



TRANSFORMING
TEACHER EDUCATION
THROUGH
CLINICAL PRACTICE:
A NATIONAL STRATEGY
TO PREPARE
EFFECTIVE TEACHERS

REPORT OF THE BLUE RIBBON PANEL ON
CLINICAL PREPARATION AND PARTNERSHIPS
FOR IMPROVED STUDENT LEARNING

*COMMISSIONED BY
THE NATIONAL COUNCIL
FOR ACCREDITATION
OF TEACHER EDUCATION*



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Executive Summary

The education of teachers in the United States needs to be turned upside down. To prepare effective teachers for 21st century classrooms, teacher education must shift away from a norm which emphasizes academic preparation and course work loosely linked to school-based experiences. Rather, it must move to programs that are fully grounded in clinical practice and interwoven with academic content and professional courses.

This demanding, clinically based approach will create varied and extensive opportunities for candidates to connect what they learn with the challenge of using it, while under the expert tutelage of skilled clinical educators. Candidates will blend practitioner knowledge with academic knowledge as they learn by doing. They will refine their practice in the light of new knowledge acquired and data gathered about whether their students are learning.

Today there are many examples of excellent clinically based programs, and many are cited in this report. These programs can be found in higher education and in new pathways to prepare teachers. However, the nation needs an entire system of excellent programs, not a cottage industry of pathbreaking initiatives.

The nation needs an entire system of excellent programs, not a cottage industry of pathbreaking initiatives.

In order to make this change, teacher education programs must work in close partnership with school districts to redesign teacher preparation to better serve prospective teachers and the students they teach. Partnerships should include shared decision making and oversight on candidate selection and completion by school districts and teacher education programs. This will bring accountability closer to the classroom, based largely on evidence of candidates' effective performance and their impact on student learning. It also will ensure professional accountability, creating a platform to ensure that teachers are able to own, and fully utilize, the knowledge base of most effective practice. In this way, we believe, public and professional accountability for candidate effectiveness can be aligned for the first time.

Creating a system built around programs centered on clinical practice also holds great promise for advancing shared responsibility for teacher preparation; supporting the development of complex teaching skills; and ensuring that all teachers will know how to work closely with colleagues, students, and community. It will be a crucial step towards empowering teachers to meet the urgent needs of schools and the challenges of 21st century classrooms.

The vision for transforming the education of the nation's nearly four million teacher workforce presented in these pages comes not from any one group but from a diverse group representing a broad range of perspectives. The NCATE Blue Ribbon Panel on Clinical Preparation and Partnerships for Improved Student Learning is comprised of state officials, P-12 and higher education leaders, teachers, teacher educators, union representatives, and critics of teacher education. We spent the past ten months addressing the gap between how teachers are prepared and what schools need. As part of this effort, we have identified 10 design principles for clinically based programs and a comprehensive series of strategies to revolutionize teacher education.

What Needs To Be Done

We recognize that revamping teacher education around clinical practice is not only a matter of adding more hours for student teaching, ensuring improved mentoring of candidates, or adding new courses here and there, even though many preparation programs have made these significant improvements. This report recommends sweeping changes in how we deliver, monitor, evaluate, oversee, and staff clinically based preparation to nurture a whole new form of teacher education. Specifically, the report calls for:

- **More Rigorous Accountability.** All teacher education programs should be accountable for – and their accreditation contingent upon – how well they address the needs of schools and help improve P-12 student learning. This will require more rigorous monitoring and enforcement for program approval and accreditation according to a clear and definite timeline and holding all programs to the same high standards. School districts will have a more significant role in designing and implementing teacher education programs, selecting candidates for placement in their schools, and assessing candidate performance and progress.
- **Strengthening Candidate Selection and Placement.** In order to make teacher education programs more selective and diverse, the selection process must take into consideration not only test scores but key attributes that lead to effective teachers. We urge states and the federal government to develop opportunities for teacher candidates to work in hard-to-staff schools through a “matching” program similar to that developed by the American Association for Medical Colleges for placing medical school graduates in teaching hospitals for internships and residencies. The report calls for clinical internships to take place in school settings that are structured and staffed to support teacher learning *and* student achievement. We also call on states and districts to require that candidates be supervised and mentored by effective practitioners, coaches, and clinical faculty. Clinical faculty – drawn from higher education and the P-12 sector – will have a say about whether teacher candidates are ready to enter the classroom on the basis of the candidate’s performance and student outcomes.
- **Revamping Curricula, Incentives, and Staffing.** It is time to fundamentally redesign preparation programs to support the close coupling of practice, content, theory, and pedagogy. Preparation faculty and mentor teachers should routinely be expected to model appropriate uses of assessment to enhance learning. We also call for significant changes in the reward structure in academe and the staffing models of P-12 schools to value clinical teaching and support effective mentoring and improvement in clinical preparation. Higher education must develop and implement alternative reward structures that enhance and legitimize the role of clinical faculty and create dual assignments for faculty with an ongoing role as teachers and mentors in schools. Similarly, school districts can work with preparation program partners to advance new staffing models patterned after teaching hospitals, which will enable clinical faculty, mentors, coaches, teacher interns and residents to work together to better educate students and prospective teachers as part of clinical practice teams. This report also urges the development of rigorous criteria for the preparation, selection, and certification of clinical faculty and mentors.
- **Supporting Partnerships.** State policies should provide incentives for such partnership arrangements, and should remove any inhibiting legal or regulatory barriers. This will require



new financial incentives that would reward expansion of these partnerships. Incentives also should reward programs that produce graduates *who do want to teach* and are being prepared in fields *where there is market demand*. Universities should ensure that their teacher education programs are treated like other professional programs, and get their fair share of funding from the revenues they generate to support the development of clinically based programs.

- **Expanding the Knowledge Base to Identify What Works and Support Continuous Improvement.** Currently, there is not a large research base on what makes clinical preparation effective. We urge the federal and state government and philanthropy to invest in new research to support the development and continuous improvement of new models and to help determine which are the most effective. NCATE* should facilitate a national data network among interested collaborators — states, institutions, school districts and others — to help gather and disseminate what we learn from this research. Partnerships need this information on a continuing basis to trace the progress of their own programs and make day-to-day decisions. Sharing this information across the nation will help to shape future research as well as public policies on preparation.

Hard Choices and Cost Implications

Implementing this agenda is difficult but doable. It will require reallocation of resources and making hard choices about institutional priorities, changing selection criteria, and restructuring staffing patterns in P-12 schools. Clinically based programs may cost more per candidate than current programs but will be more cost-effective by yielding educators who enter the field ready to teach, which will increase productivity and reduce costs associated with staff development and turnover.

We urge states, institutions, and school districts to explore alternative funding models, including those used in medicine to fuse funds for patient care and the training of residents in teaching hospitals. We also urge states and the federal government to provide incentives for programs that prepare teachers in high-need content and specialty areas and for teaching in schools with the most challenging populations.

An Opportune Moment

This is an opportune time to introduce these changes, in spite of the current economic climate. Federal, state, and district policy continue to focus on improving the quality of teaching and teachers as a cornerstone of school improvement. The development and acceptance of common core standards and InTASC core teaching standards for teachers are already helping to frame revisions of teacher education curricula. The expansion of state databases permits new kinds of accountability approaches, more useful “feedback” for schools, districts and preparation programs, and more easily accessible information. Efforts to invest in research on effective practice and the development of valid new tools to assess teacher performance and measure various domains of teaching that have been linked to student outcomes create an opportunity for the panel’s recommendations to land on fertile ground.

Although the totality of the changes recommended is sweeping, they can be scaffolded. We should take advantage of this moment by beginning to make some of them now and at little or no incremental expense. State policy makers can revamp teacher licensing requirements by raising expectations for graduates of teacher preparation programs. State program approval policies can be

* NCATE convened and supported the work of the Panel. It has recently entered into partnership with the Teacher Accreditation Council (TEAC) to create the Council for the Accreditation of Educator Preparation (CAEP) as the unified accreditor for the field. We expect this new partnership to provide accreditation with even greater leverage to implement the Panel’s recommendations.

reformed to focus on clinical preparation, program outcomes, and partnerships with P-12 schools. School districts and preparation programs can begin to build powerful partnerships in collaboration with teachers' associations. Higher education institutions can reallocate resources internally at the campus and school or department level to facilitate reform. NCATE can raise its accreditation standards. These are changes that can create momentum and lay the foundation for other reforms such as funding.

Call To Action

This report concludes with a Call to Action that urges teacher education programs to transform preparation of all teachers, regardless of where they teach, but also notes the urgent need to address the staffing and learning challenges facing high-need and low-performing schools. To support this implementation, we call on federal lawmakers and the U.S. Department of Education to invest Elementary and Secondary Education Act funds, funds available through School Improvement Grants for school turnaround efforts, and the continued funding of grants to school and university partnerships.

Already, eight states – California, Colorado, Louisiana, Maryland, New York, Ohio, Oregon and Tennessee – have signed letters of intent to implement the new agenda. As part of the NCATE Alliance for Clinical Teacher Preparation, these states will work with national experts, pilot diverse approaches to implementation, and bring new models of clinical preparation to scale in their states. Working with NCATE and other invested organizations including the American Association of Colleges of Teacher Education, the Association of Teacher Educators, the teacher unions, and their state and local affiliates, the Alliance also will reach out to and learn from other states working to transform teacher education.

In addition to ensuring more rigorous monitoring and enforcement for program approval and accreditation, NCATE should pursue an agenda to promote the Panel recommendations. This will include raising the bar for accreditation; expanding membership and visiting teams to include a higher proportion of major research universities and selective colleges; standard setting to support transformation of preparation programs; capacity building that will involve both states and the profession; and promoting research, development and dissemination of prototypes and scale-up strategies. These activities are intended to inform and strengthen the role of accreditation in supporting the transformation of the education of teachers to a clinically based, partnership supported approach.

We encourage all key stakeholders to join us in this effort, for much more is at stake than teacher education as an enterprise. Our economic future depends on our ability to ensure that all teachers have the skills and knowledge they will need to help their students overcome barriers to their success and complete school college- and career-ready. The next few years will help shape education policy and practice for many years to come. A comprehensive strategy to transform teacher education through clinical practice must be part of any significant national approach to school reform. We hope that this plan will serve as a road map for preparing the effective teachers and school leaders the nation will need in the future and provide the impetus for concerted action.



Transforming Teacher Education through Clinical Practice: A National Strategy to Prepare Effective Teachers

Unprecedented Responsibilities, Unmet Challenges

While family and poverty deeply affect student performance, research over the past decade indicates that no *in-school* intervention has a greater impact on student learning than an effective teacher. To prepare teachers for the unprecedented responsibilities they are required to take on, the United States must dramatically transform the teacher-preparation programs that educate the nation's four million teacher workforce.

But to help the nation compete in the global economy, today's teachers will have to educate all students – including those from increasingly diverse economic, racial, linguistic, and academic backgrounds – to the same high learning outcomes. They must ensure that all children master rigorous course content, be able to apply what they learn to think critically and solve problems, and complete high school “college-and workforce-ready.” They must be able to balance a focus on academic learning with an ability to respond to each student's cognitive and social-emotional developmental needs.¹

These realities are having a profound impact on the classroom and demand programs that prepare teachers with the capacity to meet them. We need teachers who are well versed in their curricula, know their communities, apply their knowledge of child growth and development, use assessments to monitor student progress and effectively engage students in learning. Teachers need collaboration, communication, and problem-solving skills to keep pace with rapidly changing learning environments and new technologies.

While teacher education has made improvements through innovation in institutions of higher education and alternative pathways, and while teaching has become more attractive to talented non-

traditional recruits, much more needs to be done, and more quickly. The public is demanding better-prepared teachers who will be effective, remain in teaching, and sustain school improvement. Many critics, policymakers, teachers, and school district leaders nationwide have raised concerns that today’s teacher education programs are inadequately equipped to prepare educators for these new realities.

How can we ensure that all new teachers will be better prepared to strengthen student learning?

Improving the clinical practice of educators, experts say, holds great promise for sparking improvement in P-12 learning and achievement. The National Research Council (NRC) report, *Preparing Teachers: Building Evidence for Sound Policy*,² identifies clinical preparation (or “field experience”) as one of the three “aspects of teacher preparation that are likely to have the highest potential for effects on outcomes for students,” along with content knowledge and the quality of teacher candidates (p.180). Briefing papers prepared for the Panel³ cite research suggesting that teachers benefit from preparation programs that provide well supervised field experiences (analogous to medical school internships) that are congruent with candidates’ eventual teaching, and that feature a capstone project – often a portfolio that reflects the candidate’s development of practice and evidence of student learning.⁴ Research on professional development schools and urban teacher residencies indicates higher retention rates among new teachers⁵ prepared in these intensive clinically based programs and greater teacher efficacy. Teacher effectiveness studies focused on the relationship of specific instructional practices and student achievement in core subject areas — such as mathematics and reading — are providing critical input for strengthening clinical preparation.⁶

Turning the Education of Teachers “Upside-Down”

The needs of public education are greater than they have ever been before. In light of this, we need a dramatic overhaul of how teachers are prepared. This will require two major shifts. First, the very focus of teacher education programs needs to be redesigned from beginning to end. Teacher education has too often been segmented with subject-matter preparation, theory, and pedagogy taught in isolated intervals and too far removed from clinical practice. But teaching, like medicine, is a profession of practice, and prospective teachers must be prepared to become expert practitioners who know how to use the knowledge of their profession to advance student learning

The National Research Council recently identified clinical preparation as one of the three “aspects of teacher preparation that are likely to have the highest potential for effects on outcomes for students,” along with content knowledge and quality of candidate teachers.

and how to build their professional knowledge through practice. In order to achieve this we must place practice at the center of teaching preparation.

In this, educators can take guidance from Sir William Osler, one of the key figures in professionalizing medical education, who noted: “He who studies medicine without books sails an uncharted sea, but he who studies medicine without patients does not go to sea at all.”

Expert practitioners need to study content and pedagogy, concepts of learning and child development to know the waters they will



“We must place practice at the center of teaching preparation.”

navigate, but they also must be able to demonstrate that they can use what they know in ways that help real students learn. This means putting emphasis on giving teacher candidates opportunities to get their sea legs by helping them develop and study their practice and the practice of their mentors and more experienced colleagues, use what they know, and improve their performance in schools and classrooms under the tutelage of expert clinical educators.

Second, this transformation cannot be accomplished by teacher preparation programs working alone. Preparation programs, school districts, teachers and their representatives and state and federal policymakers need to accept that their common goal of preparing effective teachers for improved student achievement cannot be achieved without each other’s full participation. They must form new strategic partnerships to share in the responsibility of preparing teachers in radically different ways.

All teacher preparation programs and districts have to start thinking about teacher preparation as a responsibility they share, working together. Only when preparation programs become deeply engaged with schools will their clinical preparation become truly robust and will they be able to support the development of candidates’ urgently needed skills and learn what schools really need. Conversely, only through much closer cooperation with preparation programs will districts be able to hire new teachers who are better prepared to be effective in their schools. Through partnerships, preparation programs will be able to integrate course work, theory and pedagogy with practitioner knowledge.⁷

As indicated in the chart below, the planning, funding and operations will become integrated into the daily functions of the partner groups, reflect what is known about best practices, and be made sustainable over time.

A Continuum of Partnership Development for Clinically Based Teacher Preparation*				
Goal	Beginning	Developing	Integrated	Sustaining and Generative
Partnerships that support: <ul style="list-style-type: none"> ■ Development of clinical practice knowledge, skills, and dispositions ■ Student Achievement ■ Inquiry for continuous improvement 	Beliefs, verbal commitments, plans, organization, and initial work are consistent with the goals of the partnership	Partners pursue the goals with partial institutional support	The goals of the partnership are integrated into the partnering institutions. Partnership work is expected and supported, and reflects what is known about best practice.	Systemic changes take place in policy and practice in partnering institutions. Policy at the district, state, and national level supports partnerships for clinically based teacher preparation and improved student learning.

*Source: NCATE (2001). *Standards for Professional Development Schools*.

All teacher preparation programs and districts have to start thinking about teacher preparation as a responsibility they share, working together.

As the vast majority of teachers are, and will likely continue to be, prepared in institutions of higher education these changes have significant implications for academe. These arrangements will require reallocation of resources, new staffing models for schools and reward structures for faculty, and a shift in the emphasis of teacher education programs *from an emphasis on course work to using evidence-based knowledge to inform practice*

so it effectively addresses students' needs. Here again, medical education, incorporating research and clinical faculty, provides an established model from which we can learn.

Status of the Field

The Blue Ribbon Panel examined the status of the field and found that clinical preparation is poorly defined and inadequately supported. While new and experienced teachers repeatedly cite classroom-based experiences and student teaching as the most highly valued elements of their preparation, clinical practice remains the most ad hoc part of teacher education in many programs. Most states require student teaching, the majority requiring somewhere between 10 and 14 weeks, but with few exceptions, such as Maryland and the state of Washington, they are silent on what this crucially important experience should look like, and how programs should be held accountable. Although roughly half of the states require training of mentors, they do not specify what the roles and requirements of mentors should be.⁸

This has caused great variation in how and where clinical training is delivered and an endemic unevenness in quality. A teacher candidate may spend a full year in a professional development school teaching every day with an expert mentor, having had several practicum experiences prior to that year. Another candidate may have the eight weeks of required student teaching experience with an inexperienced mentor at the conclusion of the preparation program. Still others begin serving as teachers of record with little or no prior clinical practice.

The Panel identified 10 key principles that should be followed in designing more effective clinically based preparation programs.

“Most states require student teaching, the majority requiring somewhere between 10 and 14 weeks. With few exceptions, they are silent on what this crucially important experience should look like, and how programs should be held accountable.”



10

DESIGN PRINCIPLES

10 Design Principles for Clinically Based Preparation

1. Student learning is the focus: P-12 student learning must serve as the focal point for the design and implementation of clinically based teacher preparation, and for the assessment of newly minted teachers and the programs that have prepared them. Candidates need to develop practice that advances student knowledge as defined by, for example, the Common Core State Standards, for those subjects for which they have been developed.

2. Clinical preparation is integrated throughout every facet of teacher education in a dynamic way: The core experience in teacher preparation is clinical practice. Content and pedagogy are woven around clinical experiences throughout preparation, in course work, in laboratory-based experiences, and in school-embedded practice.

3. A candidate's progress and the elements of a preparation program are continuously judged on the basis of data: Candidates' practice must be directly linked to the InTASC core teaching standards for teachers and Common Core Standards, and evaluation of candidates must be based on students' outcome data, including student artifacts, summative and formative assessments; data from structured observations of candidates' classroom skills by supervising teachers and faculty; and data about the preparation program and consequences of revising it.

4. Programs prepare teachers who are expert in content and how to teach it and are also innovators, collaborators and problem solvers: Candidates must develop a base of knowledge, a broad range of effective teaching practices, and the ability to integrate the two to support professional decision-making. To be successful teachers in challenging and changing environments, candidates must learn to use multiple assessment processes to advance learning and inform their practice with data to differentiate their teaching to match their students' progress. Further, effective teachers are innovators and problem solvers, working with colleagues constantly seeking new and different ways of teaching students who are struggling.

5. Candidates learn in an interactive professional community: Candidates need lots of opportunities for feedback. They must practice in a collaborative culture, expecting rigorous peer review of their practice and their impact on student learning.

6. Clinical educators and coaches are rigorously selected and prepared and drawn from both higher education and the P-12 sector: Those who lead the next generation of teachers throughout their preparation and induction must themselves be effective practitioners, skilled in differentiating instruction, proficient in using assessment to monitor learning and provide feedback, persistent searchers for data to guide and adjust practice, and exhibitors of the skills of clinical educators. They should be specially certified, accountable for their candidates' performance and student outcomes, and commensurately rewarded to serve in this crucial role.

7. Specific sites are designated and funded to support embedded clinical preparation: All candidates should have intensive embedded clinical school experiences that are structured, staffed, and financed to support candidate learning and student achievement.

8. Technology applications foster high-impact preparation: State-of-the-art technologies should be employed by preparation programs to promote enhanced productivity, greater efficiencies, and collaboration through learning communities. Technology should also be an important tool to share best practices across partnerships, and to facilitate on-going professional learning.

9. A powerful R&D agenda and systematic gathering and use of data supports continuous improvement in teacher preparation: Effective teacher education requires more robust evidence on teaching effectiveness, best practices, and preparation program performance. A powerful research and development infrastructure – jointly defined by preparation programs, school districts, and practitioners – supports knowledge development, innovation, and continuous improvement. While not every clinically based preparation program will contribute new research knowledge or expand development, each must systematically gather and use data, and become part of a national data network on teacher preparation that can increase understanding of what is occurring and evidence of progress in the field.

10. Strategic partnerships are imperative for powerful clinical preparation: School districts, preparation programs, teacher unions, and state policymakers must form strategic partnerships based on the recognition that none can fully do the job alone. Each partner's needs can be met better by defining clinically based teacher preparation as common work for which they share responsibility, authority, and accountability covering all aspects of program development and implementation.



What Teachers Say about Clinical Preparation

The Panel's work was informed by practitioners in the Teacher Leaders Network, a virtual community populated by highly accomplished teacher leaders from across the nation. TLN is a national initiative of the Center for Teaching Quality. These teachers' web-based conversation over four days brought many teachers' voices into the deliberations of the Panel.*

"I think we need to teach [candidates] to mine carefully, to dig deeper than the raw scores, looking at the individual students, their scores, and trends in the data, [doing] all of this with an eye for discrepancies and explanations...." - *Cossondra George is a middle and high school special education teacher in northern Michigan.*

"...Teacher educators must understand the impact that rapid change will have on curriculum design, assessments, pedagogy, and learning management (no longer only classroom management). And they cannot understand the implications if they do not participate." - *Emily Vickery is the 21st century learning specialist at a parochial school in Florida.*

"I think many good teachers start off student teaching with shortcomings, but it's the failure to make changes for the next time which creates the problem. Coming up with an evaluation system that watches for failure to grow or reflect on teaching would be ideal." - *Stephanie Basile is a fifth grade teacher at an elementary school near Denver, Colorado.*

"I have developed my expertise through mentorships and collaborative partnerships, inquiry and reflection, and purposeful study and professional development." - *Sherry Dismuke is a first grade teacher in the Boise School District in Oregon.*

"Something I look for as I work with student teachers is their ability to analyze the teaching of others... AND their own teaching. It's hard to imagine teachers becoming effective over time without being able to analyze teaching, in meaningful ways, in relation to the effects [on] student learning." - *Elizabeth Stein is a special education teacher in Smithtown, Long Island in New York.*

*For a summary of the conversation see briefing paper prepared by Renee Moore, "Teacher Leaders Advise on Clinical Preparation," available at www.ncate.org.

A New, Clinically Based Model for Teacher Preparation

The Panel calls for *clinically based preparation*, which fully integrates content, pedagogy, and professional coursework around a core of clinical experiences.⁹

Ensuring that all teacher preparation programs follow these principles will require far more than tinkering with current models to increase opportunities for clinical practice or longer internships. However, significant innovations over the last two decades are helping point the way forward.

Major efforts led by reform-minded groups of education deans, institutions of higher education and teachers unions have supported the creation of partnerships focused on building strong connections between the preparation of teachers and schools.¹⁰ They have created hybrid institutions called professional development and professional practice schools staffed and structured to simultaneously support student achievement and clinical preparation and, sometimes, the full continuum of teacher learning. They are intended to play a similar role to teaching hospitals in medical education. Many preparation programs have moved in this direction, guided, for example, by the principles of the Holmes Group and the Standards for Professional Development Schools created by NCATE with the field.

Other innovative programs have been initiated by districts, foundations, and community organizations in partnership with universities that have developed similar clinically based preparation models. Many of these programs, including urban teacher residencies, have been successful in terms of preparing more effective teachers, reducing teacher turnover, and improving student outcomes in the process.¹¹

The American Association of Colleges of Teacher Education (AACTE) recently profiled extensive clinical work underway in 67 colleges of education. The Woodrow Wilson National Fellowship Foundation has developed a state-wide model that has leveraged state and philanthropic support to bolster clinical preparation in Indiana, Michigan, Ohio, and a growing number of states. The Foundation provides \$30,000/year stipends to prospective math and science teachers who agree to spend a year in clinically robust Master's degree programs and teach for three years in low-income rural and urban secondary schools. Woodrow Wilson Teaching Fellows are placed in cohorts in well-run, high-needs schools where they are mentored by clinical faculty and expert teachers.

But these programs are not the norm, and few have fully integrated clinical preparation throughout the process of teacher education. They are often handicapped in their efforts by the lack of commitment among all partners to taking on new roles and responsibilities and by the lack of a supportive infrastructure, including institutional, district, and state policy and funding strategies. Clinically based approaches must have the commitment and support of the full complement of stakeholders who need to be involved.

Clinically based approaches, the Panel believes, have numerous advantages over traditional practica and student teaching arrangements, and partnerships that exist in name only, in no small part because they address the context for teacher education preparation programs and require school districts to take on shared responsibility for teacher education. In clinically based programs, preparation programs learn more directly what they need to know about what schools really need and they enable districts to hire new teachers who are prepared to be effective in their schools. In these programs, teacher

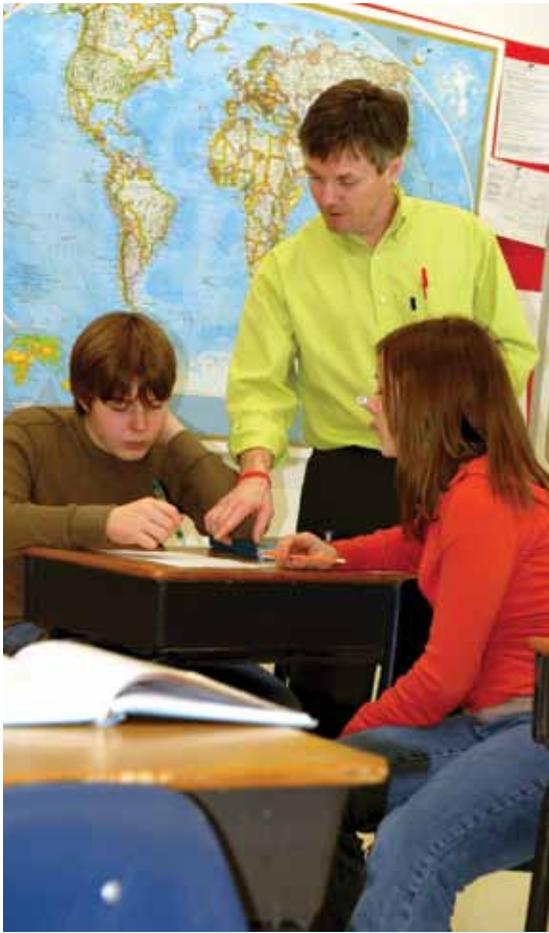


preparation can more fully incorporate practitioner knowledge through the development of clinical faculty.¹² Candidates can achieve the full value of embedded clinical experience because school districts will have committed to reallocating, restructuring and restaffing schools for clinical preparation. Students, the primary focus, can then benefit from functioning learning communities formed to support teacher learning and from the additional human resources that can be focused on their needs. Together, these partners can shift a program's emphasis from learning about teaching to using knowledge to develop practice that effectively addresses students' needs. It also calls for stringent new accountability mechanisms and the creation of reward structures that ensure that this takes place. This shift, the panel says, also better reflects the complex nature of professional practice.

New teachers need more than technical skills; they need a repertoire of general and subject-specific practices and the understandings and judgment to engage all students in worthwhile learning. They need to have opportunities to reflect upon and think about what they do, how they make decisions, how they “theorize” their work, and how they integrate their content knowledge and pedagogical knowledge into what they do. This can be accomplished through a combination of both school embedded practice and laboratory-type experiences. In a clinically based preparation program, laboratory experiences, school embedded learning and course work are integrated through a structure designed to help the candidate develop both the knowledge base and skills of professional practice. The lab experiences, experts say, are designed to support the investigation of practice, and embedded school experiences offer guided practice in real-life situations.¹⁴

Engaging Academic Faculty in Clinical Preparation

Teacher education programs have developed strategies to help better acculturate college faculty to the needs of schools. For example, at National Louis University (NLU), faculty from arts and sciences and from education interested in working with the Academy for Urban School Leadership (AUSL) Urban Teacher Residency sign up for “Boot Camp.” This commits them to make four intensive visits to schools involved in the program. They must get to know the students, the communities, the district, and the challenges their students will encounter. This is required before they are accepted as faculty in the urban teacher residency program. NLU faculty must address how their teaching of candidates relates to addressing the needs of the students their candidates will teach.¹³ Another approach to engaging academic faculty in clinical preparation are the “PedLabs” at Boston College. Similar to a lab component of an undergraduate-level science course, a pedagogical lab is a one-credit add-on to a traditional three-credit arts and sciences course. Prospective teachers can elect to take that additional course. Each content area has a committee that includes education faculty; they design a course that focuses on ways to teach the content in a school setting. The arts and sciences faculty can observe their students teaching the content in their clinical experience and then provide feedback on their instructional strategies and on the representation of the content. At Montclair State University, arts and sciences faculty co-teach content methods courses and advise pre-service teachers. Montclair is one of the more than 25 partnerships that are members of the National Network for Educational Renewal that are working to revamp teacher preparation and P-12 schools through a collaboration of school and higher education institutions, including colleges of education and arts and sciences departments within the academy.



School embedded practice focuses on developing complex analytic and practical skills. It provides real-world context for developing a whole constellation of complex skills that are orchestrated differently in different contexts, including the full range of students' cognitive and social-emotional developmental needs — and what the circumstances are in the classroom at the time. School-embedded experiences help teachers develop content-specific and general teaching skills and provide opportunities for candidates to become active members of learning communities, develop skills and dispositions associated with teaming, and work with parents within the community. A defined clinical curriculum will provide the prospective teacher with real responsibilities, the opportunity to make decisions and to develop skills to analyze student needs and adjust practices using student performance data while receiving continuous monitoring and feedback from mentors.

Equally important are much needed laboratory experiences embedded throughout the preparation program. Laboratory experiences provide prospective teachers opportunities to learn through on-line and video demonstrations, analyzing case studies representing

both exemplary practice and common dilemmas, and participating in peer and micro-teaching. Such experiences offer the opportunity to analyze a virtual student's pattern of behavior, or engage candidates in the life of a virtual school, calling upon the candidates to investigate and make decisions, and to see the consequences of those decisions.

Clinically based education programs can take some lessons in integrating laboratory experiences, embedded clinical learning and course work from medical preparation. In some programs, medical students follow a cohort of patients from the day they enter medical education to the day they complete their training, even as they take coursework and work with simulated patients in the course of their preparation. In the problem-based method developed at Harvard Medical School, for example, case studies and simulations of problems in diagnosing patient conditions, or working with families are used to construct an integrated spiral curriculum. These same cases are revisited several times during a semester. This allows medical students, working in small groups guided by clinical and academic faculty, to approach real life issues of individual patients, in increasingly more knowledgeable and sophisticated ways as their course work adds to their knowledge base. A similar approach can be used for teacher candidates, addressing the learning needs of individual students, classes, and whole school issues.



Strategies to Prepare Candidates to Address Student Needs

Through the years, preparation programs have developed unique approaches to help candidates focus their work on identifying and meeting the needs of students. These include:

- Initial community mapping exercises used at the University of Washington help put the focus on students from the very beginning, and are designed to make candidates aware of who their students are, where they come from, and the full range of needs they may have.
- Case conferencing, developed at the UCLA lab school in the 1960's, which help candidates, working with experienced faculty, learn to diagnose and work with individual children who pose difficult problems.
- Specific “protocols,” developed by MacDonald and Allen for the National School Reform Faculty enable candidates to analyze student work and to refine their assessment systems.
- Action research focuses candidates and their mentors on efforts to improve the quality of teaching and learning in their classrooms and schools.
- Using an “inquiry stance” on teaching to develop in candidates the disposition and skills for working with experienced teachers in inquiry learning communities where everybody is a learner and a researcher, and practice is the site for ongoing inquiry.¹⁵
- Instructional rounds, adapted from medical education, enable candidates to take turns engaging school and university faculty and candidates in reflecting on learning and teaching in particular groups at a particular point in time. At Clark University and other programs, rounds are integrated throughout the preparation program to build candidates’ skills in environments where collaboration and continuous feedback are routine.¹⁶
- The “Defense of Learning” approach helps focus candidates on their responsibility for student learning. For example, all teacher candidates in the New Visions for Public Schools – Hunter College Urban Teacher Residency in New York City – must use the inquiry cycle to inform their instruction throughout the semester, and then prepare and defend a presentation at the end of each semester illustrating their impact on student achievement. The presentation includes different forms of data, including samples of student work, videos, and results of various assessments. The presentations provide an opportunity to assess residents’ impact on student learning and ensure that residents’ professional development goals are focused around the needs of their students. Unsuccessful defenses provide an opportunity for teacher educators to identify specific needs for residents to improve or in some cases, an opportunity to counsel residents to leave the teacher preparation program. Both presentations are given in front of a panel that includes the candidate’s mentor, other residents, non-resident teachers, school administrators, and Hunter College faculty.

Mapping the Shift

Moving to clinically based preparation, school districts, preparation programs and unions make commitments resulting in structural, financial, programmatic and policy changes for all partners.

This will result in new roles, relationships and responsibilities for leaders and faculty in partnering institutions. The new measure of success will be not only in what graduates know, but in what they can do with what they know, and how what they do affects student learning.

The panel calls for a fundamental shift in how we conceptualize, deliver, monitor, evaluate, oversee, and staff teacher preparation.

FEATURE	CURRENT MODEL	THE MODEL WE NEED
Basic Approach	Largely focused on content knowledge, theory, and pedagogy with clinical experience added on to course work; or just clinical with no rigorous academic components.	Clinical preparation developed by partnerships of preparation programs, A&S faculty, school districts and unions is the centerpiece; course work is woven around and into clinical experiences.
Practitioner To Be Developed	Novice teachers with limited practice skills, knowledge and experience eligible for licensure. Too few are prepared in the content areas and specialties needed in schools, Too many graduates who don't teach.	Novice teachers with extensive clinical experience and who meet the needs of local school districts and meet the criteria of licensure. Programs jointly designed and implemented by preparation programs and school districts.
Providers	Largely institutions of higher education.	Multiple forms of partnerships involving all teacher preparation programs, including higher education institutions, in partnership with school districts.
Curriculum	Focus on content preparation, theory, child development, and methods developed in course work; loosely linked to practice and student teaching experience.	Course work and clinical preparation woven together throughout programs to emphasize translation of knowledge into practice. Multiple opportunities to study practice through simulations, case studies, and other laboratory based experiences utilizing available technologies; extensive school embedded clinical practice under the guidance of qualified clinical educators. Focus on development of assessment strategies founded on strong findings from learning research, uses of data for decision making, and incorporation of technology into teaching.
Clients	Teacher candidates.	Candidates and the school districts that will employ them.
Oversight	Preparation program, typically a college or university.	Preparation programs and school districts.
Funding	May be run by colleges and universities as revenue generating programs; limited incentives to develop more expensive clinical programs, or be more selective in admitting candidates. Paid for by candidates, state funding to higher education institutions, federal loans to candidates.	Additional investment by school districts through reallocation of resources and fused P-12 and higher education funding at the state and/or local levels. Estimates of savings to school districts of reducing teacher turnover and staff development costs suggest the overall cost effectiveness of this initial investment. ¹⁷
Measures of Effectiveness	Programs are not always held to same standards by state departments of education; variability of standards and licensure requirements among states.	All programs held to same standards; data-driven accountability based on measures of candidate performance and student achievement, including gains in standardized test scores. Data drives reform and continuous improvement.
Staffing	Academic faculty with content and pedagogical knowledge; clinical supervision often by untrained graduate students and P-12 faculty.	Academic faculty and specially prepared clinical faculty, drawn from preparation program faculty and P-12 schools.
Roles and Relationships	Higher education institutions and school districts have limited interaction and separate responsibilities for teacher preparation and development.	Joint responsibility for preparation and induction; differentiated staffing and new boundary spanning roles created for clinically based programs.

Promising Practices

Making these changes will be difficult but not daunting. There are many clinically based programs already in place showing noticeable results:

- Institutions are taking lessons from the preparation of other professional practitioners to revamp roles and rewards, share resources, and improve clinical experience. The Boston Teacher Residency (BTR) program, a partnership between the University of Massachusetts Boston, the Boston Public Schools, and the Boston Plan for Excellence, places teacher “residents” under the guidance of an experienced mentor teacher in a local school. For a year, residents take on increasing responsibility in the school while taking graduate-level coursework and attending seminars and earning a salary. The program culminates in an MA in Teaching and an entry-level teaching license. More than 8 in 10 (84 percent) teachers in the program stay in Boston Public Schools after three years, compared to the national average for urban school districts, which is 50 percent. Virtually all (96 percent) principals surveyed in Boston Public Schools would recommend hiring a BTR teacher.
- New partnerships are emerging that are helping shift the roles in schools to improve student outcomes. Over the past five years, St. Cloud State University has used a “co-teaching” approach in its teacher preparation program, capitalizing on having two adults in a classroom (teacher candidates and their mentor teachers) who work together to improve student learning. Using state assessment and Woodcock-Johnson III test data, there is a statistically significant difference in reading and math achievement between students in co-taught classes and students with only one licensed teacher. For example, 75 percent of special education students in a co-taught classroom were proficient on the state assessment compared to 53 percent of special education students not in a co-taught classroom.
- Programs are also learning from fields that use new technologies to bolster clinical knowledge. These models, such as Integrating New Technologies Into the Methods of Education (INTIME), are helping prospective teachers acquire crucial skills by observing online and video demonstrations, analyzing case studies representing both exemplary practice and common dilemmas, and participating in peer- and micro-teaching. INTIME, which was designed by faculty at the University of Northern Iowa and teachers at their partner schools, uses contemporary technology, high-quality conceptual models, online streaming videos, case studies, and analysis to help educators learn the skills necessary for improving student learning. The program has produced a library of 550 video vignettes available online or via DVD. The five colleges using INTIME (Eastern Michigan, Emporia State University, Longwood College, Southwest Missouri State, and the University of Northern Iowa) found that using INTIME in content methods courses increased the technological proficiency of preservice teachers, while providing examples of quality teaching practices. Faculty using INTIME also developed more online learning environments and often redesigned their courses to incorporate technology.
- Other models are emerging that help prepare top-notch teachers for urban schools. The University of Chicago Urban Teacher Education Program, for example, recruits applicants with a strong commitment to educational equality to work in underserved urban public schools. Students receive an annual \$20,000 stipend during the two-year program in exchange for a five-year commitment to teach in Chicago Public Schools. About 90 percent of the program’s graduates remain in Chicago Public Schools after their commitment is complete – well above the national average for urban public schools.

- Partnerships between school districts and teacher preparation programs need to be intentional about the district problems they seek to address. A long-standing partnership between the Long Beach Unified School District, Long Beach City College (LBCC), California State University at Long Beach, and 46 community organizations has addressed everything from student transitions and institutional alignment to development. The initiative, which receives financial support from local businesses, has increased graduation rates in schools as well as enrollment and graduation rates from the participating colleges. The partnership has also found that California State University Long Beach teacher graduates are more prepared to address the needs of local students and, therefore are employed at a higher rate than graduates from other teacher preparation programs. Through the work of the partnership, the school district has cut their teacher turnover rate down to 7 percent, which is 13 percentage points better than the national average for urban school districts as reported by the National Commission on Teaching and America's Future. Long Beach State teacher graduates fill approximately three-quarters of those vacancies each year and stay in the field of teaching longer than the national average.
- Teacher U is a partnership between Uncommon Schools, KIPP and Achievement First, three of the highest performing charter school networks in the country, and prepares teachers both for them and for other New York City district and charter public schools. It is a two-year teacher preparation program presently leading to a Masters degree from Hunter College. The program has a spiral curriculum and relies heavily on self-videotaping of student teaching for both formative and summative assessment. It ties teacher preparation to student achievement, requiring candidates to show a minimum of 12 months of growth in student achievement during the second year of their program in order to receive a Masters degree.

Other models are showing how districts and teacher education institutions can coordinate funding and provide collaborative oversight and focus teacher preparation programs on meeting school needs and community expectations for improved student attainment.

- Baylor University has worked closely with the Waco Independent School District to establish a partnership program that provides an intensive clinical experience for prospective teachers in an urban setting. The partnership has a highly developed governance structure, which includes a jointly managed coordinating council responsible for practical planning and implementation of the partnership and an oversight council responsible for providing broad policy and operational leadership for the partnership. The shared funding strategy requires that the university and the school district provide equal financial and human resource support. For example, the total cost of the partnership in the 2009-10 academic year was \$328,690, excluding indirect personnel costs, with each organization contributing half the cost. Each partner pays approximately \$3,000 per intern. The university is implementing a longitudinal study to ascertain the impact of teachers prepared by the program on students based on performance on state assessments and other indirect measures. Results from a pilot study shows that Waco students with multiple exposures to Baylor University interns perform better than students that have no exposure to the teacher candidates in the clinical preparation program.



Some states have been developing teacher performance assessment systems that focus on evaluating candidate performance and impact on student achievement. Others are engaged in building state-wide data bases that will allow preparation programs to know how effective their graduates are in the classroom. For example:

- A California statute signed into law in 1998 requires all multiple and single subject preliminary credential candidates attending fifth year, intern, or blended teacher preparation programs in the state to pass a teaching performance assessment. This assessment, known as PACT, is designed to give preservice teachers the opportunity to develop, refine and demonstrate their teaching knowledge, skills, and abilities during their teacher preparation. The design of the assessment includes a common assessment that is student-centered and modeled after portfolio assessments such as those developed by the Connecticut Department of Education, InTASC, and the National Board for Professional Teaching Standards. It also includes campus-specific tasks called embedded signature assessments now being developed that include for example, child case studies, analyses of student learning, and curriculum/teaching analyses.
- Nineteen states have committed to using a teacher performance assessment instrument that was patterned after the highly successful California PACT assessment. The purpose of the effort – spearheaded by the American Association of Colleges of Teacher Education, the Council of Chief State School Officers, and Stanford University – is to develop a nationally accessible teacher performance assessment that gives states, districts and teacher preparation programs a common framework for defining and measuring a set of core teaching skills that form a valid and robust vision of teacher competence.
- The Washington State Performance Based Pedagogy Assessment of Teacher Candidates was developed in 2004 through a partnership between the state education chief’s office and the Washington Association of Colleges for Teacher Education. The assessment, which is based on the use of authentic assessment approaches of both candidate and student performance, is used in full-time student teaching internships in P-12 classrooms. The assessment emphasizes what P-12 students are actually doing and learning in classrooms with the expectation that students will be engaged in meaningful learning and achieve state standards. By the 2011-12 academic year, this assessment will be required to be administered to all preservice teachers enrolled in state approved teacher preparation programs. By the 2012-13 academic year, all students completing a state approved teacher preparation program will be required to have passed the assessment.¹⁸
- States such as Tennessee, Louisiana and Florida are using data on student learning to identify effective and ineffective programs and to provide significant feedback to programs about what they can improve. These approaches differ and reflect a range of uses for value-added data and formative assessments for teacher evaluation. The Panel cautions against the use of formative assessments for accountability purposes and recommends the inclusion of end-of-year achievement test data as one of multiple data points for teacher evaluation. Data should include qualitative information with a focus on understanding teaching and learning through observation protocols and school and district quality reviews.

The briefing papers cite additional examples, but such efforts need to become even more comprehensive in scope and dramatically expanded.



R_x for Transformation: Panel Recommendations

The Panel consisting of a broad range of critics, researchers, policy experts, university leaders, teacher educators, union representatives and teachers deliberated carefully about what must be done in order to rebuild teacher education around clinical practice. What follows is the Panel's roadmap – a path that state leaders, preparation programs, accreditation agencies, districts, unions and other partners can follow to revamp teacher education to produce the educators we need for the 21st century.

The Panel set forth a comprehensive series of recommendations that will lead to necessary changes in policy, practice, and the culture and norms of preparation programs and districts. These recommendations are all about increasing student learning – environments where it can happen better, selecting and preparing teachers, meeting district staffing needs, realigning state policies and state and federal funding streams, and more focused accountability. The recommendations are as follows:

More Rigorous Accountability

- **Ensure more rigorous monitoring and enforcement for program approval and accreditation according to a clear and definite timeline.** States and NCATE need to set clear goals for quality and enforce them. NCATE's new accreditation options steer schools of education to (1) move beyond adequacy to excellence through its continuous improvement option, or (2) engage in a Transformation Initiative which is a major research and development effort to increase the knowledge base of the field. The professional accrediting body should set rigorous standards for what it will take to improve clinical practice and earn accreditation. Those institutions that do not make progress following this clear process and timeframe should lose their accreditation and state approval.
- **Increase accountability for outcomes by focusing accountability closer to the classroom.** Currently, few school districts have a role in designing teacher education programs with university partners, selecting candidates for placement in their schools, and in assessing candidate performance and progress. Currently, state laws often require that teacher-education faculty sign off on candidate qualifications and completion of clinical experience. In practice, this often means that decisions are made by individuals

*These recommendations
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who are too far removed from P-12 classrooms and who may not always know what the prospective teacher has done. This needs to be a mutual effort, in which the preparation program and districts work collaboratively.

■ **Link candidate performance and program approval more directly to student learning.**

The recent National Academy of Sciences report identified the importance of connecting teacher preparation and development more directly to indicators of student learning and achievement, but this is not happening on any large scale. Anecdotal reports and statistical surveys suggest that teacher preparation programs typically provide little instruction drawing from learning research that finds teacher-made assessments are the strongest means teachers can use to advance student learning. Teacher proficiencies in creating and using multiple forms of assessment can engage learners in their own growth, document learning progress toward instructional goals, provide important diagnostic information for teachers on the effectiveness of their instruction, and motivate students with descriptive feedback on what they have learned and how they can improve their practice. Yet few opportunities exist for candidates to practice creating appropriate forms of assessment for different purposes and to make use of them in field and clinical experiences. Nor is there evidence that preparation programs, in general, effectively encourage candidates to search for, analyze, and act on other data about students, families, their community, or their own practice. Emerging technologies can facilitate this process, and candidates must become proficient in their use.¹⁹ The Panel urges NCATE to define areas of expertise to be evaluated, including content knowledge and the skills of teaching specific content areas, and clinical skills of practice such as pedagogical expertise, the ability to analyze and make changes to one's own practice, problem solving, interpersonal and communication skills, professional decision making, and collaboration.²⁰ NCATE was a leader in the development of performance-based accreditation, and the Teacher Education Accreditation Council (TEAC) emphasizes the existence of evidence to support all institutional claims. We trust that the newly formed Council for the Accreditation of Educator Preparation (CAEP)* will promptly incorporate new multiple measures of outcomes for candidates and their P-12 students, as they become available.

*Higher education institutions
will need to shift their
reward structure to
value work in schools...*

■ **Hold all programs to the same standards.** State departments of education frequently set different requirements for university- and non-university based programs, particularly when it comes to clinical teaching requirements. Some states set rigorous requirements for clinical preparation by university-based programs, specifying where and how these must be addressed, but waive student teaching requirements for non-university based programs. We need to ensure that newly prepared teachers have clinical experiences, regardless of where they are prepared. All programs should meet the same standards for outcomes based on demonstrated performance of the teachers they prepare.

* NCATE convened and supported the work of the Panel. It has recently entered into partnership with the Teacher Accreditation Council (TEAC) to create the Council for the Accreditation of Educator Preparation (CAEP) as the unified accreditor for the field. We expect this new partnership to provide accreditation with even greater leverage to implement the Panel's recommendations.

Strengthening Candidate Selection and Placement

- **Increase rigor and diversity for admission to teacher preparation programs by balancing GPA requirements against other factors, including characteristics of effective educators.**

Improvement in this area will require consensus building among partnership programs, with the goal of identifying admissions standards that will serve to improve the candidate pool and increase outreach to diverse candidates. Currently, NCATE only suggests that there be clear criteria and a grade-point average (GPA) requirement for admission to a clinical preparation program. Some institutions set cutoff Scholastic Aptitude Test (SAT) or American College Testing (ACT) scores and others allow for lower admissions scores and GPAs. Some institutions define a broader range of attributes for each of their candidates by seeking information on such qualities as leadership, persistence, commitment, and facility with oral and written communications among the factors they judge in selecting applicants. Teach for America, for example, is currently studying the characteristics of its most successful teachers to improve its selection process. The Boston Teacher Residency Program has a highly selective process and is studying the impact on candidate performance. Another strategy, introduced by Alverno College, involves setting up promotional gates within teacher preparation programs that enable students to advance in the program from theory and subject-matter preparation to clinical training after they meet rigorous criteria, enabling the program to be open to a broader range of students and to advance students who demonstrate high performance. To address selection, the professional accrediting organization should explore what selection criteria are used across institutions, the impact of the criteria and methods of validating effects on the quality and diversity of candidates, and the desirability of other criteria (e.g., class rank, measures of leadership, measures of persistence, and/or measures of communications ability) and how they might be validated and used in selecting candidates.





- **Give candidates opportunities to work in hard-to-staff schools.** The Panel urges a consortium of states and preparation programs to develop a matching program similar to that devised by five medical and medical education organizations, and facilitated by the American Association of Medical Colleges, that places interns and



residents in hospitals nationwide. Organized on a regional basis, the program would be targeted at providing mentored internship experiences for candidates who want to teach in high-needs areas. Six months before their embedded clinical practice, candidates choosing to prepare for teaching in high-needs schools would identify a number of designated clinical sites in which they would like to work. Sites could then interview and select interns from among those applying. This program could be coordinated by AACTE. Existing federal dollars, including those available from Teach Grants, could fund service scholarships that cover a full year of preparation. This money could help pay interns who work in clinical sites in high-needs schools, which would also receive special federal funding. By administering funding for teaching residencies jointly, universities and school districts are more likely to work together. The new recruits would agree to remain to teach in a given school district for at least five years, the minimum span needed to turn around low-performing schools.

Revamping Curriculum, Incentives, and Staffing

- **Revamp curricula to integrate coursework with laboratory and extended embedded school experiences and better educate teachers to use measures of student learning.** Academic faculty, teacher education faculty, and school partners need to work in partnership to develop a deliberate seamless curriculum that spirally integrates coursework and laboratory experience with extended embedded school experiences. Candidates must be given experiences in working directly with students in schools not sequentially but continuously as they study the theory, content, and pedagogy of teaching. They should also work with virtual students, classrooms, and whole schools analyzing problems, trying out solutions, getting feedback – all the time drawing on what they are learning in their course work. Research on learning has identified teacher-made assessments as the strongest strategy to engage learners in their own growth, to document learner progress, and to guide the teacher’s ongoing planning and instruction. Faculty at all levels should demonstrate their understanding and uses of multiple methods of assessment and their proficiency in the emerging technologies that make the assessments more feasible. Faculty should also be able to model appropriate uses of the assessments for candidates.



- **Develop and implement alternative reward structures for higher education faculty.** Higher education needs to legitimize the role of clinical faculty and create dual assignments for faculty with an ongoing role as teachers and clinical educators in schools. Higher education institutions will need to shift their reward structure to value work in schools by including clinical faculty lines in promotion and tenure requirements. They also must reduce structural barriers and create supports for working in partnership with districts — for example, by changing schedules in teacher preparation programs to align with school calendars and using school sites for course work and meetings. Reciprocally, school districts must expand their view and capitalize on using university-based faculty and teacher candidates as important human resources in their schools.

- **Establish new staffing models to support clinical preparation in schools.** Currently, supervision of clinical practice in schools is typically assigned to a teacher as extra work. The teacher oversees interns, residents, and other

prospective teachers with little or no extra pay, training or support, and limited time allotted in the schedule. Schools and districts need to develop a new instructional model that provides mentors much-needed training and support and will lead to increasing differentiation in roles for educators. The Panel recommends a new staffing model patterned after medical preparation in which teachers, mentors and coaches, and teacher interns and residents work together as part of teams. Teachers would be given time to work with interns and residents but also would benefit from the expertise of literacy coaches, mentor and induction coaches, and clinical educators who have special expertise in working with teacher candidates. Prospective teachers would be assigned



in the building for six months to a year and can become resources in the school, augmenting the instructional program with graduated stages of responsibility as they progress.

In developing new staffing models, innovation should be encouraged. Preparation program-district partnerships must engage building leadership (administrators, teachers, union representatives) and a broad base of community partners who provide professional learning opportunities and other support to develop staffing models for schools, define roles for clinical faculty, and measure educator and program effectiveness.

At minimum, clinical faculty must be experienced and highly competent teachers, and also have the skills and knowledge to help others learn to be effective teachers. For example, a qualified clinical educator should know how adults learn, know mentoring strategies and how to use them, have a portfolio of assessment approaches, and a complement of personal skills for building trust, rapport, and communication with candidates. They need to be able to work one on one as well as with small groups. As a crucial first step, the Panel recommends that a Task Force on Clinical Faculty be funded and include the National Board for Professional Teaching Standards together with the Association of Teacher Educators, the American Association of Colleges of Teacher Education, the teachers unions and NCATE to develop rigorous selection criteria to identify the specific skills and attributes required for working with candidates and new teachers. NBPTS also could develop a program of advanced preparation for both clinical faculty and clinical teachers resulting in certification.²¹

■ **Ensure that all candidates have qualified clinical educators, coaches, and mentors.**

States and districts should require that candidates be supervised by certified clinical educators drawn from both higher education and the P-12 sector, and mentored by effective practitioners, who are also trained to work with candidates. Coaches should be made available to support mentors in the work with candidates. Clinical educators should be accountable for the performance of the candidates they supervise, as well as that of the students they teach.





Supporting Partnerships

- **Remove barriers to preparation program/district collaboration and provide incentives for meeting district needs.** State lawmakers and education leaders as well as P-16 councils, which oversee efforts to improve coordination between P-12 and higher education into a seamless system, should explore new funding options that reward districts that commit financial resources to school-based clinical preparation programs and support fused funding and other options. State officials also must thoroughly examine the policies and procedures in place to remove barriers to better, more equally shared responsibility for teacher preparation and develop policy incentives to promote their establishment.
- **Provide incentives to support programs that produce more effective teachers for high-needs schools and in needed disciplines.** Universities should ensure that schools of education receive their fair share of revenues that they bring in from teacher education to be able to support clinical programs. States should provide disincentives for programs that continue to prepare teachers in specialties not needed and who do not intend to teach.
- **Delegate and target resources.** Universities and districts should support new roles, such as joint faculty appointments. The ultimate goal should be to create a replenishing pool of expert teachers who have been identified and trained as coaches, mentors, and peer reviewers.
- **Innovate funding.** The federal government should fund the Teacher Quality Partnership Grants in Title II of the Higher Education Act, which support one-year clinical preparation for candidates, currently authorized up to \$300 million. While universities should not be the only entities qualifying for these grants, there should be a federal investment in transformation of university-based programs, given the urgent need to support innovative practices throughout this large sector. States and institutions also need to encourage students who wish to become teachers to take advantage of federal Teach Grants. These underutilized scholarships are available to students who want to teach in high-need fields and schools in exchange for serving in those schools for four out of the eight years after degree completion. Federal policy should permit the use of funds from several sources such as ESEA, federal School Turnaround Funds, and Title II support in order to: support schools serving as sites for clinical preparation programs particularly in hard to staff urban and rural areas; provide incentives for partnerships that blur the lines between preparation and in service to support a continuum of teacher development; and to identify and reward the most effective programs. Federal funds should be targeted at supporting accountability data collection and new research that will explore the impact of these changes.



Implementing this agenda may cost more per candidate than more typically designed university-based teacher education programs. A significant portion of these costs can eventually be offset, however, by resource reallocation and cost savings in staff development and reduced teacher turnover likely to result from better preparation. One approach used in medicine is the fusing of funds for patient care and the training of residents in teaching hospitals. In that example, Medicare payments are increased to teaching hospitals that help to cover training costs, but they are not separated out, based in part on the argument that the process of resident training benefits patient care, and in part on the increase in costs to the hospital associated with maintaining the residency program. However, it is clear that to achieve this transformation, state policymakers and leaders of school districts and teacher preparation programs will have to make hard choices and consider carefully their priorities, with decision-making centered around the goal of increased student achievement.

Expanding the Knowledge Base to Identify What Works and Support Continuous Improvement

- **Target funding to help build the research base and identify highly effective programs.** As proposed by the National Academy of Sciences teacher preparation study, federal funding should support a clearly defined program of research to document and provide evidence of impact of the many practices in clinical preparation on teacher effectiveness as measured by a variety of outcomes, including student achievement. As part of this effort, the federal government, with modest R&D investments, could lead school improvement reforms by identifying (and then rewarding) highly effective programs that prepare teachers who are needed by school districts and remain in the classroom for at least five years.
- **Expand information about implementation and share results.** The National Academy of Sciences described the lack of commonly defined data across the components of educator preparation and called for a national data network on teacher preparation. The Panel concurs with this assessment and recommends that NCATE play a strong participant role along with institutions, state officials, and researchers, to develop such a data network, including data on clinically based programs. Those programs that prepare the most effective teachers and lead to higher teacher retention and student results should be recognized, and documentation of their efforts should be provided so others can more readily emulate them. The Panel urges that the Department of Education support a clearinghouse of best practice videos and provide incentives for school districts, universities and non-profits to work together to assemble the best artifacts and tools for learning to teach and make them available across the nation.
- **Create a special Task Force on Emerging Opportunities for Evidence in Accreditation.** There is extensive and diverse activity across the nation in developing student and teacher record systems, creating new types of student assessments and new teacher assessments, and conduct of research on effective teaching. These activities will significantly alter the kinds of data, the commonality of measures, and the quality of data that the accrediting body can draw on for accreditation evidence. NCATE should convene a task force to review what the implications of these activities are for accreditation and what new opportunities and technologies might be available for stronger validity and reliability of accreditation evidence.



Call to Action

Adopting these recommendations will improve not only clinical preparation, but also take crucial next steps to transform teacher education for all teachers. But because of the urgent national need and policy concerns around better staffing, supporting, and addressing the learning challenges facing high-need and low-performing schools nationwide, the Panel calls for the development of new clinical models to be deployed initially to focus on the neediest schools. The Panel also urges the use of existing federal funds to provide incremental support to schools serving as sites for clinical preparation programs in hard to staff urban and rural areas in states that introduce this agenda.

Eight States Initiate Alliance for Clinical Teacher Preparation

As this report goes to print, eight states – including California, Colorado, Louisiana, Maryland, New York, Ohio, Oregon, and Tennessee – have agreed to work with NCATE to take up this call by participating in a new NCATE Alliance for Clinical Teacher Preparation. State higher education officials and P-12 leaders will work jointly to create local strategic partnerships that provide clinically based training to develop teachers for high-needs schools. The demonstration sites will be pilots for how states might “scale up” the work of teacher preparation programs and classroom practitioner partnerships throughout the entire jurisdiction.

Alliance participants will focus on supporting clinical teacher preparation by influencing state and local policies related to evaluating and approving teacher preparation programs, developing funding incentives, and supporting new approaches to teacher licensing and on-going professional development. The Alliance States and NCATE will engage state chapters of the American Association of Colleges of Teacher Education and the Association of Teacher Educators, teachers unions, and other stakeholders in a collaborative effort.

State Selection and Involvement of Other States

The participating states are geographically diverse and will build on previous success by scaling up improvements in clinical practice. The group is not all-inclusive, and others will be encouraged to join. The Alliance can also serve as a stimulus for other states to move toward clinically based teacher preparation, especially to address the need for excellent teachers in high-needs schools. NCATE will reach out to non-Alliance states and the colleges it accredits to share information with the Alliance and disseminate what is learned to other states.

Goals and Objectives of NCATE Alliance for Clinical Teacher Preparation

Specifically, the Alliance partners will focus on advancing three crucial goals:

1. Foster collaborative partnerships among schools, districts, and teacher preparation programs by:

Identifying demonstration sites that have or will develop a strong partnership between teacher preparation programs and school districts or schools with a particular focus on high-needs schools.

Testing different delivery models for clinically based teacher preparation such as year-long residencies as part of four year programs; two-year post-baccalaureate programs using spiral curricula that weave together content, theory and laboratory experiences in year one and full year school-embedded residencies in year two; and preservice practica experiences designed to engage candidates with a group of students throughout their professional programs to follow their cognitive, social, and developmental needs over time. Establishing incentives to create joint responsibility for induction by hiring districts and preparation programs.

Developing innovative funding models to institutionalize teacher preparation through the school/teacher preparation program clinical model.

Working with diverse preparation programs to assure that robust clinical teacher preparation is a central feature across all pathways into the teaching profession.

2. Assess all aspects of performance on a continuing basis by:

Collecting and analyzing multiple measures of formative and summative assessment data used by teacher candidates reflecting classroom learning and school improvement.

Linking performance assessments to state licensing requirements.

Expecting demonstration sites to establish and implement an accountability system based on assessment measures of graduates' and programs' performance through value-added and other measures in state and district longitudinal data systems.

Including performance assessment of establishing teacher preparation programs for the purpose of program improvement in the state's teacher preparation approval system.

3. Develop more effective state policies to prepare teachers who meet school needs by:

Offering incentives or establishing policies that guide the numbers and types of teachers who are prepared so that school and district needs are met.

Identifying and eliminating or addressing state and local policies and practices that might impede innovation and shifting to clinically based teacher preparation programs.

Creating a "scale-up" plan to expand from a limited number of clinical teacher preparation partnerships to a state-wide system of such partnerships as a means for improving student learning – especially in high-needs schools.



Role of Accreditation

In addition to ensuring more rigorous monitoring and enforcement for program approval and accreditation, NCATE will pursue an agenda to promote the Panel recommendations that will that will raise the bar for accreditation; expand membership and visiting teams to include a higher proportion of major research universities and selective colleges; set standards to support transformation of preparation programs;

provide capacity building that will involve both states and the profession; and promote research, development, and dissemination of prototypes and scale-up strategies. These activities are intended to inform and strengthen the role of accreditation in supporting the transformation of the education of teachers to a clinically based, partnership supported approach. NCATE should remain open to additional strategies for transformation emerging from new research including the Transformation Initiatives of member institutions. In addition, the consolidation of NCATE and TEAC into the Council for the Accreditation of Educator Preparation (CAEP) is a positive step in strengthening the field and will enhance the leverage of accreditation in moving toward this transformation.

National accreditation needs to expand current efforts to reach out to non-university based programs and bring them into a universal outcome-based quality assurance system. Although university-based programs will likely continue to prepare the bulk of the nation's new educators, others can continue to be important laboratories for development of new approaches and serious research on them, as well as being significant preparers in their own right.

Creation of Task Forces

The Panel recommends the creation of two task forces: an independent task force to develop selection criteria, preparation requirements, roles, and responsibilities for clinical educators; and a task force convened by the accrediting body to review the implications for accreditation of emerging data systems, tools for student and teacher assessment, and research on effective teaching.



Conclusion

Teachers need to be prepared in new ways to be effective and fully prepared for the uncertainties and challenges they will confront in 21st century classrooms.

Because teaching is a profession of practice, teacher education must focus on preparing expert practitioners who know their students, their subject-area content, and pedagogy in much the way that a family doctor must master the knowledge base of medicine as well as be able to understand patients and their symptoms to deliver a course of treatment that can achieve the best possible outcome. Effective practitioners learn these abilities through professional study and by mastering their profession's knowledge base, skills and dispositions of practice. But mastery and fluency comes, in large part, through robust opportunities to develop as practitioners via expertly mentored experiences in the field and through pedagogically designed approximations of practices such as case studies and simulations that allow candidates to study and observe practice and test their skills in controlled situations.

A clinically based approach to teacher education will give aspiring teachers the opportunity to integrate theory with practice, to develop and test classroom management and pedagogical skills, to hone their use of evidence in making professional decisions about practice, and to understand and integrate the standards of their professional community. Working with clinical faculty from the university and the P-12 sector and with trained mentor teachers from their districts and other experts, the programs will help aspiring candidates respond to the challenge of teaching with integrity in the face of increasingly high standards.

That portion of preparation that is practiced and demonstrated in real schools with real students helps ensure that candidates will be ready for the students with whom they will work and the schools in which they will teach. This is critically important in preparing teachers to be successful in hard-to-staff, low-performing schools and is useful in all teaching environments.

Transforming teacher education by placing clinical preparation at its center can help usher in additional changes in schools, for clinically based teacher preparation does not end with initial preparation. New teachers require intensive induction programs. This continuum of teacher development requires a parallel continuum of experienced, trained professionals (university- and school-based) who teach, supervise, and mentor candidates and novice teachers.

As a result, redesign of teacher preparation models according to the design principles presented in this report mean that schools, higher education institutions and other preparation providers, teachers and their representatives will need to explore new roles, incentives, and rewards for teachers and faculty. They must work together to develop alternative staffing models that provide ongoing support for educators. Together, they must continue to refine the use of emerging assessment approaches that can gauge the quality of prospective teacher performance in a way that takes into consideration impact on student learning and other outcomes. But there are many ways for preparers and schools to work together to implement the design principles. One size surely does not fit all.

These changes can only be accomplished if state and district leaders, college presidents and education deans, and other policymakers recognize their common interests and reshape teacher education as true partnerships between teacher education programs and school districts while taking advantage of the expertise and support of local unions and community organizations.



The proposed model of strategic partnerships between teacher preparation programs and schools and school districts will call for major cultural shifts within higher education and school districts as well as new policies and practices.

Leaders of higher education institutions must value and reward practitioner knowledge and research on practice. Preparation programs situated in universities must embrace a professional education model that recognizes the importance of clinical faculty in the

academic hierarchy and introduces tenure and promotion policies that reflect that new esteem. Meanwhile, yearly calendars and daily schedules between K-12 and higher education need to be more in sync to ensure that candidate teachers, who serve as interns, can be fully immersed in the life of the school.

School district leaders need to reconsider how to better support teacher development and introduce new staffing structures that enable educators to take on new roles and responsibilities for robust clinical preparation.

Both higher education officials and local school leaders must put aside longstanding turf battles about who is responsible for what part of the teacher development continuum. Because there is a continuum from recruitment through staff development, the parts need to be connected to each other to provide continuity and coherence; preparation programs and school districts both need to be involved across that continuum.

Teacher unions have critical roles to play in transforming teacher education into clinically based models. Clinical preparation calls for the creation of a cadre of teachers who are both classroom practitioners and clinical educators. The definition of that role and the development of training and standards for it, are central to the concerns of the union. They have an obvious self-interest in the preparation of more effective teachers and they have important roles to play in designing performance evaluations and assessments that are central to clinically based programs.

State and federal policymakers play critical roles in creating an infrastructure for clinically based teacher preparation utilizing strategic partnerships. They must create new incentives and funding for desired actions and, equally importantly, they must remove regulatory and programmatic barriers to change.

The role of the states is particularly crucial in bringing about the needed transformations. Through strengthened licensure and program approval requirements, state officials must ensure that programs are preparing candidates appropriately for teaching in a changing environment and that new teachers are fully prepared for today's classrooms. State policy can facilitate the widespread use of the most effective practices and provide incentives for effective teachers to be appropriately recognized and



rewarded. Specifically, state leaders have a role to play in establishing standards for admission to teacher preparation programs and therefore assuring the quality of candidates, in identifying how performance will be measured, in overseeing the selection and implementation of assessment and data systems to measure candidate and program performance, and in creating and enforcing standards of clinical practice and ensuring alignment with curriculum standards in the state, including the Common Core Standards.

We acknowledge the complexities these recommendations introduce, and recognize the high demands they place on state policymakers. The panel has sought to encourage broad scale action by working closely with several states. NCATE will reach out to national organizations and states to advance the work of the Alliance beyond the initial state participants.

In addition to ensuring more rigorous monitoring and enforcement for program approval and accreditation, NCATE will pursue an agenda to promote the Panel recommendations. This will include raising the bar for accreditation; expanding membership and visiting teams to include a higher proportion of major research universities and selective colleges; standard setting to support transformation of preparation programs; capacity building that will involve both states and the profession; and promoting research, development and dissemination of prototypes and scale-up strategies. These activities are intended to inform and strengthen the role of accreditation in supporting the transformation of the education of teachers to a clinically based, partnership supported approach.

We encourage all key stakeholders to join us in this effort, for much more is at stake than teacher education as an enterprise. Our economic future depends on our ability to ensure that all teachers have the skills and knowledge needed to help their students overcome barriers to their success and to complete school college- and career-ready. The next few years will help shape education policy and practice for many years to come. A comprehensive strategy to transform teacher education through clinical practice must be part of any significant national approach to school reform. We hope that this plan will serve as a road map for preparing the effective teachers and school leaders the nation will need in the future and provide the impetus for concerted action.



Endnotes

1. National Council for Accreditation of Teacher Education (2010). *The Road Less Traveled: How the Developmental Sciences Can Prepare Educators to Improve Student Achievement: Policy Recommendations*. Washington, D.C. www.ncate.org/publications
2. The National Research Council (2010). *Preparing Teachers: Building Evidence for Sound Policy*. Washington, D.C.
3. The following briefing papers were commissioned by NCATE for the Blue Ribbon Panel and are available on the NCATE website www.ncate.org; (search for 'Blue Ribbon Panel Report') Berry, B. (2010). *Teacher Education for Tomorrow*. Elliott, E. (2010). *Assessment as a Critical Element in Clinical Experiences for Teacher Preparation*. Howey, K. and Zimpher, N. (2010). *Educational Partnerships to Advance Clinically Rich Teacher Preparation*. Howey, K. (2010). *This is not Your Grandfather's Student Teaching: Kenji's Clinically Driven Teacher Education*. Levine, M. (2010). *Developing Principles for Clinically-Rich Teacher Preparation Programs*. Moore, R. (2010). *Teacher Leaders Advise on Clinical Preparation*.
4. Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2008). "Teacher Preparation and Student Achievement," (Washington, D.C.: Urban Institute, Center for Analysis of Longitudinal Data in Educational Research. Working Paper 20). See also Darling-Hammond, L. in collaboration with Letitia Fickel, Maritza Macdonald, Kay Merseth, Lynne Miller, Gordon Ruscoe, David Silvernail, Jon Snyder, Betty Lou Whitford, Kenneth Zeichner, (2006). *Powerful Teacher Education: Lessons from Exemplary Programs* (San Francisco: Jossey-Bass). Darling-Hammond, L. (2005). *Preparing Teachers for a Changing World: What Teachers Should Learn and Be Able to Do* (San Francisco: Jossey-Bass).
5. Paese (2003); Sandholtz & Wasserman (2001); Mantle-Bromley, Gould, McWhorter & Whaley (2000); Berg & others (2000); Freese (2004); Sandholtz & Dadlez (2000); Rock and Levin (2002); Pine, Maly, Swidman, & Ludlow (2003); Castle, Fox & Souder (2003); Neubert and Binko (1998); Shroyer, Wright, Kerr, and Weamer (1996); Houston and others (1999); Fleener (1999) as reported in Teitel, L. (2004) *How Professional Development Schools Make a Difference, 2nd ed.* (Washington, D.C.: National Council for Accreditation of Teacher Education). Castle, S. (2008). "Student Learning in a Professional Development School and a Control School," *Professional Educator*, 32(1),1-15; and for example Gill & Hove (2000); Pine (2003); Frey (2002); Castle & Rockwood (2002); Castle & others (2003); Castle & Lizmi (2003); Yahnke & others (2003) as cited in Teitel, L. (2004). *How Professional Development Schools Make a Difference, 2nd ed. revised* (Washington, D.C.: National Council for Accreditation of Teacher Education).
6. Ball, D. L., & Bass, H. (2000). "Interweaving Content and Pedagogy in Teaching and Learning to Teach: Knowing and Using Mathematics" in J. Boaler (Ed.), *Multiple Perspectives on the Teaching and Learning of Mathematics*, 83-104. Ball, D. (2000). "Bridging Practices: Intertwining Content and Pedagogy in Teaching and Learning to Teach," *Journal of Teacher Education*, Vol. 51: No. 3. Shulman, L. (1987). "Knowledge and Teaching," *Harvard Educational Review*, 57: No. 1.
7. Zeichner, K. (2010). "Rethinking the Connections Between Campus Courses and Field Experiences in College-and University-Based Teacher Education," *Journal of Teacher Education* 61, 89.
8. National Association of State Directors of Teacher Education and Certification (NASDTEC) website in the NASDTEC Knowledge section at www.nasdtcec.info/
9. Ball, D. & Forzani, F. (2009). "The Work of Teaching and the Challenge for Teacher Education," *Journal of Teacher Education*, 60(5), 497-511.
10. Work of the Holmes Group, the Holmes Partnership, the National Network for Educational Renewal, the National Association of Professional Development Schools, and initiatives of the American Federation of Teachers, the National Education Association, the National Council for Accreditation of Teacher Education, and the American Association of Colleges of Teacher Education have had significant impact.
11. Berry, B., Montgomery, D., Curtis, R., Hernandez, M., Wurtzel, J., & Snyder, J. (2008). "Urban Teacher Residencies: A New Way to Recruit, Prepare, Develop, and Retain Effective Teachers for High-Needs Districts," *Voices in Urban Education Summer*. 13-23. Berry, B., Montgomery, D. & Snyder, J., "Urban Teacher Residency Models and Institute of Higher Education: Implications for Teacher Preparation," commissioned by the National Council for Accreditation of Teacher Education, August, 2008, Washington, D.C.
12. The issues related to establishing a corps of clinical faculty are discussed in Zeichner, K. op cit (2010) and references for further discussion of these issues are cited therein.
13. Telephone communication with Scott Sullivan, Manager of University Partnerships, National Louis University, Fall, 2010. Sullivan also noted the potential of FIPSE Grants for university faculty who wanted to contextualize their work.
14. Grossman, P. (2005). "Pedagogical Approaches in Teacher Education," in M. Cochran-Smith & K. Zeichner (eds.) *Studying Teacher Education* (New York: Routledge), 425-476.
15. Cochran-Smith, M. & Lytle, S.L. (2009). *Inquiry as Stance: Practitioner Research for the Next Generation* (NY: Teachers College Press).
16. City, E., Elmore, R., Fiarman, S. & Teitel, L. (2009). *Instructional Rounds in Education: A Network Approach to Improving Teaching and Learning* (Cambridge: Harvard Education Press). Del Prete, T. (1997). "The 'Rounds' Model of Professional Development," *From the Inside* 1997, 1, 12-13.
17. National Commission on Teaching and America's Future. Study of the costs of teacher turnover www.nctaf.org/resources/demonstration_projects/turnover/TeacherTurnoverCostStudy.htm
18. Griffin, A., and Hett, "Performance Based Pedagogy Assessment of Teacher Candidates," (2004). Higher Education, Certification and Community Outreach Office of Supt. of P.I., State of Washington.
19. Office of Educational Technology (March 2010). *Transforming American Education: Learning Powered by Technology: National Educational Technology Plan 2010.* U. S. Department of Education.
20. See Briefing Paper Elliott, E. (Revised Sept. 2010). *Assessment as a Critical Element in Clinical Experiences for Teacher Preparation*, (Washington, D.C.: National Council for Accreditation in Teacher Education).
21. See the certification process of nurse educators, as a model. National League for Nursing, www.nln.org/facultycertification/index.htm



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