improving teacher preparation is critical to long-term improvement in teacher quality. More than 200,000 new teachers enter classrooms each year. Increasing student enrollment, the retirement of baby boom generation teachers, and high attrition in their first five years (between 40 and 50 percent of new teachers leave the profession) have transformed the teacher workforce. As a result, first-year teachers are now the single largest cohort each year.

While these numbers might cause alarm, they also highlight a huge opportunity to improve teacher effectiveness. Because states set requirements for certification and licensure and have the power to approve both traditional and alternative preparation programs, the means to transform teacher preparation is well within reach.

Policymakers know that improving teaching in our schools requires a systematic review of the many policies that impact educator effectiveness. For example, to be successful, improvements in teacher preparation must be complemented by reforms in educator evaluation, compensation, and school leadership. This issue of re:VISION, part of a series on teacher effectiveness, examines teacher preparation and offers considerations for policymakers in this important area of reform.
CURRENT CONTEXT

In most states, there are many pathways to teacher licensure, though the options vary from state-to-state. “Traditional” programs typically include those housed in a higher education setting and result in a bachelor’s or master’s degree. The label “alternative”—or “alternate”—has become a catch-all classification in teacher preparation, encompassing many routes by which a prospective teacher can achieve licensure, often without the need to return to a higher education institution for traditional education coursework or an education degree.

State policymakers set rules and guidelines for program content and the operation of traditional, university-based teacher preparation programs; these are often set out in great detail. The established requirements for such programs vary significantly from state-to-state. Traditional programs train between 70 and 80 percent of teacher candidates—an overwhelming majority of teachers—and yet, half of education professors surveyed by the Thomas B. Fordham Institute, a Washington, D.C.-based education research organization, report that these programs fail to prepare teachers for the demands of today’s classrooms. In part, the source of this problem can be traced to the low standards set by the states. While the Higher Education Act of 1998 requires states to report “at-risk” and “low-performing” teacher preparation programs, fewer than two percent were reported each year between 2001 and 2011.

In response to concerns about both the quantity and quality of new teachers produced by traditional programs, alternative preparation programs have emerged to fill perceived gaps in supply. Most alternative preparation programs aim to provide innovative and flexible routes for potential new teachers to enter the classroom. Some target the training needs of career changers, or address specific teacher shortages, like in math or science. While some alternative preparation programs are housed entirely outside of postsecondary institutions, many are located within schools of education. This has led to concerns voiced by researchers and education policymakers as to whether states’ alternative routes to licensure are genuinely an alternative to traditional teacher preparation programs.

IMPROVING TEACHER PREPARATION: THE RESEARCH

While there is limited evidence on what specific elements of teacher preparation programs ultimately lead to increased student achievement, the National Research Council’s report, Preparing Teachers: Building Evidence for Sound Policy, highlights the importance of three key aspects: the quality of teacher candidates, their subject content knowledge and the application of it in teaching, and the quality of their practical teaching or clinical experiences.

Recruiting the Best?

An often-cited 2010 report from McKinsey & Company stated that top performing nations in education (e.g. Singapore, Finland, and Korea) recruited 100 percent of their teacher corps from the top-third of their high school graduating classes, compared to the U.S., where less than one-quarter of teachers come from the top-third. McKinsey noted that top-performing countries also screened their candidates for the presence of soft skills such as perseverance and passion. The argument that raw talent will provide better job performance, all else equal, is a standard one in labor economics. (Teach for America is based on this premise.)

When considering the caliber of candidates enrolling in U.S. teacher preparation programs, the entrance standards required—or not required—by many programs are illuminating. Studies have shown that, on average, entering teachers have much lower academic qualifications in terms of test scores and institutional selectivity than 20 years ago. According to the National Council on Teacher
Quality (NCTQ), approximately 25 percent of new teachers come from teacher preparation programs that have minimal or no entry requirements. Among those programs that do have requirements, the most common GPA threshold is 2.5. Two-thirds of teacher preparation programs require below average ACT or SAT scores. The result: about a third of preparation programs are likely to draw their students from the top half of their graduating classes.

There are a handful of American studies that examine the relationship between program selectivity and later teacher effects on student achievement: the evidence all points to selectivity being an important factor. The issue is clouded by what happens—or does not happen—after students enroll in preparation programs. Encouraging top talent to join the teaching workforce is a necessary first step, but it must be supported by high-quality preparation and more effective support for teachers in their first few years on the job.

Compensation also influences whether top talent enters teaching. There is good evidence that relatively high salaries in teaching attracted the best and the brightest women into what became a very female-dominated profession after World War II. Flash-forward 50 years, and now women with similar education and experience can earn significantly more in other fields. Better-paying jobs that are genuine alternatives cause capable teachers to leave and lead some college graduates to pursue other paths.

Mastering Content

Candidates preparing to become teachers need to master the content they will teach. Teachers with deeper content knowledge raise student achievement more in those subjects, and the evidence is particularly strong for math. Forty-five states and the District of Columbia have adopted new college and career ready standards in English Language Arts and math, placing more demand on deep content knowledge. In order to help their students meet these higher standards, teachers must have a firm grasp of not only the subject knowledge, but how students acquire knowledge in their particular content areas.

Many states do not require teachers to have deep content knowledge to become certified. For instance, approximately one-third of states do not require high school teachers to have majored in the subject they plan to teach in order to be certified, and a handful of states don’t even require high school teachers to pass a test in the subject they plan to teach. Only a few states expect elementary teachers to have an area of concentration other than general education.

These lax requirements likely have a large effect on program design. For instance, in its 2013 survey that examined curricula material from more than 2,400 preparation programs, NCTQ found that fewer than one in nine elementary programs, and only approximately one in three high school programs were preparing candidates to teach to the college and career ready standards adopted by their states.
This lack of deep content knowledge is most evident in math, where there is a widespread shortage of certified teachers.20 Around 10 percent of ninth graders, for instance, are taught math by teachers who did not major in math or who lack the appropriate certification. Shortages are greater in high-poverty schools.21 But the absence of deep content knowledge in math extends beyond out-of-field teachers. The 2010 National Research Council (NRC) report concluded that “[m]any, perhaps most, math teachers lack the level of preparation in math and teaching that the professional community deems adequate to teach math.”22 For instance, a recent review by NCTQ revealed that about one-third of elementary teacher preparation programs require no math coursework.23

These issues are not confined to math. Any educator would readily acknowledge that reading is a foundational skill for learning, but only one-third of states test new elementary teachers’ knowledge of the science of reading.24 About one-half of states have minimal or no requirements that programs require the basics of reading instruction.25 The absence of state requirements is reflected in program curricula. Three out of four elementary preparation programs do not teach evidence-based methods of reading instruction; instead, candidates are often told to develop their own approaches.26

The teacher content deficit produces a vicious cycle that perpetuates poor teacher quality. Low achievement in K-12 math means that many teacher candidates lack sufficiently high levels of math knowledge when they enter preparation programs. Since many of these programs then fail to provide adequate coursework in math, this leads to a supply of math teachers without the necessary content knowledge to raise student achievement.27

Making the Most of Clinical Practice

Ensuring that teacher candidates have practical experiences in actual classrooms is critical. These experiences typically take place while a candidate is still enrolled in a teacher preparation program (student teaching) and/or in the first few years of teaching (induction). Student teaching can vary from observing or assisting the classroom teacher to taking greater, or full, responsibility for teaching an entire lesson or learning block under the observation of a mentor or paired teacher. Induction programs are typically mentoring programs for new teachers and have wide variation in mentoring arrangements and contact between mentor and mentee. A third variant includes teacher residencies and internships, where coursework runs parallel with a full-time teaching induction. Residencies aim to have the resident teacher take full responsibility for lesson planning and lead teaching by the time they graduate.

Learner-ready Teachers

“ON DAY ONE OF THEIR CAREERS, TEACHERS SHOULD BE ABLE TO MODEL AND DEVELOP IN STUDENTS THE KNOWLEDGE AND SKILLS THEY NEED TO SUCCEED TODAY, INCLUDING THE ABILITY TO THINK CREATIVELY, APPLY CONTENT TO REAL WORLD PROBLEMS, BE LITERATE ACROSS THE CURRICULUM, COLLABORATE AND WORK IN TEAMS, AND TAKE OWNERSHIP OF THEIR CONTINUOUS LEARNING. MORE SPECIFICALLY, LEARNER-READY TEACHERS HAVE DEEP KNOWLEDGE OF THEIR CONTENT; THEY UNDERSTAND THE DIFFERING NEEDS OF STUDENTS, HOLD THEM TO HIGH EXPECTATIONS, AND PERSONALIZE LEARNING TO ENSURE EACH LEARNER IS CHALLENGED...”

Source: INTASC standards 2011
Student Teaching

High-quality student teaching is an important learning experience if candidates are to become learner-ready for their first days as lead teachers in classrooms (See box: Learner-ready teachers).

Research has found that successful student teaching programs share the following criteria:28

- The program chooses the teacher with whom the student teacher is paired;
- The program requires that paired teachers have at least three years of experience; and
- The student teacher is observed at least five times and completes a capstone project that aggregates their learning from the experience.

Like other elements of teacher preparation, the design and quality of clinical and field experiences widely vary. Many student teachers may be learning practical skills from teachers who themselves struggle in the classroom. The NCTQ estimates that about 87 percent of programs have no active role in choosing the teacher with whom the student teacher is paired. Only 11 percent of programs ensure that paired teachers are effective, and only 28 percent require that paired teachers are effective mentors or have received mentoring training. Just nine percent of programs satisfy both requirements.29

Florida, Maryland, Kentucky, and Tennessee have taken steps to ensure that paired teachers are effective at raising student achievement. However, it is not clear that the regulations in these states are changing program practice. In a recent report on student teaching, NCTQ concluded that there was “a tendency by institutions to ignore regulations for which compliance is harder to determine and which are presumably not monitored all that well by the state.”30

Some schools and departments of education are working to build partnerships with local school districts to strengthen the student teaching component of their programs. California State University, Fresno, partners with the Sanger Unified School District to ensure the program meets the needs of the district and that candidates receive an intensive clinical experience. Candidates spend a full year in the

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**Teacher Preparation Exemplar: Woodrow Wilson STEM Teaching Fellowships**

The Woodrow Wilson National Fellowship Foundation’s Teaching Fellowships are state-based programs designed to recruit individuals with strong backgrounds in math, science, engineering, and technology into teaching in high-need, urban districts. Currently in four states, Michigan, Indiana, New Jersey, and Ohio, and soon to be launched in Georgia, the program offers a $30,000 stipend for participation in exchange for a three-year commitment to teaching at a high-needs school in the state.

Successful applicants enroll in a one-year master’s degree program at a partner university. In Indiana, for example, partner universities include Ball State University, Indiana University-Purdue University Indianapolis (IUPUI), Purdue University, University of Indianapolis, and Valparaiso University.

Partner universities are required to redesign their preparation programs in order to align with the Fellowship standards. These standards include intensive clinical practice, candidate mentoring, and content knowledge-related coursework. The Fellowship also features a year-long internship at a local high-needs school. Throughout the year, candidates are mentored and assessed by program faculty members. Graduates continue to receive mentoring during their three-year teaching commitment.

Source: http://woodrow.org/fellowships/ww-teaching-fellowships/

The 2005 MetLife Survey found that almost one in four new teachers in their first assignment felt "completely unprepared" or "not too prepared" to teach classrooms of children with differing abilities, and one in six felt similarly unprepared to maintain discipline and order in the classroom.

district’s schools practicing co-teaching and solo teaching and participating in professional development with school staff. During the year-long experience, coursework is offered on-site, and candidates receive support from both university faculty and local teaching staff. The University of Georgia has partnered with a local high-poverty elementary school to further the preparation of its early elementary teachers. All early elementary candidates take four clinical practice semesters and are placed with mentors with at least three years’ experience and a strong track record of excellent teaching. Graduate retention rates are encouraging: around three-quarters of the 2003 cohort remained in the classroom after seven years.  

**Induction**

Effective teacher preparation does not end at graduation. New teachers need support as they transition into their classrooms. Induction programs typically pair inexperienced teachers with more established teachers for mentoring and guidance in their first months and years of teaching. Research suggests that the most effective induction programs are at least two years in length and provide new teachers with carefully selected and well-prepared mentors as guides and coaches. Well-designed induction programs reduce the rate of early turnover, accelerate the growth in effectiveness of inexperienced teachers and, in doing so, improve student learning.  

States have acknowledged the benefits of induction, and more than 25 states now require it. Between 1991 and 2008, the number of teachers in induction programs tripled. Approximately 80 percent of new teachers now receive some kind of induction. But only a few states have research-based criteria that ensure high-quality induction; just 11 states require that induction lasts at least two years, for instance.

As of 2012, three states — Connecticut, Delaware, and Iowa — provided dedicated funding, required schools and districts to provide multiple years of induction support, and mandated participation in induction to obtain a professional license. At least 29 states set eligibility requirements for mentors, and 31 states require mentor training, but only three states — Florida, Tennessee, and Illinois — explicitly require mentors to receive an effective teacher rating on their own teacher evaluations.

**Teaching Residencies**

Teacher residencies are a form of internship. Whereas a traditional preparation program offers coursework supported by varying amounts of student teaching, and induction programs offer mentoring support to new teachers who usually quickly assume full responsibility for their classrooms, residencies offer intensive clinical practice with growing responsibility that is supported by coursework. Following the residency, participants experience an extended induction period with mentoring.

The Urban Teaching Residency United (UTRU) is a network of urban teacher development programs that combines a year-long teaching apprenticeship with an aligned sequence of graduate-level coursework. The programs target minorities and teachers in science, math, and special education. Recruitment is highly competitive. Residents are recent college graduates and lateral entry candidates. They receive a stipend for living expenses throughout the year and an education award to offset costs of the degree.

UTRU Residents are placed in high-need, “beat the odds” schools and are paired with an experienced and highly effective teacher-mentor for one year. Mentors are selected through a competitive process, undergo intensive training themselves, and have access to resources and targeted professional development. These mentors assist mentees to develop the habits, skills, and knowledge necessary to be successful in the urban classroom, and assist the transition of the mentee from apprentice to lead teacher.

Post-residency graduates commit to teaching in the district for three years. The local program finds a placement and follows up with new graduates via a two-year induction program that features classroom observations and targeted feedback through one-on-one consultations.

UTRU currently has 20 member programs in 25 cities across 15 states including: Boston; Atlanta; Seattle; Chicago; Chattanooga; Denver; Los Angeles; Memphis; New York; Oakland; Philadelphia; and Richmond.

The evaluations of UTRU are promising. Eighty-five percent of all Residency candidates stay in their placement schools beyond their first three years. In Boston, program alumni became better teachers than their non-Resident cohort peers. By their fourth and fifth years, they increased student achievement in math and English more than veteran teachers. Training site principals believe that residents and graduates were more effective than other first-year teachers.
In 2012, the Council of Chief State School Officers (CCSSO) convened a taskforce to “address the need for a coherent and comprehensive system of entry into the education profession that ensures learner-ready teachers who can prepare students to be college and career ready.” This work culminated in the release of Our Responsibility, Our Promise which identified three state policy reform levers to improve teacher preparation: licensure; program approval requirements; and data collection, analysis and reporting to assist accountability. The three levers for reform offer real promise for the improvement of teacher preparation in all states.

Seven states have joined the Network for Transforming Educator Preparation (NTEP) created by the CCSSO to support these reforms: Washington, Idaho, Kentucky, Louisiana, Massachusetts, Connecticut, and Georgia.

Network states will be working with educators, preparation programs, institutions of higher education, nonprofit and for-profit education providers, districts, and schools. The work is supported by 17 national partners, including the American Federation of Teachers, the Council for the Accreditation of Education Preparation (See box: The New CAEP Standards), the National Association of State Boards of Education, and the State Higher Education Executive Officers.

Make Licensure Meaningful

CCSSO’s Our Responsibility, Our Promise report asked states to revise and enforce their licensure standards to support the teaching of more demanding content. This effort involves enacting a multi-tiered licensure system that embodies more demanding expectations at every stage of a teacher’s career, as well as new performance-based licensure assessments.

Enacting performance-based and multi-tiered licensure systems will require substantive reform in states, beginning with initial licensure. Until recently, the default policy has been that graduation from approved teacher preparation programs and passing general tests—and sometimes depending on the state and the subject passing subject-area tests as well—meant that new teachers were certified and ready to teach.

**CONSIDERATIONS FOR POLICYMAKERS**

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**AS OF LATE 2013, 27 STATES HAVE COMMITTED TO REFORMING TEACHER PREPARATION IN RESPONSE TO OUR RESPONSIBILITY, OUR PROMISE: ARKANSAS; COLORADO; DELAWARE; IDAHO; ILLINOIS; IOWA; KANSAS; KENTUCKY; LOUISIANA; MARYLAND; MASSACHUSETTS; MAINE; MICHIGAN; MISSOURI; NEBRASKA; NEW HAMPSHIRE; NORTH CAROLINA; NEW YORK; OREGON; PENNSYLVANIA; RHODE ISLAND; SOUTH CAROLINA; SOUTH DAKOTA; TENNESSEE; VERMONT; VIRGINIA; AND WASHINGTON.**

Source: CCSSO.
The rigor of these certification tests has been controversial for many years. Despite this, states have also made it easy to pass by setting cut scores very low. For instance, every state except Massachusetts sets pass scores on elementary licensure tests below the average scores in each state. Cut scores on content area tests also vary significantly between states. On the math Praxis II exam, for example, state cut scores range from 25th to the 75th percentiles. Based on these cut scores, many teachers licensed in one state would be deemed unqualified in another.

There are, however, some promising developments. For instance, new performance-based assessments for initial licensure have been designed. The edTPA, an initial licensure assessment aligned to new college and career ready standards, offers states a ready-made, performance-based assessment (See box: The edTPA). In 2013, Delaware became one of the first states to pass a law requiring all teacher candidates—from alternative and traditional routes alike—to pass a performance assessment in order to earn a teaching license. Minnesota has recently adopted the edTPA for alternative preparation pathways to establish that graduates are ready for the classroom, and Georgia is poised to do the same in the near future.

Many states have also made the change to multi-tiered licensure in recent years. The default design is three levels: initial, standard, and master or lead teacher—usually reserved for teachers with National Board for Professional Teaching Standards certification. Many states have a provisional or emergency license for those who have yet to complete a preparation program.

While many states are moving towards performance-based initial licensure, few states use evaluation data for licensure renewal. Only eight states currently use the results from teacher evaluations to inform licensure decisions.

**Toughen Program Approval**

According to the CCSSO, states need to adopt and implement more rigorous program approval standards that encourage higher entry standards for preparation programs, substantive content-area training, and high-quality clinical practice. This will be a substantial departure from the status quo.

Under state law and regulations, half of states vest the power to approve programs in the state board of education. About a quarter of these states delegate the authority to the chief state school officer, and a quarter leave the decisions to a governor-appointed board or other commission. Because governors often appoint state board members and/or chief state school officers, there are only a handful of states where the governor has little or no control over the decision-making panel.

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**The edTPA**

The edTPA is an entry-level assessment of teaching practice in 27 licensure areas that is designed to test whether a candidate is ready to teach. It was developed by the Stanford University Center for Assessment, Learning and Equity in association with the American Association of Colleges for Teacher Education (AACTE).

The edTPA is built around three-to-five continuous days of standards-based, subject-specific classroom instruction delivered by a candidate, typically at the end of a student teaching or clinical experience. This could also include an induction period. The edTPA evaluates lesson planning, instruction, and student assessment via examination of unedited teaching videos of the candidate and examples of teaching materials and assessed student work. The edTPA is scored by trained teachers who are content experts with mentoring experience.

Early evaluations of edTPA show it is validly constructed, well-aligned to accepted standards of excellent teaching, and appropriately content-focused.

Seven states—Georgia, Hawaii, Minnesota, New York, Tennessee, Washington, and Wisconsin—have adopted policies for using edTPA, and 34 states have either policies or institutions using the evaluations. Minnesota requires all candidates to pass the edTPA, and Georgia will require all candidates to pass the assessment in order to be awarded a license from 2015-2016. Washington and Wisconsin will also require this starting 2016-17.

Source: [http://edtpa.aacte.org/about-edtpa](http://edtpa.aacte.org/about-edtpa)
In most instances, the power of approval has been de facto—delegated to national accreditation bodies. In 2012, all but eight states had program approval processes that were wholly or partly dependent on national accreditation from the National Council for Accreditation of Teacher Education (NCATE) or the Teacher Education Accreditation Council (TEAC). The merger of the two bodies in 2013 as the new Council for the Accreditation of Education Preparation (CAEP) was accompanied by the development of tougher accreditation standards (See box: The New CAEP standards). This was an acknowledgement that old standards of accreditation were too lenient. States now have the opportunity to use CAEP as the basis for more stringent program approval standards.

The new CAEP standards direct programs to document that graduates contribute to student learning growth and have high levels of content mastery in the subjects they teach. This will be a departure for all but a few states. Only a handful, including Colorado, Florida, and Louisiana, have established minimum standards for performance based on objective measures, such as candidate scores on initial licensure tests or evaluation results from the first one or two years of teaching.

Improve Data Quality and Accountability

According to the CCSSO, states need to develop and support state-level governance structures for data systems to ensure confidential and secure collection, analysis, and reporting of student data, and then use this data to inform teacher preparation policy, hiring practices, and professional learning.

At present, most states do not have data systems that capture how preparation program graduates are performing. But there are signs of change. According to the Data Quality Campaign, 43 states now have the necessary governance structures in place to safeguard K-12 student data. Forty-five states have K-12 longitudinal data systems with the capability of linking student performance to a teacher-of-record. The next step for states is to match teachers back to their teacher preparation programs. As of 2013, eight states use student achievement data to hold teacher preparation programs accountable for the effectiveness of the teachers they graduate. An additional seven states have made Race to the Top commitments to do so. Louisiana, for instance, has spent several years building a data system linking student achievement data with the state’s traditional and alternate preparation programs and uses the data to assess program effectiveness.

The New CAEP Standards

In July 2013, the National Council for Accreditation of Teacher Education (NCATE) and the Teacher Education Accreditation Council (TEAC) consolidated to form the Council for the Accreditation of Educator Preparation (CAEP). CAEP accredits preparation programs. CAEP’s mission is to create a more unified accreditation system and raise the performance of candidates as practitioners and the status of the profession.

The CAEP standards stress that preparation programs must have:

- Admission requirements of at least a 3.0 GPA;
- Program selection from the top third of candidates on assessments such as the SAT, ACT, or GRE by 2020;
- Candidates who demonstrate ability to teach to college and career ready standards upon graduation;
- Candidates who demonstrate a high standard of content knowledge in the fields for which initial licensure is sought and for which the program makes a licensure recommendation; and
- Documented evidence that graduates contribute to student learning growth.

The CAEP standards were informed by the National Board for Professional Teaching Standards and the 2011 InTASC Model Core Teaching Standards, which were developed by the CCSSO in concert with experts from national professional organizations and reflect the new rigor of the college and career ready curriculum standards.

The edTPA is consistent with the new CAEP standards, though they are not yet formally aligned. Alignment would provide clear direction to preparation programs and is something that will be considered in the future.

Source: http://caepnet.org/ American Association of Colleges for Teacher Education, “What are the standards upon which edTPA is based?”
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**PART ONE | IMPROVING THE QUALITY OF TEACHERS AND PRINCIPALS**

**PART TWO | EVALUATING TEACHERS: OPPORTUNITIES AND BEST PRACTICES**

**PART THREE | PAYING FOR IMPROVEMENT: TEACHER COMPENSATION REFORM**

**PART FOUR | GETTING TEACHERS LEARNER-READY: REFORMING TEACHER PREPARATION**

**PART FIVE | BUILDING LEADERSHIP IN SCHOOLS**