



Reimagining Teacher Preparation

An Invitation to Create New Programs for Changing Teacher Roles

DESIGN IDEAS

executive summary

Teaching is the number one in-school factor affecting student outcomes. And a central part of the strategy for improving teaching involves better teacher preparation. There is a great need for more relevant and innovative teacher preparation programs, and we believe creating a **new** program—potentially within a non-conventional institutional host—is the best way to keep the program truly independent and innovative. Possible non-conventional hosts include out-of-school programs, museums, teachers unions, school-university partnerships, and other entities that are passionate about student learning.

Such a program could be open to prospective teachers entering at multiple points in their education pathways and careers. Wherever candidates enter, the application process should be competitive even if that means the new program must start small. Once enrolled, teacher candidates should immediately engage the core elements of the program: exposure to diverse school and learning models, quality mentorship from experienced teachers, and coursework in core content. Teachers should complete their transition into the profession with a one-year residency program designed to ramp up the skills they learned in the program component, and demonstrate their competency before being fully licensed.

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introduction

Eric Hanushek's 1972 report "Education and Race" confirmed what many in education already knew: teachers are the number one in-school factor affecting student learning. In the years since, numerous reports have corroborated this finding. The natural response has been an effort to improve teachers and teaching. Recently this effort has focused increasingly on improving the institutions that train and prepare teachers.

"Teachers are the number one in-school factor affecting student learning."

Unfortunately, analyses of current teacher preparation programs in America paint a bleak picture. In June 2014, the National Council on Teacher Quality (NCTQ) released their second annual assessment of the nation's preparation programs. The study—based primarily on examination of course syllabi, textbooks, and other materials—found that over half of all teacher preparation programs nationwide achieved the lowest possible ranking on a four point scale (NCTQ, 2014). Surveys of teachers echo these findings, with educators reporting that they feel “poorly prepared” by their preparation programs for the job they face in schools (E4E, 2013).

Poor pre-service preparation has also been linked to low teacher retention rates (Ingersoll, R., Merrill, L., & May, H., 2014). Because teachers generally improve the longer they stay in the profession, high turnover means fewer students will have high performing teachers (Papay & Kraft, 2014; Ladd & Sorensen, 2014). This problem is compounded in high-poverty schools, where the turnover rate is roughly 50 percent higher than in affluent schools (Haynes, 2014). In addition to its detrimental effect on student learning, high teacher turnover also costs states a staggering \$1 billion to \$2.2 billion per year (Ingersoll, 2007–08).

With this report, we present our own contribution to the effort of improving teacher preparation: **we highlight essential elements and best practices for a new, different, and we believe, better, teacher preparation program.**

Education Evolving has studied intensively the question of how successful systems change (Kolderie, 2015). We advocate for applying what our co-founder Ted Kolderie describes as a “split screen” strategy to teacher preparation. On one side of the screen, we should encourage existing institutions to continue working to improve their programs. But, at the same time—in the second half of the screen—we must try something totally new and different. Those new programs could well succeed and flourish; and they might yield lessons or models that are useful to improving other established programs.

This report is the result of convenings, conversations, and independent research over the last year.

We hosted a design day in August 2014 with fourteen professionals from within education as well as a variety of other fields; we interviewed operators of several innovative teacher preparation programs; we spoke with operators of preparation programs in other disciplines; and, we talked with dozens of current and former teachers about their own experiences in teacher training.

We begin by exploring which skills teachers in 21st century schools will need as their roles change to fit the needs of their students and society. We then describe some of the most basic elements or best practices that we believe should be included in a program and propose a sequence and flow to the various portions of the program. And finally, we consider what types of organizations might be best suited to house this new program.

Box 1. Teacher-Powered Schools

We believe improving teaching is a two-prong issue. We need to improve teacher preparation and we need to improve the actual job of teaching. Teachers must be trusted and have the autonomy to meet the needs of their students. When this happens—in parallel with improving preparation—we will make a career in teaching more appealing to the top notch candidates we hope to attract. To learn more visit the Teacher-Powered Schools Initiative website:

www.teacherpowered.org

picturing the 21st century teacher

the learning facilitator

the content expert

the collaborative leader

the culturally competent educator



Before addressing the topic of how to best prepare teachers, it is essential to first consider what skills teachers need—both today and as we progress further into the 21st century.

Our conversations and research lead us to suggest four primary dimensions of a 21st century teacher: the learning facilitator, the culturally competent educator, the content expert, and the collaborative leader.

These skills can and must be taught. Effective teaching is a mix of both natural ability and learned skills (Green, 2014). Teacher preparation programs have the great potential and imperative to help develop the latter.

the learning facilitator



***Imagine:** Twenty-first century teachers incorporate a variety of pedagogies to personalize learning to their students' needs and interests. They build strong relationships and trust with their students in order for learning to be truly student-led.*

Schools and classrooms are changing. The use of blended learning, project-based learning, flipped classrooms, and other innovations which facilitate personalized and individualized learning are increasing, accelerated by advances in technology (Horn, 2011). Early research confirms that these changes are having positive results in schools (David, 2015; Vega, 2012). The ability to choose a classroom style and format that best fits the students in the room is crucial to teacher morale and empowers teachers to use their skills and mastery to better support their students.

These new instructional approaches involve more direct interaction between teachers and students. The abilities to build relationships with students, treat them with respect, and motivate them have always been the most important qualities of successful teachers and become only more necessary as we move toward more student-led, personalized learning.

Research supports what many already instinctively know regarding the value of these social and emotional skills. Teachers who demonstrate empathy build stronger relationships with their students, which leads to higher student outcomes (NCTQ, 2004, p. 11). Social and emotional competencies positively influence many factors such as: teacher-student relationships, classroom management, effective instruction, and teacher retention (Jones et al. 2013, p. 62). Skills in empathy, self-awareness, self-management, social awareness, and relationship building help create learning environments that are “challenging, engaging, and meaningful” (CASEL). These same skills help build learning communities where students feel respected and cared for, build bonds and attachments to their schools, trust their teachers and peers, and display high levels of self efficacy (Jennings and Greenberg, 2008, p. 515).

the content expert



***Imagine:** Twenty-first century teachers are confident experts in their subject matter, be it a particular discipline for secondary teachers or a specific age range for elementary teachers. They also understand the science of the brain and learning, so as to better transfer knowledge to their students.*

Strong expertise in the subjects a teacher will teach is very important (Hill, Rowan, & Loewenberg Ball, 2005; Metzler & Woessmann, 2010). Teachers should leave their preparation programs embracing that, more than ever before, knowledge is fluid and dynamic and thus must commit to a lifetime of staying up to date on advances in their field. Furthermore, while specific subject matter expertise is essential, academic subjects do not exist in isolation in the real world. Teacher preparation should also help teachers to connect and integrate knowledge across disciplines (Vega, 2013; Drake & Burns, 2004).

Subject matter expertise is only part of the equation. Teachers should also understand how content knowledge transfers to students. Ken Bain, president of Best Teachers Institute, describes the importance of understanding: “what it means to learn, how the human mind works, and all of the personal and social forces that can influence learning” (Kamenetz, 2014). Teachers who have an understanding of brain development and the human mind have a positive impact on the outcomes of their students (NCATE, 2010).

the culturally competent educator



***Imagine:** Twenty-first century teachers are more representative of their students. At the same time, both white and nonwhite teachers understand the complex history of race, culture and gender in American schools—and how these histories and inequalities are manifested today—and are committed to embracing and empowering all of their students.*

According to the US Department of Education, 43 percent of American students identified as students of color in 2011; in contrast, only 18 percent of teachers nationally identified as such. In Minnesota, 27 percent of students identified as nonwhite in 2013, in contrast to only 4 percent of teachers (MDE). These discrepancies are even wider in metropolitan areas.

It is helpful to understand the history which led to these disproportionate numbers. Before the landmark Supreme Court decision in *Brown v. The Board of Education* (1954), most educated black Americans became teachers, as most other professional career paths were blocked based on their race. However, in the wake of *Brown v. Board* many white parents refused to permit their children to be taught by black teachers, regardless of how well educated they were. This led to the firing of an estimated 40 percent of black teachers nationwide, who were then replaced by hastily hired and underprepared white teachers (Gordon, 2005; King, 1993; Rogers-Ard, 2012). The lack of teachers of color is the product of decades of marginalization and contributes to the devaluation of students of color who rarely see people who look like them in leadership roles at their schools. We need to break this cycle.

Teacher preparation programs should put a high priority on attracting and recruiting more minority candidates, both to break this cycle of injustice and because students benefit from having teachers who share their identity (King, 1993). Additionally, programs should weave cultural competency training throughout all elements of their programs for the benefit of white and nonwhite candidates alike.



the collaborative leader

Imagine: Twenty-first century teachers realize that they best know and understand their students' needs, and so they are actively involved in designing and running all aspects of their schools.

Collaborative teacher leadership can take many forms. In its most basic form, it can mean

team-teaching or coordinating with other teachers in the same department or grade. But as 21st century teachers move more into a role that requires them to serve as facilitators carrying out personalized learning for an increasingly diverse student body, a bolder form of collaborative leadership is necessary. Teachers should be given the option to, as a team, collaboratively design and run all aspects of their schools, departments, and programs.

This sort of collaborative leadership is central to many other white collar occupations that require high levels of professional discretion. Professionals in law, medicine, engineering, accounting, and architecture, commonly organize into “partnerships”, where decisions are made by the collective group of professionals. Schools, in contrast, are typically run with a rigid structure that places teachers—the professionals in teaching and learning—at the bottom of a hierarchy.

In response to this lack of discretion, the last 20 years have seen a growth in the number of what we call teacher-powered schools. Teachers in these schools collectively make the decisions that influence school and student success. The Teacher-Powered Schools Initiative, a joint project of Education Evolving and the Center for Teaching Quality, has been researching these schools, building awareness of this model, and supporting teachers in creating and running such schools. Of the 75+ schools that we know, some are charter schools while others are district schools; some are union schools while some are not. They are all very different from one another because each group of teachers has identified the best ways to serve their particular students. The one thing they share is that their teachers are passionate about what they are doing and feel empowered to make drastic changes for the good of their students.

Regardless of whether or not a teacher chooses to work in a fully teacher-powered school, teacher candidates will benefit from learning about collaborative leadership. Unfortunately, despite the considerable value collaboration skills represent, learning to collaborate is rarely a part of traditional teacher preparation programs.

key design elements for a new program

At this point we move from a vision of the 21st century teacher, to describing a program that we believe should be created to impart the skills described above. While we suggest many program elements in the following sections, we do so in the spirit of generating ideas, without intending to be overly prescriptive about actual program design.



Figure 1: Phases in the sequence of a new teacher preparation program

entrance points

Entrance into the preparation program could remain open to various points of entry for candidates coming from a variety of experiences and professional backgrounds. Namely:

- High school students might start the program while still in high school—possibly through the Post Secondary Enrollment Options (PSEO) program in Minnesota. This would provide them the opportunity to observe the methods they learn through the preparation program in their own classes and contextualize the lessons through the lens of current high school students.
- High school graduates could, of course, enter the program as undergraduates, as most do now. This will most likely continue to be the most common point of entry.
- Lastly, college graduates could enter the program as masters' students immediately following completion of an undergraduate degree or individuals transitioning mid-career.

The sooner a candidate enters the program, the faster they would progress through the program. For example, in a model similar to the University of Missouri Kansas City combined six-year undergraduate and medical school program, a student who enters the program while still in high school might graduate with a master's degree and teaching license much sooner than if they enter the program late into their undergraduate degree.

admission process

"Compared with other occupations and professions, teaching is relatively complex work, with relatively low pre-employment entry requirements, but nevertheless with a relatively high amount of empirical scrutiny, and also skepticism of the [entrance] requirements that do exist." (Ingersoll, 2007, p. 2)

Current teacher preparation programs are notoriously easy to get into. Only one out of four programs require applicants to be in the top half of their college graduating class (NCTQ, 2014). It is not surprising that 60 percent of Americans said entry into teacher preparation programs should be more rigorous (Bushaw & Calderon, Gallup Poll, 2014, p. 50).

By being more selective of candidates, the profession will benefit in two ways. First, studies find that teachers who are themselves more literate lead their students to greater achievement (NCTQ, 2004, p. 8). Second, by making entrance into preparation programs more selective, we begin to improve the perception of the profession as more elite, and thus garner more respect for teachers as professionals. In Finland, where teaching is viewed as one of the most prestigious careers, teacher preparation programs only accept 10 percent of applicants each year (Compton, 2011). The Teach for America program provides evidence that many of our nation's exceptional graduates do have an interest in teaching (Tucker, 2008). If these same students were to receive more substantial training, they would likely remain in the profession at higher rates (Ibid).

A new program should be intentional and extremely careful about what it takes into consideration in exercising selective admissions. We know that traditional selection criteria are often biased against racial and cultural minorities (Arbuthnot, 2009; Ahmad & Boser, 2014). And, while "hard skills" may be more easily quantified through tests and grade point averages, programs must also find ways to assess the many other skills that a 21st century teacher should possess. Essays, letters of recommendation, interviews, sample lessons, and other evaluations should be incorporated into the selection process.

A new program might choose to start small enough so as to be highly selective. Over time, as the reputation and prestige of the program grows, the new program could then begin to grow without compromising selectivity.

Recommendations:

- **Start small and be highly selective**
- **Align selection process with the skills needed for the job**
- **Develop admissions criteria that are inclusive and unbiased**

core program

Teacher preparation programs should incorporate what we believe are the key elements of a successful program: (1) **Exposure** to a plurality of models for teaching and learning; (2) **Quality mentoring**; and (3) **Rich content** (which includes, importantly, building cultural competency).

While these three elements are the foundation of a teacher candidate's years in the core program, they should also continue beyond—into residency and into their time as practicing educators. Too often programs either simply do not include all three components or include them at different stages in isolation from one another. Figure 2 illustrates how these three elements could be woven into a teacher's full preparation experience. The three components are described in greater detail below.

Exposure

Unlike most other professions, new teaching candidates already have at least 12 years of experience in their field from their own experiences in K-12 as a student. They have their own well-developed notion of what school and teaching look like. While most know that other school and learning models exist beyond what they experienced themselves, internalizing those models and changing their mental image of what teaching and learning can be is difficult. Because of this, teaching programs should expose candidates to different teaching styles and schools as early as possible, so that candidates can see the strengths of each and find a good fit for themselves and their students (E4E, 2013, p. 5).

Teacher candidates should be exposed to a variety of approaches such as: project-based learning, inquiry-based instruction, ungraded schools, or any of the hundreds of different programs that exist around the country. Teachers should also be exposed to various school governance arrangements, including centrally-managed schools, schools with some collaborative leadership, and full teacher-powered schools. Just as students need to find a school that best meets their learning style, teachers also need to know that there are choices in how and where they teach.

Exposure to different teaching styles and school models will also raise questions candidates will bring to their mentors.

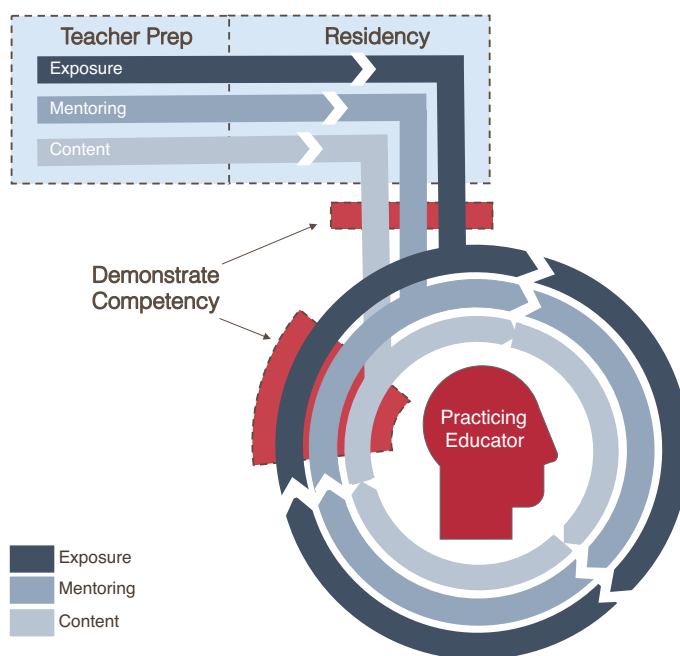


Figure 2: Structure and flow of a proposed teacher preparation program

Mentoring

"There is so much in teaching that would be best learned through apprenticeship, rather than the current system of leaving most new teachers to trial-and-error their way through." (Kamenetz quoting Renee Moore, 2014)

Having a quality mentor is one of the primary factors teachers cite for making it beyond the first few years on the job (Haynes, 2014, p. 6 citing the Schools and Staffing Survey (SASS) and the Teacher Follow-up Survey (TFS)). Teacher candidates would benefit enormously from being paired with a quality mentor from the very beginning of their program. These mentorships will provide the support candidates cite as so critical, facilitate their exposure to real life teaching as described above, and provide context for the content knowledge they learn in their program. Most importantly, candidates will build a collaborative relationship with their veteran mentor teachers and learn to problem-solve together, as they will need to do often on the job.

Content

Core program content should be constructed so as to develop candidates in the vision of the 21st century teacher described above. This content falls primarily

into two categories: subject matter knowledge, and knowledge about the art of teaching and process of learning. The actual content taught by individual programs is entirely dependent on the subject areas and the focus of a particular program. Obviously, the specific content should be determined by experts in that particular field in collaboration with experts in teaching methods.

Cultural competency as a part of program content.

It has been over 50 years since the landmark *Brown v. Board of Education* (1954) case and we as a nation continue to fail our nonwhite students. The number of nonwhite students in school continues to grow, such that this group is no longer a numerical minority. Still, nonwhite students continue to score lower than their white classmates on tests (US. Dept. of Ed. SAT scores, 2013), graduate high school at lower rates (US Dept. of Ed. Dropout Rate, 2013), and are suspended and expelled at much higher rates (US Dept. of Ed. Suspended or Expelled).¹

Teachers need to have an awareness not only of the structural and social racism that occurs in students' everyday lives, but also the often unconscious racism that they perpetuate in the classroom. Teachers must be prepared to address difficult issues such as the connections between student discipline and race. By becoming aware of covert racist practices and the policies that support them, teachers, students, and families are better equipped to devise strategies to counter and resist those practices and policies (Decuir & Dixon, 2004, p. 30). Some other useful methods include: counter-storytelling (Bell et. Al. 2008), discussing the tenets of race and where they manifest in schools and classrooms, and using current media. White teachers in particular need to recognize their privilege and be aware of their role in perpetuating the systems of racial oppression and disempowerment (Tansey, 2015).

"...we want to ensure teachers have the diversity training and empathy required to teach students from many diverse backgrounds, regardless of race or socioeconomic status. This area of knowledge should not be satisfied in a one-course requirement; it should be approached as a coherent and systematic thread that is present throughout the entire program." (E4E, 2013, p. 13).

Who Teaches Teachers?

Many current preparation programs are taught primarily by professors with PhDs but with little to no classroom experience (Green, 2014). Teacher candidates should also be taught by master teachers who can speak from their own experiences (Green, 2014; EE Design Lab, 2014; P. Gupta, personal communication, 2014). The PhDs, with their research backgrounds, are valuable, but teacher candidates need exposure to both kinds of background. A good example of a combining experts in both subject knowledge and teaching and learning is an approach adopted by the American Museum of Natural History. In this program, all courses are co-taught by an educator and an expert PhD in the content area. This not only serves to highlight the importance of both areas of expertise, but also exposes candidates to the technique of co-teaching (P. Gupta, personal communication, 2014).

Recommendations:

- **Core program should focus on exposure, mentoring, and content**
- **Cultural competency must be an important element of program content**
- **Courses should be taught by experts in both teaching and content areas**

practice teaching & residency

"The best university-based programs in the country cannot prepare a 22-year-old for the challenges of effective autonomous teaching practice any more than a degree from Harvard Medical School prepares an M.D. to care for patients." (Thorpe, 2014)

The analogy to medical training in the above quote is apt. No medical training is complete without residency. So, in addition to critically important practice teaching during the core program, we suggest that a new program add a **separate, one-year residency period**.

The National Council on Teacher Quality's 2014 assessment of teacher preparation programs found student teaching to be the most important standard and

¹In 2007, which is the last year on record, 18% of suspensions were white students, 49% were Black, and 27% were Hispanic.

the one that institutions struggle with the most. The 2014 PDK Gallup Poll also reflected that finding, with over 70 percent of Americans saying new teachers should spend at least a year practice teaching under the guidance of a certified teacher before taking on the responsibility for their own classrooms (Bushaw & Calderon, 2014, p. 50). This not only provides candidates with more hours of experience but also gives them the opportunity to observe the full cycle of lessons throughout a year.

Ronald Thorpe, the late president of the National Board for Professional Teaching Standards, conducted extensive research on the use of residency programs in teacher preparation and suggested that a lot can and should be borrowed from the medical residency model. In addition to acquiring extensive experience in clinical practice, medical residents go through residency as a cohort, which helps to foster collaboration with colleagues (Thorpe, 2014). Creating a new generation of teachers for whom collaboration has been instilled from the beginning will begin to breakdown the culture of isolation that is so ingrained in teaching.

Regardless of their specialty, medical residents spend their first year rotating through all the different specialties so as to better grasp the role of their own specialty in patient care. Similarly, teacher residents should experience the whole picture of schooling as it applies to their students. Thorpe suggested that this may even require spending time with a superintendent and school board. (Thorpe, quoting OECD 2014 Report).

Another essential feature of the medical residency model is that residents are paid. Even the relatively short periods of unpaid practice teaching required in many current teacher prep programs serve as a financial barrier to many potential teachers. In order to both open the field to more diverse candidates as well as enable candidates to participate in longer, more meaningful residency experiences, the new program must find a way to pay teacher candidates during their residency (EE Design Day, 2014; E4E, 2013, p. 5).

There is a strong *economic* argument for paying for teacher residency programs, even if it adds to costs. Teachers who feel unprepared and do not receive

adequate exposure to classroom teaching prior to entering the job are less likely to stay in the teaching field than those who receive more hands-on experience (CRPE, 2014). Teacher turnover is expensive—the 2008 estimate of costs to states was between \$1,004,484,411 and \$2,186,383,217; for Minnesota alone the estimate was between \$18,706,847 and \$40,717,928 (Ingersoll, 2007–08). Of course most school districts do not list turnover as a cost, but reducing it would generate savings, which could then be redirected toward the costs of residency.²

Lastly, teacher training could include observations not just of practicing teachers, but also of students. Teacher candidates could learn a lot from shadowing students and understanding their experiences and perspectives. It is all too easy to forget what it is like to sit in a classroom all day (Wiggins, 2014).

Recommendations:

- Residents should observe master teachers, practice their own teaching, and reflect
- Residents should be placed in teams and encouraged to collaborate
- Residents must be paid a living stipend during their year of residency
- Residents should also shadow students

demonstrating competency

Conventional assessment practices purport to measure what has been learned; they look back at how successful a student has been. We suggest building assessments of competency designed to measure suitability for moving to the next stage.

There are several points at which a new program could measure candidates' competency. The first and most obvious occurs on admittance into the program itself. The second point could be on entrance into the residency portion of the program. The third point could be upon finishing residency, in order to become a fully licensed teacher. And finally, there are already additional measurements of competency for practicing teachers, such as National Board Certification.

² For a detailed description of how we might find money to pay teacher residents read Ronald Thorpe's piece "Residency: Can it transform teaching the way it did medicine?" published in the September 2014 issue of Kappan Magazine.

For entering residency. Ronald Thorpe suggested making acceptance into residency programs a highly competitive process such that only 75 percent of newly licensed teachers are admitted. By doing so, we could decrease the excess of unemployed teachers in certain areas, lower attrition rates among new teachers, and assure the public that our nation's teachers are in fact well prepared to teach our children (Thorpe, 2014, 39).

For obtaining licensure. Completing the teacher preparation program requirements should not be sufficient to be eligible for licensure. Most states do require that teachers pass a test administered by a state licensing body, but these tests are rarely tied to any skills required for teaching. Prospective teachers might instead demonstrate competency through various metrics such as classroom observations and research, as well as content knowledge. These evaluations should closely reflect the ways teachers are or will be assessed as licensed classroom teachers.

There are a few existing evaluation tools that could be utilized for this purpose. National assessments and certifications such as these serve to measure teachers' readiness before entering their own classrooms. In doing so, these assessments also open the door to more innovative and distinctive teacher preparation programs so that all teachers, regardless of whether they were trained in an undergraduate, graduate level, or alternative program can use these assessments to demonstrate their competency.

edTPA, developed through a partnership between Stanford University and the American Association of Colleges for Teacher Education, serves as an excellent example of a test that could be used for licensure evaluation. It is a multiple-measure assessment system aligned to state and national standards and designed to measure a teaching candidate's readiness to teach in a classroom. Unlike other assessments, edTPA is a multiple-measures assessment of a candidate's teaching that is adapted for diverse learners. It addresses planning, assessment, and instruction using video recordings of candidates teaching and examples of teaching materials to show how candidates plan instruction. After years of testing, edTPA was declared fully operational in September 2013 and adopted by seven states, including Minnesota (edTPA, n.d.).

For board certification. The 2014 Gallup Poll found that over 80 percent of Americans said teachers should pass board certification in addition to being licensed to teach, as is the case in other professions like medicine and law (Bushaw & Calderon, 2014, p. 50). While board certification is voluntary in both teaching and medicine, only 3 percent of teachers are board certified (Thorpe, 2014, p. 63) as compared to 75 percent of doctors in medicine (Young, Chaudhry, Rhyne, & Dugan, 2010, p. 12). Board certification takes place after a doctor or teacher is licensed and serves as an additional assurance of competency. This not only benefits the individual students of board-certified teachers directly, but also improves the overall public perception that teachers are in fact well equipped to lead the nation's children in their learning.

To draw further lessons from medicine, there are over 20 board-certified specialties and countless sub-specialties (American Board of Medical Specialties, n.d.). Certification not only provides an initial proof of competency but also provides an avenue through which physicians continue to develop skills in their chosen specialties. Likewise, in teaching we could develop specialties beyond the existing 25 elementary and content areas (National Board of Teaching Standards, n.d.) to include different models of teaching and governance such as project-based instruction or teacher-powered schools.

While board certification would not likely be a requirement of a new teacher preparation program, the program could strongly encourage its graduates to pursue certification.

Recommendations:

- **Require all teachers to demonstrate competency through in-depth, multi-dimensional assessments**
- **Encourage graduating students to become board certified**
- **Lobby to expand possible board certification areas beyond just content, to include innovative teaching strategies**

Box 2.

Summary of a New Teacher Preparation Program

Multiple Entrance Points

- While still in high school
- As an undergraduate
- As a graduate student

Highly Selective Admission

- Based partially on academic performance
- But, also based on an inclusive demonstration of skills necessary for effective teaching

Core Program

- Exposure
 - To a variety of teaching methods and schools
- Mentoring
 - High quality
- Content
 - Hard and soft skills

Residency

- One year minimum
- Should be paid
- Continues to incorporate exposure, mentoring, and content

Demonstrate Competency

- edTPA or similar teacher-developed, multiple-measure assessment
- National Board certification

Practicing Teacher

- Continues to incorporate exposure, mentoring, and content
- Must periodically demonstrate continued competency

possible organizational homes



Creating significant change in existing institutions is incredibly difficult, often impossible. We have witnessed attempts at reforming existing teacher preparation institutions—earnest efforts yielding mixed results. For this reason, we believe that a truly different program would be best realized by creating a new, independent program.

Many states have provisions allowing for the creation of alternative teacher certification programs. For example, in 2011 the Minnesota Legislature enacted legislation directing the Board of Teaching to develop a process for approving alternative pathways to licensure (see Box 3).³ The legislation opens the possibility for many types of groups to create preparation programs. Some ideas for possible hosts are:

³For a summary of the process visit: http://mn.gov/board-of-teaching/preparing-teachers/unit_approval/index.jsp



a new program in a university

An existing university could create a new teacher preparation program in partnership with a particular school or district. While not a new concept, such a partnership has the potential to create a mutually beneficial relationship between the practicing teachers, the university professors, and teacher candidates. While this option offers the comfort of familiarity, there is a risk that the program would not have the freedom and flexibility to truly break the mold.



an out-of-school program

Many organizations have been very successful at connecting with students beyond the traditional time and space boundaries of school. Afterschool programs, college readiness programs, and even summer camps specialize in making learning fun and exciting for students. Successful programs have learned how to make themselves meaningful to their students. These same practices can and should be applied to teacher preparation programs.



a museum

In recent years, science museums have become significantly involved in teacher preparation.⁴

Science museums, as well as other types of museums, often have staff experts who know how to make science exciting and relevant. They are skilled at engaging school children in their exhibits by providing stimulating, hands-on, inquiry-based learning. These museums also employ true authorities in their fields,

who are constantly researching and adapting to new scientific findings. Teachers prepared by institutions who survive by piquing curiosity and interest in children would incorporate those capacities in their own teaching practice.



a state or local teachers union

Teachers unions have a strong interest in ensuring that their members are well prepared. As former AFT vice president Louise Sundin points out, professions and their unions have a responsibility to bolster and develop their own ranks. A union creating a teacher preparation program would also be consistent with the “guild” approach to training of the past—a model after which teachers unions were partially fashioned.

Box 3. Minnesota Alternative Prep Programs

Under the Minnesota Alternative Teacher Preparation Program Statute, two possible groups may create new alternative programs. A school district or charter school may partner with a college or university to create a program; or a school district or charter school may partner with a non-profit corporation. Applications to start new programs must be approved by the Board of Teaching. As of the writing of this report, Teach for America is the only approved prep program under this provision.

Reference: MN Stat. §122A.245(1)&(2).

⁴ For specific examples of and descriptions of museum based teacher preparation programs see the Appendix.



a school district or charter school

A district or charter school could start its own teacher preparation program, whether as the formal host, or as a strong partner with a university. Some charter schools and operators have started their own programs (such as Propel School's partnership with Chatham University in Pennsylvania or High Tech High in San Diego⁵). The program might also set up a direct employment pathway as well, with graduates agreeing to teach for a specified period of time in a district or charter school.

Whatever the organizational host, establishing a strong relationship with a K-12 school or schools is important for at least two reasons: First, such relationships deliver key exposure to real school conditions and mentoring potential. "Lab schools" are one example of this approach; they are used in some of the most successful countries such as Finland (where they are called "field schools"), Japan, Singapore, and China (Green, 2014, p.144). Lab schools or "normal" schools (as they were called) were popular in America in the early twentieth century. They provided innovative education to K-12 students and also helped college students learn to teach. Unfortunately, lab schools started to die out by the 1950s as universities saw how profitable teacher preparation could be, and began to take over training teachers (Green, 2014, p. 80-82). Some lab schools closed because at the time they were expenses on the university budget; today, chartering laws create the prospect of lab schools with independent budgets. And there are signs recently that some new implementations of the lab school concept are emerging. [See the Appendix for examples.]

Second, partnerships with schools allow preparation programs to keep a handle on what the schools that employ their graduates—in essence, their customers—need and want. Schools can keep their preparation program partners informed of their changing needs so that the programs can better prepare their teachers (NCTQ, 2014). Schools would benefit as they have a strong interest in hiring teachers that receive training that is specialized to their needs, namely to the school's pedagogy, culture, and students.

Recommendations:

- Create a new teacher preparation program
- Establish a strong partnership with a K-12 school
- Non-traditional hosts may be ideal:
 - A new program or school in a university
 - An after-school or college readiness program
 - A museum, such as a science museum
 - A state or local teachers union
 - A district or charter school

⁵ See a description of this program in the Appendix.

We end a closing challenge
with a call
to action:

Who will step up to create a new program to prepare 21st century teachers to both help students to reach their full potential, and further professionalize the career of teaching

?

acknowledgments

This proposal was written by Alex Vitrella in collaboration with Lars Johnson and Eura Chang. We want to extend a special thank you to those who participated in our design day and helped get this conversation started. We also want to thank all of the current and former teachers who shared their experiences with us. We are particularly grateful to the wonderful folks at the American Museum of Natural History and the New York Hall of Science for taking so much time to painstakingly describe their journey and their programs to us. Finally, we want to acknowledge the support and analysis of the entire Education Evolving team.

Examples of Unique Programs

appendix

There are many unique programs around the country that are training teachers using innovative practices, some of which are described below. This is by no means an exhaustive list, but merely an attempt to highlight a few examples of how real programs incorporate the elements described in the report.

American Museum of Natural History

The American Museum of Natural History (AMNH) is the only non-university degree granting institution in New York State and as such, its teacher preparation program does not involve a partnership with a university. This has allowed the program a lot of flexibility in creating a unique model. Through the 15-month program, students with an existing undergraduate degree in science who have not taught before, enter the program to earn a Master of Arts in Teaching. About half of their students are career changers. The AMNH model combines three important concurrent components: courses, mentoring, and residencies. Both the courses and mentoring take place onsite as well as online.

During their 10-month residency, students spend Mondays through Thursdays in one of four partnership schools in New York City and Yonkers. Residents are paired with mentors at the schools who have been selected by their principals. As part of the residency, students complete a rotation with teachers of English Language Learners as well as students with disabilities. On Fridays and Saturdays students take their own courses, all of which are co-taught by a doctoral-level scientist and an educator, some of whom are from the museum while others are contracted out. This is a very important aspect of the program as it not only instills the different skills that both perspectives bring, but also demonstrates the co-teaching model which AMNH believes strongly in.

The program is funded by the New York State Department of Education and the National Science Foundation. Their generous funding allows for full scholarships to cover all tuition in addition to a \$30,000 stipend during the 15-month program. Graduates must commit to teach in a high-needs public school in New York State for four years following their completion of the program, but will also receive an additional \$10,000 annually to supplement their salary during those four years.

After graduation, fellows receive two years of induction including professional development and support in classroom management and curriculum development (AMNH, n.p.; G. Preeti, personal communication, September 30, 2014).

High Tech High

High Tech High takes the best elements of the lab school concept and puts them into practice. The original High Tech High opened in 2000 under the leadership of Larry Rosenstock to address the low numbers of females and students of color in STEM fields. The school proved to be very successful and popular.

As demand grew the staff realized that it could not find teachers trained to teach in their very unique school. In 2004, the state of California authorized High Tech High as the first charter school able to fully train and credential its own teachers. In 2007, High Tech High opened its Graduate School of Education. High Tech High now operates thirteen charter schools: four elementary, four middle, and five high schools. Through their Graduate School of Education (GSE), HTH offers three different programs for potential educators: a two-year program for those seeking a California teaching credential, a one-year hybrid program called Education Leadership Academy, and a masters program for teachers and school leaders.

Teacher Credentialing

Students enrolled in the Teacher Credentialing program earn their California Teaching Credential, which is required to teach in the state of California, in one of three focuses: Single-Subject, Multiple Subjects, and Educational Specialist. The program is geared toward both students just completing an undergraduate degree and individuals transitioning mid-career.

In order to be accepted into the program, “interns”, as they are called, must first apply to and be hired by a High Tech High school. The two year program involves coursework, supervised teaching, mentor support, and a culminating assessment project. Interns complete a total of 600 hours of training and practice, and earn a full-time teacher’s salary and benefits while in the program. By credentialing their own teachers, HTH aims to prepare teachers who

truly grasp their philosophy, project-based learning, and their collegial support network (High Tech High, Teacher Credentialing, n.p.).

Education Leadership Academy

The Education Leadership Academy develops educator teams as agents of change. It is a one-year hybrid program for practicing teachers, which combines face-to-face residencies on-site at HTH schools, partnerships with educators across the country, and online learning through forums and group “hangouts”. Participants in the Academy “design their own personal learning plan and execute a Leadership Project that addresses an authentic need or issue at their home schools.” (High Tech High, Education Leadership Academy, n.p.)

M.Ed. Program

The M. Ed. Program is divided into two concentrations: Teacher Leadership and School Leadership. Each program can be completed in a one year full-time or two year part-time program. Students’ experiences are driven by personal learning plans, action research, and other inquiry models. Within the program, candidates are placed in cohorts with educators from a variety of grade levels, subjects, and learning environments. Both concentrations focus on three learning outcomes: Practicing Thoughtful Inquiry and Reflection, Designing Equitable Learning Environments, and Engaging in Leadership for School Change (High Tech High, M.Ed. Program, n.p.)

New York Hall of Science

The New York Hall of Science (NYHS) has played a role in a few different teacher preparation programs for science teachers. They have partnered with a local university for each program, and are involved to varying degrees in each partnership. The programs are master’s level programs targeting candidates with a BA in a science or math field. In New York State those with an undergraduate degree can earn a provisional teacher certification but in order to obtain a permanent certification, one must have a masters degree (S. Uzzo, personal communication, September 16, 2014). The separate programs serve as wonderful example of the varying degrees of influence an organization like the New York Hall of Science can have in teacher preparation.

CLUSTER

Collaboration for Leadership in Urban Science Teaching, Evaluation, and Research (CLUSTER) was the first teacher preparation program that NYHS was involved with. Running from 2005–2009, it was a partnership of the New York Hall of Science, City College of New York, and City University of New York’s Center for Advanced Study in Education. Unlike the two existing programs, it targeted undergraduate students and was open to all science majors at City College entering their junior year. The program was co-developed by staff at the museum and the college. Students worked as explainers at the museum and took five specialty classes as part of the program (G. Preeti, personal communication, September 30, 2014). CLUSTER Fellows received a \$2500 annual stipend in addition to a paid internship at the New York Hall of Science.

MASTER

The Math and Science Teacher Residency Program (MASTER) is a two-year program that targets candidates who have a BA in science or math but no education training to become high school math or science teachers. The program is a collaboration of the New York Hall of Science, Hunter College, and New Visions for Public Schools. It is a program that begins with a summer field experience at the Hall of Science with an emphasis on experiential and inquiry learning. The MASTER program hopes to immediately expose students to how learning might look different from what they experienced in their own schooling (S. Uzzo, personal communication, September 16, 2014). Once the academic year starts, “residents”, as they are called, spend four days a week in the classroom and are responsible for students during one class period. The residents are mentored by expert teachers who have been trained in mentoring. Residents also work and support each other as a cohort which extends after graduation. The program coordinates the hiring of graduates into one of the 73 New York City schools supported by New Visions (MASTERS, n.p.).

The MASTER program is funded by the National Science Foundation which enables the residents not to pay any tuition up front. The residents receive a \$23,400 stipend in addition to the same health care coverage as full-time teachers through the New York Department of Education and the United Federation of Teachers (UFT). They become members of the UFT and receive all the benefits that union membership entails. Due to these many benefits, the residents begin their careers at a higher salary step than traditional first-year teachers. Once the residents do begin their teaching careers, they must repay \$7,000 of their tuition during their first two years as full time teachers (MASTERS, n.p.).

SPIRITAS

The SPIRITAS (Science Pedagogy, Inquiry and Research in Teaching Across Settings) program is currently in its third year. Of the NYHS programs, it is the one that the museum is the least involved with. The program is run by Queens College, which approached NYHS looking to provide a more clinical component to their program. Much like the MASTER program, it is a two-year program that targets candidates with an undergraduate degree in science. The first year is a blend of field work with mentor teachers and university classes. The second year is spent mostly in the schools with candidates teaching their own classes and working more with their mentor teachers in the schools. In the first year that the program was offered, students were able to spend 10 days during their first summer at NYHS in a program similar to that in the MASTER program, introducing experiential and inquiry-based learning. Unfortunately, due to funding changes the summer session was shortened to only four days this last year (K. Saur, personal communication, September 19, 2014).

Relay Graduate School of Education

In 2011 the New York State Board of Regents chartered the Relay Graduate School of Education, making it the first independent, nonprofit graduate school of education to be credentialed in New York in over 80 years. Relay was founded by school leaders and teachers from Uncommon Schools, Knowledge is Power Program (KIPP), and Achievement First drawing on strategies used in their schools. Their approach emphasizes the practical, not the theoretical. The professors are all champion teachers in their own K-12 classrooms.

Relay offers residencies, fellowships, master's degrees, and certification programs in Chicago, Houston, Memphis, Newark, New Orleans, Delaware, New York, Philadelphia and Camden, as well as online (Relay, n.p.).

Relay Teaching Residency

The Teaching Residency is a two year program offered in various cities around the country. Like other successful programs, candidates move through the program in cohorts and begin working in schools from the very beginning with a lot of support from master teachers. During the program they gradually transition to lead teaching roles. Programs in each city offer their own nuances specific to the needs of teachers and students in the host city because Relay aims to prepare teachers for long careers in the classroom (Relay, n.p.).

Additional Programs

Relay also offers an array of other programs geared toward practicing teachers, principals, and others interested in education. The two-year programs for practicing teachers leads to a master's degree. The Principals Academy brings together principles from around the country to take part in a one-year fellowship. Relay also offers many free online courses on various education topics (Relay, n.p.).

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