of the university, then of education schools as they expanded beyond their initial teacher education programs to include a host of new and more highly prized subjects such as school administration, educational psychology, and the liberal arts disciplines (e.g., sociology of education and history of education).

From their inception, America's schools of education have engaged in a continuing quest to gain acceptance in the academy.

In their effort to obtain acceptance, teacher education programs attenuated their ties with P-12 schools and the people who work in them. They attempted to remake themselves in the image of arts and sciences colleges, emphasizing theory over practice and the education of academicians over practitioners.

Since their earliest days, university-based teacher education programs have been the subject of persistent criticism and prejudice. They have been disparaged by academic colleagues for being nothing more than vocational training for women, not an intellectual matter appropriate to the university. Their students and faculty were denigrated for not being of university quality in terms of their credentials, social class, race, and gender. In the late 19th century, this encouraged schools of education, eager to raise their academic standing, to adopt educational leadership programs, enabling them to prepare men for higher status jobs with bigger paychecks.

From the start, there have been proposals to move teacher education to a host of providers other than education schools. On the grounds that teacher education lacks a disciplinary base and is not an academic field, some have

argued that it be relegated to normal schools. In the belief that future teachers need an education in subject matter rather than pedagogy, critics suggested that teacher education be the domain of liberal arts colleges, not education schools. Believing education schools to be lacking in research capacity, others urged that education research be carried out by graduate schools of arts and sciences.[27]

No matter how many permutations teacher education programs have undergone over the years, the criticisms of the field, fair or unfair, have persisted. So has the belief among teacher education programs that one more accommodation might finally win them respect.

Today's teacher education programs have their roots in two different institutions—normal schools and universities.

The Evolution of Teacher Education in America

Today's teacher education programs have their roots in two different institutions—normal schools and universities. Normal schools entered teacher education first. But they were not collegiate-level institutions; they were secondary schools that prepared teachers for the common or elementary schools. While they hoped to attract the graduates of academies and high schools, most of their students had only an elementary school education. Their admission standards were low; they took just about anyone who wished to enroll. Their course of study was short—originally a year or less with brief terms and high absentee rates. Students commonly left to take jobs without completing the program. Program funding, facilities, and curriculum materials were meager. Because a high proportion of normal school students needed remediation, the curriculum was an eclectic mix of basic subject matter and pedagogy. The normal schools were local in their operation, constituency, and services. And from the time they were first established, they were attacked in the belief that others could do their job better.[28]

The rise of the high school and the advent of accreditation and professional associations in education late in the 19th century changed the world for normal schools. They sought to educate the burgeoning numbers of newly needed secondary school teachers, but higher education also claimed that right. So the normal schools transformed themselves to become competitive with colleges by adopting the newly developed standards of recently established regional accrediting associations and professional societies like the National Education Association. They raised their admissions standards to require a high school diploma of all students. They extended their programs to two years for elementary

and four years for high school teacher preparation. They added research to their activities and liberal arts departments to their organization. They added professors from liberal arts colleges to their faculties, which changed the culture of the schools. There were tensions over the quality of pedagogical courses, the relevance of liberal arts instruction, the appropriate balance between academic and vocational courses, the requirements for admission and graduation, and just about anything else arts and sciences and professional faculties could disagree about.

By 1930, the normal schools had become collegiate institutions. A decade later, normal schools had vanished. Most of the private normal schools closed and the publics became state teachers colleges. Public normal schools begat state normal colleges, which begat state teachers colleges, which begat state colleges, which begat state universities, and sometimes even "state" fell away from the title. By 1938, 20 percent of the former normal schools and state teachers colleges were offering graduate work. Two decades later, the same proportion was awarding doctoral degrees.

This brings us to the second institution that gave birth to the nation's teacher education programs. Universities, like the normal schools, wanted a role in preparing high school teachers for a lot of reasons of varying nobility. At the turn of the century, only four percent of the postsecondary-aged population was attending college, so a goodly number of colleges with very small enrollments saw teacher education as a possible source of students and income. There was fierce competition for students between colleges and every other type of educational institution as each sought to increase its enrollments.[29]

More positive educational rationales for entering the teacher education field also existed. Throughout U.S. history, college men and later women had earned tuition by teaching during term breaks, so there was a legacy to be embraced. Moreover, high school teaching depended on mastery of a subject area or discipline and this, in the mind of higher education, was indisputably the province of the university. Further, some within higher education felt that preparing better school teachers would undoubtedly enhance both the quality of the public schools and their graduates. All of this made the education of high school teachers appealing on a variety of levels to colleges and universities.

Compared to the situation in normal schools, the process of moving into education was telescoped in higher education. In 1873, the University of Iowa established the

At the turn of the century, a goodly number of colleges with very small enrollments saw teacher education as a possible source of students and income.

country's first permanent chair in education. By 1915, American higher education, not known for its speed of action, had moved from a single chair in education to a majority of colleges providing course work in the field.[30]

Education schools began offering graduate instruction in 1893 and awarded their first Ph.D. in 1897.[31] Within a decade, they were awarding doctoral degrees at a rate far higher than any other branch of the university.

A majority of teachers are prepared at the education schools with the lowest admission standards and least accomplished professors.

These education initiatives and their rapid expansion were not greeted enthusiastically within the academy. So education faculties did what their colleagues at normal schools had done; they adapted to fit better within the university. They switched their reference group from school people to professors on campus. They hired faculty whose credentials were more academic and less practice-based. They increasingly emphasized scholarship over practice in their activities and their expectations of faculty. They stressed traditional academic measures for granting admission and gauging student performance. They made their curriculums more academic and less vocational. They elevated more prestigious subject areas over teacher education. They withdrew from schools and practitioners into the university and academics. Despite these actions, universities continue to look down on their teacher education programs and the programs too often remain disconnected from the elementary and secondary schools they were created to serve.

On most campuses, teacher education is regarded by university professors and administrators inside and outside the education school as one of the poorest-quality campus units owing to low admissions standards, particularly for future elementary school teachers. Moreover, a majority of teachers are prepared at the education schools with the lowest admission standards and least accomplished professors. (See Part Eight.)

Today, the teacher education curriculum is a confusing patchwork. Academic instruction and clinical instruction are disconnected. Graduates are insufficiently prepared for the classroom. And research on teacher education is criticized by the academic community for its low quality and is ignored by policy makers and practitioners.

In the course of our conversations with teacher educators, we heard complaints over and over again about what was being done *to* them and their programs. They often portrayed themselves as innocent recipients of abuse and disrespect. While there is some truth to their claims, they must take responsibility

for many of their own problems. They have clung to an outdated, historically flawed vision of teacher education at odds with a society remade by economic, demographic, technological, and global change. They have not adequately prepared graduates to teach in the new outcome-based, accountability-driven education system that demands all students be raised to the highest knowledge and skill levels in history. Change has come grudgingly and largely at the margins.

Part One offered nine criteria for judging the quality of teacher education programs. For all of the reasons discussed, teacher education as a field does not satisfy any of these criteria. Exemplary programs are those that satisfy all of the criteria, and inadequate programs are those that fail to satisfy most of the criteria or have a fatal flaw in one or more areas. By these standards, taken as a whole the nation's teacher education programs would have to be described as inadequate as summarized in Chart 1.

This conclusion does not apply to every teacher education program. The following sections examine the condition of teacher education according to each of the nine criteria. Part Three concerns graduation and degree requirements. Part Four deals with purpose, curricular coherence, and curricular balance. Part Five discusses faculty composition and research. Part Six looks at admissions and finances. Part Seven considers assessment.

Part Eight discusses disparities in the quality of the nation's teacher education programs by institutional type. The focus shifts in Part Nine, which presents profiles of successful teacher education programs, proving that history need not be destiny. The final section offers conclusions and recommendations.

Change has come grudgingly and largely at the margins... Taken as a whole the nation's teacher education programs would have to be described as inadequate.

CHART 1

Criteria for Excellence Applied to University-Based Teacher Education Programs

Criterion	Generally meets criterion	Explanation
Purpose • Purpose is explicit, focusing on the education of practicing school teachers • Goals reflect needs of today's schools and children • Success is tied to student learning	No	University-based teacher education has focused on teaching rather than learning. The mark of program success has been whether graduates have been taught the skills and knowledge necessary to teach, rather than whether they are effective in promoting student learning. While there are programs across the country with explicit missions and goals, the field of teacher education has fundamental disagreements about what, when, where, and how much education future teachers need. Relativism and an attitude of "let 100 flowers bloom" prevails. There is no shared vision of the career progression of teachers or the education needed at each career stage.
Curricular Coherence • Curriculum is rigorous, coherent, and organized to teach the skills and knowledge needed by teachers at specific types of schools and at the various stages of their careers	No	Experts in the field of teacher education disagree about the skills and knowledge teachers must possess. They disagree about whether teacher preparation should be an undergraduate or graduate program. They disagree about whether it takes one year, four years, five years or some other number of years of study. As a consequence, pre-service education varies from undergraduate majors in education to undergraduate minors to undergraduate course work to graduate programs to alternative route programs. In-service teacher education is the weakest element in teacher education.
Curricular Balance • Curriculum integrates the theory and practice of teaching	No	The best programs integrate theory and practice, but there is generally a chasm between theory and practice in teacher education. Academics are primary and clinical education is secondary. There is little connection between what students learn in university classes and what they learn in the schools. Time in clinical settings is too short and involvement of university professors in the schools is insufficient. Too often, student teaching sites are not appropriate and performance of student teachers is insufficiently monitored.
Faculty Composition • Faculty composed of scholars and practitioners expert in teacher education, up to date in their fields, intellectually productive, and having their feet planted simultaneously in the academy and the schools • Total faculty numbers and fields of expertise aligned with curriculum and student enrollment	No	There are programs across the nation that blend high quality practitioners and academics. They work well together and engage in joint planning, teaching and assessment. But this is not the norm. More common are academics without recent experience in schools and second-class clinical faculty who are minimally involved in curriculum planning and design. There is also a divide between universities and public schools, education school and arts and sciences faculties, and teacher education and other education school professors. Teacher education program quality is generally criticized by the second in each pair.

Criterion	Generally meets criterion	Explanation
Research		Research in teacher education is generally poor as reported in a number of recent studies. Much of it is obscure, subjective and ignores basic research conventions. It also fails to study major issues in practice and policy such as the impact of teacher education on student learning.
• Research high quality, driven by practice, and useful to practitioners and/or policy makers.	No	
Finances		There are consistent complaints about teacher education programs being treated as cash cows by their universities. Their funding base is lower than many other programs, owing to the income levels of alumni and the amount of extra mural funding available.
• Resources adequate to support the program	No	
Admissions		There are teacher education programs with high admissions standards and others with lower admissions standards, but high graduation requirements. More common, however, are low admission requirements and low graduation requirements. This study finds the widely held belief that teacher education students are among the weakest in the university to be false. It is not true for students in secondary education, but elementary teacher education students do have significantly lower standardized admission test scores than their university classmates. Job status and teacher salaries certainly contribute to this. There is a troubling tendency for many less selective teacher education programs to defend their absence of rigor and standards on the grounds of being committed to access for underrepresented populations.
• Admissions criteria designed to recruit students with the capacity and motivation to become successful school teachers	No	
Graduation and Degree Standards		Graduation standards are low and the majority of teachers are graduating from weaker schools. Alumni and principals rate teacher preparation low in critical areas such as classroom management, working with diverse student populations, and teaching to state standards. These are subjects that education school deans believe should be learned at the university. Unlike law and medicine, there is no common degree in teacher education. Teacher preparation programs lead to bachelor's degrees, master's degrees, and a variety of certificates. This is a reflection of the "let 100 flowers bloom" attitude. There is also a growing market for cheap, easy degrees in teacher education to garner raises for teachers and to meet liberalized alternative route license requirements.
• Graduation standards are high and the degree awarded is appropriate to the field	No	
• Research is high in quality, driven by practice, and useful to practitioners and/or policymakers		
• Resources adequate to support the program		
Assessment		As in all university sub-units, self assessment is largely absent. Both accreditation and state controls are insufficient to set minimum quality standards.
• Continuing self-assessment and performance improvement	No	

INADEQUATE PREPARATION

One of the unfortunate consequences of teacher education's retreat from practice and practitioners is that graduates are not being adequately prepared for the classroom. This was the opinion of more than three out of five teacher education alumni (Alumni Survey; See Table 4.)

We gave principals, education school faculty, deans, and alumni a list of the skills and knowledge rated as important by principals in the new teachers they hire[32] and asked all four groups to evaluate how well schools of education prepared their graduates in each area, using a four-point scale ranging from very well to not at all well.[33] The 11 skill and knowledge areas included classroom management; subject matter mastery; ability to use technology; ability to apply different pedagogical approaches; ability to employ assessment techniques; ability to implement a standards-based curriculum; understanding of how children learn; and capacity to work with diverse groups including parents, children with disabilities, and children with limited English proficiency. (Table 5 shows the results.)

Principals were the most critical of education schools. Across the 11 competencies, only 40 percent on average thought schools of education were doing very or moderately well. Less than half of all principals surveyed thought schools of education were preparing their students very or moderately well in integrating technology into their teaching; implementing curriculum and performance standards; using student performance assessment techniques; addressing the needs of students with disabilities, limited English proficiency, and diverse cultural backgrounds; working with parents; and classroom management (Principals Survey).

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TABLE 4

Percentage of Alumni Agreeing Education Schools Do Not Prepare Graduates for Classroom Realities by Carnegie Type

Criticism	Overall	BG	BLA	DRE	DRI	MI	MII
Schools of education do not prepare their graduates to cope with classroom reality	62%	62%	58%	60%	53%	66%	57%

BG = Baccalaureate General, **BLA** = Baccalaureate Liberal Arts, **MI** = Masters Granting I, **MII** = Masters Granting II, **DRI** = Doctoral Research Intensive, and **DRE** = Doctoral Research Extensive

Source: Alumni Survey

TABLE 5

How Well Do Schools of Education Prepare Teachers According to Principals, Deans, Faculty and Teacher Education Alumni

	Percentage responding "very well" or "moderately well"			
	Principals	Deans	Faculty	Alumni
Integrate technology into the grade level or subject taught	46%	50%	50%	41%
Maintain order and discipline in the classroom	33%	54%	47%	57%
Implement state or district curriculum and performance standards	41%	79%	79%	60%
Use student performance assessment techniques	42%	58%	60%	67%
Address needs of students with disabilities	30%	51%	52%	60%
Address needs of students with limited English proficiency	16%	22%	25%	27%
Address needs of students from diverse cultural backgrounds	28%	38%	38%	52%
Understand how students learn	54%	74%	68%	81%
Work with parents	21%	34%	33%	43%
Utilize different pedagogical approaches	54%	78%	71%	74%
Have a mastery of their subject area	72%	79%	69%	73%
Average	**40%**	**56%**	**54%**	**58%**

Source: Alumni, Deans, Faculty, and Principals Surveys

Teacher education alumni (58 percent), deans (56 percent), and faculty members (54 percent) were each more positive overall, though only marginally. To put this into perspective: Historically, the passing grade for children in school has been 65 percent. By those standards, no group gave the preparation of teachers an overall grade above F.

If one looks at the 11 skill and knowledge areas individually, in only one area did 60 percent or more of the principals say students were very or moderately well prepared: mastery of subject matter. A similar rating was given by alumni, faculty, and deans in just four areas: mastery of subject matter, understanding of how students learn, ability to use different pedagogies, capacity to implement state standards.

One plausible explanation is that no professional school can possibly teach its graduates everything they need to know before taking a job. Some things can only be learned on the job. Therefore, the deans were asked if education schools were the most appropriate place to prepare teachers in each of the competencies. For all but two areas, working with parents and acquiring mastery of subject matter, more than 80 percent of the deans said education schools were, indeed, the most appropriate place to learn the competency. In the other two areas, approximately seven out of 10 deans concurred (Deans Survey). (See Table 6.)

The inescapable conclusion is that the nation's teacher education programs are not adequately preparing their students in competencies that principals say they need and that schools of education regard as their responsibility to teach.[34]

TABLE 6

Are Education Schools the Most Appropriate Place to Teach Varying Competencies According to Deans?

	Percentage of deans responding yes
Integrate technology into the grade level or subject taught	92%
Maintain order and discipline in the classroom	81%
Implement state or district curriculum and performance standards	82%
Use student performance assessment techniques	93%
Address needs of students with disabilities	92%
Address needs of students with limited English proficiency	83%
Address needs of students from diverse cultural backgrounds	90%
Understand how students learn	96%
Work with parents	71%
Utilize different pedagogical approaches	96%
Have a mastery of their subject area	68%

Source: Deans Survey

A CURRICULUM *in* DISARRAY

In the course of this study, Deborah Ball, the dean of the University of Michigan's school of education, offered the most lucid and compelling explanation of what a teacher education curriculum should be. Her conception might be described as an enriched or advanced major: that is, a traditional subject matter major in an area such as history, music, or chemistry, combined with additional specialization in how to effectively communicate that subject matter or more specifically how to enable students to learn it. The future teacher would graduate knowing what to teach and how to teach it.

The teacher education curriculum is governed by a philosophy of "let 100 flowers bloom." Relativism is the rule.

A Curriculum Bazaar

The logic and clarity of Ball's description are uncommon and refreshing. They stand in marked contrast to the teacher education curriculum nationally, which reflects the historic confusion of the field with regard to purpose. In our conversations, teacher education faculty were generally more concerned with the mechanics of the curriculum than with its intended goals. The dean of a premier education school explained that teacher educators were preoccupied with the questions of "how": How many years should a program be? How long should student teaching be? How many methods courses should students take? They overlooked the "what": What constitutes an effective teacher? What skills and knowledge does a teacher need to advance student learning?

The fundamental weakness in the teacher education curriculum is the lack of agreement about what it should produce. The result is that the teacher education curriculum is governed by a philosophy of "let 100 flowers bloom." Relativism is the rule.

In this sense, the contrast between the education of teachers and the educa-

Teacher preparation may occur at the undergraduate level, the graduate level, or both, even within the same university.

tion of most other professionals is stark. In order to prepare to become a lawyer in the United States, an individual generally enrolls in a law school, takes a prescribed three-year graduate course of study, and at its completion earns a J.D. degree, the first professional degree in the field. To become a physician, a student enrolls in a medical school, attends a prescribed four-year graduate program, and on satisfactory completion is awarded an M.D. degree, the first professional degree in that field. In both professions, there is basic agreement on what an entry-level practitioner should know and be able to do. Accordingly, each can construct a curriculum that specifies what is studied, when it is studied, how long it is studied, and which credential is awarded for completing the studies.

But teaching is different. There is no common first professional degree. Students can earn a whole host of degrees and certificates. There is nothing approaching a uniform length of study to become a teacher. A preparation program may be one year or two, four years or even five, unless it is a campus-based alternative certification program, in which case any length is possible.

The length of a program may have little to do with educational considerations. It can be determined by the marketplace. For instance, at one Northeastern research university, the chair of the teacher education program favored a five-year program that would offer a bachelor's degree in the liberal arts and a master's degree in teacher education, rather than a four-year teacher education baccalaureate. She said: "Kids need to commit at the outset of their freshman year that education is what they want to pursue. They must select courses carefully and pass every course along the way. That's difficult and even inappropriate for someone 18 or 19. They ought to do some exploring—something a fifth year would allow." Nonetheless the school has not moved to a five-year program, largely out of concern that it would be placed at a competitive disadvantage with schools that offered the shorter program.

There is not even agreement on the appropriate academic level for teacher education. Teacher preparation may, as indicated in Part One, occur at the undergraduate level, the graduate level, or both, even within the same university. It can begin on the first day of freshman year, in the second semester of sophomore year, in junior year, or in graduate school.

When faculty and deans were asked the best model for preparing teachers—using the very broad categories of undergraduate or graduate education, major or minor—their responses constituted a definition of

TABLE 7

Education School Deans and Faculty on Best Model for Teacher Preparation by Institutional Type

	Percentage selecting													
	FACULTY							DEANS						
	Overall	BG	BLA	DRE	DRI	MI	MII	Overall	BG	BLA	DRE	DRI	MI	MII
Four-year undergraduate degree in education	18%	31%	13%	11%	16%	18%	17%	28%	46%	17%	13%	31%	26%	28%
Four-year undergraduate degree with academic major and education minor	17%	30%	26%	16%	11%	13%	15%	18%	14%	28%	9%	18%	21%	21%
Four-year undergraduate degree with academic major followed by 1-year education masters	22%	11%		22%	40%	26%	19%	15%	6%	11%	29%	18%	15%	19%
Five-year program combining teacher prep with liberal arts major	31%	20%	44%	38%	18%	30%	43%	27%	28%	30%	33%	24%	25%	26%
Alternative certification	1%			2%	3%	2%	2%	1%	1%		1%			
Other	7%	6%		10%	11%	8%		8%	5%	9%	7%	9%	10%	5%
No answer	3%	2%	4%	2%	1%	4%	4%	3%		6%	8%		3%	

BG=Baccalaureate General, **BLA**=Baccalaureate Liberal Arts, **MI**=Masters Granting I, **MII**=Masters Granting II, **DRI**=Doctoral Research Intensive, and **DRE**=Doctoral Research Extensive

Source: Deans and Faculty Surveys

TABLE 8

The Three Most Important Proposals for Improving Teacher Preparation, According to Principals, Education School Alumni, Faculty, and Deans

Proposal	Percent selecting Principals	Alumni	Faculty	Deans
Strike a better balance between subject matter preparation and field experience	57%	69%	49%	13%
Require student teaching of longer duration	31%	26%	22%	23%
Provide closer supervision of student teaching	18%	21%	21%	21%
Divide professors into clinical and research categories	6%	14%	16%	13%
Mentor new teachers	50%	63%	69%	70%
Require a major in an academic subject other than education at the undergraduate level	17%	27%	34%	24%
Increase mastery of pedagogical practice	26%	27%	41%	43%
Raise requirements for academic performance	7%	14%	23%	17%
Recruit higher quality faculty	7%	16%	13%	8%

Source: Principals, Alumni, Faculty, and Deans Surveys

chaos (Deans and Faculty Surveys). As shown in Table 7, there was nothing resembling agreement between faculty and deans, deans and deans, professors and professors, even within the same type of institution. There is seemingly an "anything goes" attitude about teacher preparation. All models of teacher education—with the exception of alternative certification—seem reasonably acceptable, so long as they are university-based.

This is not to minimize that strong feelings exist among education school administrators and faculty about the merits of one approach over another, to say nothing of periodic campaigns to champion a particular form of teacher education. However, in the end the polyglot approach persists. Schools prefer not to rock the boat and upset enrollments, staffing, and finances, rather than develop well-thought-out

models of how to effectively educate our nation's teachers.

An Imbalance Between Theory and Practice

One alumnus reported the problem with his teacher education program: "I could talk about Carl Jung, scaffolding, cooperative learning groups, [and] the advantages of constructivism," but had no idea what to do "when Johnny goes nuts in the back of the class, or when Lisa comes in abused, or when Sue hasn't eaten in three days." What he described is a symptom of a serious underlying problem described by one education alumnus as "an abyss" between theory and practice.

When given a laundry list of proposed reforms to improve teacher education and asked to choose the three most important, principals (57 percent) and alumni (69 percent) placed the highest priority on striking a better balance between subject matter preparation and field experience; nearly half of all education school professors (49 percent) agreed. (Principals, Alumni, and Faculty Surveys; see Table 8.)[35]

Students have limited clinical or field work experience today in most teacher education programs; it consists only of the short time spent student teaching. This student teaching experience, which was characterized consistently as "the most valuable aspect of my education program" by new teachers, lasts a term or less for 76 percent of teacher education alumni. (See Table 9.)

The range of student teaching experiences is also narrow. Forty-five percent of teacher education alumni had only one student teacher placement, while four percent had done no student teaching at all, and anoth-

TABLE 9

Length of Student Teaching Experience for Teacher Education Alumni

Length	Percentage responding
Less than one semester	16%
One semester	60%
Longer than one semester	12%
One-year internship or apprenticeship	7%
Other	4%

Source: Alumni Survey

TABLE 10

Number of Student Teaching Experiences by Teacher Education Alumni

Number	Percentage Responding
One	45%
Two	38%
Three or more	8%
Full-time paid teacher experience met requirement	4%
No student teaching	4%

Source: Alumni Survey

er four percent said that their current teaching job had served as a substitute for student teaching, (Alumni Survey; see Table 10.)[36,37]

Moreover, too many schools pay inadequate attention to where they place students and fail both to supervise them carefully and to provide them with meaningful feedback. It was not unusual to hear students complain that they rarely saw the supervisors from the education school who were supposed to oversee their field work.

Instead of exposing students to a variety of settings and to teachers with diverse teaching styles, too often placement is viewed as basically a numbers game. The priority is to find the requisite number of slots for student teachers, with little regard to the merits of a particular placement. An administrator at a research university in the Midwest acknowledged: "When dealing with a huge amount of people, trying to keep quality control is one of the things that's most difficult in a large urban area." Sometimes students end up with inappropriate placements. Even though her studies were focused on special education, said a student at a Southwestern university, none of her field work, including her student teaching, involved working with students who had special needs.

Urban school experience was especially limited. Among the schools we visited, Alverno College in Milwaukee, the Lynch School at Boston College, City College of New York, Northeastern University in Boston, Peabody College of Vanderbilt University, and Stanford University are notable exceptions in that they make a special effort to facilitate urban placements. Lynch, for example, tries to ensure that

students spend time observing and working in three different settings—urban, suburban, and Catholic schools—before they actually student teach. But that is not the norm.

For the most part, affluent suburban youngsters in undergraduate programs found urban placements unappealing, and faculty often saw little reason to push them. A university located in a Midwestern city with a troubled school system was typical. Historically, the university placed most students in suburban or religious schools. Attempting to shift to urban assignments proved an uphill battle with students and faculty. Such resistance caused a Southern doctoral university to stop placing students in one of the weakest urban school systems in the country even though it is only a few miles away and in desperate need of student teachers. A few students just refused to go and it was more trouble for the faculty too. A professor joked that the decision eliminated parking problems for everyone, assuaged the fears of students who did not want to work in such a place anyway, and fit quite well with most professors' lack of interest.

Alumni who were critical of their teacher education programs often pointed to the price they paid later for their limited practical experience. As one of them put it: "I do not feel I was prepared for the realities of life in a school and a classroom as a teacher. There is so much more than I was exposed to in a college classroom studying textbooks. I needed real-life classroom experience before my student teaching experience." The common denominator in their criticism was the desire for more, longer, earlier, and better-integrated field work experiences.

In contrast, praise for teacher education programs frequently came from those who had spent a lot of time in the schools. When asked to identify the greatest strength of their program, alumni often chose their clinical experiences: "the four semesters of student teaching"; "the fact that we were introduced to the classroom in our first semester of elementary education"; "you spent half the week in the class and the other half in the elementary school"; "almost every education class required work in the classroom"; and "The final course in my reading degree was a six-credit, intensive practicum that involved both class work and working with a student. I think this was the most powerful aspect of my program for someone like myself who had never been in the classroom."

Students currently enrolled in teacher education programs offered similar views. Said a student at a school in the Northeast of her student teaching experience: "I have

As one alumnus put it: "I do not feel I was prepared for the realities of life in a school and a classroom as a teacher."

learned more than I could have in any class and out of any textbook." A faculty member at the same school explained that "most students are looking for real world examples to bolster their learning."

Spending substantial time in the field can enrich students and aid their learning, and the lack of such experience can impoverish them. Too many students are likely to graduate insufficiently enriched.

In our survey of deans, only 3 percent said that they provide mentoring to new teachers who graduate from their programs.

An Absence of Mentoring

In recent years, a spotlight has been placed on new teacher induction, the transitional education that teacher education graduates need when they first enter the classroom. The goal is to bridge formal study and the realities of teaching, both to improve the quality of instruction and to stem the tide of new teacher attrition, which is highest during the first five years on the job.[38]

A teacher education alumnus and veteran teacher said that mentoring, widely considered to be the most important element in induction, was critical for new teachers: "I do not feel that colleges can adequately prepare teachers for what they are going to have to deal with in the classroom. Mentors will help new teachers understand the current curriculum, deal with discipline, and become successful teachers before they become overwhelmed with the entire system."

Education school faculty, deans, principals, and teacher education alumni agree. When asked what is the most important proposal for improving teacher education, the top choice of the faculty (69 percent) and the deans (76 percent) at every type of school of education is to provide mentoring programs after graduation. That's not surprising since a little over half of each group believes one of the major reasons teachers leave the profession is inadequate mentoring (Deans and Faculty Surveys). It's also second in importance for alumni (63 percent) and principals (50 percent), right after arranging a better balance between course work and field experience (Alumni and Principals Surveys; see Table 8 in Part Four.)

Given the priority of mentoring for all concerned, it is logical to expect that something would be done about it. But education schools aren't meeting the challenge. In our survey of deans, only 3 percent said that they provide mentoring to new teachers who graduate from their programs, and few are planning to add mentoring programs in the next several years. Only 3 percent mentioned it on their to-do lists, when asked about plans for the next five years (Deans Survey).

Two of the universities we visited

give warranties instead, offering to provide additional instruction to graduates whose performance school districts find not up to expectations. One institution boasted that it had never been called on to "re-educate" a graduate. Having seen the quality of the institution's program, it seems more likely the schools that hired its graduates either were unaware of the warranty option or did not want to compound their problems by turning again to the school that had produced the subpar graduate in the first place.

Eighty-four percent of education school deans assume that mentoring of their graduates is occurring at the local district. Another 9 percent say most of their students aren't getting mentored. And 3 percent are not sure (Deans Survey).

As for the local districts, while only 2 percent of principals think that education schools should be responsible for mentoring new teachers, three out of five think school systems and education schools ought to be carrying out new teacher induction together (Principals Survey). That's not happening either. In many cases, the principals say the funding is not available to make it possible.

When it comes to helping educate new teachers, there is a gap between policy and practice. In 2005-06, 15 states required and financed mentoring programs.[39] An *Education Week* study of 30 major school districts found that 27 have mentoring programs for new teachers, 23 compensate the mentors, and an equal number specify meeting times.[40] That sounds good, but principals report that the success of programs depends on the availability of funding, the quality and number of mentors, and the commitment of principals and superintendents.

The end result is that we are a long way from providing every new teacher with a mentor, much less an induction program. A professor at a doctoral university located in the West pointed out just how badly out of sync teaching is with "most other professions such as accounting, medicine, and law [where] college graduates are given a longer induction time with supervision, mentoring, and special training."

Conclusion

Put simply, the teacher education curriculum suffers from the historic legacies of relativism regarding the appropriate ways to educate teachers and uncertainty over whether teacher education should be rooted in the public schools or colleges of arts and sciences. Overall, the result is a curriculum incapable of achieving desired outcomes because of the ambiguity of its goals and unable to educate teachers effectively because of the split between academic and

When it comes to helping educate new teachers, there is a gap between policy and practice.

clinical instruction, with an overemphasis on the academic.

Effective induction programs are rare. In the major professions, like law and medicine, induction is considered the responsibility of the hiring organization, not the school that prepared the new professional. Teacher mentoring should be thought of similarly—as the obligation of the states and school districts that hire new teachers. However, schools of education need to be more willing than they have been to work with schools and school districts to develop induction and mentoring programs. To the extent that schools of education take the lead in creating postgraduate mentoring and induction programs, they are doing so for the sake of their graduates and the children that they teach, and compensating for the failure of employers. They are providing a public service to their local schools and, possibly at the same time, advancing a research and development agenda by creating models of induction.

A DISCONNECTED FACULTY

Teacher education faculty, like the curriculum, mirror the historical conflicts and confusions of the profession. They are disconnected from the schools. They are disconnected from the arts and sciences. They engage in research disconnected from policy, practice, and the academy.

Disconnected from the Schools

Impressively, 88 percent of education school professors taught in a school at some point in their careers (Faculty Survey). However, alumni and current students complained often that the experiences were not recent or long enough. As one alumnus said: "Some of the professors I had hadn't taught in a P-12 system for over 20 years. They were fairly clueless regarding the realities of the P-12 teaching environment." Another commented: "Most of the professors had no idea what was going on in today's classroom. Yeah, they may have visited a classroom a few weeks in a row or for a semester. But they don't know what it is really like until they live it day to day.... You need professors with that kind of experience, not the kind that taught for two years back in the 1980s. Those people have lost touch with reality."

A graduate student explained that she had more classroom teaching experience than her two major professors combined. She had five years and they had four between them. She found it hard to take what they were saying seriously because of their limited experience and the number of years that had passed since they had been in a classroom. Alumni spoke of professors who were so far removed from the classroom that assignments were a waste of time: "It was all hypothetical. Prepare a lesson and remember you have four special needs students in class. That's real easy if you are pretending, but try it in a real class-

A graduate student explained that she had more classroom teaching experience than her two major professors combined.

Students and alumni criticized courses taught by professors with limited real world experience for being out of date, more theoretical than practical, and thin in content.

room." Alumni did not get from these faculty what others who praised the real-world experience of their professors did: "insights, ideas, *how to's*, and *how not to's*…."

Students and alumni criticized courses taught by professors with limited real-world experience for being out of date, more theoretical than practical, and thin in content. They also said courses included readings that were not helpful or informative. Sometimes the readings were so out of date as to be incorrect and the entire focus of a program ended up off the mark. Alumni told of being educated in teaching methods that were no longer being used in schools. One student said that "the research and teaching methods we studied were basically from the 1970s and 1980s. The program did not mention students with disabilities and seemed to assume a student body who were highly literate in their first language, which is not the reality in public school today." Another laughingly told the story, which must have been a devastating experience at the time, of a job interview in which he knew none of the current terminology or how to apply the practices used by a major school system located near the university where he had studied.

A visiting team for this study saw a comparable example in the making at a regional education school in the South where students were supposed to receive extensive instruction in state curriculum standards. However, the course in elementary reading methods did not match the curriculum taught locally, which was aligned with the state standards. A student described the course as "awful," characterizing its approach to literacy as "extinct, like the dinosaur."

In the end, when asked about teacher education curriculums in general, one out of three alumni (32 percent) thought they were out of date (Alumni Survey; see Table 11.)

When asked whether they agreed with criticisms frequently made about education schools, nearly two out of five alumni (39 percent) said professors were not sufficiently involved with schools. The numbers were higher at the institutions that produced the largest proportion of teachers—doctoral extensive universities (45 percent), doctoral intensive universities (43 percent), and Masters I institutions (44 percent) (Alumni Survey). (See Table 11.)

Professors who reported little or no involvement with the local schools could be found at both research- and non-research-oriented institutions. At the former, the pressure to publish precluded professors from spending time in the schools. At the latter, professors said that their teaching and advising loads were so heavy that they had no time for engaging with

TABLE 11

Percentage of Alumni Agreeing with Criticisms of Education Schools by Carnegie Type

Criticism	Overall	BG	BLA	DRE	DRI	MI	MII
The curriculum is outdated	32%	36%	31%	31%	26%	36%	24%
Faculty are not sufficiently involved with local schools	39%	33%	30%	45%	43%	44%	34%

BG=Baccalaureate General, **BLA**=Baccalaureate Liberal Arts, **MI**=Master's Granting I, **MII**=Master's Granting II, **DRI**=Doctoral Research Intensive, and **DRE**=Doctoral Research Extensive

Source: Alumni Survey

the local schools. One well-intentioned faculty member at a school in the Southwest said that she teaches four courses a semester, supervises several grants, and advises more than 300 students. "I don't have time to think," she said. "I'm here from 6:30 a.m. to 11 p.m. most days already."

Similarly, at selective research universities, junior faculty members—untenured or recently tenured—were expected to shoulder the preponderance of clinical loads: that is, work most intensively with teacher education students in schools. Again and again we were told the more senior faculty members become, the more likely they are to withdraw from clinical activities, particularly if they are productive scholars.[41] The process of moving away begins with tenure. Several deans said that their nationally renowned scholars in teacher education were not or were only minimally involved in clinical programs. In one case, the principal of a public school, closely affiliated with a local university, said he had never met the star teacher educator. The well-known scholar had never been in his school and did not respond to his e-mails.

There are typically three different faculties in teacher education: the traditional full-time tenure-track academic faculty; a clinical faculty composed of expert practitioners, cooperating teachers, and supervisors, some of whom come from the ranks of former teachers and current and former doctoral students; and a largely part-time adjunct faculty consisting of both academics and clinicians. The status differences between the academic and clinical faculties are profound. Joint program planning is the exception rather than the rule. Integration of clinical and

academic activities is unusual. However, schools identified later in this report as models—Alverno College, Emporia State University, Stanford University, and the University of Virginia—have successfully linked clinical and academic faculties in planning, curriculum design, and teaching.

Arts and sciences faculty complain that education research is simplistic, that education students are among the weakest on campus, and that course work in education lacks rigor.

Disconnected from Academe

Another faculty-related issue is of concern: namely, the often strained relationship between the education and the arts and sciences faculties. Teacher education course work can be artificially and simplistically broken down into content and pedagogy, one the responsibility of the arts and sciences—the other, of the education school. We witnessed a number of efforts to close the gap. For instance, the University of Tennessee at Chattanooga and the University of Dayton are building bridges between the arts and sciences and the education faculties by paying for the former to take the Praxis II exam, which 41 states and the District of Columbia require before a teacher can be certified, according to an Educational Testing Service (ETS) official.[42] The idea is to have faculty members redesign their courses so that they cover the material students need to master in order to pass the exam. Collaboration of a different sort is occurring at Boston College's Lynch School, where arts and sciences professors and education professors are co-teaching several courses, and some members of the arts and sciences faculty are engaged in research in the Boston schools.

Such efforts are unfortunately atypical. The low status of education schools on most campuses leads to what can be an almost unbridgeable chasm between the arts and sciences and the education faculties. Arts and sciences faculty complain that education research is simplistic, that education students are among the weakest on campus, and that course work in education lacks rigor. A student at a prestigious research university in the South told of faculty members who call education courses "worthless." Another student noted that "what people see us doing, writing lesson plans and compiling portfolios, is not what is typically regarded as academic work." An arts and sciences faculty member at an institution in the Southwest said flatly: "Elementary education students are the worst on campus…. The wall between arts and sciences and the College of Education is a mile high. There's almost an adversarial relationship that really needs work."

At another campus a faculty member said that the arts and sciences and the education faculties simply do not talk. At a doctoral

TABLE 12

The Three Most Important Constituencies in Determining Curriculum Content and Organization According to Education School Deans and Faculty

	Percentage selecting													
	Faculty							Deans						
Constituency	**Overall**	**BG**	**BLA**	**DRE**	**DRI**	**MI**	**MII**	**Overall**	**BG**	**BLA**	**DRE**	**DRI**	**MI**	**MII**
School Boards	3%	4%	4%	2%	1%	3%	2%	1%	2%	2%	2%	2%	1%	-
State Government	52	56	58	50	60	50	53	50	59	50	45	56	47	44
Accrediting Agencies	62	63	55	65	75	63	52	64	66	52	66	73	65	60
Faculty	52	40	71	62	56	49	56	69	67	65	79	71	69	60
Unions	-	-	-	-	-	1	-	1	-	2	-	-	1	-
Parents	1	-	-	2	-	1	-	-	-	2	-	-	-	-
Children	4	7	7	3	2	5	-	9	9	9	8	-	9	14
Principals	3	-	4	2	1	4	3	3	2	7	1	-	4	2
Superintendents	3	1	-	4	1	5	4	3	2	4	1	2	4	4
Students	15	12	23	8	14	15	21	14	16	20	13	9	11	19
Alumni	3	4	4	1	4	3	5	3	5	6	1	2	2	4
Parent Institution	3	6	4	3	5	1	2	6	4	4	6	4	7	2
Federal Government	3	4	-	2	6	3	2	2	2	-	2	2	2	4
Business	1	-	4	3	-	1	-	-	-	2	-	2	-	-
Media	-	-	-	-	-	1	-	-	-	2	-	-	-	-
Teachers	20	19	21	13	16	20	31	22	21	43	18	16	23	18
Deans	27	35	4	25	22	27	36	15	17	15	22	13	12	12

BG=Baccalaureate General, **BLA**=Baccalaureate Liberal Arts, **MI**=Masters Granting I, **MII**=Masters Granting II, **DRI**=Doctoral Research Intensive, and **DRE**=Doctoral Research Extensive

Source: Deans and Faculty Surveys

university in the Midwest, which takes as its responsibility the education of urban teachers, an education school professor imagined co-teaching "Teaching Literature in Secondary School" with the English department. Returning from her reverie, she asked, "Is that on their radar screen?" and answered, "Not at the moment." Arts and sciences faculty were indifferent to, even disdainful of, education faculty at most of the campuses we visited.

Alumni complained about "repetition," "duplication," "overlap," and having 'the same assignments' in several courses.

It is important to remember that the education school program is shaped not by teacher education professors alone, but also by accreditation requirements and state mandates, according to education school deans and faculty. Faculty see accreditors as the most important constituency in determining the curriculum (62 percent), with faculty and state government officials tied for second (52 percent). Deans switch the order a bit, citing faculty (69 percent) as the most powerful, followed by accreditors (64 percent) and state government officials (50 percent) (Deans and Faculty Surveys). The bottom line is that faculty and deans believe that professors play a major role in shaping the teacher education curriculum, but are not autonomous actors. They agree about something else as well: Practitioners—school administrators and teachers—have little or no voice in determining the content and organization of education school programs. (See Table 12.)

Faculty exert two types of control over the curriculum. One is collective control on issues such as program design and admissions requirements. The other is individual control in areas such as the content, timing, readings, and assessment standards in the classes they teach.

Faculty members were granted a high degree of autonomy in course design at most of the schools we visited. That often resulted in a fractured curriculum, a lack of continuity from one course to the next, and insufficient integration between course work and field work. Alumni complained about "repetition," "duplication," "overlap," and having "the same assignments" in several courses. One graduate went so far as to say she had "three classes with essentially the same curriculum" and another said that "most of the stuff in my master's was the same as my undergrad."

In addition, students told stories of courses being offered at times and in subjects designed to serve individual faculty members, not students. They spoke of having to postpone graduation because required courses were overenrolled, while elective courses, which professors prefer to teach, went begging. They talked of required courses being offered irregularly, which hindered their

ability to plan a program. They spoke of courses they had planned to take in order to graduate being canceled because a faculty member was on leave, changed the class time, or received a grant that lead to an adjustment in course load. They told of classes being offered out of sequence, so that a prerequisite followed the course it was prerequisite to. They reported required classes being offered at inconvenient times for working adults or two required courses being offered at the same time.

Disconnected from Policy, Practice, and Scholarship

The dean of an East Coast school of education said exactly what her colleagues had reported at other research universities: The teacher education department is the least respected unit in her education school, particularly with regard to scholarship. Faculty in other departments within the education school dismissed much of the research done by teacher education professors as lacking in scientific rigor. Tenure was granted less frequently to teacher education professors than to colleagues in other education fields. In fact, 80 percent of teacher education professors at that institution had been denied tenure owing to their minimal publication records and the low quality of their work.

There are perhaps extenuating circumstances for the lower publication rates, as teacher education faculty are expected to spend more time in the schools and in mentoring students than their peers. However, the questionable research quality, which some in teacher education attribute to the lack of major funding for large-scale research, the frequency of qualitative rather than quantitative research, and the failure to develop scholarly methods geared uniquely to the needs of teacher education is less easily explained.

A Michigan State University review of teacher education research provides an excellent illustration of the paucity of rigorous research. The authors examined the scholarly works published in three broad areas of teacher education: subject matter preparation, pedagogical education, and clinical training needed by prospective teachers; the policies and strategies used successfully to improve and sustain the quality of pre-service teacher education; and the characteristics of high-quality alternative certification programs.

The authors limited their review to research on teacher education in the U.S. published over 20 years in peer-reviewed journals. This produced a total of only 313 articles, slightly more than one article for every four teacher education pro-

At one school of education, tenure was granted less frequently to teacher education professors than to colleagues in other education fields.

grams in the country.

Then the authors screened the articles to ensure that they offered quantitative or qualitative evidence for their conclusions and that they were rigorous—"meeting generally accepted standards in relevant research traditions."[43] The number of acceptable studies dropped to 57, only 18 percent of the original pool. The paucity of research on these critical topics is surprising. The fact that so much of the empirical scholarship failed to meet a simple test of rigor is staggering.

Deans and faculty complained that teacher education research was subjective, obscure, faddish, impractical, out of touch, inbred, and politically correct, and that it failed to address the burning problems in the nation's schools.

A recent meta-study by a panel of the American Educational Research Association supported these findings. Their balanced and comprehensive 804-page report examined subjects varying from teacher characteristics and the impact of methods courses and field experience to the effects of varying types of teacher education and education for accountability.

The report is filled with expressions such as "so few studies"(p. 427), "sobering to look at amount of empirical research done"(p. 282), "extremely thin"(p. 287), "uneven" (p. 600), "limited"(p. 26), "so little existing research"(p. 619), "we know next to nothing"(p. 610), "relatively few empirical studies"(p. 651), "very few studies were longitudinal" (pp. 489-90), "vagueness of criteria for evaluation"(p. 674), and "almost nonexistent"(p. 27).

In the end, the panel recommended that teacher education adopt a set of research standards that are fundamental to scholarship in most other fields: situating research in relevant theoretical frameworks, employing clear and consistent definition of terms, providing full descriptions of research design and methods, developing reliable measures in specific areas, engaging in mixed method and multidisciplinary studies, adopting experimental research designs to study particular subjects, and focusing on the impact of teacher education on student and teacher learning.[44]

This is consistent with what the deans and faculty told us. They complained that teacher education research was subjective, obscure, faddish, impractical, out of touch, inbred, and politically correct, and that it failed to address the burning problems in the nation's schools.

One dean at a research university in the Northeast said she was tired of reading research on "voices." She was referring to case studies of individuals or the experiences of small numbers of teachers or students, research which she judged as often poor. She wanted to see research on how to save urban public schools. A dean at a Midwestern research university made a similar point, criticizing teacher education research for failing to seek solutions to school problems.

She said it would be analogous to medical school research focusing on the failings of doctors and hospitals rather than finding cures for disease.

A literature review sympathetic to teacher education done for the Clinton administration by SRI International in 2000 characterized the scholarship in teacher education as "not particularly robust"[45] and went on to say: "The evaluative frame of mind has not yet penetrated teacher education. On the basis of available research, we can describe what has been undertaken in the name of reforming teacher preparation during the past 15 years. However, it is nearly impossible to describe or summarize whether the undertakings have been effective."[46] The authors criticized the lack of "emphasis on programmatic outcomes or accountability."[47] The focus of much teacher education research remains on teachers and teaching. It has yet to fully embrace students and learning in the same fashion.

The problem is not just that teacher education research has failed to answer the question of what works in many critical areas of policy and practice. Too often teacher education scholarship has not even bothered to ask the question, or has thought the answer was an article of faith rather than a matter for empirical study. This is true not only of practice in the P-12 schools, but also of practices in teacher education programs.

Conclusion

Between the towns of Kennebunk and Kennebunkport in Maine is a small piece of land that is not part of either town. It's called "Tain'town"; tain't Kennebunk and tain't Kennebunkport.

In a way, the lot of teacher education faculty is similar. They hold a place between the arts and sciences and the schools, but they are not a part of either. They are natural allies of policy makers, practitioners, and scholars, but are embraced by none and their research is ignored or criticized by each. The lack of rigorous self-assessment of the nation's teacher education programs exacerbates those conditions.

The focus of much teacher education research remains on teachers and teaching. It is yet to fully embrace students and learning.

LOW ADMISSION STANDARDS

More than two of every five principals and education school faculty members believe schools of education have low admission standards. In fact, a majority of the professors (51percent) at the most research-oriented universities—doctoral research extensive institutions—think that, as do 39 percent of the alumni from such institutions (Alumni and Faculty Surveys).

While many education students are not academically strong, the picture is far more complex than is usually portrayed.

Myths and Realities

The popular view, often expressed in our conversations and interviews, that teacher education students come from the bottom of the barrel academically is not borne out by the facts. While many education students are not academically strong, the picture is far more complex than is usually portrayed. It is true that students who intend to major in education have lower Scholastic Aptitude Test (SAT) scores than other college-bound students. But research shows that many who identify themselves as teacher education majors never go on to major in education or they change majors once they get to college, while others not classified as teacher education majors decide that is the field they want to pursue.[48] A study by the Educational Testing Service and the American College Testing Program took a different approach to analyzing the academic quality of teacher education students. They looked at the SAT and ACT scores of intended education majors who passed the Praxis I exam of basic skills, which is increasingly a requirement for entry into education schools. The study found that the group passing Praxis I had higher SAT scores overall on both the math and verbal tests than the national average. On the ACT, the group did better overall and, on the English portion of the exam, better than the national average, but performed slightly less well in math. Despite weaknesses in the study design favoring educa-

Aspiring elementary education teachers were among the poorest performers on the exam, scoring almost 100 points below the national average.

tion school students,[49] this research makes it clear that teacher education students as a group are not at the bottom of the barrel.[50]

When SAT scores are disaggregated, future secondary school teachers are found to be on par with their peers, while elementary education students score considerably lower. The ETS/ACT study went on to compare the SAT scores of education majors who passed the Praxis II exam in subject mastery (required by some education schools for graduation and many states for teacher licensure) with those of college graduates generally. On this measure, aspiring secondary teachers overall had scores that were comparable to those of all college graduates. Depending on the discipline they were pursuing, they either exceeded the national average or fell slightly below it. By contrast, elementary education majors lagged considerably behind the national average. Elementary aspirants who passed Praxis II had a combined math and verbal SAT average of 1012 out of a possible 1600. By contrast, those who planned to teach mathematics had an average score of 1141.

The same pattern is found in students applying to graduate teacher education programs. The ETS annual report on Graduate Record Examination (GRE) scores—the graduate school equivalent of the SAT—found that those intending to pursue careers in secondary education performed better overall on the GRE than future graduate students in sociology, accounting, public administration, and social work.[51] They trailed slightly behind biologists, political scientists, and American historians. They exceeded the national average on the verbal and analytical parts of the exam, but fared less well in math.

Once again, the story is very different for aspiring elementary education teachers. They were among the poorest performers on the exam, scoring almost 100 points below the national average.[52] (See Table 13.)

So it would seem that, at least as measured by standardized test scores, the future elementary education teachers whom education schools are admitting are less academically qualified than our children need or deserve. Some teacher educators argue that it is wrong to make assertions about the quality of graduates based solely on standardized test scores. There is some truth to that objection. But if there are other qualities that are needed to promote learning among elementary school children, education schools have not accounted for them in their admission requirements, nor have they published the research on which such criteria might be based.

Some of the education schools we visited practice virtually open

TABLE 13

Graduate Record Exam Scores by Intended Field for College Seniors and Recent Graduates: July 1, 2001-June 30, 2004

Field	Verbal	Quantitative	Analytical
Elementary Education	443	527	4.3
Secondary Education	486	577	4.5
Accounting	415	595	3.9
Biology	491	632	4.4
Economics	504	706	4.5
English Literature	559	552	4.9
History	543	556	4.8
Library Science	533	540	4.5
Political Science	515	589	4.8
Public Administration	452	513	4.3
Religion	538	583	4.8
Social Work	428	468	4.1
Sociology	487	545	4.6
National Mean	**469**	**597**	**4.2**

Source: Educational Testing Service, "General Test Percentage Distribution of Scores within Intended Broad Graduate Major Field Based on Seniors and Non-Enrolled College Graduates: July 1, 2001-June 30, 2004"; Princeton, NJ: 2005. Retrieved February 21, 2006, from Web site: http://www.ets.org/Media/Tests/GRE/pdf/5_01738_table_4.pdf

admissions. Even when they have admission criteria, we found that some institutions finesse them by admitting students provisionally. One Masters I institution in the Southwest admitted about three-fourths of its students via this route.

When it comes to setting admission standards, there is a continuing struggle in education schools between access and quality. The lack of knowledge about the relationship between teacher preparation and student learning has meant that the tension has not required resolution or even much discussion. This becomes a problem at the least selective schools. Too many justify low standards of admission on the grounds of providing opportunity and a door into the teaching profession for those who have been traditionally denied access. The definition of those discriminated

against tends to be fuzzy. At one school, it was stated with all seriousness that women were such a group, which is patently absurd because the bulk of the teaching force is female.

In addition, the open door can quickly become a revolving door that may produce enrollments for the institution, but does no favors for the students who are admitted. This was apparent at a predominantly white institution in the South that prides itself on making college a possibility. The school's president said: "We are not producing any Einsteins." But he believes a college diploma is important in helping his students up the economic ladder. Nearly three out of four students at the institution need remediation. Forty-two percent drop out between the freshman and sophomore years and 74 percent of freshmen leave before graduation.

The open door can quickly become a revolving door that may produce enrollments for the institution, but does no favors for the students who are admitted.

On the Praxis I exam, which is required for admission to the education school, from 56 percent to 83 percent of those admitted scored in the bottom half of the national distribution on the various subsections. Yet, the chief academic officer thought admission standards "might be a little high, given the need for teachers" in the state.

There was a tendency to consider affirmative action and a commitment to providing access to college as justification for failing to establish minimum admission standards. Too often a commitment to access was simply a cover for increasing enrollments and using education schools as cash cows, even while speaking of the need for quality in education.

Alverno College in Wisconsin and Emporia State University in Kansas are exceptions. Although admission standards are low, the schools have clear visions of what teachers need to know and be able to do when they graduate. Alverno focuses on outcomes and Emporia combines a rich curriculum with continuing assessment. So while entrance requirements are low, graduation standards are high. The more common pattern we observed is that schools with low admission requirements also have low graduation requirements.

Quantity over Quality

At a Masters I institution that is a "mega-producer" of teachers, the provost complained that for too long the only standard of quality the education school had was how many credit hours it could produce. Test and grade requirements screened out few applicants and almost 90 percent of the students who applied were admitted. Enrollments in teacher education jumped 45 percent in five years. The faculty teaching loads were heavy, and the provost complained that faculty scholarship was "formulaic" and weak compared with that of

professors in other parts of the university—and this at an institution that is not high in research productivity to begin with.

The education faculty saw the situation differently. The university had forbidden the education school from capping enrollments or taking action to slow the tide of new admissions because the university needed the money at a time of tight state budgets. One unhappy faculty member said that "if grade point averages for admission were raised to 2.75 (from 2.5), just slightly more than a B-, it would cut enrollments by 10 percent. That's just not possible, the professor said: "We're under the gun to produce credit hours and raise numbers."

Throughout this study, education school administrators told us that their schools were treated as "cash cows" by their parent universities, generating more revenue than they received back from the university. Said one dean at a Midwestern research university: "We're a profit maker for the university."

At most schools the "profit" is used to support the university as a whole and other schools within the university, but not the education school. The provost at a Midwestern institution admitted that the education school generated revenues that it would not see: "They don't feel that they are highest on the food chain, and frankly they're not. But I doubt you can name me one of the top research universities where [the field of education] *is* at the top of the food chain."

There are exceptions. Stanford has adopted a Robin Hood approach, taking from general university funds to augment the resources of its education school. The more common approach is to maintain the education school as a low-quality tuition-dollar generator and redistribute the resources it produces to bolster other more promising parts of the university. It is an academic strategy based on relative advantage.

Provosts think about the issue this way: No matter what the physics department did, it could not produce the number of enrollments education can. But no matter how much money was pumped into education, it could never achieve the eminence of physics. Universities believe that it is to their advantage to build up a program that will bring them stature rather than a program that is unlikely to enhance the institution's standing.

So long as universities continue to use their education schools as cash cows, students, who should not be teachers, will continue to be admitted to the nation's education schools, and those oft-heard earnest speeches by university presidents about the importance of teaching and the centrality of teacher education to

So long as universities continue to use their education schools as cash cows, students will continue to be admitted who should not be teachers.

their institutions will remain hypocritical hype.

Conclusion

The standards for admitting students to the nation's teacher education programs are too low. Admission standards for future elementary school teachers are lower than those for their classmates in secondary education and the rest of the university. These shortcomings result in part from the unattractiveness of teaching as a career for many of our most able students. They are also a product of the traditional lack of respect universities have for their education schools and the historic confusion teacher education has about its mission, place in the university, and relationship with the P-12 schools.

INSUFFICIENT QUALITY CONTROL

There are two mechanisms for quality control in teacher education today. The states have established program approval and accountability procedures, and teacher education programs have created a self-policing mechanism, accreditation. Neither has succeeded in setting a minimum quality floor for the nation's teacher education programs. Moreover, their notions of quality are misplaced and dated. While the rhetoric of quality control is often rooted in the information age, its practice is firmly grounded in the industrial era. Process trumps outcomes; teachers overshadow students; and teaching eclipses learning. Today quality control focuses principally on teaching; for instance, it emphasizes the components that make up a teacher education program and focuses on attempts to measure teaching ability (passage rates on certification exams, principals' assessments of new teachers)rather than learning outcomes.

Under the existing system of quality control, too many weak programs have achieved state approval and been granted accreditation.

Under the existing system of quality control, too many weak programs have achieved state approval and been granted accreditation. Anonymous Public University (APU) is an example of a poor program that has satisfied the standards of both its state and the National Council for the Accreditation of Teacher Education (NCATE). In fact, in the course of this study, the state gave APU's education school, which previously had awarded only undergraduate and master's degrees, permission to grant doctoral degrees. It was accredited at the start of this study and reaccredited during the study.

APU is a real public university located in a large city. A pseudonym is used because the institutions and people who participated in this study were promised anonymity. In order to maintain APU's anonymity, several nonmaterial facts about the institution have been changed.

A member of the arts and science faculty described the liberal arts courses offered to education students as "dumbed down" versions.

Anonymous Public University admits under-prepared students from poorly performing local schools to its teacher education program. It graduates poorly educated teachers who go back to teach in the local schools and educate the next generation of underprepared students. APU is a recycler, making it part of the problem rather than a solution.

APU has approximately 1,000 teacher education students in its undergraduate and alternative certification programs. The university is committed to providing access to higher education to those normally denied opportunity and is nearly an open admission institution. Education school undergraduates are primarily first-generation college students and see APU as an important means of social mobility. Many transfer to Anonymous from community colleges. The president of one local community college estimates that 75 percent of the students are unprepared for college-level work in reading and writing and 90 percent are unprepared in mathematics.

Undergraduates in the education school are older: 40 percent are over 25. Most attend part-time and drop in and out of college. Attrition rates are high. Only 16 percent complete a degree in six years. Their standardized test scores are far below national averages and lower than those of undergraduates at other units of the university.

Only 28 percent of APU students seeking to enter the education programs pass the math portion of a required basic skills entrance exam the first time they take it. Just 20 percent of students transferring from community colleges pass the overall exam the first time. Earning grades of A and B at community college is no guarantee that students will pass, say faculty.

The college makes every effort to accommodate students who have difficulty with the exam. It administers the test six times a year and provides study guides. There is no limit to the number of times students can take the test. Once enrolled in the education school, they can generally repeat courses twice in order to improve their grades.

Students in the education school can prepare to become elementary or secondary teachers. In order to graduate, elementary school majors take courses in general education, in professional education, in an area of concentration such as English that is the equivalent of a minor, and do field work, including student teaching, in local schools. Secondary school aspirants major in an arts and sciences discipline and enroll in the education courses needed for state certification in their field. A member of the arts and sciences faculty described the liberal arts courses

offered to education students as "dumbed-down" versions of their traditional classes that were created at the pleading of the education school.

To graduate, all students are required to pass the appropriate state subject matter test needed for certification. The college offers review courses for the exam quarterly. Even so, one of the major statewide newspapers ran a series of articles on the performance of graduates of teacher education programs on the state certification exams. The series vilified APU as having scores that were at the back of the pack, with large numbers of candidates who consistently failed the tests.

Student teaching and other field experiences are criticized by faculty as being "horrendous." They are poorly organized and students have often had to find their own school placements. Frequently field experiences and student teaching have taken place in failing schools where students were unable to observe good practice.

The full-time professors, who are paid lower salaries than their peers on other public campuses in the state, are largely home grown, having been educated at local universities. They teach a very heavy load of 9 or 10 courses a year, which leaves them little time to work in the local schools, engage in research, or even keep up with their field.

Gaining doctoral degree granting authority was a priority for the university's president, who, in the hope of winning over the state, encouraged the school of education to develop a research agenda and hire several research oriented professors. As a first step, the education school dean required each department to apply for a grant.

The point is this. The teacher education program at APU generally admits poorly prepared students and graduates poorly prepared teachers. The curriculum is weak, the course quality is low, and the faculty are out of touch with their fields and the local schools. The leadership of the school is misguided; its aspirations to become research-oriented are unachievable, promising to deplete resources and diminish teacher preparation further. With all good motives, APU is actively perpetuating the educational poverty of its local schools.

State Quality Control

Anonymous Public University is located in a state that also has some of the highest-ranked education schools in the country. In this state, quality control is supposed to be assured for new teacher education programs by requiring state board approval and demanding that established programs meet accreditation requirements or

Student teaching and other field experiences are poorly organized and students have often had to find their own school placements.

In general, state standards are incapable of assuring quality in the teacher education programs the state approves.

state standards.

While this state has no policies regarding admission standards or exit requirements, it does specify the minimum number of education credits students must take in required classes on diversity/special needs and reading, and mandates the minimum length of teacher education programs. It also requires 10 weeks of student teaching and additional hours of clinical experience. Faculty standards are up to the individual institution, but must meet NCATE requirements and the teachers supervising student teachers must be certified.

Despite this list of requirements, the teacher education program at APU—with all of its weaknesses—was found to be satisfactory. This is not due to chicanery or indolence, but rather to the requirements' being procedural not substantive. This state requires student teaching, but it does not specify the quality of the school where it should take place, the ability of the supervising teacher other than that he or she be certified, or what ought to happen during the 10 weeks of student teaching. The result is that weak schools and strong schools can both satisfy the same set of requirements, which do a better job of assuring uniformity than excellence.

APU's home state is by no means unique or even among the states with the least rigorous requirements. Overall, state teacher education requirements fail to assure high quality. For instance, with regard to admissions standards for elementary education programs, only 14 states require an admissions test and just 18 set a minimum grade point average for applicants. Regarding curriculum, 39 states require course work in reading and 15 mandate a minimum program length. Concerning faculty, just 14 states demand a doctorate or satisfaction of NCATE professorial standards. For graduation, only five states require a graduation test. (See Table 14.)

Even in those areas in which all or most states have policies, there is often wide variation in what they require. Student teaching and field work are an example. While all 50 states require student teaching, seven do not specify the amount of time for it, leaving the decision to their universities. The rest require amounts of student teaching alternately defined in credits, or in hours, days, weeks, or terms in a classroom. The mode is 10 weeks, though lengths vary from 10 weeks to no more than 24 weeks. In days, the range is from 40 days of student teaching to 100 days. In hours, it is 30 hours to 300 hours. In credits, the low is one and the high is up to 12.[53] (See Table 14.)

Thus, in general, state standards are incapable of assuring quality in the teacher education programs the

TABLE 14

Selected State Policies on Elementary Teacher Education

Policy	Number of states with policy	Description
Specific grade point average required for admission	18	
Admission test required	14	
Education course work is specified	50	36 prescribe course work by subject area, but not credits in each. Fourteen require a specific number of credits in subject areas.
Study of "reading" required	39	In 20 states, the number of credits or hours of reading instruction is not specified. In the others the amount varies from 2 credits to 12 credits. Six is the mode.
Field work/student teaching required	50	The amounts are defined in credits, hours in a classroom, days, weeks, and terms. The mode is 10 weeks, though the numbers vary from 10 weeks to no more than 24 weeks. In days, the range is from 40 days of student teaching to 100 days. In hours, it is 30 hours to 300 hours. In credits, the low is one and the high is up to 12.
Tests required for graduation	5	
Length of program is specified	15	Usually four years or a comparable number of credits
Faculty credentials are specified as doctoral degree or NCATE accreditation	14	
State approves program	50	Thirty-two states accomplish this through state boards and the rest use an assortment of mechanisms including NCATE, a designated state officer, state standards boards, or a specific department of state government.
Accreditation required	50	All 50 states designate state standards boards for this purpose; NCATE accreditation is an alternative in 24 states.

Source: Education Commission of the States, Teacher Quality Sources. Retrieved on March 6, 2006, from http://www.tqsource.org/prep/policy/

state approves. However, there have been efforts by a number of states such as New York to raise program quality by reauthorizing all of the teacher education programs in the state. While the New York process is still ongoing, it can be reported that four institutions shut down their programs rather than undergo the review.[54]

We heard stories of NCATE visiting teams composed of people from schools weaker than the institution being evaluated.

Peer-Reviewed Quality Control

Accreditation is the mechanism that teacher education, like most other academic fields, uses for self-policing. There are two principal accrediting bodies in teacher education. NCATE, founded in 1954, accredits more than half (623) of the nation's colleges and universities with teacher education programs. The Teacher Education Accreditation Council (TEAC), established in 1997, has approved teacher education programs at 19 institutions.[55]

TEAC, which received U.S. Department of Education recognition in 2003, is too new and small to speak of meaningfully. Only one of the colleges visited in the course of this study was TEAC accredited.

In contrast, 16 of the 28 site visit schools had NCATE accreditation. In general, the deans of these schools were positive about their NCATE experience, indicating it was useful to their institution to undergo a self-study and external review. They also said it led to programmatic improvements.

A minority of deans, who were critical, described the process as "bureaucratic," "formulaic," "burdensome," "jumping through hurdles," and "expensive and time-consuming." We heard stories of NCATE visiting teams composed of people from schools weaker than the institution being evaluated and of highly selective schools opting out of NCATE because they perceived it to be composed of lower-quality institutions.

Despite these differences of opinion, NCATE accreditation plays an influential role in teacher education. As pointed out in Part Five, the deans and faculty of schools of education cite accreditation as one of the two most powerful forces in determining the organization and content of their curriculums (Deans and Faculty Surveys; see Table 12).[56] Additionally, students attending accredited teacher education programs may pass state licensing exams at higher rates, though the research on this subject is inconsistent.[57]

Using NWEA data, this study examined the relationship between student classroom achievement and the accreditation status of the college or university where their teachers

Table 15

Student Achievement in Math and Reading in RITS by NCATE Accreditation Status of their Teachers' College or University Controlling for Length of Time Teaching**

	Math Net Growth		
NCATE Certification*	**N**	**Mean**	**SD**
Not NCATE Accredited	379	0.33	3.07
NCATE Accredited	1035	0.54	3.20
Total	1414	0.49	3.17

*Teacher Experience as a Covariate

Between Group Subject Effects	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	97.08	2	48.54	4.86	0.008
Intercept	7.17	1	7.17	0.72	0.397
Teacher Experience	84.76	1	84.76	8.48	0.004
NCATE Accredited	10.45	1	10.45	1.05	0.307
Error	14102.67	1411	9.99		
Total	14536.63	1414			
Corrected Total	14199.74	1413			

	Reading Net Growth		
NCATE Certification*	**N**	**Mean**	**SD**
Not NCATE Accredited	401	0.20	3.29
NCATE Accredited	1049	0.42	3.40
Total	1450	0.36	3.37

*Teacher Experience as a Covariate

Between Group Subject Effects	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	125.63	2	62.82	5.57	0.004
Intercept	29.84	1	29.84	2.65	0.104
Teacher Experience	110.36	1	110.36	9.78	0.002
NCATE Accredited	12.58	1	12.58	1.12	0.291
Error	16320.83	1447	11.28		
Total	16635.81	1450			
Corrected Total	16446.47	1449			

** The institutions in the study were only those at which the teachers prepared for certification.

Sources: NWEA Study, www.ncate.org/public/institlis.asp?ch=106, www.usnews.com/usnews/edu/grad/rankings/edu/brief/edurank_brief.php

TABLE 16

NCATE Status of *U.S. News and World Report*-Ranked Graduate Schools of Education by Top and Bottom Decile

Decile	Percentage NCATE Accredited
Highest Decile	30%
Lowest Decile	80%

Sources: U.S. News and World Report, Education School Ranking, 2005, NCATE Membership Listing

TABLE 17

NCATE Status of *U.S. News and World Report*-Ranked Colleges with Undergraduate Teacher Education Programs by Selectivity

Selectivity	Percentage NCATE Accredited
Most Selective	44%
Least Selective	65%

Sources: U.S. News and World Report, Ultimate College Guide 2006, NCATE Membership Listing

were prepared. Controlling for longevity as a teacher, there were slight gains in student achievement among the NCATE teachers, but they were statistically insignificant. This study found no difference in student math or reading achievement by students taught by teachers educated for certification at NCATE- and non-NCATE-accredited institutions (NWEA Study; see Table 15.)

The real issue is not whether the graduates of NCATE-accredited schools or their students score higher on standardized tests. It is that teacher education accreditation does not assure program quality. Anonymous Public University is an illustration of the problem, which is rooted in two weaknesses.

First, the most selective teacher education programs in the country are less likely to seek NCATE accreditation than their less eminent peers. Examining 100 graduate schools of education ranked by *U.S. News and World Report*, 30 percent of the schools in the highest decile are accredited versus 80 percent of schools in the lowest decile. (See Table 16.)

The same is true of universities with undergraduate teacher education programs. Forty-four percent of institutions ranked most selective by *U.S. News and World Report* are NCATE accredited versus 65 percent of universities rated least selective. (See Table 17.)

The result is that teacher education accrediting policy and standards are more likely to reflect the practices of the average or subpar programs rather than the outstanding ones. This is true of accreditation governance and review committees as well. It means, too, that the outstanding programs are less likely to join NCATE, feeling their participation benefits the association more than it does themselves.

The second weakness, probably connected to the first, is that the quality floor set by NCATE, the minimum acceptable standard for accreditation, is too low. An example is the acceptable admissions floor. *U.S. News and World Report* publishes the admission rates for teacher education master's programs. Among those programs that admit 100 percent of their applicants, 48 percent are accredited. Among those that accept 90 percent of their applicants, 51 percent are accredited. Such high admission rates in the schools we visited were invariably a mark of a weak institution. (See Table 18.)

TABLE 18

NCATE Status by Admission Acceptance Rate

Acceptance Rate	Percentage NCATE Accredited
100% of applicants accepted	48%
90% or more of applicants accepted	51%

Sources: U.S. News and World Report, Ultimate College Guide 2005
NCATE Membership Listing

At the accredited institutions we visited in the course of this study, most of the deans praised NCATE accreditation, which has had a palpable impact on the teacher education curriculum. Nonetheless, it has been unable to assure quality in the nation's teacher education programs. This is in part because NCATE's accredited schools underrepresent the top-ranked schools of education and the quality floor set by the association reflects the practices of its membership.

Conclusion

The nation lacks an effective vehicle for setting minimum quality standards for teacher education. Moreover, standards are tied to teaching rather than learning.

Despite the best efforts of the states and the National Council for Accreditation of Teacher Education, the floor is low enough today for institutions like APU to win the approval of both.

DISPARITIES *in* INSTITUTIONAL QUALITY

The overwhelming majority of America's teachers continue to be prepared in university-based teacher education programs. Even though these programs can be found at four-year colleges of every description, almost 9 out of 10 university-prepared teachers (88 percent) graduate from just three types of institutions: doctoral research extensive universities, doctoral research intensive universities, and master's granting universities. More than half (54 percent) are products of a single type of university: Masters I. (See Table 19.)

A majority of the new teachers graduating from universities are being prepared in weaker teacher education programs.

This study finds Masters I universities are weaker academically than the other two major producers of teachers. As a group, they have lower admission standards, professors with lesser credentials, fewer resources, and produce less effective graduates in the classroom.[58]

This generalization needs to be put into context. There are 467 Masters I universities with teacher education programs. This is 39 percent of the programs in the U.S. and more than twice the number found at research intensive and research extensive institutions combined. To say they are weaker does not mean every program is weaker, nor does it mean that every doctoral university is stronger than every Masters I. Indeed, Emporia State University, which is a Masters I, will be discussed later as an exemplary teacher education program. However, it *does* mean that a majority of the new teachers graduating from universities are being prepared in weaker teacher education programs.

Lower Admissions Standards

Masters I undergraduates have lower standardized admission test scores and high school grades than their peers at research and doctoral universities.[59] They score 50 points lower on the verbal portion of the SAT and 54 points lower on the

TABLE 19

Percentage of Graduates from University-Based Teacher Education Programs by Carnegie Type

Baccalaureate General	4%
Baccalaureate Liberal Arts	6%
Masters I	54%
Masters II	4%
Doctoral Intensive	13%
Doctoral Extensive	20%
Total	100%

Note: The percentages do not add up to 100% due to rounding.

Source: Demographics Study

math exam than students at research extensive universities. Their secondary school grades also lag behind those of peers at doctoral research extensive universities, with just 33 percent achieving A- or higher averages as compared to 50 percent at research extensive universities. Students at research intensives have test scores and grades in between. (See Tables 20 and 21.)

Lesser Faculty Credentials

Teacher education faculty bring to their jobs two important credentials. One is their experience working as teachers and their knowledge of practice. The other is their training as academics and their knowledge of teaching scholarship. More than three-quarters of the professors at all three types of institution have been teachers and have spent a substantial amount of time in the classroom. Among the 23 site visit schools included in this study that were Masters I or doctoral universities,[60] a greater percentage of Masters I professors (86 percent) have taught in P-12 than their doctoral research extensive colleagues (76 percent).

But doctoral intensive universities had the highest percentage of former P-12 teachers: 92 percent. The professors at all three types of school have a median of at least five years' teaching experience. Professors at Masters I's have the longest experience, a median of eight years. (See Table 22.)

With regard to training, teacher education faculty at Masters I institutions are the products of less distinguished graduate schools than their colleagues at doctoral universities. *U.S. News and World Report* ranks graduate schools of education on their overall quality as well as the quality of their elementary and secondary education programs. This study examined where the teacher education professors at the 23 DRE's, DRI's, and MI's we visited earned their doctorates. Teacher education

TABLE 20

SAT Scores for Undergraduate Teacher Education Majors by Institutional Type

Type	SAT Verbal	SAT Math
Research Universities	564	571
Doctoral Universities	557	565
Masters I Universities	514	517

Source: Carnegie classification by SAT and major for undergraduates, using data from Baccalaureate & Beyond 1999-2000, National Postsecondary Student Aid Study (NPSAS) by Higher Education Research Institute (HERI) at UCLA.

TABLE 21

Percentage of Teacher Education Freshmen With High School Grade Point Averages of A- or Higher by Institutional Type

Type	Percentage responding
Research Universities	50%
Doctoral Universities	41%
Masters I Universities	33%

Source: Higher Education Research Institute, Cooperative Institutional Research Program, UCLA, 2003, (unpublished)

professors at doctoral universities had more than twice the median percentage of professors with degrees from both the top schools overall and the highest-ranked schools in teacher education. (See Tables 23 and 24.)

The faculty at Masters I universities are also less productive in scholarship than their peers at doctoral universities. They are less likely to have published a book or written an article for a refereed journal in the past two years. (See Table 25.)

In sum, doctoral and Masters I universities all have faculties with substantial experience in practice. But Masters I universities have a lower proportion of professors who earned their doctorates from top-ranked universities. This means that most attended less-selective graduate schools, were educated and mentored by less-distinguished faculty, and had less-able classmates to learn from. Masters I faculty are also less productive as scholars, which is one way in which professors remain vital and keep up to date in their fields.

Fewer Resources

High-quality programs require adequate human *and* financial resources. Masters I teacher education programs spend less per student than doctoral extensive and intensive universities, which causes under-investment in areas such as facilities, maintenance, financial aid, technology, professional development, and library holdings. It also encourages programs to make greater use of adjuncts, who cost less than full-time faculty. The result is that Masters I universities have significantly larger student-to-full-time-professor ratios than doctoral universities. (See Tables 26 and 27.)

TABLE 22

Faculty Teaching Experience in the Schools by Carnegie Type

Institutional Type	Doctoral Extensive	Doctoral Intensive	Masters I
Percentage of faculty with experience teaching in the schools	76%	92%	86%
Median number of years teaching	5	7	8

Source: Faculty Survey

TABLE 23

Percentage of Teacher Education Faculty with Doctorates from the 20 Highest Ranked Graduate Schools of Education by Institution Type

Institutional Type	Number of Institutions	Doctorates from Highest Ranked Grad Schools	
		Mean %	Median %
Doctoral Universities	15	41%	36%
Master I Universities	8	26%	16%

Note: There were only two doctoral intensive universities among the 23 site visit teacher education programs, so doctoral intensive and doctoral extensive universities were combined.

Sources: U.S. News and World Report, Demographic Study

TABLE 24

Percentage of Teacher Education Faculty with Doctorates from the 20 Highest Ranked Graduate Schools in Teacher Education by Institution Type

Institutional Type	Number of Institutions	Doctorates from Highest Ranked Grad Schools	
		Mean %	Median %
Doctoral Universities	15	37%	44%
Master I Universities	8	19%	16%

Note: There were only two doctoral intensive universities among the 23 site visit teacher education programs, so doctoral intensive and doctoral extensive universities were combined.

Sources: U.S. News and World Report, Demographic Study

TABLE 25

Percentage of Education School Faculty Engaging in Various Research Activities in the Past Two Years

Carnegie Type	Published in Refereed Journal	Published Book
Doctoral Extensive	80%	31%
Doctoral Intensive	63%	22%
Masters I	57%	12%

Source: Faculty Survey

Lower Impact

In the final analysis, the measure of a teacher education program's success is the impact of its graduates on student achievement. The Northwest Evaluation Association study examined the relationship between teacher characteristics and student achievement growth. NWEA has a large database of longitudinal student achievement data containing more than 30 million student assessments, collected from more than 6,000 schools located in 1,500 school districts in 45 states. Nearly 2,400 P-12 teachers with students in the database volunteered to fill out questionnaires regarding their educations and experiences in the classroom.[61] The study examined student achievement for the academic year 2004-05 in comparison with the achievement of a matched group of students. This made it possible to look at the relationship between specific teacher characteristics—such as their highest degree, undergraduate major, or type of school attended—and the growth and performance of their students. This study focused on student growth in the areas of math and reading.

NWEA assessments, relying on tests of student achievement and academic progress, are aligned with

state standards and are cross-referenced in order to provide comparability between the assessments. Student growth in learning is measured on an equal interval scale in which each unit, roughly the equivalent of a month's growth in learning, is called a Rausch Unit (RIT)[62] based on the work of Danish statistician Georg Rausch. (Appendix 2 provides a full description of the study.)

The NWEA study examined the relationship between the type of university that teachers attended to prepare for certification and their students' growth in achievement. Controlling for experience, the study found that students with teachers prepared at Masters I universities show lower growth in math and reading than do students with teachers prepared at doctoral universities. The

TABLE 26

Education School Student/Faculty Ratios by Carnegie Type

Institutional Type	Teacher Education Graduates/ Full-Time Faculty	Full-Time Equivalent Students/ Full-Time Faculty
Doctoral Extensive	5.3	16.5
Doctoral Intensive	5.8	20.7
Masters I	9.3	28.9

Source: Demographic Study

TABLE 27

Budget Dollars Per Full-Time Equivalent Student by Carnegie Type

Carnegie Type	Dollars per Student
Doctoral Extensive	$6,767
Doctoral Intensive	$5,772
Masters I	$3,584

Source: Demographic Study

Table 28

Math and Reading Net Growth in RIT's Controlling for Teacher Experience by Carnegie Type

	Math Net Growth		
Institution Type*	**N**	**Mean**	**SD**
Doctoral/Research Institutions	527	0.65	3.28
Masters I	593	0.28	3.21
Total	1120	0.45	3.25

*Teacher Experience as a Covariate

Between Group Subject Effects	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	102.39	2	51.20	4.88	0.008
Intercept	4.04	1	4.04	0.39	0.535
Teacher Experience	63.72	1	63.72	6.07	0.014
Institution Type	41.68	1	41.68	3.97	0.046
Error	11717.72	1117	10.49		
Total	12050.03	1120			
Corrected Total	11820.11	1119			

	Reading Net Growth		
Institution Type*	**N**	**Mean**	**SD**
Doctoral/Research Institutions	548	0.57	3.32
Masters I	605	0.28	3.47
Total	1153	0.42	3.40

*Teacher Experience as a Covariate

Between Group Subject Effects	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	62.47	2	31.23	2.71	0.067
Intercept	0.49	1	0.49	0.04	0.836
Teacher Experience	39.20	1	39.20	3.40	0.066
Institution Type	25.81	1	25.81	2.24	0.135
Error	13264.79	1150	11.54		
Total	13529.52	1153			
Corrected Total	13327.25	1152			

Source: Northwest Evaluation Association

difference in math was .37 RIT's, which is significant at the .05 level, and .29 RIT's in reading, which is a strong relationship, but not significant at the .05 level. This is about a week and a half of additional growth a year in math and a little more than a week in reading. Over the course of 12 years of schooling, this amounts to four and a half months in math and nearly four months in reading, which represents a substantial difference in student achievement growth and indicates greater efficacy among teachers prepared at doctoral granting universities. (See Table 28.)

Conclusion

A majority of our teachers, who graduate from Masters I universities, come to their teacher education programs with lower high school grades and test scores than their peers at doctoral universities. Their programs are staffed by professors prepared at less highly ranked universities with budgets less generous than those of doctoral universities. When graduates become teachers, their students experience lower growth in math and reading than those with teachers trained at doctoral universities.

When Masters I graduates become teachers, their students experience lower growth in math and reading than those with teachers trained at doctoral universities.

EXEMPLARY TEACHER EDUCATION PROGRAMS

One of the most gratifying aspects of this study was finding excellent teacher education programs at more than a quarter of the schools we visited.[63] These programs were models demonstrating that the history of teacher education is surmountable. They resisted the pressure to withdraw from P-12 schools. Instead, they embraced practice and practitioners. For their efforts, they have received the support of their universities.

This report profiles four of these teacher education programs, located at Alverno College, Emporia State University, Stanford University, and University of Virginia.[64] These institutions differ in the types of teacher education programs they offer: four-year undergraduate programs, five-year undergraduate/graduate programs, and a 15-month master's program. They are small and they are large. They are less selective and highly selective. They are public and private, religious and nonsectarian. They are located in different regions of the country at baccalaureate colleges, master's granting universities, and research universities.

Each model program is committed to preparing excellent teachers and has clearly defined what an excellent teacher needs to know and be able to do. This is translated into a coherent, integrated, comprehensive, and up-to-date curriculum.

But these teacher education programs share a number of basic characteristics that make them exemplary. Each is committed to preparing excellent teachers and has clearly defined what an excellent teacher needs to know and be able to do. This is translated into a coherent, integrated, comprehensive, and up-to-date curriculum. The field experience component of the curriculum is sustained, begins early, and provides immediate application of theory to real classroom situations. There is a close connection between the teacher education program and the schools in which students teach, including ongoing collaboration between academic and clinical faculties. All have high graduation standards.

The teacher education faculty at all four schools are committed to their pro-

gram and their students. Even education school faculty outside of teacher education and faculty colleagues outside the education school respect and participate in the program. Moreover, top university administrators are positive about and support the teacher education program. Beyond this, the high quality of the program, and of its graduates, is recognized by important external publics such as the schools that hire them and the experts who assess them.

Milwaukee principals rate Alverno graduates as "consistently better prepared to teach in [inner city schools] than graduates of other programs."

Four-Year Undergraduate Programs

Alverno College

Alverno College, founded by the School Sisters of St. Francis, is a Catholic women's college in Milwaukee. Alverno enrolls a little over 2,200 undergraduate and graduate students. Of these, 346 undergraduates and 129 graduates are in programs for teachers. Its student body is nonresidential and is one-quarter minority.

The education division of this baccalaureate general college admits a local student body that stays and teaches in the local schools. Five years after graduation, 85 percent of the teacher education graduates are still in the classroom. Though the college is small, this remarkable retention rate makes Alverno one of the five top feeder institutions for the Milwaukee Public Schools. Principals in those schools rate the Alverno graduates as "consistently better prepared to teach in [inner city schools] than graduates of other programs."

This is even more impressive because Alverno is largely an open admission school in which entering students often come underprepared. Passage of the Praxis I and Pre-Professional Skills Tests are required for admission to the teacher education division, but the college is willing to work with highly motivated students who fail the exams the first time around. This kind of individualized attention to students is a hallmark of the Alverno approach.

In terms of the faculty, there are nine full-time education professors, six of whom have doctorates, and 12 part-time faculty members. What is unusual is that liberal arts faculty, who consider teacher education one of the more rigorous majors at Alverno, are also deeply involved in the teacher education programs. Language arts education, for instance, is coordinated by a senior English department professor and a number of liberal arts faculty teach methods courses in their disciplines.

The Alverno teacher education curriculum, which prepares students for early childhood, elementary, middle school and secondary teaching, can be described in two very different ways. Starting off with the traditional description: the student program

comprises the college's core liberal arts classes, courses in disciplinary areas like math or science, course work in early childhood or secondary education, four field experiences, student teaching, and study in any supplementary areas needed. A full-time student enrolls in 12 to 18 credit hours a semester.

As for the Alverno description, the college has an outcome- or ability-based curriculum. All teacher education candidates must complete a total of 40 competence units distributed across eight areas: communication, analysis, problem solving, valuing in decision making, social interaction, developing a global perspective, effective citizenship, and aesthetic engagement. There are six developmental levels, which require increasing levels of knowledge and skill in each area. Alverno requires that all students demonstrate mastery at least through level four in the eight areas.

By way of example, in social interaction the six developmental levels are: 1) identify your own interaction behaviors in group problem solving; 2) analyze the behavior of the others in the group within two theoretical frameworks; 3) evaluate your own behavior within two theoretical frameworks; 4) demonstrate effective social interaction behavior in a variety of situations and circumstances; 5) demonstrate effective interpersonal and intergroup behaviors in cross-cultural interactions; and 6) facilitate effective interpersonal and intergroup relationships in one's professional situation.

A given course will address a number of the eight ability areas and the syllabus will describe what students have to do to show they have attained a specific level of competence. No one has to guess what the professor wants; explicit expectations and assessment criteria are public. Through a variety of means—including self-assessment, teacher assessment, and external assessment—a student demonstrates the level of competence or development in particular abilities. Each semester, students receive a matrix showing where they stand in terms of their competence level for each ability. Students are graded as satisfactory or unsatisfactory and repeat unsatisfactory work until it becomes satisfactory.

The teacher education program relies on extensive field work. Prior to student teaching, Alverno students complete a minimum of 100 hours of field work divided into four different experiences, one taken each semester of the sophomore and junior years. The first, intended to get their feet wet and allow them to see a good teacher in action, focuses on lesson planning and requires students to teach two lessons. The next empha-

Each semester, students receive a matrix showing where they stand in terms of their competence level for each ability.

sizes literacy and stresses the development of goals, objectives, and standards. A third centers on assessment and classroom management.

The final field experience takes place in an urban school and students are required to teach eight lessons. In this fourth field experience, Alverno undergraduates assess their students before and after they teach in order to gauge how much of a difference they have made.

Students must assemble a portfolio (including a video record of their teaching performance) that is evaluated by the student, the faculty, and local principals, assistant superintendents, alumni, and other educators.

After the fourth field experience, and prior to student teaching, the Alverno students go through the most comprehensive and rigorous assessment of their careers. They must assemble a portfolio (including a video record of their teaching performance) that is evaluated by the student, the faculty, and external assessors including local principals, assistant superintendents, alumni, and other educators with whom the college has relationships.

Student teaching, which follows, involves two nine-week placements in at least one urban school. Students are expected to manage the classroom for five weeks during each placement. As in the earlier field work, they keep logs, engage in self-assessment, produce lesson plans, and participate in a weekly seminar. They are required to write a comprehensive case study of the effectiveness of student learning.

The only complaint heard from a small number of faculty is that there are too many adjuncts or part-time faculty on staff. However, the use of adjunct professors to supervise student teachers is effective because the adjuncts have long-term involvements with and are better integrated into the college than is typical. Full-time education faculty are also more actively involved in supervising student field work than is typical in teacher education programs, rotating in and out of supervision assignments. And even rarer among institutions of higher education, non-education faculty routinely observe students teaching in their content area.

Faculty are hired at Alverno for their commitment to teaching and their experience as teachers, not for their research or their publications. The chair of the education division puts it this way: “We are an institution where teaching is our number one priority. We are committed to the scholarship of teaching, and to figure out the most effective way to teach our student body.” Unlike many schools of education that talk about exemplary teaching methods but don’t go beyond the rhetoric, the whole of Alverno, not just the education division, stresses the modeling of good teaching. The college has a staff of six full-time researchers who study Alverno’s approaches to teaching and learning,

their consequences, and how they can be improved. This institution studies the graduates of its programs in ways few other colleges do.

Alverno also applies what it has learned to improve education. Its faculty are much in demand in the local schools and around the country. Past initiatives include a Joyce Foundation grant that funded Alverno professors to work with the Milwaukee middle and high schools to develop performance assessment strategies. Another initiative aimed to integrate technology (a particular strength of Alverno teacher education) and portfolio assessment into the curriculum of the Milwaukee elementary schools. The college has received more than $4 million in awards from major foundations to support the work of the college.

Education at Alverno is not without problems. One hears questions on campus from those who would rather get an "A" than a "satisfactory" grade; from students about the quality of a particular field experience or a cooperating teacher; and from faculty about salaries. But the bottom line is that Alverno turns out very good teachers. Nationally, this small college was involved in helping determine the knowledge, skills, and dispositions of beginning teachers included in the bible of new teacher standards, the Interstate New Teacher Assessment and Support Consortium (INTASC) standards. The National Commission on Teaching and America's Future identified Alverno as one of seven outstanding teacher education programs in a series of books entitled "Studies of Excellence in Teacher Education." The U.S. Department of Education chose Alverno's elementary education program as one of four winners of a national award for programs for effective teacher preparation. Last year alone 900 educators from more than 200 institutions in the United States and abroad visited Alverno to study its teaching methods. Not bad for a local, tuition-dependent, less-selective former normal school.

Unlike many schools of education that talk about exemplary teaching methods but don't go beyond the rhetoric, the whole of Alverno, not just the education division, stresses the modeling of good teaching.

Emporia State University

At most of the universities we visited, teacher education was looked down on by professors and administrators outside and frequently inside the school of education. But not at Emporia State University (ESU) in Kansas, the home of the National Teachers Hall of Fame, dedicated to honoring master career teachers and to promoting the teaching profession. The ESU school of education, named The Teachers College (TC), is the institution's pride and joy. ESU president Kay Schallenkamp calls "teacher preparation… the jewel in our crown," an opinion echoed by Vice President for Academic Affairs John Schwenn. A department chair

At Emporia, all teacher education applicants must provide proof of 100 hours of supervised work experience with children.

marveled: "I've never worked at an institution where the school of education had more clout," marveled a department chair. In 2006, the city of Emporia will officially adopt the nickname "Teacher Town, USA."

The Teachers College was founded in 1863 as the first public normal school in Kansas. Today, it offers 11 undergraduate and 13 graduate programs. It enrolls 1,150 undergraduates in its teacher education programs, nearly 30 percent of ESU's undergraduate population, and graduates about 300 teachers annually from its baccalaureate programs, split almost evenly between elementary and middle/secondary education.

The school draws most of its undergraduate students from Kansas. Two-thirds are traditional-age college students. Minority enrollment is 4 percent Hispanic and 4 percent African-American, reflecting the demographics of the population in TC's primary enrollment area. Close to 40 percent of TC students are transfer students, the majority coming (with weaker skills) from community colleges.

Emporia undergraduates enter teacher education in their junior year. As sophomores, they take a survey course titled "Introduction to Teaching," which includes 30 hours of tutoring in the local schools. Students get a chance to see what it's like being around children and being a teacher. Faculty say they get a chance to eyeball their future students and to caution those who don't seem cut out for the profession that they might consider switching fields. All teacher education applicants must provide proof of 100 hours of supervised work experience with children.

After this initial exposure, those who decide to apply need to have a 2.5 cumulative GPA and a 2.75 GPA in the General Education Core Curriculum. Those who enroll actually have higher grades: a GPA of 3.21 as compared with 3.03 for all upper division students at Emporia in spring 2005.

They must also pass Praxis I, the pre-professional skills test, with cut-off scores in writing, math, and reading, originally set by the Kansas Board of Regents at approximately the 55th percentile nationally. TC entrants generally average several points above the cut-off.[65] The elementary program takes a lower percentage of applicants than the secondary program because fewer elementary applicants pass Praxis I.

A few students are admitted provisionally if they miss the cut-off on just one test by a point or two. Provisional students must attend a remedial lab and pass "an appropriate test" or be dropped by the program. Applicants can retake Praxis I until they pass it, and while those who fall into that category are

relatively few, some cooperating teachers feel that those who take the test multiple times are more likely to be unsatisfactory in the classroom.

Like Alverno, TC is one of those rare schools with a low bar for admission, but a high bar for graduation. To earn a diploma, students must pass Praxis II. Students who fail the exam still graduate, but not with teacher education degrees.

They must also pass through three admissions processes: ESU general admission, TC admission in their junior year, and admission to the TC senior year program. In addition, the senior year program requires recommendations from the student's mentor teacher and university internship supervisor.

Emporia State's Teachers College has 76 tenured or tenure-track faculty; all but two hold doctorates. Like Alverno faculty members, they have a shared sense of identity and purpose: they are teachers of teachers first and scholars second. They focus on issues of education and pedagogy; their colleagues in arts and sciences provide the academic content and methods courses.

As with most institutions, teaching, scholarship, and service are all considered in granting tenure or promotion, but "teaching is weighted double," said a department chair.

This faculty also maintains close ties with P-12 schools. All elementary education professors are in the public schools everyday, engaged principally in teaching demonstration lessons, team teaching with public school teachers, and mentoring student teachers. Arts and science professors frequently join them, observing student teachers and designing team taught lessons.

But they see their work as more than educating future teachers. Their job is improving P-12 education in the entire state of Kansas. Because the faculty and their students are overwhelmingly from Kansas and plan to remain there, they believe the ESU faculty has been given an opportunity to raise the quality of the entire state education system. One out of every six teachers in Kansas has completed a degree at ESU.

Teacher education is the showcase at Teachers College. There are three critical elements—the curriculum, the clinical program, and partnerships—that make the program work.

Elementary teacher education is a three-block program building on the ESU lower division general education core. Block I is the first-year program, in which students take 33 hours of professional courses such as "Planning & Assessment of Teaching," "Reading for the Elementary Teacher I," and "Teaching Science in the Elementary School."

Blocks II and III, the senior-year

The faculty members have a shared sense of identity and purpose: they are teachers of teachers first and scholars second.

program, are a mix of course work and a one-year internship. Block II, taken in the fall, includes seven courses: "Teaching in Social Studies," "Teaching Language Arts," and "Teaching Mathematics in the Elementary School"; "Classroom Management"; "Observing Teaching/Learning Models"; "Reading for the Elementary Teacher II"; and "Reading Practicum." Block III, taken in the spring, is also 17 credit-hours, including 12 hours of "Student Teaching" plus the courses "Professional Competencies of Teachers" and "Foundations of Curriculum Development."

All elementary teacher education students are required to spend their senior year as an intern in a professional development school.

Block II and III courses are 100 percent field-based, held on-site at professional development schools (PDS). The PDS, a union between a university and a school, is modeled after the teaching hospital. For the school district, participation brings professional development for teachers, chances to train and hire successful interns, access to expertise from university faculty, and an additional person in the classroom to work with students. The university benefits because its teacher education program is rooted in the schools, the clinical and academic curriculums are integrated, students receive better preparation for the classroom, and faculty are intimately involved in the schools, which is far from the norm.

This decision to adopt a field-based program necessitated a rethinking of the teacher education curriculum. "We had to grapple with the question: How does the content of a university class fit into this new environment?" said Dean Tes Mehring. To make this work, professors had to redesign their courses: integrating theory and practice, gearing instruction to what is happening in the classroom, collaborating with other faculty and classroom teachers, dropping unnecessary and redundant course content, and adding new units.

All elementary teacher education students are required to spend their senior year as an intern in a professional development school. During their first semester in the PDS, they spend two full days and three half-days each week in the classroom, and the remainder of their time taking site-based methods courses. They meet in their college class to discuss theory; practice it the next day in their P-12 intern classroom; then return to their college class to talk about what happened and what they learned from the experience. As the semester progresses, students spend more and more time at the PDS. Their courses end by Thanksgiving and interns spend the first two weeks of December teaching every day. This gives them a head start on student teaching, which they do full-time the following semester. They stay at the

same school, but change classrooms to get the experience of working at a different grade level and with a different mentor teacher.

The internship is much more than student teaching. As interns, students are treated like staff members and are expected to experience the life of a teacher both inside and outside of the classroom. They go through new teacher orientation and are expected to attend all teacher meetings. They participate in grading and parent-teacher conferences. They build relationships with students and their families. TC students view their intern experiences as intense and valuable. "It was wonderful to be able to see the entire school year from beginning to end: how to set up a class, how to go through, how to wind it down," said a TC graduate. "By the end, you really feel like a teacher." The TC interns and alumni with whom we spoke uniformly said that the program helped them feel well prepared, ready to be in a classroom by themselves.

The mentor teachers at the PDS schools agree. "It's so organized," said one, "so well thought out. Interns get twice the training of regular student teachers." They receive high levels of feedback throughout the year, and graduate with confidence in their professional skills. Supervisors are supposed to visit the student teacher's class four to six times over 16 weeks, but many show up much more often. About 80 percent of the student teachers are supervised by full-time education faculty, only about 20 percent by adjuncts. This is in contrast to many education schools we visited, where adjuncts and doctoral students do the bulk of the supervision.

Two critical partnerships make this program possible. The first is with the public schools. The word "partnership" tends to be overused in education, but the PDS's we visited were true partnerships. Both the schools and ESU own them. Together, teachers and professors built the program, defining what teachers needed to know and the mechanisms for assessing their competence in those areas. Both the school district and ESU invest time, resources, and human capital to make this initiative work. Both were thrilled with the result.

The education school's second crucial partnership, primarily in middle and secondary education, is with the faculty in arts and sciences at ESU, who teach methods courses in their disciplines and supervise student teaching. It is a faculty reminiscent of Alverno's. Professors feel a sense of ownership and pride regarding teacher education students, a sharp contrast with most of the campuses we visited. One ESU science professor summarized the

Students view their intern experiences as intense and valuable. Said one: "It was wonderful to be able to see the entire school year from beginning to end."

Three years after graduation, 92 percent of ESU graduates are still teachers versus a state average of 70 percent.

relationship quite simply: "The teachers we turn out," he said, "they are mine." Another faculty member even looks for students in his freshman and sophomore courses who would make good teachers and tries to persuade them to apply to TC or, alternatively, counsels some pre-education majors into other careers if he thinks they lack the right personality for the job. Arts and sciences faculty members are also connected with the schools and teachers around the state. As a professor remarked: "There are 700 biology teachers in Kansas and I know all of them." Teacher education is so engrained in the arts and sciences that one of the criteria for hiring faculty is the candidate's interest in preparing teachers in his or her academic discipline.

So how well is ESU doing? its graduates get jobs. Ninety-eight percent of the students who graduate get hired and the other 2 percent go to graduate school. Its graduates stay in teaching. An ESU study finds that three years after graduation, 92 percent of graduates are still teachers versus a state average of 70 percent. Employers rate ESU teachers highly. ESU surveyed the schools that employed teachers graduating from December 1998 to August 2000. They said the teachers were either well prepared or very well prepared in areas including subject-matter competency (85 percent), instructional planning (81 percent), teaching methodology (80 percent), and classroom management (71 percent). And as with Alverno, ESU's education school has won awards for its program, such as the National Distinguished Program in Education Award from the American Association for Colleges of Teacher Education.

The bottom line is that Emporia State offers an exemplary elementary teacher preparation program, but it is still a work in progress. "We built the plane while we were flying it," said Dean Mehring, and the faculty members are still tweaking it. For instance, ESU recently made curricular changes to provide relief to senior teacher education students who are buffeted by heavy course loads and a five-day-a-week internship. A larger issue is that the middle/secondary teacher programs have lagged behind the elementary education program in their redesign.

The homogeneity of the faculty and the student body is a shortcoming, too. There are only four professors of color at Teachers College. This is the downside of a regional university and Kansas demographics, although population data indicate a rising Hispanic population. It is also a liability in preparing students to teach diverse populations. In the employer survey, only 63 percent of respondents rated TC as doing well or very well in the areas

of inclusion/diversity. The college is aware of the issue and taking steps to address it.

There is also a paucity of evaluative data. TC is better than many programs in that it keeps track of its alumni. But to date, the evidence of success is persistence data, placement information, and alumni surveys. Missing is research on the impact of TC's graduates on their students' achievement and their schools. Such a study is under way.

One of the most appealing characteristics of the Teachers College is its willingness to acknowledge shortcomings and its desire to address them.

A Five-Year Teacher Education Program

The University of Virginia

The University of Virginia (U.Va.) is very different from Alverno and Emporia State. It is a very selective doctoral extensive university, founded by Thomas Jefferson. Located on a beautiful historic campus, U.Va. is commonly referred to as a "public ivy." Virginia's education school, the Curry School of Education, offers a very different teacher education program, too: a five-year curriculum in which students earn a bachelor's degree with a liberal arts major and a master's degree in teaching.

The Curry School has a relatively small teacher education program. In 2005, 175 students were admitted to the B.A./M.T. program and typically about two-thirds of the students graduate. The average SAT score for students admitted to Curry in 2005 was an impressive 1247, slightly lower than the arts and sciences scores. Faculty members rate the students highly, describing them as "outstanding," "very articulate," "very committed," and "one of the real pleasures of working here." One professor went so far as to say: "The students here make us all look smarter."

However, a professorial wag took a slightly different tack, characterizing the teacher education students as "white, privileged, astute, and almost entirely female." The 2005 class was 83 percent female and 20 percent were minorities.

Nearly 37 percent of Curry's teacher education students come from families with one or both parents in the teaching profession. Nine out of 10 become classroom teachers after graduating, more often choosing suburban over urban schools as is true at the vast majority of selective education schools. However, about a third of the 2005 graduates planned on teaching in urban (17 percent) or rural (17 percent) schools. Curry has not historically collected data on alumni retention.

In the course of their five years at

One of the most appealing characteristics of the college is its willingness to acknowledge shortcomings and its desire to address them.

By the time Curry students complete the fourth year of the program, they have had as many as six field trip experiences and up to 90 hours in the field.

the University of Virginia, students meet the requirements for a U.Va. bachelor's degree, including a minimum of 30 credits of general education and whatever number of credits are required for a bachelor's degree in any particular arts and science department. Students complete 53 to 56 credits in education, including 16 to 18 credits in field placements and student teaching. In addition, several education classes have non-credit school-based labs attached to the course work. Teacher education programs are available at the P-12 levels in the areas of elementary, secondary, and special education. In contrast to most education schools, more students seek certification in secondary than elementary education. Each teacher education student has faculty advisors in both Curry and arts and sciences.

Admission to the teacher education program, which begins in the second year of college, is relatively easy, but not automatic. Students fill out an application, describe their interests and their experiences with children and families, pass Praxis I, and demonstrate good academic standing at the university with an overall GPA of 2.7 or better. During their second year, they take their first education class, an introduction to the field, entitled "Teaching as a Profession," and an associated field experience in a school or community service agency intended to teach them about organizational structure and behavior. In their third and fourth years, students enroll in basic education courses, classes required for licensure, and related field experiences. For instance, the basic "methods" class ("Instruction and Assessment") and the content courses require fourth-year students to engage in clinical work in a classroom and teach several lessons to students.

By the time Curry students complete the fourth year of the program, they have had as many as six field experiences and up to 90 hours in the field; completed core or basic education classes in subjects such as exceptional learners, learning and human development, and educational technology; and taken courses in the area in which they plan to be certified, such as teaching chemistry in secondary schools. If anything, students would like even more field experience.

In their fourth year, Curry undergraduates must take the Graduate Record Exam prior to formal admission to the graduate program. In recent years, average scores for the master's program, which admits both fifth-year students and a cohort of graduate students who enroll in a two-year program, have averaged from 1225 to 1240. They take the Praxis II exam at the beginning of

the fifth year as well, as Curry requires. The Praxis I is taken in the third year, when students from the college are admitted to the teacher education program.

In their final year, fifth-year students, who are now working on a master's degree, spend the fall term student teaching full-time in order to see how a teacher sets up a classroom and establishes expectations at the beginning of the school year. They spend the second semester taking a capstone course on issues in education and working on a research project based on a classroom problem or issue identified during the fall with the aid of a clinical instructor and their university supervisor. The aim of the project, exploring issues such as the pros and cons of a particular approach to reading and a comparison of two different methods of teaching science, is to bring students back to the school to do research.

Curry places students in a variety of P-12 schools in the region. Its focus is on choosing classroom teachers who model good teaching, rather than working with a particular school. Teachers apply to the education school to be clinical instructors (cooperating teachers) for Curry students and their applications are carefully reviewed. If selected, they receive $500 for each student they supervise. A Curry faculty member or doctoral student in turn supervises each student and clinical instructor, visiting the school where a student has been placed two or three times a month to meet with the student and clinical instructor. At the end of the process, all three evaluate each other. The decision to continue or discontinue employing the clinical instructor grows out of that evaluation.

Twenty-five to 30 doctoral students serve as supervisors each year, working under the guidance of faculty members representing each of the licensure areas. Supervisors must have at least three years' experience teaching the subject in which they are supervising students. In addition to observation training provided by the Teacher Education Office, supervisors take a three-credit course on evaluating teaching.

A little over a third of the full-time tenure-track faculty participate in teacher education, including professors from related fields. As at Alverno and Emporia, teacher education wins high marks from Curry colleagues in other fields, and the research of the teacher education faculty is not looked down upon, as it is in many research universities. It is seen as "the same as the other research," said one professor. In fact, one of Curry's highest ranked programs in scholarship is Special Education, which also prepares teachers.

In addition to observation training provided by the Teachers Education Office, supervisors take a three-credit course on evaluating teaching.

Professors believe the five-year program is academically and professionally superior to the traditional four-year curriculum.

The Curry School tenure-track faculty, numbering 81, is a research university professoriate expected to be strong in research, teaching, and service. However, in contrast to the situation at Alverno and Emporia, research is the most important in this trinity. Professors made it clear that research counts more than service to the local schools. One junior faculty member put it this way: "I have yet to have anyone tell me that I had better be in the schools or I would not get tenure." Curry professors have not been encouraged to get involved with the local schools and community and most have not done so, but there are notable exceptions. And because most professors live in the Charlottesville area, they are unavoidably part of the community and its schools.

U.Va. professors enjoy a strong reputation as a teaching faculty. Students were enthusiastically and almost uniformly laudatory in their comments about their professors. Said one senior faculty member who had taught at three other institutions: "This is the best teaching faculty I have ever been associated with. They subordinate their personal interests to those of their students in a way that is rare among Research I universities."

The Curry faculty and administration are wedded to the five-year teacher education program, which is rooted in the belief that providing a broad liberal arts education with an arts and sciences major, and ensuring extensive field work experience and pedagogical education, cannot be done in four years. Professors believe the five-year program is academically and professionally superior to the traditional four-year curriculum. There is a cornucopia of anecdotes, but professors and administrators admit, as one said, that there "really is no hard evidence that the five-year program is superior." But there is little doubt on the part of the Curry School of Education community that a serious study would prove that it is.

Without that evidence, many other schools would likely view the idea of moving to an extended teacher preparation program in an age of alternative certification as inherently unwise. But it has worked for Virginia in several ways. Enrollments and SAT scores both rose following the change. The arts and science professors found the education school and teacher education more acceptable because the school supported liberal arts majors for all students, even though they still regarded education as less scholarly than other fields. The five-year program built a sense of pride and uniqueness within the education school. It also moved teacher education to a much more central place at Curry.

But more important, the program received rave reviews from the public schools.

A local deputy superintendent echoed the sentiments of nearly all of her colleagues: "Students from Curry are the highest quality we see. I don't know whether it is the five-year program or the quality of the students."

The University of Virginia, like Alverno and Emporia State, has a reputation for turning out strong teachers. U.Va. was another of the seven schools praised for excellence in teacher education by the National Center on Teaching and America's Future. Its teacher education programs are ranked in *U.S. News and World Report* among the top 10 schools in elementary, secondary, and special education.

In addition, the Carnegie Corporation named Curry one of the top-ranked teacher education programs in the country and has awarded it up to $5 million to develop state-of-the-art programs to strengthen P-12 teaching.

Known as "Teachers for a New Era," the project has allowed Curry to enhance partnerships for clinical practice for Curry students and veteran teachers alike, establish an extensive research program focused on teacher development, and build stronger relationships between its faculty and that of the College of Arts and Sciences.

A Master's Program

Stanford University

Stanford University, accredited by NCATE and the California Commission on Teacher Credentialing, has adopted an entirely different approach to preparing teachers than the other schools. One of the most selective universities in the country, Stanford is a private, nonsectarian, doctoral extensive research university, enrolling more graduate than undergraduate students. It is located in California's Silicon Valley. Its graduate School of Education prepares future teachers in a one-year master's program, which everyone calls STEP, an acronym for the Stanford Teacher Education Program.

In 2004, this small teacher education program enrolled 69 students. As is typical, the overwhelming majority of students are women (76 percent). However, in contrast to Alverno, Emporia, and Virginia, about 50 percent each year are students of color. STEP students have undergraduate grade point averages of B+ or A- and their Graduate Record Exam scores average over 1200. To be admitted to the program, they must have passing scores on the California Subject Examination for Teachers (CSET) in the disciplinary field they intend to teach, or must have completed the course work for what California calls an "approved

The arts and science professors found the education school and teacher education more acceptable because the school supported liberal arts majors for all students, even though they still regarded education as less scholarly than other fields.

A STEP student usually starts in the classroom by helping small groups, leading mini-lessons, and working on curriculum.

subject matter program." STEP students attend a program, extending over a summer and a full academic year, from which they earn a master of arts in education degree and a preliminary California secondary teaching credential. An elementary education program began in 2003 with an undergraduate cohort that will continue through the master's degree, expanding on the original secondary school preparation program.

STEP combines a year in the classroom with 45 units of graduate course work. Students spend a minimum of four hours a day or 20 hours per week at a partnership high school, and they have classes at the university in the afternoon. The goal is to integrate theory and practice, to connect what is learned in the university with what is learned in the field. The program seeks to weave together five areas: social and psychological foundations of education; curriculum and instruction in the content area; language, literacy, and culture; general pedagogical strategies; and a practicum and student teaching.

For the student cohort, this translates into entering in summer and taking courses on equity and democracy, curriculum and instruction in their disciplinary field, and the centrality of literacies. The fall and winter quarters cover adolescent development and learning, further study of curriculum and instruction in the discipline, classroom management, principles of learning for teaching, and teaching in heterogeneous classrooms. The spring quarter consists of classes on language policies and practices, school reform, the ethics of teaching, action research, and a content elective. Students also participate in a teaching seminar throughout the year, focusing at different times on technology, building community in the classroom, classroom assessment, and special education needs.

During the half-day that students spend at partnership schools, they gradually assume more responsibility for teaching. Throughout the year, STEP students and their cooperating teachers plan and teach together. STEP students usually start in the classroom by helping small groups, leading mini-lessons, and working on curriculum. By late winter or early spring, they assume independent student teaching responsibilities, with continued oversight and guidance in planning from the cooperating teacher. STEP provides a supervisor in the same teaching field for every three to four student teachers. Supervisors are usually doctoral students with teaching experience, retired teachers, or teachers opting for less than full-time work, such as new mothers.

The supervisors make nine for-

mal observations during three of the four quarters and additional informal observations, videotaping at least one per quarter. Cooperating teachers with whom students work in the schools also complete three formal quarterly assessments. The student teaching criteria, as well as the course work, are based on standards drawn from the California Standards for the Teaching Profession, INTASC (the Interstate New Teacher Assessment and Support Consortium), and the National Board for Professional Teaching Standards for master teachers. These standards are incorporated into an extensive rubric that guides student teaching observations and evaluations, and they are used to evaluate the end-of-year portfolio assessment that all candidates complete.

At the beginning of the school year, the cooperating teacher, the university supervisor, and the student negotiate a plan for how the student will engage in co-planning and co-teaching. The selection of cooperating teachers is a fairly rigorous procedure involving classroom visits by teacher education faculty and staff members, and personal interviews with the STEP director and Stanford faculty. The aim is to find excellent teachers and mentors whose practices are consistent with the STEP vision of teaching. An observation protocol for selecting cooperating teachers covers issues such as classroom climate, how the goals of lessons are communicated and assessed, and how cooperating teachers address individual learning needs. A cooperating teacher candidate must have at least three years of teaching experience in the area of certification and a strong commitment to mentoring students for a full academic year. After cooperating teachers are selected, there are classroom visits to ensure quality.

STEP students are placed in one of 20 partnership schools, but the goal is to reduce the number to no more than 8 to 10 to assure quality control and to better focus resources. The key criterion in choosing schools is the quality of teaching. STEP partners with inner-city high schools, but has found that teacher and principal turnover and large numbers of uncertified teachers often compromise the program's insistence on placing students in high-quality teaching situations. In late 2001, STEP created a charter high school in nearby East Palo Alto, a community that had lost its local high school due to a desegregation plan 25 years earlier; all of its students were bused to other high schools. In collaboration with Aspire Public Schools, a charter school management organization, Linda Darling-Hammond, the faculty sponsor of STEP, raised money from the university and other funders to start a new high school in this minority community. Today, this

A cooperating teacher candidate must have at least three years of teaching experience in the area of certification and a strong commitment to mentoring students for a full academic year.

Cooperating teachers can take any course at the school of education through the continuing education program for only $60.

charter public high school is a partnership school and most of its teachers are STEP graduates. Stanford is now responsible for operating the school through the newly created Stanford Schools Corporation. STEP graduates have helped launch three other small high schools in nearby communities (San Francisco, Redwood City, and elsewhere in East Palo Alto) that are also in partnership with the teacher education program.

As with Emporia, partnership is not simply a matter of rhetoric in describing the relationship between Stanford and the schools where it places students. At one school with 10 STEP student teachers, the university has provided professional development on teaching students in heterogeneous groupings, faculty assistance in redesigning the math department, on-site support at least one day a week for cooperating teachers, assistance for the teachers in achieving the required California CLAD (Crosscultural, Language, and Academic Development) credentials, and a trip to New York City for a faculty team to visit small schools after the teachers had decided to reorganize their school into small learning communities. Further, cooperating teachers can take any course at the school of education through the continuing education program for only $60. Under these circumstances, it is not surprising that the schools were enthusiastic about STEP.

By the conclusion of the program, STEP students have built a culminating electronic portfolio. In lieu of writing a thesis, the portfolio documents how the student has met the required standards, showing competence in addressing the needs of all students, classroom management, pedagogical content knowledge, curriculum design, assessment, and professional development. Through case studies, analyses of their units, videos, on-going assessments, and reflections on practice, the portfolios sum up the year's growth in skills, knowledge, and attitudes. The portfolios are presented to a four-member committee of university and school-based faculty members both as a means of assessment and to create a greater shared understanding of teaching standards.

Sponsored by Darling-Hammond, one of the most important names in university-based teacher education, STEP involves more than half of the school of education's 46-member, full-time, tenure-track faculty in one way or another, which is extraordinary. The Stanford University administration gives the education school good marks and a number of education school professors have appointments in the schools of arts and sciences and business.

When Darling-Hammond came to Stanford, she worked with other professors to redesign STEP, which had recently received a critical evaluation from the university. She gave it a clear vision of what good teaching looks like and made a commitment to recruit a diverse student body. She wants STEP students to be able to work with diverse learners, have the capacity to reflect on their practice, and be capable of questioning and learning in the context of their students' work. The program is rooted in an equity agenda.

Stanford professors regularly engage in discussions of how the vision is being translated into curriculum and instruction. They have made substantial changes in their courses both inside and outside the program, increasing the connections between theory and practice, and seeking to connect course work to specific assignments in the field. They have realigned their courses to better fit the needs of the program, not something that comes naturally to faculty members at research universities.

Students are enthusiastic about the program. Their chief complaints, which are minor in comparison to the praise, are about the overload caused by the time-intensive nature of the program, the high cost of Stanford tuition even with better financial aid packages specifically for STEP students, and the desire for more accessible advising.

On graduation, STEP students are generally eager to become teachers in urban schools. Studies carried out by the program graduates show that at least 90 percent felt adequately or better prepared on 27 of 36 dimensions of teaching. More than 7 out of 10 gave such ratings in every area. STEP graduates also felt better prepared than a national sample of new teachers to teach the knowledge, concepts, and skills of their disciplines in ways that enable students to learn; to use knowledge of learning, subject matter, curriculum, and student development to plan instruction; to use a variety of assessment methods; to choose teaching strategies for different instructional purposes and to meet different student needs; and to evaluate the effects of their teaching and change plans.[66] Though one of the more comprehensive assessment programs, STEP has not collected data on the impact of their graduates on their students' achievement.

A survey of the 1997 to 2000 graduates of STEP conducted in 2001 showed that 80 percent were still teaching and 89 percent continued to work in the field of education. What is startling for a group so new to teaching is that 87 percent were already involved in school leadership activities: 78 percent in curriculum development, 65 percent in reform

STEP graduates felt better prepared than a national sample of new teachers to teach the knowledge, concepts, and skills of their disciplines in ways that enable students to learn.

CHART 2

Criteria for Excellence Applied to Exemplary Teacher Education Programs

Criterion	Generally meets criterion	Explanation
Purpose • Purpose is explicit, focusing on the education of practicing school teachers • Goals reflect needs of today's schools and children • Success tied to student learning	Yes	The four programs have a clear sense of purpose defined by their vision of what it means to be an excellent teacher. They are designed to equip future teachers with the skills, knowledge, and dispositions necessary to meet the needs of today's children and schools. Tying success to student learning, however, is more prominent in program rhetoric than practice. This is the most serious weakness in all four programs.
Curricular Coherence • Curriculum is rigorous, coherent and organized to teach the skills and knowledge needed by teachers at specific types of schools and at the various stages of their careers.	Yes	The curriculums are dramatically different. However, all four curriculums, mirroring program purpose, are coherent, integrated, comprehensive, and up-to-date– preparing students with knowledge of pedagogy, child development, and the content field in which they will teach. Students receive frequent, rich, and speedy feedback on performance and concerns.
Curricular Balance • Curriculum integrates the theory and practice of teaching	Yes	These programs are notable in terms of how well they both integrate and balance academic and clinical instruction. Field experience is sustained, begins early, and provides immediate application and connection of theory to real classroom situations. The goal is for today's university lesson to be observed in practice tomorrow and for that practice to fuel academic study the day after.
Faculty Composition • Faculty composed of scholars and practitioners, expert in teacher education school leadership, up to date in their fields, intellectually productive, and having their feet planted simultaneously in the academy and the schools. • Total faculty numbers and fields of expertise aligned with curriculum and student enrollment	Yes	All four programs have strong faculty, an unusual amalgam of liberal arts professors, teacher education faculty, and public school teachers, committed to teacher education and their students. There is a very close connection between the teacher education program and the schools in which their students teach, including continuing collaboration between university and clinical faculties. This is especially the case at Stanford and Emporia State. Standards for choosing both clinical faculty and field placements are rigorous and reflect the programs purposes. In toto, students receive an education from a faculty with feet planted firmly in the academy and the schools. The numbers of faculty and their fields of expertise are aligned with the program in all cases, though Alverno is the most stretched.
Admissions • Admissions criteria designed to recruit students with the capacity and motivation to become successful school teachers.	Yes	All four are committed to recruiting students who will make excellent teachers, though their standards for admission vary sharply. Stanford and U. Va. are highly selective and Alverno and Emporia State are not.

Criterion	Generally meets criterion	Explanation
Graduation and Degree Standards		
• Graduation standards are high and the degrees awarded are appropriate to the profession.	Yes	All four programs have high expectations for students and high graduation standards. Emporia bridges the gap between entrance and graduation standards by requiring students to pass four different assessments to earn a diploma. In contrast, the Alverno is designed to provide individualized education targeted at alleviating student weaknesses apparent at the time of admission and building their competencies prior to graduation.
Research		
• Research high quality, driven by practice, and useful to practitioners and/or policy makers.	Varies	Since the 1970's, Alverno, despite its focus on teaching over research, has been a leader in research on outcome-based assessment, Stanford and Virginia are doctoral extensive universities and their faculty are well known for their research in teacher education. Both schools bring in more than ten million dollars a year in research grants. The Stanford program is led by one of the most important voices in teacher education research in America. It is arguable than anyone has had a greater impact on teacher education policy in America than Linda Darling-Hammond. Emporia State University does not pretend to be a research university. However, its efforts to integrate experiential and academic learning, have served as a powerful source of professional development for its faculty.
Finances		
• Resources adequate to support the program	Yes	All four programs have extraordinary support. While funding levels vary significantly, each program has enthusiastic backing from the public schools they work with, their central university administrations, faculty colleagues in the liberal arts, and education school professors outside of teacher education.
Assessment		
• Continuing self-assessment and performance improvement.	Mixed	Each of the programs engages in self-assessment. However, Alverno has one of the most impressive assessment programs in the country. Virginia, which had the least developed of the four, stepped up its efforts with the aid of the Carnegie Corporation. The major shortcoming in all four assessment programs is a lack of data on program and graduate impact on student achievement in classrooms.All four of the programs are accredited—three by NCATE and one by TEAC.

or improvement committees, and 17 percent as department chairs or in other formal leadership positions.[67] In 2005, *U.S. News and World Report* ranked STEP number three in the country in secondary teacher education. It is an impressive record for a newly reconstituted program.

Conclusion

Each program seeks to recruit students with the capacity and motivation to become successful school teachers.

Alverno, Emporia State, Stanford, and Virginia cover the waterfront in terms of the ways schools of education prepare teachers. Yet, individually and collectively they show how high the quality of teacher education can be. They satisfy each of the criteria for program excellence in teacher education detailed in Part One.

Their purpose is clear; their programs reflect the needs of today's schools and students; and they tie the success of their programs to student learning, though loosely and more in rhetoric than practice. Curriculums are well organized, coherent, high in student feedback, and embody the skills and knowledge new teachers need. The four programs are particularly notable for how well they integrate and give appropriate balance to academic and clinical education.

Each school has a faculty composed of high-quality academics and practitioners. The collaboration observed at each school among liberal arts professors, education school faculty, and school teachers is impressive, particularly at Emporia State and Stanford. Total faculty numbers and fields of expertise are aligned with the curriculum and student enrollment, though Alverno is the most stretched in that regard.

Selectivity in admissions varies substantially, but each program seeks to recruit students with the capacity and motivation to become successful school teachers. Stanford and Virginia are very selective, while Alverno and Emporia State are not. However, all have high graduation standards. Alverno and Emporia State bridge the gap in admission and graduation expectations through a process of continuing assessment and multiple opportunities for students to satisfy assessment criteria.

All four programs have extraordinary support. While funding levels vary significantly, each program has enthusiastic backing from the public schools it works with, its central university administrations, faculty colleagues in the liberal arts, and education school professors outside of teacher education.

Each engages in regular self-assessment and curricular improvement, which is unusual in teacher education, though none has documented the impact of its graduates or program on student achievement in the schools. These four programs are models of success worthy of emulation. (See Chart 2.)

EDUCATING *the* TEACHERS AMERICA NEEDS

America needs more and better teachers. The nation's teacher education programs can make an important contribution to fulfilling both needs. But no matter how much teacher education improves, there are fundamental problems in teaching that it cannot solve. I think of an alumnus who came to see me early in my presidency at Teachers College, Columbia University. He was teaching in an urban elementary school and loved it, but didn't think he could continue. He told of going to a reunion at the Ivy League college he had attended as an undergraduate and finding "everyone" had a higher status, a better paying job. His parents called every weekend and said it was wonderful that he'd had this teaching experience, but it was time for him to get on with his career. He went to parties and met wonderful women. When he told them what he did for a living, they remembered their glasses needed to be refilled. He didn't know how much longer he could take these pressures.

No matter how much teacher education improves, there are fundamental problems in teaching that it cannot solve.

A new and improved teacher education program could do little for this alumnus, who by all accounts was already a superb teacher. A program could not attract the best and the brightest to teaching when higher-paying professions have greater allure and when parents, friends, and professors argue loudly against becoming a teacher. It could not retain teachers when their salaries are very low compared to those of professionals in other fields with comparable educational credentials. And the gap grows larger the longer one remains in teaching. A program could not improve poor working conditions for teachers or rejuvenate floundering schools. It could do nothing to compensate for needed state, local government, and school board action on matters like teacher salaries and working conditions.

States could take three steps that would improve both the quality and quantity of the teacher force. 1) They could increase teacher salaries to levels competitive with other professions that attract a greater share of our best students. 2) They could pay higher salaries for teaching in low-performing schools to ensure that the children in greatest need of high-quality teachers receive them in adequate numbers. 3) They could introduce salary scales tied to teacher qualifications and performance to reward the best teachers and encourage them to remain in their classrooms.

The challenge facing education schools is not to do a better job at what they are already doing, but to do a fundamentally different job.

What excellent teacher education programs can and should do is prepare teachers for the realities of today's classrooms. They should educate teachers for a world in which the only measure of success is student achievement. They should educate teachers for subject matter mastery, pedagogical competence, and understanding of the learning and development of the children they teach.

The challenge facing education schools is not to do a better job at what they are already doing, but to do a fundamentally different job. They are now in the business of preparing teachers for a new world: an outcome-based, accountability-driven system of education in which all children are expected to learn. This means that whatever teacher education programs did in the past, even if perfect, no longer meets the needs of the schools. This report offers five recommendations for strengthening teacher education.

RECOMMENDATION ONE:
Transform education schools from ivory towers into professional schools focused on classroom practice.

Today, teacher education is the stepchild of America's schools of education, unloved and unvalued by the academy, practitioners, and policy makers. After a history of retreating from the P-12 schools and the people who work in them, education schools have to recognize that they cannot be ivory towers. No matter how hard they twist and contort themselves to fit into the academic mold, education schools cannot transform themselves into colleges of arts and sciences. More than a century of experience has made that crystal clear.

Education schools need to embrace the reality that they are professional schools and refocus their work on the world of practice and practitioners. It is the only way they can become both excellent and useful.

Medical schools are rooted in hospitals; law schools look to the courts; journalism schools see their home as the media; and business schools focus on corporations. The work of education schools needs to

be grounded in P-12 schools.

Education schools also need to follow the example of other professional schools in making the education of the basic practitioner their primary activity. Medical schools see their work as preparing doctors and law schools have the mission of educating lawyers. They are not embarrassed by the job; they do not shrink from it. This is what they were created to do and they do it proudly. So too must education schools have as their fundamental purpose the education of teachers.

In 1986, in *Tomorrow's Teachers: A Report of the Holmes Group*[68] an assemblage of university-based education school deans recommended the creation of something they called professional development schools (PDS), the education equivalent of teaching hospitals. Such schools would bring together university professors and their students, as well as P-12 teachers and *their* students, to enrich education, research, and professional development. This is the approach described in the Emporia State University profile. It is a model that gained currency in the aftermath of the Holmes report, but has since lost ground owing to cost, work load, and difficulty in finding appropriate sites. However, it offers perhaps the strongest bridge between teacher education and classroom outcomes, academics and clinical education, theory and practice, and schools and colleges. The PDS offers a superb laboratory for education schools to experiment with initiatives designed to improve student achievement.

RECOMMENDATION TWO:
Focus on student achievement as the primary measure of teacher education program success.

Today's teacher education programs are products of America's industrial era. They focus more on process than outcomes. They are more concerned with teaching than learning. They concentrate more on how skills and knowledge are transmitted than their mastery.

In preparing teachers for classrooms in today's information economy, each of these priorities needs to be reversed. The focus of schooling has shifted from process to outcomes, from teaching to learning. The measure of a school's success is the achievement of its students and the gauge of a teacher's effectiveness is the learning of his or her students.

In this environment, the job of a teacher education program is to prepare teachers who can promote student achievement. The measure of a program's success is how well the students in its graduates' classes perform.

The states need to take the lead if these goals are to become realities. Unfortunately, the data required to

The measure of a school's success is the achievement of its students and the gauge of a teacher's effectiveness is the learning of his or her students.

New state data systems can be used to assess and improve the performance of education schools by providing information on the performance of the teachers and principals who were prepared at the institution.

shift the focus of education schools to learning outcomes does not yet exist. There is little useful research on the impact of teacher education programs on student achievement in the schools. But there is good news. Thirty-four states report they have moved or are moving in this direction. And the U.S. Department of Education recently awarded contracts to North Carolina and Tennessee to build P-12 longitudinal data collection systems. Those states have been leaders in promoting value-added assessment and tracking individual student achievement growth over time. Ten additional states are being considered for participation in the program.

These data systems will permit the states to follow each student's academic progress from pre-school through high school, providing data on student needs as well as on the performance of their schools and teachers. It will also generate a database that can be used to assess and improve the performance of education schools by providing information on the performance of the teachers and principals who were prepared at the institution. It can also be used to assess which types of teacher education are most effective—education for a profession or a craft, preparation in university or a non-university setting, an undergraduate or graduate program. It can also help us to understand what subjects are most important for teachers to study, who makes the most effective teacher education faculty, and what is the appropriate balance between academic and clinical instruction.

Every state will need to develop a P-12 longitudinal database. It promises to be an important tool in raising student achievement, improving schools, and enhancing teacher performance. It also will offer a much-needed opportunity to refocus teacher education on student achievement.

RECOMMENDATION THREE:
Rebuild teacher education programs around the skills and knowledge that promote classroom learning; make five-year teacher education programs the norm.

Curriculum improvement cannot wait for the research proposed in Recommendation Two to be completed. There is an immediate need to counter the relativism and anything-goes mentality that dominate teacher education today, leading to a multiplicity of disjointed and conflicting programs. The teacher education curriculum is found variously at the undergraduate and graduate levels; is offered in majors, minors, and master's programs; requires anywhere from less than a year to five years of study; leads to a slew of degrees and

certificates; and lacks any semblance of coherence. The content of the curriculum is too often a grab bag of courses, ranging across the various subfields of teacher education from methods to the philosophy and history of education, rather than the focused preparation needed for real classrooms. The number of bad programs, fueled largely but not wholly by weaker education schools, is growing. Such schools adopt alternative route programs, compete with nontraditional providers, and attempt to remain vital in an era of deregulation by reducing the length and rigor of their offerings.

Teacher education programs need to follow the example of other professional schools. They need a shared vision of what a teacher must know and be able to do to promote student learning. And there needs to be agreement on the curriculum that future teachers must complete to learn these things.

The advanced or enriched major in teacher education is recommended as the means for accomplishing this. As noted earlier, this approach was proposed by Deborah Loewenberg Ball, dean of the University of Michigan School of Education. The educational rationale for the advanced major is compelling and the curriculum design is excellent, mirroring the rationale.

The enriched major provides an antidote to the oft-heard charge that the teacher education major is a "watered-down" version of other undergraduate majors—that is, requiring fewer courses in the arts and sciences and dumbing those courses down.

The enriched major is designed as an advanced or more substantial concentration—not as a counter to a poor reputation, but in the belief that teaching requires longer study and greater specialization. The enriched major requires that future teachers, like other undergraduates, complete a major in a subject matter such as physics, history, or French. Then they must complete an advanced specialization in how to effectively communicate that subject matter so students can learn it.

The curriculum would consist of three components: a subject matter concentration of a scope and depth that constitutes mastery of a discipline; pedagogical education rooted in the subject area and tied to the skills and knowledge teachers need to promote student learning; and education in child development to teach the most effective ways to apply subject matter and pedagogy to educate particular groups of students.

For instance, a future biology teacher would take precisely the same courses as all other biology majors. Pedagogical instruction, integrating academic and clinical education,

The enriched major requires that future teachers, like other undergraduates, complete a major in a subject matter such as physics, history, or French. Then they must complete an advanced specialization in how to effectively communicate that subject matter so students can learn it.

The enriched or advanced teacher education major would be five years in length, involving four years of undergraduate education (including general education courses and a major) and one year of study in how to teach the major subject.

would build on this by providing course work in subjects such as methods of teaching biology, designing curriculum to achieve biology standards, and assessment in biology. These courses should ultimately be rooted in the research on curriculum effectiveness and student learning. Finally, courses in child development and adolescent learning would enable future teachers to understand what biology their students are capable of learning and which pedagogies might be most effective in enabling them to learn it.

The enriched or advanced teacher education major would be five years in length, involving four years of undergraduate education (including general education courses and a major) and one year of study in how to teach the major subject.[69] The ideal is a five-year teacher education program of the sort the University of Virginia offers, allowing for an integration of subject matter knowledge and pedagogy/child development instruction with clinical experience throughout. The Stanford STEP approach is also desirable. Adding 15 months of pedagogical study beyond the baccalaureate, it allows students to choose teaching as a career later in their college careers or after graduation, but does not permit clinical experience until the fifth year or concurrent study of a subject and the means of communicating it.

Whether schools of education offer five-year programs or four-plus-one programs, the enriched teacher education major should seek to develop the qualities that made the four programs described in the previous section exemplary. They should have clear definitions of what successful teachers in an outcome-based education system need to know and be able to do, focusing on skills, knowledge, and aptitudes in subject matter, pedagogy, and child learning and development. They should translate this definition, along with research on what works, into a coherent, up-to-date, high-feedback, and comprehensive curriculum. Their academic and clinical instruction, connecting theory and practice, should be balanced, sustained, and integrated. Their academic and clinical faculties should work together on planning, teaching, counseling, and assessing programs and students. They should involve faculty from across the education school and around the university. They should have high graduation standards and be intimately involved in the P-12 schools. The measure of their success should be student achievement in their graduates' classrooms.

Student teaching and field work should begin in the first days of teacher preparation and continue to its conclusion. What is learned in the university classroom should be

observed in the school room the next day. What is seen in the school should be the subject of instruction at the university the following day. Designed as an apprenticeship, field work should provide teacher education students experiences in communities, families, and schools. Over the course of their programs, students should gain increasing responsibility in the classroom to the point of serving as full-scale teachers.

On completing a teacher education program and entering the classroom, new teachers need induction and mentoring programs. States and school systems have an obligation to provide them.

RECOMMENDATION FOUR:

Establish effective mechanisms for teacher education quality control.

At the moment, teacher education is the Dodge City of the education world. Like the fabled Wild West town, it is unruly and disordered. The disorder is increasing as traditional programs vie with nontraditional programs, undergraduate programs compete with graduate programs, increased regulation is juxtaposed against deregulation, universities struggle with new teacher education providers, and teachers are alternatively educated for a profession and a craft. Significant improvements in state regulation and accreditation are essential to ensure quality oversight in teacher education.

Responsibilities of the States

State standards for assuring quality control in teacher education programs today are weak. They vary dramatically in the requirements they set and focus principally on process: the length and design of, and content to be covered in, teacher education programs. They set standards that are satisfied by both strong and weak teacher education programs.

As a first step in raising teacher quality and improving quality control in teacher education, the states need to shift their focus from the process by which teachers are prepared to minimum acceptable outcomes of teacher preparation. States need to ascertain how well graduates of each teacher education program in the state perform in promoting learning among the students they teach. Accomplishing this will require state funding for the longitudinal P-12 data collection systems, as well as research on teacher education and student achievement as described in Recommendation Two.

States can also enhance the quality of their teacher education programs by establishing the same standards, rooted in student outcomes, for licensing university-based and non-university-based teacher

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education programs.

In addition, they can raise quality by establishing the same requirements for teacher certification and licensure for students educated via traditional and nontraditional routes. Licensure should be for fixed periods of time, no longer than a decade, with renewal depending on rigorous evaluation based on student achievement results. Initial teacher licensure for new teachers would rely on the qualifications that potential teachers bring to the job in the form of assessment scores and educational credentials. Subsequent licensure would depend on a teacher's record in promoting student achievement.

Historically, standards and their enforcement have been weak. Accreditation has limited importance because graduating from an accredited institution is not a requirement to get a teaching job.

Responsibilities of Accreditation

No field can be self-regulating until it has established high and explicit standards for itself, created a vehicle for enforcing them, and incorporated the highest quality institutions in its field as members and participants in peer review. Accreditation in teacher education does not meet these requirements. Historically, relatively few of the top schools have participated. Standards and their enforcement have been weak, so accreditation currently has limited importance because graduating from an accredited institution is not a requirement to get a teaching job.

It is time to rethink accreditation. With the expectation that teacher education will be the centerpiece of the work of every education school, create an accrediting mechanism named the National Council for the Accreditation of Schools of Education.

From the start, the process of rethinking accreditation should involve the top schools in developing standards and enforcement mechanisms. That will establish credibility, encourage the participation of outstanding schools in enforcement, raise the status of accreditation, and increase current standards. The process also requires establishing standards based on schools of education being professional schools, not graduate schools of arts and sciences, and rooting measures of success in student classroom outcomes.

It's also time to expand accreditation to include not only colleges and universities, but also the non-collegiate education programs offered by new providers.

There are three ways in which this can be accomplished. First, one of the two existing accrediting associations—the NCATE and TEAC—can take the lead in the fundamental redesign of teacher education accreditation. This seems the hardest approach given the difficulty of self-reform in any priesthood. Second, the leaders of the top education schools—including institutions

like Alverno, Emporia, Stanford, and Virginia—can convene a planning group to redesign accreditation. It is in their interest to do this, because if government perceives self-policing as ineffective, it is likely that government will ultimately fill the void. Third and perhaps the most promising approach: A neutral party such as the Carnegie Corporation, which has spent the past several years working on teacher education reform, could create a blue ribbon panel for this purpose. The Gates Foundation, which is moving into the area, would also be a candidate for this assignment.

RECOMMENDATION FIVE:

Close failing teacher education programs, strengthen promising programs and expand excellent programs by creating incentives for outstanding students and career changers to enter teacher education at doctoral universities.

Despite the existence of model and exemplary programs, teacher education in the U.S. is principally a mix of poor and mediocre programs. Only a quarter of the programs we visited could be described as strong. The products of poor programs undermine the quality of the teacher force and rob our children of opportunity.

Universities have an obligation to evaluate the quality of their teacher education programs. They should establish timetables of no more than five years for closing poor programs, strengthening promising programs, and creating strong programs. Augmented by classroom achievement data, the evaluation criteria offered in Part One and used in this report provide a possible template for program assessment. If universities do not carry out this assignment, the states must do so through their power to authorize academic programs.

Currently, doctoral extensive, doctoral intensive, and Masters I universities are the primary producers of the nation's school teachers. This study found doctoral universities had significantly stronger programs. Their students have higher grades and test scores; their faculty have stronger credentials; their programs have smaller classes and greater financial resources; and their graduates are more effective in the classroom.

Because teacher education is a low-status field, the most eminent universities, their education schools, and their faculties have retreated from teacher education in favor of offering programs in more "academic," higher-status fields. The result is that the lion's share of teacher education is relegated to weaker programs.

Many of the programs that

If universities do not carry out the assignment to close poor programs within five years, states must do so through their power to authorize academic programs.

The federal government or private philanthropy should consider establishing the equivalent of a Rhodes Scholarship to attract the best and the brightest to teaching.

should be closed will be found among Masters I universities. Programs to be expanded will be found disproportionately at research universities, particularly doctoral extensive universities. Enrollment increases will necessitate incentives. Students attending doctoral universities are more likely to be discouraged by family and friends from becoming teachers. As a result, states will need to offer scholarships targeted at future teachers—scholarships with requirements for teaching in state public schools after graduation. It will also be necessary for states to seed the cost of program expansion at research universities.

Toward this end, the federal government or private philanthropy should consider establishing the equivalent of a Rhodes Scholarship to attract the best and the brightest to teaching. This could involve establishing a teaching fellowship program for highly accomplished graduates to earn teaching certificates at research universities, which could have the effect of increasing the proportion of teachers prepared in this sector.

A Rhodes Scholarship for teachers would dignify the profession, underline teaching's importance to the nation, and serve as a counter to the discouragement that top students experience from parents, friends, and professors about becoming teachers. It would also provide leverage for improving teacher education, as teacher education programs could be required to demonstrate specified qualities to participate. If the federal government chooses not to adopt such a program, individual states should consider doing so.

States can also work to increase the quantity of teachers being produced by education schools. In general, there is a disconnect between the numbers and types of teachers a state needs and the numbers and types of teachers universities prepare. States can address this mismatch by establishing commissions—composed of school, university, and government leaders—to assess teacher shortages and areas of need and to set growth targets for individual programs that encourage the expansion of the best programs, the limited growth of average programs, and the diversion of enrollments from weak programs. Because some states are net exporters of teachers, it may be wise to create regional planning across state lines.

Conclusion

By pursuing these recommendations, the nation's teacher education programs can begin the process of increasing the quantity and quality of the teacher corps. Each of the proposals has the capacity to raise teacher quality: education schools embracing practice and making the

preparation of practitioners their primary activity; teacher education programs focusing on P-12 student achievement as the principal measure of their success; rebuilding the teacher education curriculum around the skills and knowledge necessary to promote classroom learning; closing failing teacher education programs and expanding enrollments in the strongest programs; and raising quality control standards.

The impact of teacher education will diminish, however, unless government eliminates current policies and practices that support low quality in the non-collegiate teacher education sector. It will be necessary to close low-quality non-collegiate programs, establish common quality control standards for collegiate and non-collegiate teacher education programs, and reconcile conflicting policies such as deregulating teacher education to raise teacher numbers and increasing regulation to raise teacher quality.

Several of the measures proposed also address the issue of quantity: expanding teacher education enrollments and enhancing capacity in doctoral universities; establishing state commissions to develop university enrollment targets; creating a national fellowship for teachers; and instituting induction programs for all new teachers. The last may offer the greatest possibility of producing more teachers. As noted earlier, almost half of all new teachers leave within the first five years. Moreover, studies by Richard Ingersoll have found nationally that "most of the hiring of new teachers is simply to fill spots vacated by teachers who just departed."[70] A program of effective mentoring offers the possibility of significant retention from that pool, particularly since many former teachers say they left for lack of mentoring (Alumni Survey). However, there is every reason to believe that the states could increase teacher numbers even more quickly by raising salaries.

It is time for teacher educators to act. This is a report written not by an education school basher, but by a person who has spent more than half of his professional career as a faculty member and administrator at schools of education. I believe in them and I want to see them thrive.

But there is a real danger that if we do not clean our own house, America's university-based teacher education programs will disappear. The Holmes report warned a decade ago of the consequences of perpetuating existing weaknesses: "Institutions preparing educators should either adopt reforms that link their educational contributions closely with schooling… or surrender their franchise."[71]

This is exactly what has happened with the rise of alternative

There is a real danger that if we do not clean our own house, America's university-based teacher education programs will disappear.

routes, the growth of non-university-based teacher education programs, and government deregulation of teacher education. Colleges and universities have not had to surrender their franchise. It is being taken away from us.

Here's the dilemma, put as pragmatically as possible. Future teachers can now choose to spend their time and money at a university preparing for careers or they can start their careers immediately by taking a teaching job and earning a salary. Via an alternative route, teachers can pick up teaching credentials without ever attending a university. Potential students may think that the latter choice makes more sense unless something tangible and worth a significant investment can be gained by attending a university-based teacher education program. In short, university-based programs must be better than the alternatives—demonstrably, not rhetorically, better.

There is a serious risk that America's nearly 200-year-old experiment in university-based teacher education will fade away.

If education schools do not act now, there is a serious risk that America's nearly 200-year-old experiment in university-based teacher education—which began with the normal schools—will fade away or even be declared a failure. If they *do* act, there is the potential to shape the future of teacher education on- and off-campus, and the promise of giving our country the teachers it needs and our children the teachers they deserve.

DATA SOURCES

A number of studies were conducted in the course of this research. All of the heads (deans, chairs, and directors) of U.S. education schools and departments were surveyed (53 percent responded) regarding their school's demographics and practices, as well as their personal experiences, attitudes, and values regarding their own education school and education schools collectively (Deans Survey).

A representative sample of 5,469 education school faculty members were surveyed (40 percent responded) regarding their work and their experiences, attitudes, and values regarding their own education school and education schools generally (Faculty Survey). A representative sample of 15,468 education school alumni who received degrees from the baccalaureate to the doctorate in 1995 and 2000 were also surveyed (34 percent responded) regarding their careers, their experiences in the schools that awarded their degrees, and their attitudes and values regarding education schools (Alumni Survey).

Finally, 1,800 principals were surveyed (41 percent responded) regarding their own education, the education of the people they hire, and their attitudes and values regarding education schools collectively (Principals Survey).

With the exception of the Deans Survey (which included all of the education school heads) the surveys used randomly chosen samples of the population. The faculty and alumni samples were stratified by Carnegie type, region of the country, and institutional size. The principals survey was stratified by geographic region and school type. The responses were either representative of the universe or, when necessary, weighted to recreate the universe. A technical manual on the surveys conducted by Synovate is available.

The research also included case studies of 28 schools and departments of education. Teams of academics and journalists conducted site visits at each school for the purpose of going beyond the survey data to paint a more in-depth portrait of the education school. They spent several days on each campus, with the length of their stay dictated by the size and complexity of the school. At each school, they studied its history, mission, programs, admissions and graduation requirements, plans, funding, and the characteristics of the student body, staff, and administration. Particular attention was given to programs in teacher

education, educational administration, and research preparation. The schools were chosen to reflect the diversity of the nation's education schools by region, control, religion, race, gender, and Carnegie type. The participating schools were promised anonymity and those interviewed were promised confidentiality. Only in instances of exemplary practice is the name of any institution mentioned.

There were also inventories of the different programs offered and the types of doctoral degrees awarded by education schools, again stratified by Carnegie type. A random sample of doctoral dissertation abstracts and descriptive characteristics for both Ph.D.'s and Ed.D's. was examined. A demographic profile of education schools was produced by combining the data collected in the Deans Survey with data collected by the National Council for the Accreditation of Teacher Education (Demographic Study). Databases were used from the College Board, Graduate Record Examination, Educational Testing Service, National Center for Educational Statistics, American Association for the Advancement of Sciences, National Council for the Accreditation of Teacher Education, ProQuest Digital Dissertations (the University of Michigan dissertation archive), and CIRP Freshman Survey conducted annually by the Higher Education Research Institute at UCLA.

Finally, a study of teacher characteristics and student achievement was carried out for this study by the Northwest Evaluation Association (NWEA). It is described in Appendix 2.

NORTHWEST EVALUATION ASSOCIATION STUDY

Methodology

Data Collection

NWEA collected teacher preparation data using the following methodology:

- An electronic survey was offered to all teachers signing in to the NWEA Reports Site to access their spring 2005 class reports from 4/22/05 to 6/10/05. Participation was voluntary.
- NWEA worked with the project staff to develop the survey instrument, which consisted of questions designed to assess the amount and type of teacher preparation (e.g., education level, type of preparation program, degree type, and preparation experience).
- Teachers were entered into a drawing for $100 Amazon.com gift certificates as an incentive for participation. To increase participation during the last week of the survey, all participants were offered $20 Amazon.com gift certificates.
- The survey was offered to teachers in more than 6,000 schools in some 1,500 districts in 43 states. NWEA collected survey responses from 2,380 teachers from 35 states and 566 districts.

While this sample of teachers is not intended to be representative of the nation's teachers, it is well suited to making determinations regarding the relationship of teacher preparation to student growth.

Student Growth Data Analysis

The survey responses were linked back to NWEA's Growth Research Database (GRD) to retrieve the respondents' corresponding fall '04–spring '05 student growth information. NWEA was able to match student growth data for 1,611 teachers in the math subject area and 1,650 teachers in the reading subject area. Growth relative to a virtual comparison group (VCG) was used to determine whether teacher preparation had an effect on student growth.

The GRD is a large database of longitudinal student achievement data, col-

lected from more than 1,500 school districts and over 6,000 schools in 45 states. This database serves as a research tool that will help educators and researchers better understand the many conditions that contribute to students' academic growth. NWEA's GRD houses over 30 million individual student assessments and is the primary resource for VCG development.

From the GRD data, VCGs were developed as a baseline for the analyses. For the raw student growth statistic, NWEA took the difference between the student's fall '04 and spring '05 NWEA assessment. It then compared the raw growth value against the mean growth for a group of 51 matched students. This resulting index was then averaged for each teacher and subject to arrive at the net growth statistic that is used as the dependent variable for the study.

A VCG is the result of a process that begins with the identification of a study group. Students in both the study group and the VCG must all have participated in the NWEA Measures of Academic Progress (MAP) or Achievement Levels Tests (ALT) assessment programs. For the purpose of this study, the study groups were identified as the students taught by the participating teachers.

Once the study group was identified, it formed the basis for the development of the virtual comparison group. Using each study group's student and school characteristics, a VCG was identified from the GRD using the following process:

First: Level 1 filters were applied: (General Filters)

A. The pre- and post-assessment periods: fall '04 and spring '05

B. The subject areas: reading and mathematics

C. Only students with valid pre- and post-assessment scores in the appropriate subject areas were identified as potential candidates.

Second: Level 2 filters were applied: (School level filters)

A. Students must have attended schools that had a percentage of free and reduced-price lunch program recipients that was within plus or minus 5 percentage points of that of the school attended by each student in the study group.

B. Students must have attended schools that appear in the National Center for Educational Statistics Common Core of Data (CCD) Survey with the same "urban/rural" classification attended by each student in the study group. The first two CCD classifications were considered urban for this study, classifications 3-5 were considered suburban, and classifications 6-8 were considered rural.

Third: Level 3 filters were applied: (Student level filters)

A. Qualifying students were in the same grade as each student in the study group.

B. Qualifying students had a fall RIT score plus or minus two RITs of each student in the study group.

Processes:

First: Level 1, level 2, and level 3 filters were applied to the entire Growth Research Database (minus the students in the school attended by each study group member) to create a "qualified" group of students for each student in the report.

Second: If the qualified group was greater than 51 students, a random sample of 51 students was drawn to create the final comparison group.

Third: If the qualified group numbered fewer than 51, the pre-RIT range was widened one RIT score at a time until the resultant group of students was larger than 51 and then a random sample of 51 students was drawn to create the final comparison group. This process was repeated up to four times (a maximum of plus or minus five RIT points) and if a qualified sample larger than 50 still didn't result, then the free and reduced-cost lunch range was widened from five percent to 10 percent to increase the size of the qualified group of students.

A. The final VCG for each student in the class report has 51 compari son students.

B. The mean was computed for each VCG and is recorded as the VCG for each student.

Characteristics of NWEA's Assessments

All scores for the NWEA assessments are based on a cross-grade, equal-interval scale developed using Item Response Theory methodology. These scales are referred to as RIT scales (Ingebo, 1997). The RIT scales are designed to measure student growth and performance across time. They take advantage of strong measurement theory and experimental design, and have proved to be extremely stable over 20 years (Kingsbury, 2003). This stability holds for each subject area measurement scale (reading, mathematics, and language usage) and across grade levels (Northwest Evaluation Association, 2002).

Measures of Academic Progress assessments are administered via computer; item difficulties adapt in difficulty depending on the student's performance. Once an item is answered, the student achievement level is estimated and the next most informative item is shown to the student. If the student answers a question correctly, a more difficult item is displayed. Conversely, if a student answers a question incorrectly, a less

difficult item is displayed. As the items are selected within the test, the estimate of achievement becomes more precise. This iterative item selection process is repeated until the test is completed. The advantage of this type of assessment is that each child is given a custom test better suited to the student and much more accurate than a traditional test (Northwest Evaluation Association, 2003).

Achievement Level Tests (ALT) are paper-and-pencil delivered assessments designed around the difficulty of the content rather than the age of the student. ALT assessments are built by taking a broad range of content-specific material and breaking it down into relatively small, targeted ranges of item difficulty. A grade-specific test will use only one form to measure student achievement within a class, while an ALT assessment has from seven to nine levels to choose from, based on student ability. This means that each student taking an ALT test will be challenged with items appropriate for his or her achievement level. Grade-level assessments will be challenging only to students who are at or around the mean achievement level for that grade.

The MAP and ALT delivered assessments typically consist of 40 to 50 items in each content area and each is designed to take approximately one hour to complete. NWEA offers MAP and ALT assessments in the reading, language, mathematics, and science content areas. Students have the option to test up to four times a year in each content area.

NWEA's assessments are designed to align directly with each state's content standards. NWEA accomplishes this by cross-referencing the state's content standards with the index that organizes the NWEA item bank. NWEA's MAP and ALT assessments have item banks of more than 20,000 multiple choice test items. NWEA also has conducted state alignment studies for 19 states that relate state proficiency scores to the RIT scale (Kingsbury et al., 2003).

Description of Dataset Used for Analysis

The dataset included NWEA assessments delivered by both the computerized adaptive Measures of Academic Progress and the paper-and-pencil-based Achievement Level Tests. Although these assessments are delivered in two mediums, our studies have shown that the mode of test administration does not affect the student's achievement level estimate (Kingsbury, 2002).

In order for students to be included in the growth dataset, they must have had a valid fall and spring NWEA assessment in either reading or math. They also must have taken either a MAP Survey with goals assess-

ment or an ALT assessment.

In order for a teachers' survey responses to be included, they must have had a student assigned to them in NWEA's assessment system for both fall and spring. For instance, if teachers were in NWEA's assessment system for spring '05 but not fall '04, they were not included in the growth dataset. Out of 2,380 teacher survey responses, there were 1,611 teachers who met the requirements for inclusion in the math growth dataset and 1,650 teachers who met the requirements for inclusion in the reading growth dataset.

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A DESCRIPTION *of the* NATION'S EDUCATION SCHOOLS *by* CARNEGIE TYPE[72]

The nation's education schools can be sorted into three broad Carnegie classes—those located at baccalaureate degree granting institutions; those found at colleges awarding the master's degree; and those housed at research universities granting the doctorate. Within each of these classes, the Carnegie typology identifies two types of institution. Here's how it works:

Education Schools and Departments in Baccalaureate-Granting Colleges

A third of the nation's "schools of education," more accurately described as education departments, are found at baccalaureate-granting colleges. The 401 departments located at these schools are primarily engaged in undergraduate education, though slightly more than a quarter (28 percent) offer relatively small graduate programs, usually in teaching. The departments are small in size, graduating collectively only 13 percent of the nation's teachers prepared in undergraduate programs, four percent of teachers educated in graduate programs, and one percent of the country's school administrators. Their budgets average $594,000 per year. Education departments at these schools focus more on teaching than research. Course loads are heavy and publication rates and research funding are low.

The Carnegie Foundation for the Advancement of Teaching classification divides baccalaureate colleges into two distinct types of institutions—liberal arts colleges, institutions awarding at least half their degrees in the liberal arts; and baccalaureate general colleges, more broad gauged institutions offering less than half their degrees in the liberal arts.

Our data show that based on SAT scores, liberal arts colleges, constituting one-third of the education departments at baccalaureate institutions, are more selective in student admissions. They are more academically oriented, more rooted in the arts and science tradition, and a greater proportion of their faculty hold Ph.D.'s. The general baccalaureate colleges are more concerned with

practice and view themselves to a greater extent as professional schools.

Education Schools at Master's-Granting Universities

In contrast to baccalaureate colleges, education schools at master's-granting universities tend to be larger. There are 562 schools and departments of education, and they constitute 47 percent of the nation's education schools. They graduate 54 percent of teachers prepared as undergraduates, 62 percent of teachers educated at the graduate level, and 57 percent of school administrators earning degrees each year.

Masters I education schools graduate 49 percent of teachers prepared in undergraduate schools and 60 percent of teachers prepared in graduate schools.

The reason for the enormous impact of this sector is not that each school produces so many graduates, but that there are so many schools. The typical master's-granting school of education produces slightly more than 200 teachers and administrators each year. Nearly all of the education schools and departments at these universities (96 percent) offer undergraduate degrees/programs in education. More than nine out of 10 (92 percent) award master's degrees, and 10 percent grant doctoral degrees.

As with the baccalaureate colleges, the Carnegie Foundation divides master's universities into two categories. The first is Masters Colleges and Universities I (MI) and the second is Masters Colleges and Universities II (MII).

The MI's, predominantly regional public universities, award 40 or more master's degrees per year across three or more disciplines while the MII's, commonly private, tuition dependent colleges, grant a minimum of 20 master's degrees without regard to field. The MI's have on average more than twice as many full-time and part-time undergraduates, more than six times as many full-time graduate students, and over three times as many part-time graduate students. Their budgets mirror the size differential. While both are defined as offering a wide range of undergraduate programs and graduate education up through the master's degree, their education schools differ substantially in the scope of their programs (Demographic Study).

Neither can be regarded as selective in admissions, as measured by SAT scores. The Masters II colleges are a tiny sector of the education school world, consisting of 95 schools of education that together are just slightly ahead of liberal arts colleges in degree production. In contrast, Masters I schools of education account for 467 education schools and graduate 49 percent of teachers prepared in undergraduate schools, 60 percent of teachers prepared in graduate schools, and 55 percent of school administrators receiving

degrees each year. They have a stronger scholarly orientation than the MII's, but are weaker in teaching. The MI is in this sense in an unenviable position. It is weaker in teaching than the best of the MII and baccalaureate schools, and weaker in research than the research universities.

Education Schools at Doctorate-Granting Universities

The final category of education school is located at research universities. There are 228 doctorate-granting schools of education, a smaller number than either baccalaureate or master's institutions, but these schools graduate a larger number of teachers, school administrators, and researchers per capita than other Carnegie types. They produce 33 percent of the teachers prepared at the baccalaureate level, 34 percent of the teachers educated in graduate schools, 42 percent of degrees awarded to school administrators, and 97 percent of the doctorates granted in education. The typical doctoral institution in our survey produced 263 undergraduate teachers, 69 graduate teachers, 47 school administrators, and 24 holders of doctorates.

Of the three sectors, doctorate-granting schools place the greatest emphasis on graduate education, with graduate student headcounts slightly exceeding their undergraduate numbers. They are also more research oriented than any of their peers—their faculty have the highest publication records, receive the most extramural funding, have the highest proportion of doctorates, and are least likely to be concerned with practice. Doctorate granting education schools offer the greatest number of programs in the broadest range of fields and have the largest annual budgets of all education schools.

As with master's and baccalaureate institutions, there are two distinct types of doctoral schools of education. One is what the Carnegie Foundation terms Doctoral/Research Extensive Universities (DRE), which award 50 or more doctoral degrees per year in at least 15 disciplines. The other is termed Doctoral/Research Intensive Universities (DRI), schools that either grant annually at least 10 doctoral degrees across three disciplines or at least 20 doctorates overall, regardless of field. Doctoral extensives, which number 138 schools of education, make up 61 percent of this sector.

Both types of school are selective in admissions, though the DRE's are the most selective education schools in the nation as measured by SAT and GRE scores. Both offer undergraduate education programs, although not universally. Eighteen

The 228 doctorate-granting schools of education graduate a larger number of teachers, school administrators, and researchers per capita than other Carnegie types.

percent of the doctoral extensives and five percent of the doctoral intensives offer strictly graduate programs in education.

The master's degree is, however, nearly universal, being awarded at 95 percent of the DRE's and 98 percent of the DRI's. They also have a near monopoly on the education doctorate, with 95 percent of the doctoral extensives and 82 percent of the doctoral intensives awarding the degree.

No school of education in any of the six categories can be expected to mirror all of the characteristics of the schools in its class.

Doctoral extensive schools of education are in a class by themselves when it comes to research. They are the most research oriented of the nation's education schools, with the highest publication rates, grant dollars for research, proportion of graduate students, and faculty with Ph.D.s. They are the only type of education school that stresses publication in hiring faculty (Deans Survey; Demographic Study).

Cautions

This study employed the Carnegie typology throughout as a vehicle for capturing the commonality and diversity among the nation's schools of education. The reader is offered two cautions in this regard. First, the classes should be viewed as composites, meaning no school of education in any of the six categories can be expected to mirror all of the characteristics of the schools in its class. Second, neither the strengths nor the weaknesses discovered in the course of this research regarding a specific class of education school can be ascribed automatically to any particular school within the class.

DESCRIPTIONS *of* FIVE NON-UNIVERSITY TEACHER EDUCATION PROVIDERS

A for-profit newcomer to teacher education is Kaplan Higher Education, the largest division of the Washington Post Corporation. Kaplan enrolls 58,000 students through 75 campuses and on-line programs in the United States.[73] It is planning to launch an on-line school of education, offering master's degrees in elementary and secondary teacher education. To lead that effort in 2003, it hired the former chancellor of the New York Public Schools, Harold Levy, best known for developing an alternative teacher certification program to staff the New York schools. In accepting the new position, Levy, a critic of traditional education schools, said that "there is a crying social need for more teachers and better qualified teachers." He criticized the "arbitrary" barriers to entering the teaching profession imposed by education schools, such as "Do you have the time to drive down Tuesday night to take the course?"[74] He promised that Kaplan would "give the not-for-profit world a run for its money."[75]

In the not-for-profit sector, Teach for America (TFA) is perhaps the most visible example of a non-university teacher educator. It recruits recent college graduates, usually without any teacher preparation, to teach in under-served urban and rural classrooms for two years, provides a summer orientation program, and offers support services after the recruits enter the classroom. In the past decade and a half, more than 98,000 people have applied to Teach for America and over 14,000 have participated in the program.[76] In 2005, applicants included more than 10 percent of the graduating classes of Amherst, Dartmouth, Spellman, and Yale, making TFA admissions more selective than most U.S. colleges.[77]

As imposing as Kaplan and Teach for America are, potentially the most formidable entrants into the teacher education marketplace are likely to come from the ranks of the nation's 1,100 community colleges. At least 22 states have granted community colleges a role in teacher preparation.[78] The potential of two-year colleges is enormous. There are nearly as many community colleges in the U.S. as education schools and departments. They are attractive financially

These agencies bring to teacher preparation intimate ties to the schools, deep knowledge of P-12 education, and a reputation for just-in-time performance.

and logistically for teacher education. One in five teachers begins her college career at a community college,[79] so she would have no need to transfer to a higher cost, upper division school and risk losing credits in the transition. In addition, two-year colleges offer a greater possibility of recruiting under-represented populations into the teacher force, since they attend community colleges in disproportionate numbers.

Regional service agencies constitute another possible force to be reckoned with. They exist in over 44 states to provide support programs for local school districts in areas ranging from curriculum and professional development to food services and purchasing.[80] With names like Boards of Cooperative Education Services, Area Education Agencies, Regional Education Service Agencies, Education Service Districts, and any number of other variations, these agencies are designed to improve the effectiveness of the education programs in their local schools by providing efficient and low-cost central office functions to school districts.[81]

Teacher education enters the picture for these agencies in two ways. First, some are seeking state approval to prepare teachers for hard-to-serve areas in order to assist schools. Second, Georgia and other states have begun to extend the jurisdiction of their regional service agencies beyond the schools to include higher education, which opens the door for them to provide collegiate instruction, particularly teacher education. These agencies bring to teacher preparation intimate ties to the schools, deep knowledge of P-12 education, and a reputation for just-in-time performance, which may put them in an advantageous position relative to traditional higher education institutions.

On top of all this, a number of school districts around the country are going into the business of educating their own teachers. For example, Boston Public Schools has adopted what it calls the Boston Teacher Residency (BTR), a 12-month teacher preparation program based on the medical model, which teams the potential or "resident" teacher with a master teacher for a school year. During that time, the resident works in an assigned school four days a week and takes courses the other day. The courses, created specifically for the program and tailored to the instructional needs of the district, are taught by practitioners, consultants, and other experts drawn from colleges and universities, public schools, and community organizations. At the completion of the program, "residents" receive dual certification in their content area and in special education. There is a $10,000 tuition

charge, which is forgiven if the "resident" teaches in Boston schools for three years. The tuition is, in effect, offset by a $10,000 living stipend for participants, who must have at least a bachelor's degree. The program, which gives preference to those in understaffed academic areas, is intended to attract 120 participants annually when it reaches full capacity. That amounts to one-third of the teachers the school system hires each year. Annually the new program will be turning out more than an education school's worth of new teachers who are educated to meet the specific needs of Boston schools.

The program, which gives preference to those in understaffed academic areas, is intended to attract 120 participants when it reaches full capacity.

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Arthur Levine
Princeton, New Jersey, 2006

NOTES

[1] Twelve hundred and six is the number of schools, colleges, and departments of education identified in this study. Slightly higher and lower numbers appear in the literature, which may be a consequence of the openings and closings of teacher education programs as well as differing definitions of what constitutes a program. In this study, the universe of schools, colleges, and departments of education is referred to as "education schools" and "schools of education."

[2] National Center for Education Statistics, *Digest of Education Statistics 2003* (Washington, DC: NCES, 2006). (NCES 2006-005), Table 253. (See also http://nces.ed.gov/programs/digest/d04/list_tables3.asp#c3a_5.)

[3] The categories used were those in effect at the time of the study and do not reflect Carnegie's recent revisions of the categories.

[4] Alexander C. McCormick, *The Carnegie Classification of Institutions of Higher Education: 2000 Edition,* (Menlo Park, Calif: Carnegie Foundation for the Advancement of Teaching, 200l), p. 1.

[5] Alliance for Excellent Education, "Teacher Attrition: A Costly Loss to the Nation," *Issue Brief*, (Washington, DC: Alliance for Excellent Education, August, 2005).

[6] Rod Paige, *Meeting the Highly Qualified Teacher Challenge: The Secretary's Annual Report on Teacher Quality,* (Washington, DC: U.S. Department of Education, 2002), p. 19.

[7] Abell Foundation, *Teacher Certification Reconsidered: Stumbling for Quality,* (Baltimore: Abell Foundation, 2001), p. 10.

[8] Linda Darling-Hammond, "Research and Rhetoric on Teacher Certification: A Response to 'Teacher Certification Reconsidered,'" *Educational Policy Analysis Archives*, v. 10, n. 36, September 6, 2002; p. 3.

[9] Jeff Archer, "Research: Focusing In on Teachers," *Education Week*, April 3, 2002, Education Week Online.

[10] U.S. Department of Education, *The Secretary's Fourth Annual Report on Teacher Quality: A Highly Qualified Teacher in Every Classroom*, (Washington, DC: U.S. Department of Education, 2005).

[11] As of 2005, 37 states required teachers to pass basic skills exams to be certified, 43 states mandated subject knowledge assessments, and 25 states adopted pedagogy tests. Beyond this, 33 states required a bachelor's degree in a content area for teacher certification. (See *Education Week*, "Efforts to Improve Teacher Quality," *Education Week: Quality Counts 2006*, January 5, 2006; pp. 86-90).

[12] Twenty-nine states publish the institutional pass rates of their graduates on licensing exams. Forty-eight states and the District of Columbia require the identification of low performing education schools, though the rhetoric here is stronger than the reality, as only 13 states reported a total of 20 schools needing improvement. And 14 states are experimenting with accountability provisions for education schools tied to student achievement in the classes their school graduates teach. (See *Education Week*, "Efforts to Improve Teacher Quality," *Education Week: Quality Counts 2006*, January 5, 2006; pp. 86-90).

[13] Feistreitzer reports that 538 programs, called alternative routes, produced approximately 35,000 certified teachers. (See C. Emily Feistritzer, *Profile of Alternative Route Teachers,* (Washington, DC: National Center for Educational Information, 2005), p. 2.

14 National Center for Education Statistics, "Table 253: Bachelor's, Master's, and Doctor's degrees conferred by degree-granting institutions, by sex of student and field of study: 2002-03," Digest of Education Statistics, 2004. See http://nces.ed.gov/programs/digest/d04_253.asp.

15 Different sources cite different numbers of programs. The numbers invariably range from 1,100 to 1,300 as cited in the Secretary of Education's 2005 report, U.S. Department of Education, Office of Postsecondary Education. *Secretary's (Margaret Spellings) Fourth Annual Report on Teacher Quality: a Highly Qualified Teacher in Every Classroom,* (Washington, DC: U.S. Department of Education, 2005).

16 Despite this enormous variation, there are two commonalities worth noting. Baccalaureate teacher education programs are overwhelmingly the most common form of classroom preparation and most teacher education graduates are the product of a single type of institution, master's colleges and universities I (see Tables 1 and 2). See footnote 11 for additional sources.

17 Feistritzer, C. E., *Profile of Alternative Route Teachers,* (Washington, DC: National Center for Educational Information, 2005).

18 Ibid, pp. 39-40.

19 Ibid, p. 40.

20 Ibid, p. 43.

21 Most alternatively certified teachers are trained and teach in urban and rural areas. The greatest demands for new teachers across the nation are in large urban areas and outlying rural areas. (See: http://www.ncei.com/Alt-Teacher-Cert.htm).

22 Suzanne M. Wilson, Robert E. Floden, and Joan Ferrini-Mundy, *Teacher Preparation Research: Current Knowledge, Gaps, and Recommendations,* (Seattle: Center for the Study of Teaching and Policy, University of Washington, February 2001).

23 The lack of evidence on the efficacy of traditional teacher preparation has been taken as a negative finding by some critics, rather than the non-finding it actually is. This has provided a rationale for advancing the position that teaching is a craft learned on the job. It has fueled the expansion of alternative routes and the burgeoning of alternative providers. The logic is that there is no compelling reason not to create these programs, given how little we know about the impact of teacher preparation programs. (See Suzanne M. Wilson, Robert E. Floden, and Joan Ferrini-Mundy, *Teacher Preparation Research: Current Knowledge, Gaps, and Recommendations,* (Seattle: Center for the Study of Teaching and Policy, University of Washington, February 2001).

24 Kenneth M. Zeichner and Hilary G. Canklin, "Teachers Education Programs." In Marilyn Cochran-Smith & Kenneth M. Zeichner (Eds.), *Studying Teachers Education: The Report of the AERA Panel on Research and Teacher Education,* (Mahwah, N.J.: Lawrence Erlbaum Associates, 2005).

25 The Holmes Group, *Tomorrow's Schools of Education: A Report of the Holmes Group,* (East Lansing, MI: The Holmes Group, Inc., 1995).

26 The criteria are based on the elements that are commonly used in program evaluation in higher education: purpose, students, staffing, curriculum, assessment, and resources. Scholarship is included because it is a staple of graduate education and the means by which fields of study like teaching advance. I developed the template from the literature in the field, drawing on scores and scores of publications and studies of curriculum and teacher education.

27 Geraldine J. Clifford & James W. Guthrie, *Ed School: A Brief for Professional Education,* (Chicago: The University of Chicago Press, 1988).

28 One of the earliest normals was established in Lexington, Massachusetts, in 1839. Six decades later, at a time when there were fewer than 1,000 colleges in the U.S., normal schools numbered 331. Half public and half private, they were located in every state in the union. In 1874-75, all normal school enrollment was 29,100; by 1899-00, the enrollment reached 51,700. By 1909-10, all normal schools—public, state, and private—were

enrolling over 132,000 students, a population equal to 29 percent of the collegiate student body (pp. 355, 430) of the day. C.A. Ogren, *The American State Normal School "An Instrument of Great Good",* (New York: Palgrave MacMillan, 2005). Also see T.D. Snyder (editor), *120 Years of American Education: A Statistical Portrait,* (Washington, D C: National Center for Educational Statistics, U.S. Department of Education, 1993). Retrieved January 3, 2006, from http://nces.ed.gov/pubs93/93442.pdf.

29 The notion of a clear education pipeline was still years off in the late-19th century. The roles and relationships between the educational institutions then in existence were blurred and conflicting. Higher education had been competing with the high schools for common school graduates since the public secondary school was first established, two centuries after the first college. High schools and academies were also rivals in their own fashion for the same students. Academies and normal schools were competing over teacher training. Neither common schools nor higher education wanted anything to do with the Johnny-come-lately high schools. And the colleges were competing with the normal schools for the education of secondary school teachers. There was enough intrigue here to rival a romance novel on court life among the 18th century royals.

Even within higher education, there was confusion about whom to educate. A high proportion of the students in the nation's colleges were in remedial or subcollegiate units. So higher education was engaged in both secondary and postsecondary education: in essence, already performing at both the level of the normal schools and the colleges.

30 Clifford, G. J. & Guthrie, J.W., *Ed School: A Brief for Professional Education,* (Chicago: University of Chicago Press, 1988), p. 63.

31 Ibid, p. 73.

32 Sixty-five percent of the principals rated addressing the needs of students with limited English proficiency as very important or fairly important in the new teachers they hire. More than eight out of 10 principals said the same of integrating technology into teaching and meeting the needs of students from diverse cultural backgrounds. For the remaining eight competencies, more than nine out 10 principals offered ratings of very or fairly important in hiring (Principals Survey). The data are in Table 3.

33 Principals, deans, and faculty members were asked to evaluate education schools in general and alumni were asked to evaluate their own experience.

34 It would be a mistake to interpret these findings as support for alternative routes and providers, which offer far less preparation prior to entering a classroom.

35 This was not on the deans' radar screen, however. Only 13 percent of the deans rated the issue as important, giving it the lowest ranking of any issue on the laundry list, with relatively little variation among institutional types (Deans Survey).

36 The last group generally consisted of individuals who went to education school after being hired as uncredentialed teachers, an increasingly common occurrence in hard-pressed urban school systems.

37 Only one alumnus in 11 had the benefit of an education involving a professional development school, designed as the teacher education equivalent of a teaching hospital in medicine (Alumni Survey).

38 After five years, almost half (46 percent) of teachers have left the field. Richard Ingersoll, "The Teacher Shortage: A Case of Wrong Diagnosis and Wrong Prescription," *NASSP Bulletin*, v. 86, 2002; pp. 16-31.

39 Education Week, *Quality Counts at 10: A Decade of Standards Based Education*, Education Week Online, www.edweek.org/sreports/qc06.

40 "Education Week Quality Counts 2003," *Education Week*, v. 22, n. 17, January 9, 2003; p. 70.

41 Notable exceptions to this pattern are noted in the case studies of exemplary programs that follow. Distinguished professors like Linda Darling-Hammond continue to have strong ties with the daily life of schools.

[42] Personal correspondence between Tara Niraula, project director, and an ETS official.

[43] Wilson, S. M., Floden, R. E., & Ferrini-Mundy, J. *Teacher Preparation Research: current knowledge, gaps and recommendations*, (Center for the Study of Teaching and Policy, University of Washington, 2001). See: http://depts.washington.edu/ctpmail/PDFs/TeacherPrep-WFFM-02-2001.pdf#search=%22the%20teacher%20preparation%20research%3A%20current%20knowledge%2C%20gaps%22.

[44] Marilyn Cochran-Smith and Kenneth M. Zeichner, *Studying Teacher Education: The Report of the AERA Panel on Research and Teacher Education,* (Mahwah, N.J.: American Educational Research Association and Lawrence Earlbaum Associates, 2005).

[45] Daniel C. Humphrey, Nancy Adelman, Camille Esch, Lori Riehl, Patrick M. Shields, and Juliet Tiffany, *Preparing and Supporting New Teachers: A Literature Review*, (Washington, DC: SRI International, U.S. Department of Education, September 2000), p. 17.

[46] Ibid, p. 30.

[47] Ibid, p. 17.

[48] Moreover, there are significant demographic differences between the test takers who say that they plan to major in teacher education and their collegiate peers. The former group is composed largely of women—78 percent. Women's average score on the SAT is substantially lower than that of men—1009 versus 1051. If the group of teacher education "intenders" was equally balanced by gender, the gap in scores would narrow even more. It would narrow yet further if adjusted for minorities, who are disproportionately represented among the teacher education intenders and score lower on the test. (See College Board, *2005 College Bound Seniors: Total Group Profile Report*. Retrieved December 29, 2005, from http://www.collegeboard.com/prod_downloads/about/news_info/cbsenior/yr2005/2005-college-bound-seniors.pdf.)

[49] College Entrance Examination Board, *2002 College Bound Seniors: A Profile of SAT Test Takers*, (New York: College Entrance Examination Board, 2003). See www.collegeboard.com/prod_downloads/about/news_info/cbsenior/yr2002/pdf/2002_TOTAL_GROUP_REPORT.pdf.
It must be pointed out that this is far from a perfect comparison, in that the ETS study failed to cull from the national population students who did not attend college or even those who went on to become education majors. It also gave education schools the advantage of eliminating the scores of their weaker students who did not pass or even take the Praxis I, so it is likely the study overestimates the performance of teacher education students, while the initial comparison certainly underestimated their scores. Nonetheless, between the two there is a convergence in the scores of teacher education students and their classmates.

[50] Drew Gitomer, Andrew Latham, and Robert Ziomek, *The Academic Quality of Prospective Teachers: The Impact of Admissions and Licensure Testing,* (Princeton: Educational Testing Service, 1999).

[51] Educational Testing Service, "General Test Percentage Distribution of Scores within Intended Broad Graduate Major Field Based on Seniors and Non-enrolled College Graduates: July 1, 2001-June 30, 2004," (Princeton, N.J.: Educational Testing Service, 2005). Retrieved February 21, 2006, from http://www.ets.org/Media/Tests/GRE/pdf/5_01738_table_4.pdf.

[52] Ibid.

[53] Education Commission of the States, "Teacher Quality Sources". Retrieved March 6, 2006, from http://www.tqsource.org/prep/policy/.

[54] Source of information is based on an e-mail communication between Tara Niraula, project director, and a New York State education department official, dated March 16, 2006.

[55] TEAC was formed as a reaction to NCATE. The two associations engage in very different practices, though they are moving closer together. TEAC accredits teacher education programs and NCATE

accredits whole institutions with teacher education programs. NCATE imposes a set of standards on institutions based on what the field believes to be adequate practice tied to state standards, the Educational Testing Service Praxis II exam, and the Interstate Teacher Assessment and Support Consortium (INTASC) standards. There is also an attempt to align NCATE standards with the National Board for Professional Teaching Standards. In contrast, TEAC standards are institutionally driven. Teacher education programs define what they are seeking to achieve, are expected to present rigorous evidence of their accomplishment, and are evaluated by TEAC as to the adequacy of their programs. Each program is separately assessed, permitting some to be accredited and others not.

[56] This refers to all curricula and all accrediting associations. Some like the American Psychological Association (APA) are so powerful that students are unable to obtain a license without attending an APA accredited institution. This is not the case in teacher education.

[57] D. Gitomer, A. Latham, A.,and R. Ziomek, *The Academic Quality of Prospective Teachers: The Impact of Admissions and Licensure Testing,* (Princeton: Educational Testing Service, 1999). D. Ballou and M. Podgursky, "Teacher Training and Licensure: A Layman's Guide," in Kanstoroom and Finn, C. (editors), *Better Teachers, Better Schools,* (Washington, DC: Thomas B. Fordham Foundation, 1999). Harold Weglinsky, "How School Matters: The Link Between Teacher Classroom Practices and Student Academic Performance," *Education Policy Analysis Archives,* v.10, n.12, February 13, 2002.

[58] It needs to be stressed that these observations refer to a class of institutions, not each of the institutions in the class. For instance, Emporia State University, cited as having an exemplary teacher education program, is a Masters I university.

[59] The Carnegie classification system changed between 1994 and 2000. The current terms "doctoral extensive" and "doctoral intensive" replaced the terms "research university" and "doctoral granting university." The schools included in each category have changed slightly with the alteration in terms and because of institutional changes over the period.

[60] The site visits actually included 24 institutions, but one was eliminated from this portion of the study because of a very unusual approach to staffing.

[61] This sample was not intended to be representative of the nation's teachers. Rather it was a sample of convenience well suited to make determinations regarding the relationship of teacher preparation to student growth.

[62] A RIT score represents an estimate of a student's level of achievement in a content area measured on an underlying scale, the RIT scale. There is one RIT scale for each major content area (reading, mathematics, language usage, science concepts, and science topics). Each scale was constructed using modern Item Response Theory. Each scale is constant with respect to what is being measured and is not dependent on normative data to derive its meaning; a score of, say 210, has the same meaning for a student in grade 3 as it does for a student in grade 7. Finally, each scale is independent of grade level; thus each scale spans grade levels. This characteristic makes the RIT scale ideal for measuring students' progress as well as their achievement status. Growth of a single RIT point, as we mentioned in the paper, is roughly equivalent to a month's worth of instructional growth. As a general rule, students can be assessed up to four times a year. The norm is somewhere from two (fall and spring only) to three (fall, winter, and spring).

[63] This was a marked contrast with our research on school leadership programs in which we were unable to find a single program in the U.S. that could be recommended as a model worthy of emulation. We had to go to England to find an exemplary leadership program.

64 Several other programs were deemed exemplary and could have been profiled as well. Choices were based on demonstrating the diversity of exemplary teacher education programs. For instance, under the category of five-year programs, University of Virginia was selected for a profile over Boston College, which has four- and five-year programs, because of its location in the South and its status as a nonsectarian public research extensive university. A private Catholic college had already been selected to represent four-year undergraduate programs. Both University of Virginia and Boston College had excellent teacher education programs.

65 The Board of Regents no longer requires the Praxis I for admission to teacher education at state institutions, although ESU has maintained this requirement.

66 Linda Darling-Hammond, Melissa Eiler, and Alan Marcus, "Perceptions of Preparation: Using Survey Data to Assess Teacher Education Outcomes," *Issues in Teacher Education*, v. 11, n. 1, Spring 2002; pp. 65-84.

67 Ibid, p. 68.

68 The Holmes Group, *Tomorrow's Schools: principles for the design of professional development schools: a report of the Holmes Group*, (East Lansing, Mich.: The Holmes Group, 1990).

69 A competency-based curriculum would be preferable to fixing a specific length of time for an enriched major. This would have the advantage of making the major time-variable. As at Alverno, students would advance by achieving mastery, rather than by passing a succession of discrete courses. The problem is that, although the Alverno approach is much admired, it has not yet been replicated at other universities.

70 Richard Ingersoll, *Is There Really a Teacher Shortage?* (Consortium for Policy Research in Education and the Center for the Study of Teaching and Policy, September 2003), p. 10.

71 The Holmes Group, *Tomorrow's Schools of Education*, (East Lansing, Mich.: The Holmes Group, 1995), p. 6.

72 The categories used in this study were those in effect at the time of the study and do not reflect Carnegie's recent revisions of its categories.

73 Kaplan Inc., *Learning Transforms Lives*, (New York: 2005), p. 4. See http://www.kaplan.com/NR/rdonlyres/D82C8726-4BCC-45BB-A23F-31517873F80B/0/91903_Brochure.pdf.

74 Goldie Blumenstyk, "Kaplan Announces Plans to Move Into Teacher Education," *The Chronicle of Higher Education*. Retrieved February 10, 2006, from http://chronicle.com/free/2003/04/2003040102n.htm.

75 Ibid.

76 Teach For America, *Teach For America 2005 Corps Profile;* Teach For America, *Teach For America 2004 Corps Profile*. Retrieved February 14, 2006, from www.teachforamerica.org/about.html.

77 Teach For America, *Options Open, Top Graduates Line Up to Teach to the Poor.* Retrieved October 3, 2005, from www.teachforamerica.org/newsroom.html.

78 WestEd Policy Brief, *Teacher Supply & Quality, The Changing Role of Community Colleges* (October 2003). Retrieved May 1, 2006, from http://www.wested.org/online_pubs/po-03-02.pdf.

79 Recruiting New Teachers, *Tapping Potential: Community College Students and America's Teacher Recruitment Challenge,* (Belmont Ma.: Recruiting New Teachers, 2002), p. 8.

80 Association of Educational Service Agencies, *About ESEA and Its Services,* Retrieved February 13, 2006, from AESA Web site. See http://www.aesa.aesa.us/about_aaesa.html.

81 M. Mclver, *Education Service Agencies: Initiating, Sustaining, and Advancing School Improvement,* (Aurora, Colo: Mid-continent Research of Education and Learning).

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