



THE CLINICAL PREPARATION OF TEACHERS

A Policy Brief

*From the
American Association of Colleges for Teacher Education*

For release at the briefing

Teacher Preparation: Who Needs It?

THE CLINICAL COMPONENT

**National Press Club
Washington, DC
March 11, 2010
8:45 – 10:30 a.m.**

American Association of Colleges for Teacher Education
1307 New York Avenue, NW, Suite 300, Washington, DC 20005-4701
Tel: 202.293.2450 • Fax: 202.457.8095 • www.aacte.org



The Clinical Preparation of Teachers: A Policy Brief

from the
American Association of Colleges for Teacher Education

Introduction

As the quality of teaching is now recognized as the most important factor in student learning, teacher preparation is rightfully receiving increased attention. Questions of keen interest are *What is the best way to prepare highly effective teachers?* and *What are the key features of such programs?* Multiple studies have shown the benefits of teacher preparation that is directly linked to practice.¹ Three critical features of such preparation are (1) tight integration among courses and between course work and clinical work in schools; (2) extensive and intensively supervised clinical work integrated with course work; and (3) close, proactive relationships with schools that serve diverse learners effectively and develop and model good teaching.²

This policy brief focuses on the clinical aspects of teacher preparation in each of these key features. These aspects include the typical processes of clinical work (observing, assessing, diagnosing, prescribing, and adjusting practice to reflect new knowledge), the location (in direct contact with clients), and the duration of the training (including an extended period of practice such as an internship and/or residency).³

The importance of clinical practice is often underestimated and misunderstood by lay audiences and even policy advocacy organizations.⁴ The purpose of this brief is to clarify such misconceptions, to describe and define good clinical practice in teacher preparation and the research evidence behind it, and to make policy recommendations to promote widespread adoption of rigorous, clinically based preparation programs.

First, we discuss recent changes in the teacher preparation profession. Next, we offer evidence of the importance of strong clinical experience to successful teaching. We then describe the critical components of clinical preparation, and we profile several examples of promising clinically based preparation programs. Finally, we present AACTE's policy recommendations for states, the federal government, and teacher preparation providers.

Teacher Preparation Has Changed

The concept of practical experience in teacher preparation goes back at least to the 19th century, when the normal school movement produced four core categories of study for teachers, one of which was *practice teaching*.⁵ For the next 150 years, expectations of what teachers should know and be able to do changed very little, although preparation typically included a component labeled “observation and practice,” “in-school practicum,”⁶ “field experience,” or, more commonly, “student teaching.”

Teacher candidates generally completed course work on psychological principles, subject matter, and teaching methods before beginning student teaching—for about 8 weeks at the end of the program—with few connections to course content. School-based cooperating teachers were selected not necessarily on the basis of quality. Placements were idiosyncratic, with experiences ranging from primarily clerical work to solo teaching without assistance. Because

About the AMERICAN ASSOCIATION OF COLLEGES FOR TEACHER EDUCATION

AACTE is a national alliance of educator preparation programs dedicated to the highest quality professional development of teachers and school leaders in order to enhance PK-12 student learning. The 800 institutions holding AACTE membership represent public and private colleges and universities in every state, the District of Columbia, the Virgin Islands, Puerto Rico and Guam. AACTE's reach and influence fuel its mission of serving learners by providing all school personnel with superior training and continuing education.

Sharon P. Robinson, President and Chief Executive Officer

Copyright 2010 by the American Association of Colleges for Teacher Education

AACTE • 1307 New York Ave., NW, Suite 300 • Washington, DC 20005 • Tel: 202/293-2450 • Fax: 202/457-8095 • www.aacte.org

university- and school-based faculty did little joint planning or teaching, candidates learned theory in isolation from practice and had just a quick encounter with classroom practice divorced from theory. New teachers trained in this way, when entering their own classrooms, thus reverted largely to what they knew best—the way they themselves had been taught.⁷

A study of 15,500 education school alumni who graduated 10 to 15 years ago is revealing. Seventy-five percent reported having had only one semester or less of field experience, yet they characterized that experience as “*the most valuable aspect of my education program.*” The most common finding was a desire for more, longer, earlier, and better-integrated field work experiences.⁸ A more recent study reports that 65% of nearly 2,300 potential mid- and second-career teachers surveyed said that real classroom experience is an important aspect of a teacher preparation program.⁹ It recommends a system for midcareer changers that includes strong clinical experiences in schools that prepare candidates for the specific settings in which they will teach.¹⁰

The 21st century has become a watershed in recognizing the importance of high-quality clinical programs in teacher preparation. Teachers for a New Era (TNE), a large-scale, multiyear grant program of the Carnegie Corporation of New York launched in 2001, supported innovation in teacher education programs at selected colleges and universities. It was based on the premise that excellent teaching is a clinical skill and that exemplary teacher education provides for clinical education in a clinical setting.¹¹ One of its three essential principles was that “education should be understood as an academically taught ‘clinical practice profession,’ requiring close cooperation between colleges of education and actual practicing schools; master teachers as clinical faculty in the college of education; and residencies for beginning teachers during a two-year period of induction.” This was a different way of thinking about what had previously been considered field experiences and from traditional notions of student teaching.¹²

In any clinical practice profession, a knowledge base of historical, philosophical, sociological, and economic foundations is taught and learned in traditional academic settings. Clinical practice occurs principally with clients (which in teaching are pupils), in clinics (classrooms or laboratories), and it entails interaction among student teachers, teaching staff, administrators, families, and communities. TNE points out that clinical education is developmental and designed to teach clinicians not to act *upon* the client, but to assist the client’s growth and development. Good clinical practice keeps the client’s interests as a central focus at all times. TNE was the precursor to the now more prevalent conception of quality teacher preparation as school-embedded teacher learning.¹³

Teaching is increasingly recognized as an academically taught “clinical practice profession,” such as clinical psychology and medicine.¹⁴ As we come to appreciate the nature of teaching as a complex practice that requires considerable knowledge, skill, and judgment, the term “student teaching”—meaning a short practice period at the end of academic course work—is fast becoming anachronistic. The lab school concept, the professional development school¹⁵ movement (now entering its fourth decade), and the rapidly growing interest in yearlong teacher residencies—the precedent for recent revisions in the Higher Education Opportunity Act—are compelling indicators of this trend.

Residency programs in education are adapting medical residency models, created specifically to build effective district–preparation program partnerships. They thus target their recruitment and selection of residents to meet district needs. These programs involve prospective teachers in groups, or cohorts, who are prepared together and easily form professional learning communities. The intensive, extended 1-year preparation tightly weaves education theory and classroom practice together and often offers the course work at the P-12 school site, meshed with ongoing classroom instruction. Each resident is placed with a highly trained, rigorously selected mentor teacher and is gradually released to take on structured teaching roles that are closely examined and refined to enhance students’ learning. Ongoing postresidency support is provided after residents are hired.^{16,17} The numbers and types of teacher residency programs are growing and range from urban (e.g., the Academy for Urban School Leadership in Chicago, the Boettcher and Denver Teacher Residencies) to rural (Bard College, California State University–Chico, and Arizona State University) and from undergraduate to postgraduate.

Clearly, a sea change in teacher preparation is now in progress to seat teacher preparation primarily within P-12 schools in close partnership with districts. A leader in the field has just chronicled the path to “a new epistemology” for teacher education that more closely connects campus courses and field experiences to create prospective teacher learning opportunities.¹⁸ Further, just recently, the largest teacher preparation accrediting body took major steps toward revising its standards and accreditation processes to support more clinically based educator preparation and working partnerships between preparation programs and P-12 schools.¹⁹

The Importance of Strong Clinical Experience

Strong clinical preparation of teachers is a key factor in their students' success. It will thus have an impact on tomorrow's graduates and their—and the nation's—ability to compete in the challenging global economy and participate in a pluralistic democratic society. To understand this connection, one must understand the nature and requirements of teaching.

Knowing one's subject matter is necessary, but not sufficient, for effective teaching. Teaching requires not just knowing the content to be taught, but knowing *how to teach* that content to students of varying backgrounds and levels of understanding. It further requires that teachers be *able* to teach the content, a process different from *knowing about* how to teach it.²⁰ Teachers must understand and also be able to *do* a wide variety of things—a process termed “enactment”²¹—and do many of them simultaneously. For example, telling prospective teachers about possible classroom strategies or offering teaching routines may be helpful, but *telling* them does not ensure that teachers will develop deep understanding or diagnostic and instructional skills for dealing with students who require different approaches or supports. Teachers must have extended opportunities to observe and practice ways of engaging students with subject matter in ways that are intellectually sound and developmentally appropriate. They must be able to impart the content in ways that children—as opposed to adults—of varying ages and developmental levels will comprehend.

Experts recognize that excellent teaching is complex, intricate work that can be learned to high levels of skill with appropriate training. Good teaching is not simply a matter of personal style and individual commitment. It requires detailed knowledge of the content area being taught, a great deal of precision and skill in making it learnable, as well as good judgment and a tremendous capacity to relate to a wide range of young people. The teaching process is dynamic and reciprocal²² and, in fact, is unnatural to the lay person. Experts and very smart people are not automatically good at it.²³

One reason for the complexity is that teachers must act in different time frames and with different levels of ideas with individuals, groups, and an entire class to make each lesson coherent, to link one lesson to another, and to cover a curriculum over the course of a year.²⁴ Teachers must juggle multiple academic and social goals requiring trade-offs from moment to moment and day to day. Their actions are affected by changing student needs and unexpected classroom events. Many decisions cannot be routinized because they are contingent upon student responses and the particular objectives of a given moment. Teachers must learn to weigh difficult dilemmas and to make and implement decisions on the fly; be able to alter their plan for unforeseen circumstances in the midst of teaching; and to respond to children while presenting well the material they are teaching.²⁵ Students need teachers who are prepared to help them learn, not beginners who are struggling with or naïve about their responsibilities.²⁶

Effective teachers have been described as those who—

- Know how students learn, develop, and acquire and use language
- Understand their subject matter and the purposes of curriculum
- Know and understand teaching:
 - * how to teach subject matter so it can be understood by diverse learners
 - * how to use diverse resources to plan and structure engaging learning opportunities
 - * how to monitor and assess learning using multiple sources of evidence
 - * how to adapt instruction accordingly
 - * how to coach and monitor students' use of technology
 - * how to manage a classroom effectively
- Have high expectations for all students and help students learn
- Contribute to positive academic, attitudinal, and social outcomes for students
- Contribute to the development of classrooms and schools that value diversity and civic-mindedness
- Collaborate with other teachers, administrators, parents, and education professionals to ensure student success, particularly the success of students with special needs and those at high risk for failure²⁷

Much of the information teachers need to make effective decisions emerges in the context of the practice.

For example, information about what ideas students have developed about a topic, how they are understanding or misunderstanding the material being taught, and how different students learn best emerges in the actual work of teaching—and guides future planning and instruction. How well different strategies will work with this or that group of students, or with a particular individual, also emerges in the course of enacting plans and cannot be fully known ahead of time in the abstract.²⁸

Such skills are developed through learning situated in practice, interacting with real children of various cultural backgrounds and developmental levels. Knowledge of content is successfully taught in academic settings, but knowing how to teach and the actual doing, or enacting, of teaching is more effectively learned by teacher candidates in clinical settings with pupils and skilled mentor teachers. Recent verification of this need is seen in the experience of career changers entering teaching, 90% of whom rated their preparation program as good or excellent. However, 75% were especially challenged by classroom realities such as dealing with behavioral issues, teaching English language learners, and incorporating standards into the curriculum.²⁹

Good clinical experience yields positive effects. We know from research that good clinical experience is associated with effective teaching. Several studies have found that, when a well-supervised clinical experience precedes or is conducted jointly with course work, teacher candidates appear more able to connect theoretical learning to practice, become more comfortable with the process of learning to teach, and can more ably enact what they are learning in practice.³⁰ In fact, prospective teachers—particularly career changers—want and seek out clinical opportunities. Research shows the importance of strong clinical practice to student achievement, teacher retention, and teachers' sense of preparedness when they enter the classroom:

- **Increased student achievement.** Teachers' initial classroom experiences, especially in the first 1 or 2 years, consistently predict teacher effectiveness,³¹ and these initial experiences are much different for candidates with strong preservice preparation.³² Particularly significant are the results of a 5-year study of the effects of 31 elementary teacher preparation programs in New York City on the learning of nearly 80,000 fourth- through eighth-grade students. Results revealed that preparation programs that are focused more on the work of the classroom and that allow teachers to engage in the actual practices involved in teaching produce significantly more effective first-year teachers.³³ The pupils of teachers in Florida whose alternative preparation program, that of the American Board for Certification of Teacher Excellence (ABCTE),³⁴ required no clinical experience performed statistically significantly less well on the state math test than students of a comparison group of teachers.³⁵
- **Teacher retention.** Several research studies reveal a relationship between candidates' practical experience and retention in teaching. The lack of clinical skills and experience has been linked to high levels of teacher burnout and attrition, and well-prepared novices with intensively supervised clinical experience were found in one study to be more likely to remain than those with limited clinical experience.³⁶ Another analysis reported that candidates with clinical experience were twice as likely to stay past the first year of teaching as those who have not.³⁷
- **Teachers' sense of preparedness.** Teacher candidates want and seek out clinical experience. Two California State University studies³⁸ found a relationship between the experience of practice teaching and feelings of preparedness. Further, nearly two thirds of career changers recently considering entering teaching indicated that having a program that includes clinical training in real classrooms with experienced teachers is "very important" to them. The research sponsor urged teacher educators to provide strong clinical experiences in schools that fit candidates' future plans, integrating theory and practice.³⁹

Teaching as a Clinical Practice Profession

The attributes of teaching—seen as a clinical practice profession—are clearly parallel to those of other such professions.⁴⁰ These include

- **The centrality of clients** (in this case, students), involving direct observation and treatment
- **Requisite specialized knowledge and skills** plus theoretical, practical, and technical understandings not possessed by laypeople
- **The use of evidence and judgment** to determine the best course of treatment⁴¹

- ***A professional community and standards of practice*** to which professionals and professional organizations, including preparation institutions, are held accountable⁴²
- ***Clinical education***, including rigorous academic and practical training involving working effectively with clients, obtaining a high degree of knowledge, understanding how to use evidence and judgment in practice, and comprehending and valuing the standards of their respective professional communities.⁴³

Researchers suggest that teacher candidates should have opportunities to practice and reflect on teaching *while enrolled in their preparation programs*, as well as during initial years of practice.⁴⁴

Standards of the National Council for Accreditation of Teacher Education (NCATE) reflect these findings, stating that prospective teachers should exhibit consistent success through a substantial preservice clinical experience involving a variety of challenging situations and supervised by both university- and school-based faculty.⁴⁵ NCATE, in fact, devotes one out of the six standards on which it evaluates institutions' professional education units to "Field Experiences and Clinical Practice."⁴⁶ Its Board of Examiners teams determine whether "the unit and its school partners design, implement, and evaluate field experiences and clinical practice so that teacher candidates and other school professionals develop and demonstrate the knowledge, skills, and professional dispositions necessary to help all students learn." Further, seminal documents of the National Board for Professional Teaching Standards⁴⁷ are infused with descriptions of practice-based skills that teachers can only develop in classrooms while interacting with students.⁴⁸

Critical Components of Clinical Preparation

High-quality preparation programs are *school embedded*—i.e., grounded in the work of schools—through closely linked partnerships between the preparation program and the school.⁴⁹ They bridge theoretical concepts and pedagogical knowledge, simultaneously taught in an academic format, to the actual doing, or enactment, of teaching in real time with real students in live classrooms. Key components of these programs include the following:⁵⁰

1. **Strong school-university partnerships.** It is imperative that faculty from the education school and the P-12 school be mutually involved in designing, implementing, and evaluating each other's programs; participating in each other's professional development activities; and adapting instructional programs for candidates and for pupils. The partners share expertise and integrate resources to support learning of teacher candidates.
2. **Settings.** Excellent "placement schools" are carefully selected by preparation programs as intellectually rich sites for observation and learning by teacher candidates. The sites are mutually developed and enhanced over time through the building of strong relationships between the teacher development faculties of the school and the university. Sites are screened for their potential to expertly demonstrate specific practices with pupils having particular characteristics, such as varying developmental levels or special needs, in a range of community and school types.
3. **Clinical placements.** The partners ideally determine the specific placement of teacher candidates jointly, so as to provide appropriate learning experiences and share expertise to support candidate learning. Placements that are congruent with candidates' planned teaching grade and subject area are associated with higher student learning.⁵¹ Good placements are well-supervised and mentored by skilled clinical teachers and offer opportunities for a variety of well-structured experiences on the part of the candidate.
4. **Clinical teachers.** Strong school-based clinical teachers are essential to the success of the clinical experience and are selected for their deep expertise, their extensive experience, and their match with candidate subject and grade. They are trained as mentors and highly skilled in supporting the learning of adult candidates as well as that of children. Recent research from the Teacher Education Accreditation Council indicates positive effects of higher levels of training among cooperating teachers.⁵² Ideally, they work with each candidate for the duration of his or her clinical experience.
5. **Coordinating faculty.** Specially designated collegiate faculty work closely with K-12 schools and assist and oversee the institution's teacher candidates' clinical experience. These faculty members—like their school counterparts—are uniquely able to positively communicate with and support adult candidates in their often-challenging clinical experience. They work jointly with clinical teachers in designing, implementing, assessing, and revising candidates' clinical experience.
6. **School-based clinical curriculum.** A jointly designed clinical curriculum links theory to practice and provides carefully scaffolded, graduated responsibilities for prospective teachers to undertake. Candidates are guided

through in-school assignments and projects that develop their understanding of student motivation and learning, classroom management, use of technologies, discipline, and assessment techniques and data analysis. Sometimes this experience is structured as a full academic year of internship in the classroom of one or more clinical teachers. Ideally candidates rotate to several placements to experience a greater diversity of students and teaching issues.

7. **Length of program.** Teacher candidates participate in school-embedded clinical work throughout their entire program. Experts stress the importance of a full-year experience to allow time for necessary teacher learning to take place.⁵³ Accreditation rubrics state that clinical practice must be sufficiently extensive and intensive for candidates to develop and demonstrate proficiencies in the professional roles for which they are preparing.⁵⁴ A minimum time frame of one semester, or 450 hours is suggested for acquisition of the clinical skills necessary to serve as teacher of record.⁵⁵ Some model preparation programs require twice that—at least 30 weeks (900 hours) of mentored clinical practice under the direct supervision of one or more expert veteran teachers. The time should not be firmly fixed but be dependent on the performance of the particular candidate.
8. **Performance assessment.** Clinical practice includes essential ongoing evaluation and assessment of candidates' performance as they interact with, instruct, guide, correct, and support students in real time. Performance assessment tools for this purpose are becoming increasingly available. The new Teacher Performance Assessment being piloted in 20 states by a collaborative of AACTE, the Council of Chief State School Officers, and Stanford University is expected ultimately to be widely adopted nationally. It is based on the very successful Performance Assessment of California's Teachers (PACT).⁵⁶

Examples of Promising Clinically Based Preparation Programs

Listed below are brief profiles of clinical preparation programs that are emerging as potential models. They are based on the best research and professional judgment, and unquestionably, they are innovative and inspiring and hold great promise for success.

PDS NEXT Project—Arizona State University and the Arizona Board of Regents

This bold project is among the 28 Teacher Quality Partnership grants, for which \$43 million was awarded September 30, 2009, by the U.S. Department of Education to reform traditional university teacher preparation and teacher residency programs. It received by far the largest award of all the grantees (\$6.7 million for the first year). PDS NEXT Project is a statewide, school-university, teacher education partnership that includes Arizona State's College of Teacher Education and Leadership, its College of Liberal Arts and Sciences, and the Vice President's Office of Educational Partnerships. Other partners are the Rodell Foundation and 15 high-need urban and rural partner districts representing 230 schools, 10,809 teachers, and 174,308 high-need students. The project builds on the Teacher Advancement Program instructional rubric and teacher development model. The goal of this project is to reform 25 historically struggling schools in the urban and rural partner districts. This will be accomplished by designing and implementing reformed, district-based prebaccalaureate and master's (residency) teacher education programs that yield highly skilled new teachers who, by their second year of teaching, produce student achievement gain scores greater than the partner district average. This project will prepare a total of at least 600 exemplary new teachers through both pathways over the 5-year grant. A feature of this project is its work with the state's community colleges. Well over 70% of the individuals who become teachers in Arizona on the prebaccalaureate degree pathway matriculate through community colleges, so it is important that the universities help the community colleges reform their programs in both content and rigor to improve the pool of teacher candidates.

Contact: Scott Ridley, Project Director, ridley@asu.edu;
see http://asunews.asu.edu/20090930_pdsnextgrant.

Initial Professional Teacher Education Program, University of Colorado Denver

For 15 years, this program has used an extensive professional development school (PDS) clinical model of preparation to prepare graduate and undergraduates for urban schools. Elementary, secondary, and special

education teacher candidates engage in four internships during their program, exceeding the state's required 800 hours of field experience. Candidates complete the licensure program in a 12- or 18-month format. Cohorts of 10 to 12 candidates are placed in each of the 30 elementary, middle, or high school PDSs throughout their teacher preparation year. Candidates work alongside practicing classroom teachers known as clinical teachers, co-teaching in multiple ways to develop teaching skills while strategically focusing on K-12 student learning. For the first three internships, teacher candidates take courses simultaneously at the university. PDS and university faculty closely align course work with internship experiences as candidates learn complex aspects of teaching early in the week and apply it in a classroom later in the week, with myriad opportunities for ongoing inquiry and reflection about quality instruction. In the fourth and final internship, course work tapers off and candidates immerse themselves at their PDS site 5 days a week. They continue to co-teach with their clinical teachers, but the roles shift as candidates take on increasing responsibility for planning, instruction, and assessment. They plan for co-teaching in ways that support the greatest student learning. At each PDS, candidates are supported by a site team of a university site professor/faculty member who spends at least one day a week in the school and a school-based site coordinator who is a master teacher or instructional specialist released at least part time to support the group of candidates. This site team spends many hours coaching candidates and clinical teachers, facilitating a weekly site seminar to continually help candidates blend theory to practice, and supporting the overall efforts of renewal and professional learning at the school.

Contact: Cindy Gutierrez, Director, cindy.gutierrez@ucdenver.edu;

see <http://www.ucdenver.edu/academics/colleges/SchoolOfEducation/Pages/Home.aspx>.

Stanford University's Teacher Education Program (STEP)

STEP prepares teachers in collaboration with nine local reform-oriented high schools serving diverse student populations in the Bay Area. Like teaching hospitals in the medical profession, these PDSs develop and demonstrate leading-edge practices while training novices and supporting the development of veteran teachers and administrators. STEP currently prepares about 70 secondary and 20 elementary candidates in a master's degree program that includes a strong emphasis on content pedagogy and teaching diverse learners plus a year-long, tightly connected clinical experience. East Palo Alto Academy (EPAA), a partnership school, was launched in 2001 by Stanford University, in collaboration with the Ravenswood School District and Aspire Public Schools, in a low-income, all-minority community near the university that had lacked a public high school for 25 years. Stanford faculty from the education school, medical school, law school, and college work with the school to provide students with a strong education, health care, and other supports. The school has dramatically transformed students' opportunities with a college-preparatory, project-based curriculum organized around performance-based assessments and with a personalized design. More than 90% of students go onto college. In the new East Palo Alto High School, which serves about 300 students annually, California Department of Education (CDE) statistics show that more than 90% have graduated each year, and more than 90% of graduates are accepted to postsecondary education. Each year since its first graduating class, the proportion of students admitted to 4-year colleges has increased, from just over 30% in 2005 to 50% in 2008. Despite the fact that students arrive at the high school about 3 to 4 years below grade level in reading and mathematics, are English language learners, and are low-income on average, the school has sharply increased achievement from the lowest level in the state in 2001—scoring in the bottom 10% on the state academic performance index (API)—to the 70th percentile in relation to schools serving similar populations of students. The school's academic performance and its most recent gain of 27 points on the API were much greater than that of schools serving comparable students, designated by the state as "similar schools." According to the CDE, these schools had an API of 582 in 2005-2006, which remained unchanged in 2006-2007. With Stanford's reforms and supports, achievement increased across the board, e.g.: 10th-grade pass rates on the state exit exams increased by more than 50% in English language arts and by 400% in mathematics, and increases in proficiency rates on the state tests more than doubled in every subject area at every grade level.

Contact: Linda Darling-Hammond, Professor of Education, info@suse.stanford.edu;

see <http://suse-step.stanford.edu/>.

Woodrow Wilson Teaching Fellowship

The Woodrow Wilson Teaching Fellowship offers a model for states to rethink their teacher education programs and bring new talent into classrooms to address significant shortages of mathematics and science teachers. The fellowships, funded with support from both private philanthropies and state funding, provide \$30,000 stipends to prospective teachers who enroll in exemplary master's-level teacher education programs and agree to teach for 3 years in low-income rural and urban secondary schools. The fellowships offer additional funding to the participating campuses to rework their approach to teacher preparation, emphasizing intensive clinical experience and discipline-specific pedagogy. Participating states are focusing on math and science in high-need urban and rural schools. In Indiana, Michigan, and Ohio, over the course of their 3-year programs, the Woodrow Wilson Teaching Fellowship will prepare more than 700 math and science teachers at 14 institutions, with a total of nearly \$40 million in public and private funding and a lifelong impact on the math and science achievement of an estimated 87,500 students who will learn from the Fellows every year. The Woodrow Wilson Indiana Teaching Fellowship was created in 2007 with leadership from Governor Mitch Daniels, \$10 million in funding from the Lilly Endowment, and additional state funds. Four Indiana universities are participating: Ball State University, Indiana University-Purdue University Indianapolis, Purdue University, and the University of Indianapolis. These institutions have redesigned their graduate-level math and science teacher preparation programs so that Fellows spend significant time in school classrooms throughout their study while also engaging in rigorous academic work—a requirement for all participating universities. The W. K. Kellogg Foundation's Woodrow Wilson Michigan Teaching Fellowship, inaugurated in 2009, will be offered at the University of Michigan, Michigan State University, Eastern Michigan University, Western Michigan University, Grand Valley State University, and Wayne State University. The six institutions will collectively host 120 Fellows annually. Governor Jennifer Granholm led the way in bringing the program to Michigan with the help of \$16.7 million in funding from the W. K. Kellogg Foundation. In 2010, Ohio Governor Ted Strickland and Chancellor Eric Fingerhut of the Ohio Board of Regents launched the Woodrow Wilson Ohio Teaching Fellowship as part of the state's Choose Ohio First scholarship program. The four selected partner institutions—the Ohio State University, the University of Akron, the University of Cincinnati, and John Carroll University—will host 80 Fellows each year. The Ohio program is supported with \$9 million from Choose Ohio First funds and an additional \$2.5 million in commitments from five Ohio funders. Additional states are in the pipeline and could be added as early as fall 2010.

Contact: Constance K. Bond, Vice President for Teaching Fellowships, wwteachingfellowships@woodrow.org; see <http://www.wwteachingfellows.org>.

St. Cloud State University

St. Cloud State University (SCSU), St. Cloud, Minnesota,⁵⁷ has transformed its student teaching experience, with the help of a \$5 million Teacher Quality Enhancement partnership grant (2003-2008) from the U.S. Department of Education. In collaboration with the St. Cloud Area Schools, the project addresses challenges related to placing teacher candidates, strengthening the preparation program, and maximizing human resources in the classroom. The focus of this initiative is on the development, implementation, and evaluation of a co-teaching model of student teaching. It provides two adults in the classroom, actively engaged with K-12 students for greater periods of time than in traditional student teaching. The two adults are the certified teacher and the teacher candidate (introduced to students as a "teacher"), with whom the certified (cooperating, or clinical) teacher has agreed to work on a co-teaching basis. The co-teaching model allows children increased opportunities to get help when and how they need it; it allows teachers to incorporate co-teaching pedagogy, grouping students in ways that are not possible otherwise. To date, the SCSU co-teaching intervention has provided co-teaching training to more than 700 cooperating teachers and more than 2,000 teacher candidates. This initiative has been honored by receiving the Innovative Partnering and Collaboration Award from the Minnesota State Colleges and Universities; the prestigious Christa McAuliffe Award for Excellence in Teacher Education from the American Association of State Colleges and Universities for the innovative use of co-teaching in student teaching; and the AACTE Best Practice Award in Support of Research on Teacher Education Quality and Accountability. Research reveals that students in a co-taught classroom statistically outperform students with a single teacher and that traditional student teaching,

which often leaves teacher candidates unassisted in the classroom, results in statistically significantly lower proficiency levels on the part of students compared with those of students in either a co-teaching student-teaching setting or with a single teacher.

Contact: Nancy Bacharach, nlbacharach@stcloudstate.edu;
see www.stcloudstate.edu/coe/tqe.

State Requirements and Clinical Preparation

State regulatory policies to ensure high-quality clinical preparation for teacher candidates vary widely. As the annual *Quality Counts*⁵⁸ 2010 report and its EdCounts database illustrate (see chart, next page), state requirements differ in terms of the number of weeks and hours required for student teaching and for clinical experiences other than student teaching. Currently only 39 states require any such experience. Maryland has the highest requirement in terms of weeks (20 weeks), and Wisconsin follows next with 18 weeks. However, states also report “other clinical experiences” in terms of hours, and Colorado leads with 400 hours. Eleven states and the District of Columbia require no clinical preparation.

In most states, clinical-experience requirements for alternative-route candidates are less rigorous than those for traditional-route candidates. Only five states—Georgia, Michigan, Rhode Island, Wisconsin, and Wyoming—are reported as requiring student teaching for preservice alternative-route candidates, and none are listed as requiring preservice clinical experiences for alternative-route candidates.

Data from another source, the National Association of State Directors of Teacher Education and Certification, also reveals that state policies cover the gamut regarding clinical preparation. Eighty-five percent of the state respondents to the latest survey indicated that their state requires field experiences prior to student teaching. Only 60% said that experience in a multicultural setting is required, and 60% said their state requires experience with more than one group of students. Only about one third of state respondents said training is required for cooperating teachers, and 10 to 15 weeks of student teaching was the norm among the 31 respondents.⁵⁹

Recommendations for States

- *All states should require clinical experience during preservice teacher preparation.* A minimum length of one semester, or 450 hours (15 weeks at 30 hours per week), should be required of and provided to each candidate.⁶⁰
- *The same clinical preparation requirements should apply to all teacher preparation routes.* With the exception of candidates who successfully test out of clinical experience requirements based on a valid and reliable teacher performance assessment, all candidates in all states—regardless of the pathway to teaching—should be required to complete a supervised clinical preparation program of the same length and rigor.
- *A high-quality teacher performance assessment should be required of all candidates.* AACTE encourages all states to join the current 20 that are piloting and moving toward adoption of a valid and reliable teacher performance assessment, which ultimately will enable teacher candidates who are competent and qualified to enter the classroom as soon as they can demonstrate these competencies.⁶¹
- *States should join together to agree on common clinical experience requirements.* Such agreement would enhance the mobility of teachers and could help to reduce shortages of teachers in certain areas and certain subjects.
- *States should offer incentives to schools that act as clinical settings for teacher candidates.* Such incentives could support salaries for newly hired mentor teachers and coaches working with teacher candidates, substitutes for pullout sessions between clinical teachers and candidates, or stipends for postgraduate residents.⁶²
- *States should support the expansion or replication of successful teacher residency programs.* Such support could cover the piloting of new teacher residency programs and provide funding to evaluate the impact of such programs.

State Requirements for Student Teaching and Other Clinical Experiences

State	Minimum weeks required of traditional-route candidates for student teaching	Minimum hours required of traditional-route candidates for clinical experiences	State requires preservice student teaching for alternative-route candidates	State requires preservice clinical experiences for alternative-route candidates
Alabama	15	150	No	No
Alaska	--	--	No	No
Arizona	--	--	No	No
Arkansas	12	--	No	No
California	9	--	No	No
Colorado	13	400	No	No
Connecticut	10	--	No	No
Delaware	--	--	No	No
District of Columbia	--	--	No	No
Florida	10	--	No	No
Georgia	--	--	Yes	No
Hawaii	--	--	No	No
Idaho	6 semester hours	--	No	No
Illinois	--	--	No	No
Indiana	--	--	No	No
Iowa	14	80	No	No
Kansas	12	--	No	No
Kentucky	12	--	No	No
Louisiana	9	180	No	No
Maine	--	--	No	No
Maryland	20	--	No	No
Massachusetts	150-300 hours	--	No	No
Michigan	12	--	Yes	No
Minnesota	10	--	No	No
Mississippi	12	--	No	No
Missouri	8 semester hours	2 semester hours	No	No
Montana	--	--	No	No
Nebraska	12	100	No	No
Nevada	8 semester hours	--	No	No
New Hampshire	15	--	No	No
New Jersey	15	--	No	No
New Mexico	14	--	No	No
New York	8	100	No	No
North Carolina	10	--	No	No
North Dakota	10	--	--	--
Ohio	12	100	No	No
Oklahoma	12	45	No	No
Oregon	15	--	--	--
Pennsylvania	12	190	No	No
Rhode Island	12	--	Yes	No
South Carolina	12	100	No	No
South Dakota	10	--	No	No
Tennessee	15	--	No	No
Texas	12	30	No	No
Utah	--	--	No	No
Vermont	12	60	No	No
Virginia	5	150	No	No
Washington	--	--	No	No
West Virginia	12	125	No	No
Wisconsin	18	--	Yes	No
Wyoming	8	--	Yes	No

Source: Quality counts. (2010, January 14). *Education Week*, 29(17). See <http://www.edcounts.org/createtable/step1.php>.

Federal Requirements and Clinical Preparation

The federal government has sent mixed messages to potential teachers, parents of K-12 students, policy makers, providers, and accreditors about the role of clinical preparation for teachers. On the one hand, federal policy supports programs with little to no preservice clinical preparation requirements (e.g., ABCTE and Teach for America), urges state expansion of alternative routes, and allows teachers to be labeled “highly qualified” by earning a bachelor’s degree and simply passing a paper-and-pencil test.⁶³ On the other hand, clinical preparation is promoted by Education Secretary Arne Duncan as critical to effective preparation⁶⁴ and is extensively required in the Higher Education Opportunity Act’s signature teacher preparation program, the Title II Teacher Quality Partnership (TQP) grants.⁶⁵

The TQP grant program bears further scrutiny. Enacted in 2008, it was the result of 5 years of congressional deliberation and represents a state-of-the-art bipartisan agreement about the key characteristics for teacher preparation in the 21st century. Developed with extensive input from experts and leaders in residency programs,⁶⁶ its rigorous program requirements are purposefully intended to ground the field of teacher preparation in a clinical setting.

In order to receive a TQP grant, a school of education must partner with a high-need local education agency and the school of arts and sciences in the college or university. Numerous additional partners, such as community agencies, businesses, and the governor’s office, are encouraged. Grantees are required to strengthen the clinical component of preservice preparation at the baccalaureate level and/or to develop preservice residency programs at the master’s level. In both instances, the clinical component must be of 1 year’s duration. This yearlong requirement, which could translate to about 900 hours, is relatively stringent, considering that the most demanding state requirement for clinical preparation is 800 hours for undergraduate internships. By design, these programs are intended to significantly expand the clinical component of preparation based on the promising success of the residency model and research on the efficacy of clinical preparation.

Federal Recommendations

- *The “Highly Qualified Teacher” definition in the Elementary and Secondary Education Act (ESEA)* should be revised to require that teachers establish not only their content expertise but their ability to teach it effectively, as measured by their actual performance in classrooms, following extended clinical experience. Prospective teachers should exhibit consistent success through a substantial preservice clinical experience in a challenging school setting supervised by both university- and school-based faculty. This requirement should pertain to both traditional- and alternative-route candidates. A minimum of 450 sequential hours of closely monitored and supervised clinical experience should be required. No candidate should serve as teacher of record until he or she has completed a preparation program.
- *ESEA should invest in the development of a national teacher performance assessment* that would parallel the development and adoption of Common Core State Standards, an initiative being spearheaded by the Council of Chief State School Offices and the National Governors Association.⁶⁷ With all but two states having endorsed the common core standards, a need will soon become evident for performance assessments of and professional development for teachers that are linked to these standards.
- *The Teacher Quality Partnership grants, with a specific clinical preparation focus, should be maintained in the Higher Education Opportunity Act and their funding increased.*
 - * AACTE recommends a TQP appropriation of \$300 million for FY 2011 and at least 10% increases in subsequent years through 2015.
 - * AACTE particularly supports the teacher residency concept—both undergraduate and graduate—whereby prospective teachers, as part of a cohort of candidates, are placed for an entire academic year in a school implementing similarly high-quality clinical experiences. AACTE urges the expansion of that program and the award of both evaluation and technical assistance contracts to enable successful practices to be disseminated widely.
 - * New provisions should be included requiring that teacher candidates supported by TQP programs be evaluated as successful using multiple measures, including a valid and reliable teacher performance assessment, prior to assuming a position as teacher of record.

- * The federal government should make an investment in establishing a system and network of clinical preparation, much like the Health Professions Education Assistance Act,⁶⁸ which supports a network of teaching hospitals to prepare doctors.
- * The federal government should require bodies that accredit teacher preparation programs to develop and utilize strong standards for clinical preparation that support more clinically based educator preparation and working partnerships between preparation programs and P-12 schools.
- * The federal government should require *all* providers of teacher preparation to be professionally accredited. Currently, professional accreditation is voluntary in some states, and alternative routes to teaching operate outside any accreditation process. A requirement for professional accreditation was one of candidate Barack Obama's campaign promises, and it should be put in place with uniform clinical requirements for all providers.

Recommendations for Providers of Teacher Preparation

- ***School districts and universities should jointly design and supervise strong clinical practice collaborations.*** Such partnerships involve accomplished teachers serving as mentors, clinical teachers, and clinical faculty to ensure that internship-style preparation remains connected to advances in the disciplines, teaching and learning, and technology. Further, special systems should be developed for career changers to transition to teaching through clinically based preparation tailored to adult learners.⁶⁹
- ***All teacher candidates should receive substantial and appropriate clinical preparation prior to becoming teachers of record in their own classrooms.*** This preparation should meet the *Critical Components of Clinical Preparation* described above and comply with recommended state requirements.
 - * ***A minimum of one semester of at least 450 hours of clinical practice should be completed*** by teacher candidates and required for state licensure. This requirement should pertain to both traditional- and alternative-route candidates.
 - * ***More highly desired, and preferred, is a full year of clinical practice***—approximately 30 weeks, or 900 hours, as is typical for postbaccalaureate residency programs. A period of induction support should be available to the novice teacher for at least 1 additional year.
 - * ***Evaluation using multiple measures, including valid assessments of teaching performance*** as mentioned above, should determine candidates' readiness to assume an unsupervised teaching role.
- ***Clinical teachers and other teacher mentors should be trained*** in helping and supporting novice teachers, modeling excellent teaching practice, and exercising positive problem-solving skills. Their designation as mentors should be determined by excellent supervisor and peer evaluations as well as outstanding performance on a teacher performance assessment.
- ***Clinical teachers should have at least 3 years of teaching experience,***⁷⁰ be matched to their novice teachers by subject and grade level, and be selected jointly by preparation program and school faculty on the basis of the clinical teacher's interest in and ability to deftly guide the specific candidate through a clinical practice program.
- ***Our nation's public schools and teacher preparation programs should jointly adopt standards*** for clinically based teacher preparation programs. Whether programs are initiated by higher education institutions or school districts, they should be held to the same high-quality standards. AACTE stands ready to assist in the development of such standards and is currently working with leading experts to help in their design.

Conclusion

The profession of teaching has changed. It is now recognized that good teaching is not merely a matter of personal style, individual commitment, or a fondness for children. Teaching involves a complex set of intricate skills requiring extended preservice practice in a clinical setting. “Winging it” is not an acceptable strategy, especially in today's high-need schools. Content mastery is the keystone upon which essential teaching skills are developed. But without extensive clinical practice, new teachers will default to the untenable and unethical practice of trial-and-error instruction.

Teaching is fast becoming a clinical practice profession such as medicine, nursing, and psychology. Credible organizations across the nation attest to the critical importance of extended, rigorous, embedded clinical preparation of teachers.⁷¹ Although high-quality clinical practice is not yet the norm in today's preparation programs, it should be the heart of teacher preparation and the focus of innovation. Leadership and support to make that happen are essential. AACTE members stand ready to join with neighboring school districts, our essential partners, in developing educators needed in today's diverse classrooms.

AACTE members are sending a message to federal and state policy makers: All providers of educator development must be required to meet the same professional standards of program efficacy and accountability. Extensive clinical development is a program standard that all must meet. Policy makers should require all providers to report on the impact of their programs, including their effect on the learning of P-12 students.

Notes

- 1 Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. H. (2008, September). Teacher preparation and student achievement. *NBER Working Paper No. W14314*.
- 2 Darling-Hammond, L. (2006). *Powerful teacher education: Lessons from exemplary programs*. San Francisco: Jossey-Bass.
- 3 See, for example: Carnegie Corporation of New York (2001, July 1), *Teachers for a New Era: A national initiative to improve the quality of teaching—announcement and prospectus* and Hinds, M. D. (2002), *Teaching as a clinical profession: A new challenge for education*, Carnegie Corporation of New York.
- 4 See, for example, the August 27, 2009 letter from Kate Walsh, president of the National Council on Teacher Quality, to Secretary Arne Duncan, in response to the Education Department's Notice of Proposed Priorities, Requirements, Definitions, and Selection Criteria relative to the Race to the Top initiative. Walsh urges deletion of the requirement to provide a clinical/student teaching experience in the definition of *alternative certification route*. She says that "programs can compensate for the absence of a student teaching experience by providing intensive mentoring support" and encourages "the Department to reconsider its definition to one that ... does not explicitly require a clinical or student teaching experience."
- 5 McDiarmid, G. W., & Clevenger-Bright, M. (2008). Rethinking teacher capacity. In M. Cochran-Smith, S. Feiman-Nemser, D. J. McIntyre, & K. E. Demers (Eds.), *Handbook of research on teacher education: Enduring questions in changing contexts*. New York: Routledge/Taylor & Francis Group and the Association of Teacher Educators.
- 6 Ibid.
- 7 Ibid., p. 153.
- 8 Levine, A. (2006). *Educating school teachers*. Washington, DC: The Education Schools Project.
- 9 Hart, P. D., Research Associates. (2008). *Teaching as a second career*. Princeton, NJ: Woodrow Wilson National Fellowship Foundation.
- 10 Haselkorn, D., & Hammerness, K. (2008). *Encore performances: Tapping the potential of midcareer and second-career teachers*. Princeton, NJ: Woodrow Wilson National Fellowship Foundation.
- 11 Carnegie Corporation of New York, 2001.
- 12 Ibid, p. 12.
- 13 Levine, M. (2009, Spring). *Preparing high quality teachers for high needs schools: Investing in clinical education and partnerships*. Washington, DC: National Council for Accreditation of Teacher Education.
- 14 Alter, J., & Coggshall, J. G. (2009, March). *Teaching as a clinical practice profession: Implications for teacher preparation and state policy*. The New York Comprehensive Center and the National Comprehensive Center on Teacher Quality.
- 15 Professional development schools, or PDSs, are innovative institutions formed through partnerships between professional education programs and P-12 schools. There are over 1,000 PDSs in the United States and many more that are similar but not specifically defined as PDSs. The partnerships have a four-fold mission: the preparation of new teachers, faculty development, inquiry directed at the improvement of practice, and enhanced student achievement. The goal of PDSs is to improve both the quality of teaching and student learning. They are often compared to teaching hospitals, which are also hybrid institutions created in the early 20th century. For further information go to <http://www.ncate.org/public/pdswhat.asp?ch=133> for PDS standards and www.napds.org, *the National Association for Professional Development Schools*.

- 16 Berry, B., Montgomery, D., Curtis, R., Hernandez, M., Wurtzel, J., & Snyder, J. (2008, August). *Creating and sustaining urban teacher residencies: A new way to recruit, prepare, and retain effective teachers in high-needs districts*. Center for Teaching Quality and the Aspen Institute. Retrieved March 9, 2010, from <http://www.teachingquality.org/legacy/AspenUTR.pdf>. See also <http://www.utrunited.org/> for the Urban Teacher Residency United, which is providing assistance to interested parties, crafting standards, and developing a network of urban residency programs.
- 17 See the U.S. Department of Education's recent Teacher Quality Partnership grant awardees, most of which include a residency component, at: <http://www2.ed.gov/programs/tqpartnership/2009awards.html>.
- 18 Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college- and university-based teacher education. *Journal of Teacher Education*, 61(1-2), 89-99.
- 19 The National Council for Accreditation of Teacher Education (NCATE) on January 5, 2010, announced the creation of a Blue Ribbon Panel to restructure the preparation of teachers to reflect teaching as a practice-based profession akin to medicine, nursing, or clinical psychology. The panel will establish a set of guiding principles for the clinical preparation of teachers so preparation focuses more on building the expertise necessary for effective practice as professionals. It will examine characteristics and elements of clinical preparation in exemplary programs, review the research, and make policy recommendations. This work is intended to lead to changes in NCATE standards and accreditation processes to support more clinically based educator preparation and working partnerships between preparation programs and P-12 schools.
- 20 See National Board for Professional Teaching Standards (2002, August), *What teachers should know and be able to do*, p. 13: "Traditional distinctions between knowing and doing have obscured the fact that thought and action interpenetrate in teaching—knowing about something and knowing how to do something are both forms of understanding central to teaching." Arlington, VA.
- 21 Kennedy, M. (1999). The role of preservice teaching education. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: Handbook of policy and practice* (pp. 54-85). San Francisco: Jossey-Bass.
- 22 Interstate New Teacher Assessment and Support Consortium. (1992). *Model standards for beginning teacher licensing, assessment, and development*. Washington, DC: Council of Chief State School Officers.
- 23 Ball, D. (2009, June 18). Statement at the AACTE Congressional Briefing on Innovation and Reform in Teacher Preparation. Washington, DC.
- 24 Hammerness, K., Darling-Hammond, L., Bransford, J., Berliner, D., Cochran-Smith, M., McDonald, M., & Zeichner, K. (2005). How teachers learn and develop. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world: What teachers should learn and be able to do* (pp. 358-389). San Francisco: Jossey-Bass.
- 25 Ibid., p. 377.
- 26 Ball, 2009.
- 27 This is a composite definition, based primarily on Little, O., Goe, L., & Bell, C. (2009, April), *A practical guide to evaluating teacher effectiveness*, Washington, DC: National Comprehensive Center for Teacher Quality; and on Darling-Hammond, L., & Baratz-Snowden, J. (2005), *A good teacher in every classroom: Preparing the highly qualified teachers our children deserve*, San Francisco: Jossey-Bass.
- 28 Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.
- 29 Hart, P. D., Research Associates. (2010, February). *Career changers in the classroom: A national portrait*. Princeton, NJ: Woodrow Wilson National Fellowship Foundation.
- 30 Hammerness et al., 2005.
- 31 Rowan, B., Correnti, R., & Miller, R. J. (2002). *What large-scale, survey research tells us about teacher effects on student achievement: Insights from the Prospects Study of Elementary Schools*. Philadelphia: University of Pennsylvania.
- 32 Darling-Hammond, L., Chung, R., & Frelow, F. (2002). Variation in teacher preparation: How well do different pathways prepare teachers to teach? *Journal of Teacher Education*, 53(4), 286-302.
- 33 Boyd et al., 2008.
- 34 The ABCTE program is a fast-track program designed for career changers that leads to teacher licensure in states that have approved its use. Its candidates must meet four requirements: (1) hold a bachelor's degree from a U.S. Department of Education-accredited college or university; (2) pass a criminal background check; (3) receive a passing score on a subject area exam; and (4) receive a passing score on the ABCTE Professional Teaching Knowledge exam. ABCTE was founded in 2001 with a grant from the U.S. Department of Education. It is promoted as a flexible and cost-effective certification program designed for career

- changers. ABCTE is a state-approved route to full teacher certification in Florida, Idaho, Mississippi, Missouri, New Hampshire, Oklahoma, Pennsylvania, South Carolina, and Utah. See www.abcte.org.
- 35 Tuttle, C. C., Anderson, T., & Glazerman, S. (2009). *ABCTE teachers in Florida and their effect on student performance: Final report*. Princeton, NJ: Mathematica Policy Research.
- 36 National Commission on Teaching and America's Future. (2003). *No dream denied: A pledge to America's children: Summary report*. Washington, DC: Author.
- 37 Whitener, S. D., Gruber, K. J., Lynch, H., Tingos, K., Perona, M., & Fondelier, S. (1997). *Characteristics of stayers, movers, and leavers: Results from the Teacher Follow-up Survey, 1994-95*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.
- 38 California State University. (2002). *First systemwide evaluation of teacher education programs in the California State University: Summary report*. Long Beach: Author; and California State University. (2002). *Preparing teachers for reading instruction (K-12): An evaluation brief by the California State University*. Long Beach: Author.
- 39 Haselkorn & Hammerness, 2008.
- 40 Alter & Cogshall, 2009.
- 41 Shulman, L. S. (1998). Theory, practice, and the education of professionals. *The Elementary School Journal*, 98(5), 511-526.
- 42 Darling-Hammond, 2006; Shulman, 1998.
- 43 Shulman, 1998.
- 44 Hammerness et al., 2005.
- 45 National Council for Accreditation of Teacher Education. (2001). *Standards for professional development schools*. Washington, DC: Author.
- 46 National Council for Accreditation of Teacher Education. (2008). *Professional standards for the accreditation of teacher preparation institutions*. Washington, DC: Author.
- 47 The National Board for Professional Teaching Standards is an independent, nonprofit, nonpartisan, and nongovernmental organization formed in 1987 to advance the quality of teaching and learning. It has developed professional standards for accomplished teaching, created a voluntary system to certify teachers who meet those standards, and helped integrate certified teachers into educational reform efforts. Virtually every state and more than 25% of all school districts now offer financial rewards or incentives for teachers seeking National Board Certification. More than 82,000 educators are now NBCTs. See www.nbpts.org.
- 48 National Board for Professional Teaching Standards. (n.d.). *The five core propositions*; and NBPTS, 2002.
- 49 Levine, 2009.
- 50 From Darling-Hammond, 2006, unless otherwise noted.
- 51 Boyd et al. (2008), pp. 27 and 42.
- 52 Murray, F. B. (2010, February). *Cooperating teachers' evaluation of TEAC accredited teacher education programs*. Washington, DC: Teacher Education Accreditation Council.
- 53 Feiman-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain teaching. *Teachers College Record*, 103(6), 1013-1055. See also Darling-Hammond, L. & Hammerness, K., with Grossman, P., Rust, F., & Shulman, L. (2005), *The design of teacher education programs*, in Darling-Hammond & Bransford (Eds.), *Preparing Teachers for a Changing World: What Teachers Should Learn and Be Able to Do*.
- 54 NCATE, 2008. Standard 3a. See <http://www.ncate.org/public/unitStandardsRubrics.asp?ch=4#stnd3>.
- 55 Personal communication with Linda Darling-Hammond, March 3, 2010.
- 56 A description of the Teacher Performance Assessment is found at <http://www.aacte.org/index.php?/Programs/Teacher-Performance-Assessment-Consortium-TPAC/teacher-performance-assessment-consortium.html>.
- 57 See American Association of Colleges for Teacher Education. (2009, June). *Innovation and reform in teacher preparation*. Washington, DC: Author. Retrieved March 9, 2010, from <http://www.aacte.org/Downloads/Innovation%20and%20Reform%20in%20Teacher%20Preparation.pdf>
- 58 Quality counts. (2010, January 14). *Education Week*, 29(17).
- 59 See the National Association of State Directors of Teacher Education and Certification at <http://www.nasdtc.info/>.

60 See Note 53.

61 See <http://www.aacte.org/index.php?/Programs/Teacher-Performance-Assessment-Consortium-TPAC/teacher-performance-assessment-consortium.html>.

62 These last recommendations coincide with those of the National Comprehensive Center on Teacher Quality. See <http://www.tqsource.org/publications/clinicalPractice.pdf>.

63 See the U.S. Department of Education's Race to the Top guidelines at <http://www2.ed.gov/legislation/FedRegister/announcements/2010-1/012710c.html>.

64 See, for example, Secretary Duncan's speeches at the AACTE Annual Meeting & Exhibits on February 17, 2010 (<http://www2.ed.gov/news/speeches/2010/02/02192010.html>) and at Teachers College, Columbia University on October 22, 2009 (<http://www.tc.columbia.edu/news/article.htm?id=7195>).

65 Teacher Quality Partnership guidelines are found at <http://www2.ed.gov/programs/tqpartnership/index.html>.

66 Senate HELP Committee hearing March 6, 2007, on NCLB Reauthorization: Strategies for Attracting, Supporting, and Retaining High Quality Educators. See http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_senate_hearings&doid=34-052.

67 The Common Core State Standards Initiative is a state-led effort coordinated by the National Governors Association Center for Best Practices and the Council of Chief State School Officers. Governors and state commissioners of education from 48 states, 2 territories, and the District of Columbia have committed to developing a common core of state standards in English language arts and mathematics for grades K-12. The college- and career-readiness standards were released for public comment in September 2009. The K-12 standards are expected to be released for public comment in March. Both sets of standards, the college- and career-readiness and the K-12, are expected to be finalized in early 2010. See <http://www.corestandards.org/>.

68 See the Health Professions Education Assistance Act at http://www.eric.ed.gov/ERICWebPortal/custom/portlets/recordDetails/detailmini.jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=ED148192&ERICExtSearch_SearchType_0=no&accno=ED148192.

69 Haselkorn & Hammerness, 2008.

70 In line with the requirement of having 3 full years of teaching before a teacher can apply to be certified by the National Board for Professional Teaching Standards. See http://www.nbpts.org/become_a_candidate/eligibility_policies.

71 The critical importance of extended, embedded clinical preparation has been acknowledged, for example, by: AACTE, the Center for Teaching Quality, the Council of Chief State School Officers, the National Board for Professional Teaching Standards, the National Comprehensive Center on Teacher Quality, the National Commission on Teaching and America's Future, the National Council for Accreditation of Teacher Education, the Teacher Education Accreditation Council, Teachers for a New Era, the Woodrow Wilson National Fellowship Foundation, the U.S. Congress, the U.S. Department of Education, Presidential Candidate Barack Obama, and many more.

AACTE Member Institutions

Alabama

Alabama A&M University
Alabama State University
Athens State University
Auburn University
Auburn University Montgomery
Birmingham Southern College
Jacksonville State University
Miles College
Samford University
Spring Hill College
Stillman College
Troy University
Tuskegee University
University of Alabama
University of Alabama at Birmingham
University of Alabama Huntsville
University of Mobile
University of Montevallo
University of North Alabama
University of South Alabama
University of West Alabama

Alaska

University of Alaska Anchorage
University of Alaska Fairbanks
University of Alaska Southeast

Arizona

Arizona State University
Arizona State University, West Campus
Grand Canyon University
Northern Arizona University
University of Arizona
University of Phoenix Arizona

Arkansas

Arkansas State University
Arkansas Tech University
Harding University
Henderson State University
John Brown University
Lyon College
Ouachita Baptist University
Philander Smith College
Southern Arkansas University
University of Arkansas
University of Arkansas at Little Rock
University of Arkansas at Monticello
University of Arkansas at Pine Bluff
University of Arkansas Fort Smith
University of Central Arkansas
University of the Ozarks

California

Alliant International University
California Lutheran University
California Polytechnic State University
California State Polytechnic Univ. Pomona
California State University Stanislaus

California State University Bakersfield
California State University Chico
California State Univ. Dominguez Hills
California State University East Bay
California State University Fresno
California State University Fullerton
California State University Long Beach
California State University Los Angeles
California State University Northridge
California State Univ. San Bernardino
California State University Sacramento
California State University San Marcos
Chapman University
Claremont Graduate University
Loyola Marymount University
National University
Pepperdine University
Point Loma Nazarene University
Saint Mary's College of California
San Diego State University
San Jose State University
Sonoma State University
Stanford University
Touro University California
University of California Los Angeles
University of La Verne
University of San Diego
University of San Francisco
University of Southern California
University of the Pacific

Colorado

Adams State College
Colorado College
Colorado State University
Fort Lewis College
Jones International University
Metropolitan State College
University of Colorado at Boulder
University of Colo. at Colorado Springs
University of Colorado Denver
University of Denver
University of Northern Colorado
University of Phoenix Colorado

Connecticut

Central Connecticut State University
Eastern Connecticut State University
Fairfield University
Quinnipiac University
Sacred Heart University
Saint Joseph College
Southern Connecticut State University
University of Connecticut
University of Hartford
Western Connecticut State University

Delaware

Delaware State University
University of Delaware

Wesley College
Wilmington University

District of Columbia

American University
Catholic University of America
Gallaudet University
George Washington University
Howard University
Trinity College
University of the District of Columbia

Florida

Bethune Cookman University
Florida A&M University
Florida Atlantic University
Florida Gulf Coast University
Florida International University
Florida State University
Nova Southeastern University
Saint Leo University
Southeastern University
University of Central Florida
University of Florida
University of Miami
University of North Florida
University of South Florida
University of South Florida St. Petersburg
University of West Florida
Warner University

Georgia

Albany State University
Armstrong Atlantic State University
Augusta State University
Berry College
Brenau University
Brewton Parker College
Clark Atlanta University
Clayton State University
Columbus State University
Dalton State College
Emory University
Fort Valley State University
Georgia College & State University
Georgia Southern University
Georgia Southwestern State University
Georgia State University
Kennesaw State University
Macon State College
Mercer University
North Georgia College & State University
Paine College
Spelman College
University of Georgia
University of West Georgia
Valdosta State University

Hawaii

University of Hawaii at Manoa

University of Hawaii West Oahu
University of Phoenix Hawaii

Idaho

Boise State University
College of Idaho
Idaho State University
Lewis Clark State College
Northwest Nazarene University
University of Idaho

Illinois

Augustana College
Aurora University
Bradley University
Chicago State University
Columbia College Chicago
Concordia University
DePaul University
Dominican University
Eastern Illinois University
Elmhurst College
Governors State University
Greenville College
Illinois College
Illinois State University
Lewis University
Loyola University Chicago
McKendree University
Millikin University
National Louis University
North Park University
Northeastern Illinois University
Northern Illinois University
Olivet Nazarene University
Roosevelt University
Saint Xavier University
Southern Illinois University Carbondale
Southern Illinois University Edwardsville
University of Illinois at Chicago
University of Illinois at Urbana Champaign
Western Illinois University
Wheaton College

Indiana

Anderson University
Ball State University
Butler University
DePauw University
Franklin College
Goshen College
Grace College
Huntington University
Indiana State University
Indiana University
Indiana University East
Indiana University Kokomo
Indiana University Northwest
Indiana Univ. Purdue Univ. Fort Wayne
Indiana University South Bend
Indiana University Southeast
Indiana Wesleyan University

Manchester College
Marian University
Oakland City University
Purdue University
Purdue University Calumet
Purdue University North Central
Saint Joseph's College
Saint Mary of the Woods College
Saint Mary's College
Taylor University
University of Evansville
University of Indianapolis
University of Notre Dame
University of Southern Indiana
Valparaiso University
Wabash College

Iowa

Ashford University
Central College
Clarke College
Drake University
Graceland University
Iowa State Univ. of Science and Tech.
Loras College
Morningside College
Mount Mercy College
Northwestern College
Saint Ambrose University
Simpson College
University of Iowa
Wartburg College

Kansas

Baker University
Benedictine College
Emporia State University
Fort Hays State University
Kansas State University
MidAmerica Nazarene University
Ottawa University
Pittsburg State University
Southwestern College
Tabor College
University of Kansas
University of Saint Mary
Washburn University
Wichita State University

Kentucky

Asbury College
Bellarmine University
Berea College
Brescia University
Campbellsville University
Eastern Kentucky University
Georgetown College
Kentucky State University
Lindsey Wilson College
Morehead State University
Murray State University
Northern Kentucky University

Pikeville College
Spalding University
Thomas More College
Transylvania University
Union College
University of Kentucky
University of Louisville
University of the Cumberlands
Western Kentucky University

Louisiana

Centenary College of Louisiana
Dillard University
Grambling State University
Louisiana College
Louisiana State University Alexandria
Louisiana State Univ. and A&M College
Louisiana State University Shreveport
Louisiana Tech University
Nicholls State University
Northwestern State University
Southeastern Louisiana University
Southern University and A&M College at
Baton Rouge
Southern University at New Orleans
University of Louisiana at Lafayette
University of Louisiana at Monroe
University of New Orleans
Xavier University of Louisiana

Maine

University of Maine
University of Maine at Farmington
University of Southern Maine

Maryland

Bowie State University
Coppin State University
Frostburg State University
Hood College
Johns Hopkins University
Loyola College in Maryland
McDaniel College
Morgan State University
Mount Saint Mary's University
Salisbury University
Stevenson University
Towson University
University of Maryland Baltimore County
University of Maryland College Park
University of Maryland Eastern Shore
University of Maryland University College

Massachusetts

Boston College
Bridgewater State College
Eastern Nazarene College
Framingham State College
Harvard University
Lesley University
Northeastern University
Salem State College

Suffolk University
University of Massachusetts Amherst
University of Massachusetts Boston
University of Massachusetts Dartmouth
University of Massachusetts Lowell
Westfield State College
Wheelock College

Michigan

Andrews University
Calvin College
Central Michigan University
Eastern Michigan University
Ferris State University
Grand Valley State University
Madonna University
Michigan State University
Northern Michigan University
Oakland University
Saginaw Valley State University
Spring Arbor University
University of Detroit Mercy
University of Michigan
University of Michigan Flint
Wayne State University
Western Michigan University

Minnesota

Augsburg College
Bemidji State University
Bethel University
College of St. Benedict/St. John's Univ.
College of Saint Scholastica
Concordia College
Concordia University Saint Paul
Gustavus Adolphus College
Hamline University
Metropolitan State University
Minnesota State University Mankato
Minnesota State University Moorhead
Northwestern College
Saint Catherine University
Saint Cloud State University
Saint Olaf College
University of Minnesota
University of Minnesota Duluth
University of Minnesota Morris
University of Saint Thomas
Walden University
Winona State University

Mississippi

Alcorn State University
Blue Mountain College
Delta State University
Jackson State University
Millsaps College
Mississippi College
Mississippi State University
Mississippi University for Women
Mississippi Valley State University
University of Mississippi

University of Southern Mississippi
William Carey College

Missouri

Avila University
College of the Ozarks
Culver-Stockton College
Drury University
Evangel University
Fontbonne University
Harris-Stowe State University
Lincoln University
Lindenwood University
Maryville University of Saint Louis
Missouri Baptist University
Missouri Southern State University
Missouri State University
Missouri Western State University
Northwest Missouri State University
Park University
Rockhurst University
Southeast Missouri State University
University of Central Missouri
University of Missouri at Kansas City
University of Missouri Columbia
University of Missouri Saint Louis
Washington University
Webster University
William Jewell College

Montana

Montana State University
Montana State University Billings
University of Great Falls
University of Montana
University of Montana Western

Nebraska

Chadron State College
Concordia University
Creighton University
Doane College
Hastings College
Midland Lutheran College
Nebraska Wesleyan University
Peru State College
Union College
University of Nebraska at Kearney
University of Nebraska at Omaha
University of Nebraska Lincoln
Wayne State College
York College

Nevada

Nevada State College
Nova Southeastern University Nevada
University of Nevada Las Vegas
University of Phoenix Las Vegas

New Hampshire

Keene State College
Plymouth State University
University of New Hampshire

New Jersey

Caldwell College
College of New Jersey
Georgian Court University
Kean University
Monmouth University
Montclair State University
New Jersey City University
Princeton University
Ramapo College of New Jersey
Richard Stockton College of New Jersey
Rider University
Rowan University
Rutgers University New Brunswick
Seton Hall University
William Paterson University of New Jersey

New Mexico

Eastern New Mexico University
New Mexico Highlands University
New Mexico State University
University of New Mexico
Western New Mexico University

New York

Adelphi University
Bank Street College of Education
Brooklyn College of CUNY
Canisius College
City College of New York of CUNY
College of Saint Rose
College of Staten Island, CUNY
Columbia University
Dowling College
D'Youville College
Five Towns College
Fordham University Lincoln Center
Hofstra University
Hunter College of CUNY
Iona College
Lehman College of CUNY
Manhattanville College
Molloy College
New York City College of Tech., CUNY
New York Institute of Technology
New York University
Niagara University
Pace University
Queens College of CUNY
Sage Colleges
Saint Bonaventure University
Saint John Fisher College
Saint Thomas Aquinas College
Siena College
SUNY College at Cortland
SUNY at New Paltz
SUNY College at Oneonta
SUNY College at Brockport
SUNY Buffalo State College
SUNY at Geneseo
SUNY at Oswego



Syracuse University
Utica College
Wagner College
York College of CUNY

North Carolina

Barton College
Bennett College
Campbell University
Chowan University
Davidson College
East Carolina University
Elizabeth City State University
Elon University
Fayetteville State University
Gardner-Webb University
Greensboro College
Johnson C Smith University
Lees McRae College
Lenoir Rhyne University
Livingstone College
Meredith College
Methodist College
North Carolina A&T State University
North Carolina Central University
North Carolina State University
Peace College
Saint Augustine's College
Salem College
Shaw University
University of North Carolina at Chapel Hill
University of North Carolina at Charlotte
University of N. Carolina at Greensboro
University of North Carolina at Pembroke
University of North Carolina Wilmington
Wake Forest University
Western Carolina University
Wingate University
Winston-Salem State University

North Dakota

Dickinson State University
Mayville State University
Minot State University
North Dakota State University
University of North Dakota
Valley City State University

Ohio

Baldwin-Wallace College
Bluffton University
Bowling Green State University
Capital University
Case Western Reserve University
Central State University
Cleveland State University
Heidelberg University
Hiram College
John Carroll University
Kent State University
Lourdes College
Marietta College

Miami University
Mount Vernon Nazarene University
Notre Dame College
Ohio Dominican University
Ohio Northern University
Ohio State University
Ohio University
Ohio Wesleyan University
Otterbein College
Shawnee State University
University of Akron
University of Cincinnati
University of Dayton
University of Findlay
University of Rio Grande
University of Toledo
Urbana University
Ursuline College
Walsh University
Wittenberg University
Wright State University
Xavier University
Youngstown State University

Oklahoma

Cameron University
East Central University
Langston University
Northeastern State University
Northwestern Oklahoma State University
Oklahoma Baptist University
Oklahoma Christian University
Oklahoma City University
Oklahoma Panhandle State University
Oklahoma State University
Oklahoma Wesleyan University
Oral Roberts University
Southeastern Oklahoma State University
Southern Nazarene University
Southwestern Oklahoma State University
University of Central Oklahoma
University of Oklahoma
Univ. of Science and Arts of Oklahoma

Oregon

George Fox University
Lewis and Clark College
Oregon State University
Pacific University
Portland State University
Southern Oregon University
University of Oregon
University of Portland
Western Oregon University
Willamette University

Pennsylvania

Alvernia College
Bloomsburg University of Pennsylvania
California University of Pennsylvania
Cheyney University
Duquesne University

Edinboro University of Pennsylvania
Gannon University
Indiana University of Pennsylvania
King's College
Kutztown University
Lehigh University
Lincoln University of Pennsylvania
Lock Haven University
Mansfield University
Millersville University of Pennsylvania
Penn State Harrisburg
Penn State University
Shippensburg University
Slippery Rock University of Pennsylvania
Temple University
University of Pennsylvania
University of Pittsburgh
University of Scranton
Widener University

Puerto Rico

University of Phoenix Puerto Rico
University of Puerto Rico Rio Piedras

Rhode Island

Providence College
Rhode Island College
Roger Williams University
Salve Regina University
University of Rhode Island

South Carolina

Anderson University
Benedict College
Charleston Southern University
Citadel Military College of South Carolina
Claflin University
Clemson University
Coastal Carolina University
College of Charleston
Erskine College
Francis Marion University
Furman University
Lander University
Limestone College
Morris College
Newberry College
Presbyterian College
South Carolina State University
University of South Carolina
University of South Carolina Aiken
University of South Carolina Beaufort
University of South Carolina Upstate
Winthrop University
Wofford College

South Dakota

Augustana College
Black Hills State University
Dakota State University
Mount Marty College
Northern State University

South Dakota State University
University of South Dakota

Tennessee

Aquinas College
Austin Peay State University
Belmont University
Carson-Newman College
Christian Brothers University
Crichton College
Cumberland University
East Tennessee State University
Fisk University
Freed Hardeman University
Lee University
LeMoyne Owen College
Lipscomb University
Middle Tennessee State University
Milligan College
South College
Southern Adventist University
Tennessee State University
Tennessee Technological University
Trevecca Nazarene University
Union University
University of Memphis
University of Tennessee
University of Tennessee at Chattanooga
University of Tennessee at Martin
Vanderbilt University Peabody College

Texas

Angelo State University
Austin College
Baylor University
Lamar University
Midwestern State University
Our Lady of the Lake Univ. of San Antonio
Sam Houston State University
Southern Methodist University
Southwestern University
Stephen F. Austin State University
Texas A&M International University
Texas A&M University
Texas A&M University Commerce
Texas A&M University Corpus Christi
Texas A&M University Kingsville
Texas Christian University
Texas Southern University
Texas State University San Marcos
Texas Tech University
Texas Woman's University
Trinity University
University of Houston
University of Houston Clear Lake
University of Houston Victoria
University of Mary Hardin Baylor
University of North Texas
University of Saint Thomas
University of Texas at Arlington
University of Texas at El Paso

University of Texas at Tyler
University of Texas of the Permian Basin
University of the Incarnate Word

Utah

Brigham Young University
University of Phoenix Utah
University of Utah
Utah State University

Vermont

University of Vermont

Virgin Islands

University of the Virgin Islands

Virginia

Bridgewater College
College of William and Mary
Eastern Mennonite University
George Mason University
Hampton University
James Madison University
Liberty University
Longwood University
Mary Baldwin College
Marymount University
Norfolk State University
Old Dominion University
Radford University
Regent University
Saint Paul's College
University of Virginia
Virginia Commonwealth University
Virginia Polytechnic Inst. and State Univ.
Virginia State University
Virginia Union University

Washington

Central Washington University
City University of Seattle
Eastern Washington University
Evergreen State College
Gonzaga University
Northwest University
Pacific Lutheran University
Saint Martin's University
Seattle Pacific University
Seattle University
University of Puget Sound
University of Washington
Washington State University
Western Washington University
Whitworth University

West Virginia

Alderson Broaddus College
Bethany College
Bluefield State College
Concord University
Fairmont State University
Glennville State College
Salem International University

Shepherd University
West Liberty University
West Virginia State University
West Virginia University
West Virginia University at Parkersburg
West Virginia Wesleyan College

Wisconsin

Alverno College
Cardinal Stritch University
Edgewood College
Marian University
Marquette University
Mount Mary College
Silver Lake College
University of Wisconsin Eau Claire
University of Wisconsin Green Bay
University of Wisconsin La Crosse
University of Wisconsin Madison
University of Wisconsin Milwaukee
University of Wisconsin Oshkosh
University of Wisconsin Parkside
University of Wisconsin River Falls
University of Wisconsin Stevens Point
University of Wisconsin Stout
University of Wisconsin Whitewater
Viterbo University

Wyoming

University of Wyoming

Affiliate Members

California Commission on Teacher
Credentialing
Carnegie Foundation for the
Advancement of Teaching (CA)
Connecticut State Dept. of Education
Hinds Community College (MS)
Howard Community College (MD)
J. Sargeant Reynolds Community Center
for Teacher Education (VA)
Kansas State Department of Education
Maricopa Community Colleges (AZ)
Metro High School (OH)
Montgomery College (MD)
Nat'l Board for Prof. Teaching Stds. (VA)
Okla. Commis. for Teacher Preparation
Okla. State Regents for Higher Education
Queensborough Comm. College, CUNY
Rhode Island Department of Elementary
and Secondary Education
San Roque Charitable Trust (CA)
South Carolina Commission on Higher
Education
South Carolina Department of Education
SUNY System Administration
University of Aberdeen (Scotland)
University of Wisconsin System
Administration
Western Governors University (UT)
Wisconsin Department of Public
Instruction

