

Developing Principles for Clinically Based Teacher Education

Marsha Levine

Senior Consultant, NCATE

May 2010, Rev. November 2010

**Commissioned by the National Council for the Accreditation of Teacher Education for the Blue
Ribbon Panel on Clinical Preparation and Partnerships for Improved Student Learning**

INTRODUCTION*

A. Context

The Blue Ribbon Panel was commissioned by the National Council for Accreditation of Teacher Education to bring together leaders of higher education institutions and alternative pathways that prepare teachers, school districts, teacher unions, and state policymakers, to provide leadership for the transformation of teacher education in order to better meet the needs of P-12 students. The work of the Panel was to focus on how clinically based preparation and partnerships could achieve this important goal.

B Objectives of This Briefing Paper

The paper is one of six written for the Panel, each addressing a different aspect of making clinical preparation more effective. It makes the case for richer clinical preparation, based on a review of the research and relevant models of professional education as well as some innovative practices, specifically in teacher preparation. The brief sets out some recommendations and design principles for developing such rich clinical preparation programs.

C Organization of Paper

The paper is organized into four parts:

- Part I defines what we mean by clinical preparation and presents the case for enhancing such preparation for prospective teachers;
- Part II makes some observations and offers a proposal for refocusing clinical preparation;
- Part III makes specific program and policy recommendations;
- Part IV proposes a set of design principles to guide the development of richer clinical preparation in teacher education.

Part I: What is the Case for Clinically Based Preparation and How Do We Define It?

* The author gratefully acknowledges the important contributions to this paper made by Sharon Feiman-Nemser and Marilyn Cochran-Smith. Their extensive comments on an earlier draft and conversations with the author were extremely helpful. I, of course, take full responsibility for the content of the paper.

The context for teaching today is vastly different than it was 50 years ago. Greater diversity among students and the tailored instruction that many of them need has altered what teachers need to know and need to be able to do. In too many cases these challenges are not adequately met. This situation is occurring at the same time that teachers are being held accountable in ways that their predecessors were not.

New and experienced teachers repeatedly cite the opportunities to practice as being the most critical element of their preparation. This is not because they devalue the content or theory, but because their preparation did not provide adequate opportunity for them to learn how to use what they knew in a supportive, highly mentored environment. We believe these challenges can be addressed by creating clinically based preparation programs, in the form of laboratory experiences and school-embedded clinical practice, as a required part of teacher preparation.

It is in clinical experiences that prospective teachers have the opportunities to connect theory and content with practice; where they can hone their skills; and where their performance can be regularly assessed as they work with mentors who are themselves not only expert practitioners, but highly trained teacher educators.

Teachers without intensive clinical preparation are like surgeons without practical training. Imagine, if you will, a brain surgeon performing an operation solely on the basis of studying anatomy and neurology and reading texts that describe procedures, but never having had the opportunity to be in an operating room, assist expert surgeons, and perform the procedure under the supervision of expert mentors.

A. The Case for Rich Clinical Preparation

The case for rich clinical preparation rests on three arguments, each supported by research and documented experience: (1) the experience of other professions; (2) what we know about effective teachers and how to prepare them; and (3) what is known about the phases of teacher development.

1. The Experience of Other Professions

Underlying the assertion that teacher preparation be redesigned to include more clinical experiences embedded in school-university partnerships is the concept that teaching is a practice-based profession,

akin to medicine, nursing, or clinical psychology. As such, preparation for teaching should focus on preparing candidates for practice. Professional preparation requires opportunities to master a solid knowledge base along with opportunities to learn when and how to use knowledge in practice. The relationship and the interplay between these two necessary knowledge bases and ways of learning is at the heart of the design of a teacher education program for preparing professional practitioners. Candidates need to develop skills for putting knowledge into action and the require opportunities to learn how to exercise professional judgment as they work in diverse and constantly changing situations. Additionally, they should be supported in a structured, mentored induction experience design to assist them in building and refining those skills.

There is a long history of research and development on the education of the practicing professions, beginning in 1910 with the Flexner Report¹ on medical education. That report led to the creation of the modern profession of medicine through the reform of medical education, introducing the notion that the education of medical practitioners included content and professional knowledge, as well as extensive opportunities to learn how to use that knowledge in making decisions and taking action. This was institutionalized with the creation of post-baccalaureate medical schools followed by an internship and residency embedded in a teaching hospital – a hospital specially staffed and structured to support both patient care and physician education. Over the years, medical education has evolved to include clinical experiences from the very beginning of medical education, culminating in the internship and residency years. These experiences are both laboratory based and hospital- or practice-embedded, as such they involve approximations of practice as well as extensive opportunities to learn in the course of enacting practice.

Teaching has long sought the status of a true profession, but achieving this status has been challenging. The scale of K-12 schooling in the U.S. requires a huge workforce of nearly four million teachers. Preparing this workforce has largely been a local or regional endeavor, leading to a patchwork system of teacher education, largely under the governance and control of the fifty states and the 14,000 local school districts and 99,000 public schools who employ them. Another challenge to the professionalization of teaching are the commonly held beliefs about what is required to be an effective teacher. Based on what is seen as a twelve-year apprenticeship, some believe that anybody who has been to school can teach school. A variation on that is the belief that anyone who knows her content is qualified to teach it. These myths are at the core of deep differences in the education

policy community regarding the requirements for teaching. Nevertheless, a continuing focus on the nature of teaching and research into effective practice and on how one develops the requisite knowledge and skills for effective practice, has made a large contribution toward countering these myths and to the professionalization of teaching. As in medicine, reforming education for teaching can play a significant role in creating a true profession, with all that is implied.

Professionals exercise a unique kind of expertise. In 1992, Mary Kennedy wrote about the four forms of expertise needed by all professional practitioners:

- The application of technical skills.
- The application of theories, concepts, and principles – practitioners must identify the appropriate principle for each particular situation and apply it.
- The ability to critically analyze a situation and to generate multiple interpretations of it. This involves identifying possible principles to apply to a situation, and selecting the most appropriate one.
- Deliberate action—this entails multiple interpretations of a situation but goes beyond analysis to an action. It recognizes that there may be multiple goals in any given situation, and multiple conflicting goals may apply to the same case. Expertise involves choosing among alternative goals.²

These forms of expertise apply to professional practice in many fields. They define practice as the dynamic interplay between a body of knowledge, the ability to use specific tools and skills of the field, and the capacity to make complex decisions based on informed judgments. This interplay is an important part of what defines effective teaching and is a large part of the goals of clinical preparation.³

2. What We Know About Effective Teachers and How to Prepare Them?

Theoretical and empirical research⁴ in teaching has added to the above definition of professional expertise, some characteristics specifically associated with effective teaching:

- Deep knowledge of content and how to teach it;
- Ability to understand and relate to students and their needs;
- Command of a set of pedagogical tools and resources and the ability to use them on demand;
- Ability to affect positive learning outcomes in students;

- Ability to be a functional member of a team, school faculty, or learning community.⁵

Researchers have focused on the correlation of these characteristics, and the attempt to identify others, with student achievement. The complexity of teaching and the environment in which it occurs has challenged them in their attempt to correlate these characteristics with improved student outcomes measured largely by, but not limited to, achievement test scores.

A recent review of research on teacher education conducted by noted educational researchers for the National Research Council⁶ noted the need for more definitive studies that would focus more precisely on what makes a teacher effective. At the same time, they indicated that significant studies have been done, making the following important observations:

- Teachers have more impact on student achievement than any other school-based factor;⁷
 - Clinical preparation, strong content knowledge, and the selection of candidates have been found to be three significant factors in new teacher success in the first year of teaching;⁸
 - Some specific teaching practices have been identified with improved student outcomes.⁹
- For example, research has documented the effectiveness of using assessments in instruction in producing better student performance. Also, considerable research exists on the positive impact of a teacher's expertise in using the pedagogy of specific content areas has been documented.¹⁰

A great deal more research that relates specific teaching skills with student outcomes is needed to further flesh out a more empirically based definition of effective teaching.

Impact of Effective Teachers on Teacher Turnover and Student Achievement

There is a second link between teacher effectiveness and student achievement, in addition to what we know about the impact of specific teaching practices. Teachers who are effective remain longer in teaching, in part because they experience greater satisfaction and thus have a higher sense of efficacy. Teachers who are not prepared in their first couple of years of teaching to meet the challenges of the students they teach, become discouraged, especially if they do not receive adequate support and mentoring, and leave. We also know that high turnover rates among teachers have cumulative and residual effects on future student achievement. Statistics of teacher turnover, particularly in schools with challenging populations, bear this out.¹¹ It follows that increasing retention of successful

teachers is likely to enhance student learning outcomes. Thus, there is a second relationship between teacher effectiveness and student outcomes related to high turnover rates among teachers who are not being successful.

One implication of both of these findings is to focus us on the kinds of preparation programs that have a positive impact on increasing teacher efficacy and the development of expertise in skills associated with effective practice.

The Impact of Clinical Preparation on Producing Effective Teachers

Research on the impact of clinical preparation on teacher efficacy, retention, and student achievement indicates that teachers prepared in clinically-rich programs, such as professional development schools, report a higher sense of efficacy, are evaluated more highly by supervisors, are more sought after for their more advanced skills, and have higher retention rates - particularly in hard to staff schools.¹² Furthermore, studies increasingly show improved outcomes for students taught in settings, such as professional development schools and partner schools, that provide clinically-rich preparation.¹³

One study offers more evidence of the relationship between the characteristics of teacher preparation and student outcomes.¹⁴ That study made the following important observations about the impact of characteristics of teacher preparation on teachers' impact on student achievement:

- Teachers whose students make the greatest achievement gains have extensive and well-supervised clinical preparation and experience relevant to their initial teaching assignments;
- Teachers who have had opportunities to “engage in the actual practices of teaching” have the greatest student achievement gains;
- Teachers who have the opportunity to study and assess local school curricula they will use in their initial teaching have the greatest student achievement gains;
- Teachers who have had capstone experience in which action-research or data-focused portfolios are used to make assessments about candidate effectiveness have greater student achievement gains.

3. The Phases of Teacher Development and Clinical Preparation

We know that the education of teachers is not completed with pre-service preparation. New teachers are still learning to teach in the context of teaching, and good teachers continue to grow professionally throughout their careers. Each of these phases of a teacher's career can and should be

supported through the creation of structures, learning opportunities, and incentives, all within a culture of collegiality and a professional learning community.

Teaching practice develops over time. Feiman-Nemser has identified critical tasks in learning to teach for each phase of formal teacher education from initial preparation to new teacher induction to continuing professional development. Some of the critical tasks during initial preparation include developing a defensible vision of good teaching, acquiring deep and flexible subject matter knowledge for teaching, learning about learners and learning, including the influence of culture, developing a beginning pedagogical repertoire, and cultivating the skills and dispositions to reflect on one's teaching.¹⁵

The central tasks of an induction phase include learning the teaching context, developing a responsive instructional program; creating a classroom community; enacting a beginning repertoire; and developing a professional identity. It is also during the first years of teaching that novices refine their skills of inquiry, observation, interpretation and analysis so that learning in and from teaching becomes a professional habit.¹⁶ New teachers also continue to refine their vision of good teaching and their professional identity as a teacher.

Experienced teachers have learning needs as well and they deserve continuing opportunities to deepen their practice, strengthen their skills as critical colleagues and develop new capacities necessary for new professional roles (e.g. mentor, team leader). Changes in the career structure of teaching¹⁷ that include expectations for working with colleagues, taking on differentiated roles outside the classroom,¹⁸ and obtaining National Board Certification, all presuppose a continuum of teacher development.¹⁹

This learning to teach framework reinforces Darling-Hammond's idea of teaching as "the learning profession."²⁰ It also highlights the importance of schools as settings for teacher learning not just for student learning.

B. What are the Characteristics of Clinically Based Preparation?

Two interrelated premises for the design of clinical preparation programs stand out. First, clinical preparation must provide the opportunity for novice teachers to apply all the knowledge they are

acquiring about teaching and student learning, and to refine it. Ball and Cohen ²¹ describe this as “learning about practice in and from practice.” Second, a focus on student needs must be at the core of developing teaching expertise.

There are two complementary approaches to clinical preparation – laboratory experiences and extended embedded school experiences. They share some common elements but also have unique purposes, characteristics, and pedagogies. Both approaches share the common goal of helping prospective teachers connect theory and practice and develop the skills and knowledge that are embedded in practice. Well-designed laboratory and school-embedded opportunities spread over time as teachers take on graduated responsibilities, can help them learn what they need to know and be able to do in order to teach effectively.

1. Laboratory Experiences

Laboratory-based clinical experiences are more focused on “vitalizing theoretical principles or cultivating the intellectual skills and habits of teaching (analysis, interpretation, reasoning, imaginative rehearsal) and not so much on the practical skills of enactment.”²² They focus on using approximations of teaching rather than the experience of total immersion in a school.

They may also be centered on developing discrete technical skills. Some laboratory experiences may require access to school settings although not total immersion in a school; others can be effectively accomplished in campus-based or other laboratory settings. These pedagogies include:

- Use of simulations, case studies, analyses of teaching and other approximations of teaching;
- Observations of peers, mentors, and university faculty teaching;
- Virtual professional learning communities;
- Teaching clinics;
- Journaling and dialogue journals;
- Use of protocols for learning from student work;
- Analysis of teacher work samples and portfolio development.

Such experiences can be woven throughout the preparation program.

2. School-Embedded Clinical Experience

The development of certain kinds of expertise, however, requires more intensive, and extended school-embedded experiences. Just being present in a school, however, even full-time, with a cooperating teacher does not mean that the candidate will develop expertise. An experience that is

essentially an observation apprenticeship, even with built in opportunities to “take over some teaching responsibility”, does not suffice.

What does seem to be required is for the prospective teacher to be embedded in a real setting with highly trained mentors who can foster the development of the learner’s ability to analyze a situation, determine possible goals and select from among them, draw on theoretical and conceptual knowledge and turn all that into action. Such learning is context specific: the teacher learner must have real responsibilities, have the opportunity to make decisions, be monitored and get continuous feedback from mentors, and develop skills to analyze student needs and adjust their practices on the basis of using student performance data. Particular pedagogies are associated with these embedded experiences, turning them into what can be described as “mentored internships.” One useful approach to this kind of clinical learning is the cognitive apprenticeship model.²³ In this approach, the emphasis is put upon unpacking the thought processes that go into the complex acts of teaching and making them accessible to the learner. Other pedagogies include an inquiry model,²⁴ case conferences, teacher study groups that include protocols for analyzing practice or student work, teacher research projects, peer observation, grand rounds, and co-teaching.

3. Examples of Rich School-Embedded Clinical Experiences

There are many examples of clinically rich preparation programs. They can be found in all kinds of programs – four and five year university-based programs, Masters degree level initial preparation programs, and programs offered by non-traditional providers. Professional Development Schools (PDSs) and urban teacher residencies are useful examples. PDSs constitute a major new hybrid institution that joins P-12 and higher education in the support of both student and teacher learning, including the clinical preparation of new teachers, induction, and professional development. They were created to enhance the quality of clinical experiences in teacher preparation. Where they have succeeded, they have created intensive partnerships among university teacher preparation programs, school districts, and teacher unions. They require internships of up to a full year for teacher candidates and provide the setting for extensive clinical preparation that is embedded in the on-going work of the school.

The focus of the work in PDSs (including the clinical preparation) is on meeting the needs of the children in attendance. The extensive experience of PDSs has taught us that a clinical preparation

program that is grounded in collaboration, professional community, high standards of practice and is dedicated to student success can change an entire school, and can have a positive impact on the achievement of students in that school. Candidates coming through PDSs with a full year internship are often evaluated by their supervisors as better prepared than their colleagues who have had more limited clinical preparation. The new teachers prepared in such settings have higher retention rates and are highly sought by employers, who evaluate them as entering teaching the skills of first and second year teachers.²⁵ PDSs have been developed through university/school partnerships in programs at every level.

Urban teacher residencies are Masters level preparation programs that are offered by non-traditional providers in partnership with universities. They are excellent examples of programs in which the clinical experience is the centerpiece – content and pedagogy are wrapped around the clinical. They are full year residencies targeted at preparing teachers for specific school districts and are examples of highly context-specific clinical preparation.

PDSs and urban residencies both provide models for how preparation programs might modify their clinical preparation to achieve the characteristics described above.²⁶ They provide an environment that encourages professional interaction among teachers – a collegial, open, and collaborative culture; they support teacher learning through the allocations of time and human resources. Both models provide the prospective teacher with a contextualized learning experience that fosters the development of expertise associated with higher student outcomes and higher rates of teacher retention. Because candidates are deeply immersed in clinical settings for extensive periods of time (a full year for urban residencies, and up to a full year for PDSs) they are able to address some of the tasks associated with the early induction phase of teacher development. In these models, the boundary between preparation and induction blurs. Preparation is made more intense and the scope is widened. They do not take the place of induction which is still necessary; they just raise the bar in terms of experiences and expected outcomes associated with preparation. Documented results of such programs suggest they put candidates in a much stronger position as they take on the full responsibilities of classroom teachers of record.

C. The Case for Partnerships

Finally, the transformation of clinical preparation of teachers cannot be achieved by preparation programs acting alone. Intensive clinical preparation, especially when it is school embedded, requires the collaboration of preparation provider and schools, and the support of all the stakeholders in its success. The formation of meaningful partnerships between universities (and alternative providers) and schools is critical to a successful redesign of this kind. Partnerships should be reciprocal by nature – reflecting a commitment to a shared responsibility for teacher learning and for improved student achievement. Schools are important mediators of teachers’ learning. They can be instrumental or act as a barrier. It has been wisely noted by Seymour Sarason that schools that support teacher learning will benefit student learning. Schools have much to gain from such partnerships. PDSs and urban teacher residencies view their programs as change agents for schools – fostering professional development among whole faculties and the creation of real learning communities characterized by public practice, professional discourse, and a commitment to working together to address student needs. Schools have much to give as well. The knowledge base of practice that resides with their expert teachers is critical in the development of practice in prospective teachers. Preparation programs, working in schools and in close partnership with them, also have much to gain in terms of developing relevant curricula and approaches to candidates’ development. They too have much to offer – including research skills and cutting edge knowledge on how children learn. (See the Briefing Paper by Howey and Zimpher on Partnerships)

Part II. Some Observations and a Proposal

This section makes some observations about clinical preparation based on the discussion above, including the relevant research and experience. The proposal presents a strategy for embedded clinical experience directed at our basic goal: to prepare teachers to be more effective in meeting the needs of students.

A. Observations

1. There is support for clinically rich teacher preparation. The support can be found in other models of professional preparation, in research and in our experience with successful programs. Yes, we need to know more about what clinical practices have the greatest impact.

In order to learn that, we must be diligent about designing research in clinical settings and to value that research that will yield more.

2. Although it is generally acknowledged that learning to teach takes time, and that no preparation program, no matter how good, can produce fully developed teachers, the research on teacher performance and turnover in the first years of teaching suggests that we need to do a better job in preparing candidates to be successful beginning teachers. This is particularly true for new teachers in challenging school settings. It is important to note that these kinds of challenging settings are increasing rapidly all over the country. One example will serve as illustration of this point. Montgomery County, a large suburban school district outside of Washington D.C., has grown over 40% in student enrollment in the last ten years. A high proportion of that growth has been through increases in the numbers of recent immigrants moving to the county. These families, coming from 140 countries, bring with them students speaking many languages. Further, many of the new students are considerably poorer than those from what historically has been a very affluent county. As a result, the needs of the school district have changed dramatically, and the skills required of teachers have changed along with that. This picture is repeated all over the country. It is not just the challenges of urban school districts that are going unmet; increasingly, it is the needs of a large number of suburban and rural districts, as well.
3. In order to design and implement rich clinical preparation, one needs both the preparation program and the districts to be fully engaged in determining what is necessary, what implementation strategies are appropriate, what works and what does not.
4. The knowledge, skills and dispositions addressed in the early induction phase of teaching are being addressed in innovative intensive clinical preparation programs such as urban teacher residencies and highly developed professional development schools. They are preparing teachers in supportive learning communities with trained mentors. Prospective teachers in those programs have defined roles and responsibilities that are staged according to their increasing levels of expertise. The clinical preparation is woven together with the content and pedagogical learning. The line between preparation and induction is blurring in an intentional way. This does not eliminate the need for post-preparation induction, as illustrated by the two to five years of such support provided by urban teacher residencies. It does suggest that the “curriculum” and pedagogies associated with induction need to be a part of preparation. A sharp division between preparation and induction, including who is

responsible for each phase needs to be rethought. Preparation programs and school districts need to be engaged in both phases.

B. A Proposal

The above observations suggest two possible strategies. The first is to leave preparation programs as they are, and to create intensive induction experiences for all new teachers of the sort some other industrialized countries provide (i.e., fully paid induction years with limited teaching responsibility and intensive mentoring), all under the supervision of the school district. Currently such programs are not the norm. Making them the norm would take considerable human and financial resources on the part of school districts. Further, maintaining induction solely as the responsibility of school districts would reinforce a bifurcated system, in which one of two sectors - the preparation program provider, most often an institution of higher education, or the school district - is each responsible for one significant part of the development of beginning teachers instead of one where partners have joint and collaborative responsibilities.

Alternatively, we can create intensive clinically-embedded preparation programs, called “mentored internships” which merge the preparation and early induction phases of teacher education, supported by intensive partnerships between preparation program providers (university or non-traditional) and schools. It would bring to bear the expertise of both sectors on this phase of the continuum of teacher education. It would result in better integration in the preparation phase of learning to teach, of the theoretical and practice based knowledge necessary for professional practice; and it would be more aligned with the professional model of education we examined earlier in this brief. It would result in greater alignment between how teachers are prepared and the needs of the schools. Importantly, such programs would act as change agents in the schools – establishing environments that encourage and support professional learning communities that sustain teacher learning that are targeted at enhanced student achievement throughout the schools. Finally, it would create a continuous, seamless experience for the prospective teacher and seal a gap in the preparation pipeline that has been a challenge for a long time. The tasks associated with preparation and early induction as identified, for example, by Feiman-Nemser would merge in the mentored internship.²⁷

Part III. Program and Policy Recommendations

The recommendations below flow out of the discussion of clinical preparation and the observations made above. They are aimed at program providers, school districts, and state and federal policymakers as they move toward creating a seamless connection between teacher preparation and student achievement through the development of rich clinical preparation grounded in partnerships.

Recommendation 1: Preparation programs should develop more extensive lab-based clinical experiences that are woven throughout the preparation of new teachers. They should focus on pedagogies that are designed to help candidates develop expertise in specific instructional approaches and in the use of analytic and assessment tools; to integrate theory and practice; to develop their professional skills as decision makers and problem solvers; and to foster their orientation toward the use of inquiry in their practice. Lab-based pedagogies might include case studies, examination of student work, analyses of teaching using a variety of media approaches, and other approximations of teaching.

Recommendation 2: Extended and intensive school-embedded clinical experiences (e.g. mentored internships) should be a requirement for full licensure. The curriculum for such experiences should embrace those skills associated with both the preparation phase and early induction phase of teacher development. School settings for such mentored internships should be structured and staffed appropriately to support both functions of teacher development and student learning.

Recommendation 3: A MATCH process, similar to that used in graduate medical education should be developed for the mentored internship experience. Prospective teachers should be able to identify districts in which they would like to do their internship and apply to those districts. Districts in turn should be able to rank their preferences for intern placements. A computer program can then match prospective interns with districts that have ranked them highly on their preferred list. Medical schools do this on a national basis; a regional basis would be more appropriate in education. Consortia of institutions and program providers could then collaborate on the supervision of interns in school districts located within reasonable geographic proximity. This process can be particularly relevant in the preparation of teachers for hard to staff, challenging school environments and rural settings.

Recommendation 4: The governance of such mentored internships should be the shared responsibility of both the preparation program(s) and the school district(s) in a fully engaged partnership.

Recommendation 5: In order to gain full certification, novice teachers should be required to demonstrate proficiency in identified teaching skills and knowledge in appropriate performance assessments.

Recommendation 6: In order to strengthen the research base for clinically-rich preparation programs, the programs should have a requirement for continuous and on-going research to identify the impact of the model on teachers and on their students' learning.

Recommendation 7: NCATE Unit Standards should be revised using the design principles for establishing more clinically rich preparation programs, as listed below. This is likely to entail a review of all standards, not just Standard #3 that speaks to Clinical Preparation.

Part IV. Principles for Designing Rich Clinical Preparation for Teachers[†]

The final goal of the paper is to suggest a set of design principles for rich clinical preparation programs that reflect what we know about the education of practicing professionals, effective teaching, and how teachers learn. The principles are meant to frame clinical preparation that is grounded in broadly-based partnerships to prepare teachers to better meet the needs of students in our schools.

1. Performance Goals for Clinical Learning are Clear.

- There is an articulation of specific practices and skills associated with teacher effectiveness that are to be learned.
- Prospective teachers know what is expected.
- Prospective teachers know what those skills and practices look like.
- Numerous models and demonstrations are provided for prospective teachers.
- Scaffolding for the development of attributes of desired practice is provided.
- There are extensive opportunities to practice with coaching and mentoring.
- Consistent and on-going formative assessment is provided for the novice teacher.

2. Laboratory Experience is Woven Throughout the Preparation Program.

- Candidates have frequent opportunities to hone clinical skills through a variety of laboratory experiences woven into their preparation programs. These may include, for example, simulations, exercises in data management, video case studies, and analyses of teaching. They may be campus based or school based in setting.
- Prospective teachers are immersed in the materials of practice and in working with particular concepts using those materials. These may be laboratory-based or school embedded experiences.
- Numerous opportunities are provided to relate practice to expert knowledge. For example: use of protocols for examination of student work; examining classroom artifacts; studying

[†] The 10 Design Principles recommended in the report of the Blue Ribbon Panel reflect, but differ from those listed here. The Panel's 10 Principles are the result of Panel discussion and extensive input from panel members. See the Report of the Blue Ribbon Panel on Clinical Preparation and Partnerships for Improved Student Learning on the NCATE website www.ncate.org search Blue Ribbon Panel.

video tapes on teaching and learning in classrooms; using cases of teaching and learning. Emphasis is put on developing specific content pedagogies.

3. School-Embedded Clinical Preparation Provides a Mentored Internship Experience Situated Within Productive School Contexts.

- Mentors are trained as teacher educators as well as being expert practitioners.
- An extensive school-embedded experience, (a mentored internship) in which the candidate is a part of a teaching team, is integrated into the preparation program through the participation of academic faculty, clinical faculty, and school-based faculty as teachers, mentors, models, and advisors.
- Embedded clinical preparation occurs within a school in which the faculty can and do demonstrate effective practice in facilitating student learning and are also trained to help candidates develop skills associated with effective practice. Prospective teachers are learning in settings that are relevant to the contexts in which they want to teach. In some cases, they may be the same settings in which they will begin their teaching career. They become familiar with relevant curriculum and the needs of the student populations they will encounter in their initial years of teaching.

4. Embedded Clinical Preparation Takes Place Within an Inquiry-Oriented Professional Community in Which Practice is Public and Focused on Meeting Students' Needs.

- The learning community provides a safe environment in which the practice of experts and trained mentors as well as candidates is open and public, allowing for both informal and formal opportunities to observe and be observed, and to constructively discuss practice in order to support learning among professionals.
- Prospective teachers are placed in cohorts and become members of teams working collaboratively to support student learning and teacher learning. Teams include experts, mentors, coaches, university faculty and prospective teachers.
- There is on-going public professional discourse about teaching practices and learning allowing candidates to understand the knowledge and decision making processes that underlie expert practice and to learn to use the language of practice.
- Feedback is provided in a variety of forms, both consistently and regularly, by mentors, peers, and supervisors.

- Formative performance assessments of teacher learning are conducted regularly incorporating demonstrations, presentations, and analyses of student work. They involve mentor teachers, university faculty, school administrators, cohort members, and school faculty.
- Structured protocols that frame the study of teaching and learning such as Examinations of Student Work, Child Study Protocol, and Instructional Rounds are regular components of the program.
- The curriculum for clinical preparation grows out of, and includes, the identification and diagnosis of students' needs and draws on the research and practice-based knowledge of effective practice.

5. Clinically Rich Preparation Accommodates the “Developmental” Nature of How Teachers Learn and What They Have to Learn.

- Candidates are placed in school settings in cohorts.
- A continuum of support and a distributed mentorship approach for teachers helps them gain skills they need at each phase in their development.
- Through laboratory and school-embedded experiences, candidates are provided with a range of opportunities over time to develop skills at increasingly more complex levels.

6. Clinically Rich Preparation Addresses Professional and Public Accountability.

- Candidates are held to high standards of effective practice including, but not limited to, demonstrating positive impact on student achievement.
- Learning teams work within the common core standards and novices are provided with the resources they need in order to concentrate on how they support students' learning.
- Candidates working with mentors develop a commitment to supporting achievement of each student and to identifying and successfully using practices that lead to student success.
- Candidates and teachers working together build a significant repertoire of teaching approaches, helping students to achieve their objectives.
- The system of professional development, support and assessment is studied rigorously to uncover its efficacy.

7. Design, Implementation, and Evaluation of Clinical Preparation is the Responsibility of a Partnership Formed to Ensure that Teachers are Being Prepared to Effectively Meet the learning Needs of diverse Students.

- Partnerships support the development of boundary-spanning roles for program providers and school based faculty and the blending of resources to better meet the goals of candidate preparation and improved student learning.
- Clinical preparation partnerships are embedded in a broad-based community in which all stakeholders of quality P-12 education participate.
- Clinical preparation partnerships have a supportive infrastructure at all levels – institution, school, district, state and federal.

ENDNOTES

¹Flexner, A., and Pritchett, H.S. (1910). *Medical education in the United States and Canada: A report to the Carnegie Foundation for the Advancement of Teaching*. New York: Carnegie Foundation for the Advancement of Teaching.

²Kennedy, M. M. (1992). Establishing professional schools for teachers. In M. Levine (Ed.), *Professional practice schools: Linking Teacher Education and School Reform* (pp. 63-80). New York: Teachers College Press.

³ Schon, D.A. (1987). *Educating the Reflective practitioner*. San Francisco: Jossey-Bass.

⁴ See for example *What Should Teachers Know and Be Able to Do?* (2002) National Board for Professional Teaching Standards, http://www.nbpts.org/UserFiles/File/what_teachers.pdf (retrieved 4/29/10) ; Kennedy M. (1999). The role of preservice teacher education. In Darling-Hammond, L. and Sykes, G. (Eds.) *Teaching as the Learning Profession: Handbook of Teaching and Policy* (pgs 54-86). San Francisco: Jossey Bass.; Darling-Hammond, L. and Bransford, J. (2005). *Preparing Teachers for a Changing World*. Sponsored by the National Academy of Education. San Francisco: Jossey - Bass. Cochran-Smith, M. and Zeichner, K. (2005) *Studying Teacher Education: The Report of the AERA Panel on Research and Teacher Education*. New Jersey: Erlbaum Associates

⁵ Berry, B., Smylie, M. and Fuller, E. (2008). *Understanding Teacher Working Conditions: A Review and Look to the Future*. Hillsborough, NC: Center for Teaching Quality.
Jackson, C.K. & Bruegmann, E. (2009, August). Teaching students and teaching each other: The importance of peer learning for teachers. NBER Working Paper 15202. Washington, DC: National Bureau of Economic Research.
Goddard, Y. & Goddard, R.D. (2007, April). A theoretical and empirical investigation of teacher collaboration for school improvement and student achievement in public elementary schools. *Teachers College Record*, 109(4),877-896.
Louis, K. S., Druse, S. and Marks, H. (1996). Schoolwide professional community. In F. Newmann and associates. *Authentic achievement: Restructuring schools for intellectual quality*, 179-203. San Francisco: Jossey –Bass.

⁶ The National Research Council of the National Academies (2010). *Preparing Teachers: Building Evidence for Sound Policy*. Washington, D.C.: The National Academies Press

⁷ Sanders, W.L., and Horn, S. (1994). The Tennessee value-added assessment system (TVAAS): *Mixed-model methodology in educational assessment*. *Journal of Personnel Evaluation in Education*, 8,299-311. Wright, S.P., Horn, S.P. and Sanders, W.L. (1997). Teacher and classroom context effects on student achievement: Implications for teacher evaluation. *Journal of Personnel Evaluation in Education*, 11(1), 57-67. Hanushek, E.A., Kain, J.F., and Rivkin, S.G. (1999, January). *Do higher salaries buy better teachers?* Paper presented at the Annual Meeting of the American Economic Association, New York.

⁸ 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.

⁹ Darling-Hammond, L. and Bransford, J. (2005). *Preparing Teachers for a Changing World*. Sponsored by the National Academy of Education. San Francisco: Jossey - Bass.
Cochran-Smith, M. and Zeichner, K. (2005) *Studying Teacher Education: The Report of the AERA Panel on Research and Teacher Education*. New Jersey: Erlbaum Associates

¹⁰ 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* (pp. 83-104). Westport, CT: Ablex.

¹¹ Donaldson, M.L. (2005, April). *On barren ground*: How urban high schools fail to support and retain newly tenured teachers. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Canada; Berry, B. (2004). Recruiting and retaining "highly qualified teachers" for hard to staff schools. *NASSP Bulletin*, (87),5-27. Ingersoll, R. & Smith, T.M. (2004). Do teacher induction and mentoring matter? *National Association of Secondary School Principals Bulletin*, 88(638), 28-40.

¹² Paese (2003); Sandholtz and Wasserman (2001) Mantle-Bromley, Gould, McWhorter and Whaley (2000);Berg and others (2000); Freese (2004); Sandholtz and Dadlez (2000); Rock and Levin (2002); Pine, Maly, Swidman, and Ludlow (2003); Castle, Fox and Souder (2003); Neubert and Binko (1998); Shroyer, Wright, Kerr, and Weamer (1996); Houson and others (1999); Fleener (1999) as reported in Teitel, L. (2004) *How professional development schools make a difference, Second edition, revised*. Washington, D.C.: National Council for Accreditation of Teacher Education.

¹³ Castle, S. (2008). "Student Learning in a Professional Development School and a Control School," *Professional Educator*, 32(1),pp1-15; and for example Gill and Hove(2000);Pine (2003); Frey (2002);Castle and Rockwood (2002); Castle and others (2003); Castle and Lizmi (2003); Yahnke and others (2003)as cited in Teitel, L. (2004) *How professional development schools make a difference, Second edition revised*. Washington, D.C.: National Council for Accreditation of Teacher Education.

¹⁴ 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.

¹⁵ Feiman-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain teaching. *Teachers College Record*, 103, 1013-1055.

¹⁶ Ibid.

¹⁷ Metropolitan Life Survey 2005; Johnson, S.M., Berg, J.H., & Donaldson, M.L. (2005). *Who stays in teaching and why: A review of the literature*. Cambridge, MA: The Project on the Next Generation of Teacher; Johnson, S.M., Birkland, S., Kardos, S.M., Kauffman, D. Liu, E. & Peske, H.G. (2001 July/August). Retaining the Next Generation of Teachers: The Importance of School-Based Support. *Harvard Education Letter*. Retrieved from <http://www.edletter.org/past/issues/2001-ja/support.shtml>. Johnson, S. M.(2004). *Finders and keepers: Helping new teachers survive and thrive in our schools*. San Francisco: Jossey-Bass. Rosenholtz, S(1989). *Teacher's*

workplace: The social organization of schools. New York: Longman. Lieberman, A. & Miller, L.(1992). Teacher Development in Professional Practice Schools. In M. Levine (Ed.), *Professional practice schools: Linking teacher education to school reform*. New York: Teachers College Press.

¹⁸ Berg, J.H., Charner-Laird, M., Fiarman, S.E., Jones, A., Qazilbash, E.K. and Johnson, S.M. (2005). Cracking the Mold: How Second-Stage Teachers Experience Their Differentiated Roles," Paper presented at the annual meeting of the American Educational Research Association, Montreal, Canada, April 2005,

¹⁹ Darling-Hammond, L. (1988). *How can we ensure a caring, competent, qualified teacher for every child?* New York: National Commission

²⁰ Darling-Hammond, L. and Sykes, G. editors (1999). *Teaching as the learning profession: A handbook of policy and practice*. San Francisco: Jossey-Bass.

²¹ Ball, D.L. and Cohen, D.K. (1999). Developing practice: Developing practitioners: Toward a practice-based theory of professional education. In L. Darling-Hammond and G. Sykes (eds) *Teaching as the learning profession: A handbook of policy and practice*. San Francisco: Jossey-Bass (pp.3-22).

²² Personal communication via e-mail from S. Feiman-Nemser, May 6, 2010.

²³ Brown, J.S., Collins, A., and Duguid, P. et al (1989). Situated Cognition and the Culture of Learning. *Educational Researcher* 18 (1), 32-42. Collins, A., Brown, J.S., and Holum, A. (Winter 1991). Cognitive Apprenticeship: Making Thinking Visible. *American Educator*. Washington, D.C.: American Federation of Teachers.

²⁴ Cochran-Smith, M. and Lytle, S.L. (2009). *Inquiry as Stance: Practitioner Research for the Next Generation*. New York: Teachers College Press.

²⁵ Teitel, L (2004), op cit.

²⁶ Berry, B., Montgomery, D., Snyder, J. (2008) *Urban teacher residency models and institutes of higher education: Implications for teacher education* Washington D.C.: NCATE; Levine, M. (Spring 2009) *Preparing high quality teachers for high needs schools: Investing in clinical education and partnerships*. Washington, D.C.: NCATE

²⁷ Feiman-Nemser 2001, p.1050, Op cit