



The Teachers of 2030:

*Creating a Student-Centered
Profession for the 21st Century*

By Barnett Berry

A TeacherSolutions 2030 Product



Teacher Leadership • Research • Policy



In this report, I describe a future for America's teaching profession — one that students and their families deserve. In a subsequent book, to be published by Teachers College Press, these themes will be developed in much greater depth — and built more directly and clearly from the voices and experiences of the 12 expert teachers who make up the TeacherSolutions 2030 team. Our work is made possible by the interest and support of MetLife Foundation — and our analyses draw upon and complement the issues and perspectives surfaced over 25 years by the MetLife Survey of the American Teacher. The views presented here are those of the author and the teachers who are quoted and not necessarily those of MetLife Foundation.

-Barnett Berry

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Teaching in 2010

A lot has changed since the days of Horace Mann and his creation of the normal school in 1848 to specifically prepare teachers for our nation's public schools. But not as much as we might expect.

In its 160-year history as an organized occupation, teaching has never been marked by innovation or dynamic evolution. Instead, as education historian Kate Rousmaniere has written, the teaching profession has been “rife with political dynamics, social drama, and philosophical debate.”* As a consequence, when we walk into the public school classrooms of 2010 we might find an interactive white board instead of a chalk board, and an LCD projector instead of a pulldown map, but the ways teachers organize their classrooms, teach their content and expect students to learn is often eerily familiar — even to those who attended school in the early 1960s, when I entered my first grade classroom.

Since its modern origins in the mid-1800s, much of teaching's organizational arrangements and its cultural backbone have remained the same. Most teachers continue to teach in isolation from one another most of the time. Many — especially those teaching in high needs schools serving students of color and poverty — are expected to implement a standardized curriculum in lockstep fashion.

Today, most teachers still are supervised by administrators who are promoted to school leadership positions not because of their pedagogical expertise, but due to their ability to manage and control both teachers and students. While a great deal of effort has been made to develop better school principals as part of modern-day school reforms, little emphasis is placed on those who can cultivate teacher leaders who can spread their pedagogical expertise, build school-community partnerships, or elevate their policy voices on major matters related to student learning.

In top 10 fashion, here is how the teaching profession is best characterized in 2010:

1. Inequities in how public education is financed in the United States leave few resources for high-need urban and rural schools — those serving poor children and those of color — to compete in teacher labor market.**
2. While policymakers claim they want better qualified and prepared teachers, they routinely lower hiring standards to expediently address shortages — especially for schools serving our nation's most vulnerable students.

3. While school district recruitment and hiring practices have improved, they continue to value the inexpensive teacher over the expert, and they still rely on the career mobility patterns of Baby Boomers — not those of Generation Y.
4. Most universities, while attracting more academically able candidates than in the past,^{***} still do not prepare teachers for teaching in high-needs schools.
5. While more districts are recruiting non-traditional candidates for high needs schools and positions, the narrow training offered does not prepare teachers for 21st century teaching and leadership for tomorrow's schools.
6. While teacher tenure rules are archaic, unions resist giving up job protections because of principals who do not have the skills or inclination to conduct fair evaluations of teaching effectiveness.
7. While some states and districts require induction programs for new teachers, most novices are still assigned the most challenging classes, without comprehensive mentoring from trained experts who have time to support them.
8. Even those teachers who are well-prepared and well-qualified often find they cannot teach effectively in schools where poor working conditions — inadequate or unsupportive administrators, limited time to learn and improve, too few opportunities to lead and collaborate — define their “not-so” professional environment.
9. Collective bargaining has set a standard for defining teachers' economic interests along industrial union lines, but it has not significantly advanced the status of teachers in terms of being recognized and rewarded as experts about learning.
10. While foundations and the federal government programs have promoted new performance pay systems, most reflect only marginal changes (e.g., modest stipends, emphasis on 20th century testing regimes, etc.), rarely promote teacher ingenuity, and often place a cap on leadership opportunities.

*Kate Rousmaniere. “In Search of Profession: A History of American Teachers,” in David M. Moss, Wendy J. Glenn and Richard L. Schwab (eds.). *Portrait of a Profession: Teaching and Teachers in the 21st Century*. (Westport, Conn.: Greenwood Publishing Group, 2005).

**In 2003, median teacher salaries in New York City were \$53,000 as compared to \$95,000 in suburban Scarsdale – a function of funding inequities as well as dramatically different levels of teachers experience and education.

***See Drew Gitomer's recent analyses of the improved academic ability of teacher education candidates and graduates at http://www.ets.org/Media/Education_Topics/pdf/TQ_full_report.pdf

About this paper's authorship

This monograph appears midway through the development of a book on the future of teaching, scheduled for publication in the fall of 2010. The book is a team effort, undertaken by 12 accomplished educators from across the United States, who have agreed to systematically study and speculate about public education and the teaching profession in the year 2030. As they go about this work, these teacher leaders are drawing upon their own experiences, current policy research and debate, and the insights of other future-thinkers who, like themselves, look at the educational, social and political trends of today and begin to imagine best-case scenarios about learning and teaching tomorrow.

In essence, this paper is a progress report on the TeacherSolutions 2030 (TS2030) project, written from the perspective of Barnett Berry, who is President and CEO of the Center for Teaching Quality and a writing partner with the TS2030 team. In this monograph, Berry speaks in his own voice about the future of the teaching profession, but he draws deeply on the understandings and insights emerging from his teacher colleagues as they continue work on next year's book from Teachers College Press.

Introduction

We Cannot Create What We Cannot Imagine

We are not soothsayers. So began my ongoing collaboration with a small team of great American teachers eager to imagine a brighter future for students and the teaching profession. We quickly agreed not to make a vain attempt to describe the future with perfect clarity. But after almost a year of study, we remain confident that we can identify present realities, examine expert predictions of future trends,¹ and apply our understandings of what works for student learning today to describe what will likely work – and be needed – in the schooling of tomorrow.

The teaching we imagine emerges from a student-centered profession, driven by new tools, organizations, and ideals. Some of the ideas and principles that shape our vision come from the past,

Jennifer Barnett wants a place at the table when decisions are made about her students' learning.



not the future. But they are principles yet to be achieved in most of our nation's public schools, where so many promises of educational opportunity remain unfulfilled.

Our look ahead is a fast-forward to 2030 – barely 20 years from now and well within the career reach of many teachers working in classrooms today, including a half-dozen members of our own writing team. Whatever the current stage of our education careers, those of us working on this project all agree on this: *The teaching profession must look very different in 2030 if all students are going to meet the demands of our global economy and our ever-evolving democratic way of life.*

My colleagues in this venture teach in every region of the nation. They serve students in many teaching roles, at many grade levels, in urban, suburban and rural schools. Some began teaching in the 1970s, others launched their careers in the New Millennium. These 12 expert teachers and myself – a former teacher who advocates for their profession – set out to look deeply at teaching's past and present and the state of the profession in our nation's public schools.

Using the virtual tools of the Teacher Leaders Network (TLN), a dynamic professional learning community supported by the Center for Teaching

Quality, we studied the works of researchers and reformers, demographers and futurists — and the best thinking of teacher leaders and policy pundits. We examined the debates swirling around No Child Left Behind and the question of how best to identify a highly effective teacher. We debated long and hard among ourselves. Ultimately we came together, not always in lock-step, but in harmony about an expanded vision for student learning in the 21st century and for the teaching profession that will, in myriad ways, continue to accelerate that learning.

At the turn of the century, Marc Prensky suggested that students of today and tomorrow “do not just think about different things, they actually think differently.”² If this is true —and more and more I believe it is — then policymakers and the public must now focus on the ways we expect teachers to think about and do their work and the varied roles they need to play in student learning. The focus of today’s debates should not be about “making” better schools and teachers using a 20th century blueprint. The key conversation needs to be about changing the learning environments of students and the teachers who serve them.

In the “flattening world” of the first quarter of the 21st century, students must know and do more. They must learn much more than the 3Rs of reading, writing and math (and a smattering of science and social studies) now demanded of them by last-century standardized tests and top-down school accountability systems. The rules and tools of the No Child Left Behind Act have reinforced an overreliance on traditional measures of student achievement and promoted a cautious curriculum and lock-step teaching. In the emerging workplace, most students — not just an elite few — must be able to find, synthesize, and evaluate information from a wide variety of subjects and sources. The continued exponential growth of knowledge in many fields, especially in science and mathematics, poses new challenges for keeping abreast — and undermines worn-out notions of the need to cover content defined by a classroom textbook and an overly prescriptive set of curriculum standards. At a time when more than 4,000 new books are published daily (and you can publish your own for a few hundred dollars, if you like) no one can keep pace with the flow of new ideas. But students *can* gain the habits of mind, the learning skills, and the

facility with digital tools necessary to process relevant information and determine what is useful and valid.

As our interconnected world gets smaller, our schools also need to help students understand and work with more culturally diverse people, across national boundaries. Increasingly, students and families are seeking opportunities for anytime/anywhere learning. Teachers must be able to meet them in the educational marketplace, leveraging their skills and knowledge as guides in the growing world of technology-driven student learning opportunities. All the while, Internet technologies are providing teachers with unprecedented opportunities to connect with one another beyond school walls — dissolving bureaucratic controls over professional development and making it possible for any teacher to learn from successful colleagues without regard to physical boundaries, the clock on the classroom wall, or the budgetary decisions of the central office.

Learning and Teaching in 2030

In 2030, interactive media environments and immersive learning games have long since created students with a new profile of cognitive skills, requiring teachers to teach much differently.³ Advances in cognitive science and human brain-scanning techniques have spawned new teaching methodologies that diagnose and remedy literacy difficulties in children and adults. Virtual tools and networking, just coming of age in the early years of the century, have now opened borderless learning territories for students of all ages, anytime and anywhere. Ray Kurzweil’s early 21st century vision of brain cybernetics and nanomachines that would allow human users to vastly expand their cognitive abilities has proved prescient. Not only are students benefitting directly, many teacher leaders have begun to use tools like “experience beaming”¹ to spread their teaching expertise more readily to fellow practitioners, underscoring the value of expert teachers in a society and an economy that rests on information science.

Indeed, in the year 2030 we can imagine that America’s teaching profession has fully arrived, and beleaguered public schools are reaping the benefits of

¹Kurzweil proposes that nanotechnology will make it possible for “experience beamers” to transmit the entire flow of their sensory experiences to others via the Web.

all students having access to talented, well-prepared, and highly supported teachers. The structure of the profession looks very different than it did two decades ago, at the height of the dysfunctional debate over how to recruit and utilize talented teachers and principals. The battle over the role of university-based teacher education and alternative certification — and the controversy over how to evaluate and reward teachers — has pretty much ended.

School districts are no longer faced with the dilemma of searching for traditional college-prepared teachers who will teach for a career, or pursuing non-traditional candidates who enter with limited pre-service education and choose to stay in the classroom for just a few years. They now do both — and care less about the source of their teachers than the qualities they bring. They give careful attention to who is recruited, how much training they need, and what responsibilities they will need to fulfill for students and the school communities they serve.

In 2030, policymakers, administrators, and teacher unions are no longer arguing over whether to use standardized test score data to assess teaching effectiveness. New data and statistical tools — descendants of software concepts like the Quantified Self — and the pervasiveness of personal learning environment (PLE) strategies⁴, have led the way for gathering, disseminating, and producing information among and by teachers — eroding long-standing walls between what students learn, how teachers teach, and how the public knows whether schools are improving. Idea marketplaces, inspired by early trendsetters like [Teachers TV](#) and the Wireless Generation have demolished the longstanding isolation of America's teachers and created endless opportunities for good teaching to be seen, critiqued, and emulated.

In 2030, Teaching Is Understood as Complex Work

For most of its occupational history, teaching has been defined as “women’s work,” where females were primarily expected to nurture children while working for administrators, who were mostly male, at below-market wages.⁵ As a result, teaching has long fallen prey to a range of competing factors, interests, and ideals. For example, teachers have been expected to

be an authoritarian with their students, but always subservient to political, bureaucratic, and school managerial authorities on matters of policy and practice. They have been often admired for service to children, while bearing the brunt of disdain for public education and being mocked for their assumed lack of intellectual ability.

Teachers have been “way too familiar and too visible” with the general public, historian David Labaree has noted, and “what they know seems to be all too common.”⁶ Having experienced teaching for years as public school students, many Americans conclude that patience and persistence, not professional knowledge, make for a great teacher. An old adage, coined by H.L. Mencken, framed the public view of teaching for much of the 20th century: “Those who can – do. Those who can’t – teach.”

In 2030, teaching has come to be seen as complex professional work. In his prescient 2002 book *Smart Mobs*, virtual collaboration expert Howard Rheingold described how groups of people would soon use digital networking tools to “gain new forms of social power, new ways to organize their interactions and exchanges.”⁷ In the decades since, teachers have come to do just that. Using the latest connective technologies, they are identifying their most effective colleagues and capitalizing on a wide variety of virtual professional learning opportunities. Some time ago, global projects (e.g. Classroom 2.0, supported by social networking software like NING) demonstrated the Internet’s potential to bridge cultural and geographical divides and offered powerful examples of what people can do and learn without traditional organizational structures.⁸ By 2010, pedagogical entrepreneurs were opening up the possibilities of web-based professional development strategies to de-isolate teaching, visualize how good teachers teach, and offer cost-effective ways of spreading exemplary practices across a once-fractionated world of educators.

The fruits of those labors have been realized in 2030. About 15 percent of the nation’s teachers — over 500,000 — have been prepared in customized residency programs designed to fully train them in the cognitive science of teaching and to also equip them for new leadership roles. Most are now serving in hybrid positions where they teach students part

of the day or week, and also have dedicated time to lead as student support specialists, teacher educators, community organizers, and virtual mentors in teacher networks. Some spend part of their non-teaching time working closely with university- and think tank-based researchers on studies of teaching and learning — or conducting policy analyses that are grounded in their everyday pedagogical experiences. In some school districts, teachers in these hybrid roles earn salaries comparable to the highest paid administrators, if not more.

These expert teacher leaders, thanks in part to viral networking, have become well known to growing numbers of parents, business and community leaders, and policymakers. They are honored for their ability to use a wide array of instructional tools, built on brain research and neurological advances, to design personalized, learner-centered experiences and environments for the diverse students who still populate America's public schools.

These specially trained hybrid teachers are groomed for a long career in teaching. As the leaders of their profession, they are expected to support and develop a wide array of short-term recruits as well as content experts, online mentors, and teaching assistants who, with the right supervision, contribute significantly to the teaching and learning enterprise that extends beyond the official school day. The once-vexing struggle to secure qualified and effective teachers for all of America's 65 million students has been resolved. New organizational arrangements allow for the most expert teachers to teach part of the day (or week/year) and use their non-classroom time to support and supervise a wide array of diverse instructors.

No longer is the "teacher quality" debate focused solely on measuring the effectiveness of individual teachers in isolated classrooms. Instead, most policymakers are more interested in how teachers grow professionally and spread their knowledge to others. In 2030, education accountability systems place much more of a premium on how teachers learn as teams, both in their brick and mortar buildings and in virtual settings where they work with peers, mentors, and coaches.

Policymakers have long ago rejected the narrow

regimes of No Child Left Behind. Instead, school accountability focuses on multiple measures of student learning and accountability systems have expanded their oversight to assess how well district administrators, non-profits, community colleges, and universities support teachers and principals, and how well policymakers govern and finance public education.

In 2030, New Trust Remakes Teaching and Learning

In 2030, new levels of trust among key stakeholders and constituents have created new levels of cooperation. Consequently, the struggle between administrators and unions over outdated hiring, tenure and merit pay policies have all but vanished from the political scene. Teachers who have always worked in environments that promote collaboration and continuous improvement now lead their unions.

They have evolved into something akin to professional guilds — leaving behind that part of their mission that once required them to fight for teachers to earn a decent middle class living, work under reasonable conditions, and not be hired or fired on the basis of administrative whims. This has been possible because school boards and administrators — long tied to 20th century industrial thinking — now accept teachers as knowledge workers in a 21st century profession.

In 2030, school boards and administrators typically craft contracts with teachers for teaching in their physical buildings as well as in the virtual world, creating new ways for teachers to be compensated. Teachers can earn far more money than ever before, and many are in a position to negotiate their own personal services contracts with school districts and partnering learning agencies. With support of their professional guilds, these *teacherpreneurs* are highly valued and well-paid for their custom pedagogical expertise.

Ariel Sacks discusses a model to structure teachers' time to facilitate critical thinking and new ideas.



New visions of the linchpin role of education and schools in future prosperity are providing teachers with numerous options for entrepreneurial activity. Some participate in the global trade in pedagogy. Others may choose to serve their local communities more deeply — bridging school, family, and neighborhood. Increasing numbers of teacher leaders are recognized and rewarded for leading efforts to integrate social, academic and health services in school buildings that now serve as 24/7 community centers, educating and supporting both children and adults.

Drawing on decades of evidence from full-service intervention strategies like the Harlem Children's Zone, policymakers have embraced the need to connect academic improvement to a wide range of early childhood programs, parent training and engagement, and social and health services. Governmental budgets at the federal, state, and local levels are now connected, merging ideas, funds, people and initiatives across education and social and health care sectors.

In 2030, the principal's job has become more doable. Policymakers have finally realized that public schools can no longer afford for their highly skilled principals and teacher leaders to perform routine administrative duties. Building managers are now more likely to handle the business of running schools, and governments have restructured finance formulas and organizational configurations so that staff and auxiliary personnel can handle the many custodial tasks associated with public education. Principals themselves are more engaged as leaders of teacher leaders. They now are far more likely to be selected on the basis of their pedagogical expertise and ability to manage schools driven by teacher leadership. Indeed, the word "principal" is no longer a noun, but an adjective describing the most effective teachers who are expected to lead their colleagues.

To earn a prestigious slot as the leader of a high-needs school, principals must successfully complete a two-year residency and pass a rigorous performance assessment. Before they enter a residency program, principal candidates must demonstrate that they are highly effective teachers who can lead. Principals are rewarded, first and foremost, on the basis of how well they develop and utilize teacher leaders,

who have primary responsibility for leading school improvement initiatives and community engagement efforts.

In 2030, the world of teaching has been turned upside down. Have I been overly speculative? I don't think so. In fact, absent the inevitable advances in technology over the next 20 years, most everything that needs to be done to realize this vision is being done now, somewhere in the world. To a great deal of public fanfare, Zeke Vanderhoek has launched a New York City charter school where some teachers will be paid more than the principal. Teacher leader Lori Nazareno and a team of colleagues have just opened a union-supported, teacher-led school in Denver. The Math and Science Leadership Academy will feature many of the key components of the vision described here, including hybrid teacher roles. Elsewhere, teachers like Milwaukee's Roxie Hentz have turned themselves into community organizers, creating an afterschool program for young teens that bridges what takes place in the classroom with what is taking place in the community and in the everyday lives of children and their families.

And the evidence of accelerating educational connectivity across the globe is indisputable. Shannon C'de Baca, a member of the TeacherSolutions 2030 team, not only teaches high school science online for the state-supported Iowa virtual school network, she mentors novice teachers in Afghanistan and other eastern nations via the Web — all from her home near Los Alamos, New Mexico. Vicki Davis, a teacher and the IT director at Westwood Schools in Camilla, Georgia, has co-created, with teacher Julie Lindsay, currently at Qatar Academy, three award-winning international wiki-centric projects, the Flat Classroom Project, the Horizon Project, and Digiteen. Their efforts have linked more than 500 students from both public and private schools in Australia, Austria, Bangladesh, China, Japan, Qatar, Spain and the USA. These are two examples of thousands of trailblazing efforts by Digital Age teachers who are not waiting for someone else to change the world.

All that said, it is true — and sadly so — that in the United States today, no state, school district or school has yet managed to assemble all the pieces of a 21st century teacher development system. I see harbingers — places that are far outpacing most of their peers —

but my teacher colleagues in the TeacherSolutions 2030 initiative and I understand that several critical “levers of change” have to take hold before we can expect our vision of the profession’s future to be achieved a mere 20 years from now.

At the end of this report, I identify what I believe these change levers to be. But first, let us consider four emergent realities — defined by our TeacherSolutions 2030 team — that can tell us a lot about what must happen if America is going to assure a high-quality 21st century education for every student in our public schools.

Preparing Now for the Schools of 2030

Emergent Realities Are Shaping the Profession’s Future

Our TeacherSolutions 2030 journey of research, discovery, debate and learning has required both my teacher colleagues and me to grapple with a prodigious amount of evidence and ideas. As we began the writing process, we first sorted out our assignments by topics critical to any profession — recruitment, preparation, induction, evaluation, continued professional growth, and of course, compensation and career pathways. The approach proved to be too linear — too 20th century. After much consideration we landed on “emergent realities” as an organizing framework.

We chose *emergent* because the future of education is already being shaped by the rapid escalation of global communications, economic and demographic realignment and technological innovation. The prerequisites for transformation are already beginning to surface in dynamic schools and classrooms — and among dedicated professionals —throughout the nation. We added *realities* because we are not trading in fantasy or utopian thinking, but *building on ideas and ideals that are already influencing public education and student learning opportunities*.

My teacher colleagues, who daily experience the limitless potential of the students they teach, remain hopeful about public education’s prospects. But

neither they nor I are looking at the future through rose-filtered glasses. Among the realities that cast shadows on the future is the devastating economic recession, which is sapping the forward momentum of many school districts. Equally distressing are the growing numbers of children entering the public schools with chronic health problems and extreme learning challenges, and the implications of a digital divide that could limit access to 21st century learning possibilities for our most vulnerable students.

Foremost in our sights, however, is the prospect of organizing a critical mass of teachers, parents, administrators, researchers, reformers, legislators, community leaders, non-profit organizers and students themselves around a reform agenda that will finally produce fundamental improvements in American teaching and learning.

As my colleagues and I think through education’s emergent realities, we begin with a focus on student learning, which must serve as the centerpiece of any attempt at educational transformation. Much of what follows may feel more like a conversation than a typical policy report. This is intentional — as it was the iterative nature of the learning process that framed our deliberations and writing. We expect to extend this conversation to growing numbers of policymakers, practitioners, researchers and reformers in the months and years to come.

Emergent Reality #1: A Transformed Learning Ecology for Students and Teachers

Teaching Isaiah and Ziad

Isaiah was struggling with writing his name. He held the crayon without a problem. He could make straight and curved lines, but he couldn’t seem to master the curve in the S. Whenever he sat down during our daily journal time he refused to try to write his name.

My one-sided conversation went something like this:

“Move the crayon up and then down.”

“Try to make it smooth. That’s close, but now try again like this.”

“Let’s try it with my hand on yours.”

“Isaiah, please quit stopping me from moving your hand.”

I tried getting him to trace over an S written with a highlighter. I showed him how to draw an S in the air. None of these tactics were working. Then at some point I noticed that he liked to make noises to designate action, especially when he was playing with cars in the block area. The next time he was struggling to write his name I tried something new. I showed him how to move the crayon around the S but make it sound like a racecar.

“EeeeeAwawwa.”

A smile with ears looked up at me. It worked. He had so much fun he forgot he couldn’t make an S. We played the same game with all of his letters, and over time the noise-making disappeared. I had succeeded in teaching Isaiah to write his name.

My solution did not come from a textbook, at least not one I have read. It came after I’d tried every technique passed on to me in teacher education, by other teachers, or collected in a workshop. None of them impressed Isaiah. I am sure other pre-K teachers have discovered what I call the “matchbox car” writing method, but I’m pretty confident it hasn’t been researched and proven to be a best practice. I had an inspiration in what Malcolm Gladwell would call a “Blink” of an eye.⁹ I had been thinking about helping Isaiah consciously and unconsciously for several days when the solution just came to me. I would call the ability I used to come up with the solution “creative problem solving.”

The tired but eternal debate over whether teaching is an art or a science perpetuates a false dichotomy. Art and science are two branches of the same tree of understanding. Each serves in its unique way to light

reality.

This account from our TeacherSolutions 2030 colleague John Holland, a National Board Certified early childhood educator, defines the teacher-student learning interaction as something quite different from the end goal of having a student provide information on demand, via the bubbles of a standardized achievement test. There was nothing “standard” about Isaiah’s learning experience or John’s blink-of-an-eye pedagogical insight. Instead, what was present was his unwavering commitment to meet an individual child’s needs through the application of his accumulated teaching skills — after a decade of classroom experience. This is the face of teaching and learning in 2030, as we envision it: deeply personal, highly differentiated, and still — as learning is today — dependent on the expertise of great teachers.

For those who might think that Isaiah and John’s shared learning moment is the typical classroom experience, consider the portrait of another one of our colleagues, Shannon C’de Baca. Shannon was a Milken Award-winning science classroom teacher before becoming a “virtual teacher” for Iowa Learning Online, where she teaches high school students who are widely dispersed across the state. Shannon works daily with students whose brick-and-mortar learning environments squeeze out the type of personal learning that John’s story emphasizes:

Ziad is 15 years old and sees no point in school. Her schedule is packed with courses she thought sounded interesting, but they lost their appeal when the rules and structure limited the pace and style of her learning. She reads ahead and does all the teacher requires, but Ziad finds no rewards for her creative thinking or extra work. Her private folder is packed with essays and questions she would like to share, but with 35 students in her science class, there is little time for one-on-one interactions with her teacher.

Six months ago, Ziad began to cause trouble. She got lots of attention — and a hefty suspension for misbehaving. She decided to enroll in an online science course to pass the time and keep up with her coursework while suspended. In her virtual course she talks live over the Internet with her teacher three times a week, posts her thoughtful and creative

questions in an online class discussion forum and submits extra work regularly to her teacher, who provides timely feedback. She is able to share not just what she knows, but who she is.

Four-year-old Isaiah and 15-year-old Ziad are at two different poles of the education system, but — specific developmental needs aside — what they require to be successful learners is much the same. Isaiah and Ziad need teachers who have the opportunity to observe their unique gifts and interests and connect their learning to these individual attributes. They need teachers to serve as models of critical thinking and trusted guides in learning, so that they will risk venturing down new or previously unfruitful intellectual paths — not an easy task for a toddler or a teen.

If you have any doubts about the needs and desires of students, you can try asking them yourself. Our TeacherSolutions 2030 colleague Laurie Wasserman did just that. Laurie is a National Board Certified Teacher (NBCT) entering her third decade as a special education teacher in Massachusetts. She asked sixth graders throughout her school what traits a teacher of the future should have so students can learn more. Laurie was astonished to see some normally recalcitrant students pore over their written responses, several of them requesting to extend a brief classroom activity into a multi-day project. Their words paint a portrait of teachers and learning opportunities that are highly personalized, evolving and even fallible. These students recognize that 21st century skills are the product of a process of learning, unlearning, and re-learning, and they expect their teachers to serve as models at every step of the journey.

Teachers of the future, according to 12-year old Callie, need the attributes of her best teachers today. As she described her 3rd and 4th grade teachers, she said: “One thing that made them amazing teachers is that we were never, ever bored. They thought of fun projects, we learned games at recess, and yet I learned through them more than in a classroom where you just sit and the teacher reads out of a textbook. This year I have an English teacher in sixth grade that I think is the best teacher I ever had. It’s hard to even understand why, but I guess it’s just that she does projects. She cares about what we think,

and she’s just so darned nice. To be a good teacher, you need to listen to your students and to care about what they say.”

Teachers of tomorrow will need to “know what you know and know what you don’t know,” said Amanda. They must “always help whoever needs help and give extra time for whoever needs it. Always be ready for questions and not do the same thing day after day; it gets boring.”

Mary’s advice for educators of 2030: “I think teachers will need to lay down the law, but be a mentor and a friend. When kids can trust the teacher, they feel safe and well taken care of. Share your knowledge. You will be wrong sometimes, but everyone makes mistakes. Be funny, do projects, keep your class interested. Tell stories about your mistakes. It will make the kids feel less self-conscious.”

Learning experiences like those that Laurie’s students describe certainly do happen in some schools, for some students, but that’s simply not good enough. Many of our TeacherSolutions 2030 team members work in urban and rural schools caught in the vise-grip of overly rigid No Child Left Behind (NCLB) sanctions and improvement regimes. NCLB has turned a much-needed spotlight on achievement gaps and sharpened the focus on student learning outcomes. But the NCLB measures of progress are inadequate and have been found to narrow what is taught to the limited content and skills required to achieve passing scores on outdated standardized tests. The NCLB accountability system, some researchers argue, has actually decreased the cognitive demands of classroom instruction and reduced the time available for the exploration and reflection that not only promotes creative problem solving but helps establish the powerful learning relationships described by Laurie’s adolescent students.¹⁰

Eliminating arts programs, social studies, and hands-on science learning for the sake of prescriptive lessons based on drill and rote memorization is not what our students deserve nor will it serve our nation’s interests in the challenging century ahead. And before we dismiss this concern as isolated to schools “on the other side of town,” consider Laurie Wasserman’s own

observation, spoken from the perspective of a teacher now in her fourth decade on the front lines of public school education:

Teachers today, everywhere, are working with all kinds of learners – students who “learn differently,” whose first language isn’t English, or who have issues in their lives beyond a teacher’s own life experiences. These students are no longer confined to “those” schools in the inner cities and rural communities of America.

They are becoming omnipresent.

Instead of devaluing the impact of expert teachers and replacing their hard-fought knowledge with overly scripted curriculum, Laurie and her TS2030 colleagues would ask us to maintain and strengthen the integrity of a student-centered teaching profession. To meet the needs of all learners, we must acknowledge that no learning occurs in a vacuum and closely consider the environments and conditions under which committed educators strive to feed the minds and spirits of their students.

Rethinking learning environments

Instead of the authoritarian learning structures of days gone by – where teachers were the repositories of all information and students were expected to be the willing receptacles – today’s Net Generation students need and long for personal interactions, relevant learning, and facilitation in support of their own discoveries. A YouTube video with half-a-million views, *A Vision of K-12 Students Today*, reinforces these points as students describe their expectations to “create, consume, remix, and share information with each other.”¹¹ In other words, they’re calling for teachers and learning environments that impart the 21st century skills – critical thinking, creativity, collaboration, and innovation¹² – needed to be competitive contributors to a global knowledge economy.

Compare this vision for learning with the current reality that students and teachers encounter daily in many classrooms. New York City teacher Ariel Sacks depicts the antiquated model of today’s schools in an

essay for the TS2030 project:

In the face of great potential, consider the environment of the American public school. Does it provide opportunities for each of us to practice critical thinking? Are schools places where children and adults can continually develop and apply our potential as thinkers?

A decade into the 21st century, most American public schools function more like 20th century factories than current factories themselves do. Artists and designers are reinventing the shells of America’s industrial age as loft spaces, while companies outsource factory work to developing countries. In A Whole New Mind, Daniel Pink makes the argument that our 20th century model of education still emphasizes rote skills — for a job market that no longer depends on routines. Computers are taking over many 20th century tasks and companies are tapping cheaper labor overseas. The good jobs that will remain for our children...here in the United States are largely conceptual, context-specific, and demand more than formulaic responses. They require a new skill set that includes collaborating with others to solve problems, thinking critically and creatively, and maintaining cultural relevance. They are largely jobs that do not exist yet.

How do we create learning environments to prepare students for jobs that do not yet exist? How do we nurture effective learners, consumers and producers of information in a world where the amount of new technical information is doubling every two years, where 31 billion Google searches are performed monthly and the number of daily text messages exceed the world’s total population?¹³ The model of schools and teachers as the primary transmitters of “critical” information seems increasingly inadequate.

TS2030 team member Renee Moore, an NBCT, Milken winner and former Mississippi Teacher of the Year reminds us that an illustrative marker of 20th century learning — the Carnegie unit — has been the measure of secondary student accomplishment for generations. The unit, developed in 1906, measures the amount of time a student has been enrolled in a subject. For example, a total of 120 hours in one subject — meeting four or five times a week for 40

to 60 minutes, for 36 to 40 weeks each year – earns the student one “Carnegie unit” of high school credit. A predetermined number of units constitutes the minimum amount of preparation that could be interpreted as four years of academic or high school preparation. Under such a system, Moore points out, “what matters is not so much what is taught, how it is taught, or how well it is learned, but how much time is spent on each subject.”

If we reflect on Isaiah’s and Ziad’s fruitful learning experiences, described above, the issue of time measured in Carnegie units never arose. For Ziad, a series of on-point email exchanges with her teacher could have been more relevant than weeks of lecture-style classes. A web-based portfolio of Ziad’s subject-specific essays and scientific investigations could tell more about her academic proficiency than a once-a-year standardized test. It’s difficult to calculate the minutes of time that went into John Holland’s observations of Isaiah’s learning style and the necessary trials to arrive at a successful outcome. What the TS2030 teachers do know from these examples and their combined decades of classroom experience is that *the crux of learning relies on an interaction* – between student and teacher, between student and student, and between a teacher and other teachers (the often forgotten element in the learning equation). In the learning environments of 2030, we expect not only to see students having regular interactions with community members, subject area specialists and peers from other locales, we expect teachers to be having similar interactions about content and pedagogy with distant teacher colleagues and other experts.

Researchers can now tell us the types of interactions that are most likely to yield student learning. Effective teachers already have the expertise to select the individual techniques from that research repertoire that are most likely to be effective with certain students. And yet we continue to measure the potential for *all* student learning using a time unit developed in the early years of America’s industrial age. Even the most well-intended school reforms can be subject to the subtle dominance of the Carnegie unit. One prevalent example: Extending class periods or school days in the belief that more time equates to more learning.

In a world where technologies are making the transfer of information increasingly efficient, yet potentially overwhelming for developing learners, my teacher colleagues and I would argue that meaningful human interactions, informed by research around how individuals learn best, need to replace time as the central unit of learning. We like the term *Potential Learning* units. *PL* units define not a random measure of arbitrary time but the explicit outcome of such interactions. Learning environments – whether brick-and-mortar schools, virtual schools, teacher professional development environments or software learning tools – should be designed to increase the frequency and impact of *PL* units.

What might this look like? Consider this scenario written by Ariel Sacks, a sixth-year middle grades teacher and Bank Street College graduate, as she imagines her own professional practice in the year 2030:

I have been teaching for almost 30 years now. I am a teacher leader in The Lightyears Network, which includes two schools in New York, one in Louisiana, another in Japan.

7 a.m. – Drink coffee, open Palmnet to the Lightyears online platform and the web. Every teacher, student and parent in the NYC public schools has such a device, but each one is connected to its respective school’s platform. I project it on the kitchen wall in front of me. A message from Mrs. Hendricks. Her son was robbed by teenagers while walking home from school yesterday. Her message includes a map of her son’s walking route. I access his schedule. Band practice today until 5 p.m. I search his route for Safety Lookouts, which include parents, high school students and storefront owners. Bingo! Three indicate availability weekdays at 5 p.m. I send out an automated message to the volunteers, who are accustomed to these alerts, telling them exactly what time to look out. The problem is solved in two minutes and requires less than 10 minutes of each volunteer’s time. I designed this program with two teachers and a technology volunteer last year because of an uptick in neighborhood violence. We received a school-based teacherpreneurship grant to create it.

8 a.m. – Prep period conducted by reviewing student blogs on my Palmnet on my subway ride to school.

9 a.m. – Eighth grade English. I share the room with Mr. Yau, a second-year English teacher for whom I serve as master mentor. I am the head teacher for one 90-minute class daily, during which he assists part-time. He is the head teacher for the other 90-minute class, while I observe and assist part-time. Students enter and busily begin checking each other's literature blogs from the night before on their Palmnets, which I've programmed to become available for viewing and commenting at exactly 9 a.m. The blogs include responses to yesterday's discussion of a novel. We've partnered with a class in Japan, reading the same novel; their blogs are available for viewing and commenting. I circulate, checking in with a few students who had not finished the book for yesterday's discussion. They open their electronic margin notes from last night. I okay them to enter today's discussion.

9:15 a.m. – Students assemble around a seminar table to continue face-to-face discussions of the novel. A computer screen helps me moderate. Students press a button when they want to comment; their name appears on the screen. There is also a digital tally showing how many times each student has spoken. Mid-discussion, the computer screen highlights names of students who have not spoken yet; I ask them to comment. A digital Dictaphone records and transcribes our conversation into written words, which will be available on our class literature blog. Tomorrow we will videoconference with the school in Japan for final discussions of the novel.

10 a.m. – Break. Students may talk, walk or use their Palmnets.

10:10 a.m. – Writing time. Students to reflect in their journals on how our observations of the novelist's craft in discussion today might be useful in their own writing. Then students work on their stories. Each student has a writing partner from our schools in Japan or Louisiana. Students are writing stories that are set in their partner's region. Their partners post videos and photos of their neighborhoods and answer questions about their settings.

10:45 a.m. – Meeting with Mr. Yau. We debrief my facilitation of today's discussion. I ask him which points he thinks I might follow up on tomorrow, and how I might do it. We look at his class's fiction writing through our Palmnets, and determine that half of the students need more work on subject-verb agreement (something he'd taught a few months ago). We send evidence of this need to his portfolio and brainstorm a few ideas for reinforcing this skill with those students. Mr. Yau has set a goal of improving his grammar instruction and hopes to receive a raise for this skill this year.

11:30 a.m. – Lunch...eat in garden café with colleagues; informal professional discussions intermingle with personal conversation.

12:30 p.m. – Meeting at NYC partner middle school. The school has a number of recent immigrants from Yemen, who need ESL instruction that includes teaching our alphabet and phonics system. I meet with English teachers to plan a way to address these students' literacy needs immediately, without boring them developmentally or isolating them from other students socially.

2 p.m. – A period dedicated to pursuing an area of professional growth of my choosing. I decide to return to my school, to a workspace with a view of the garden. A group of students is working there with neighborhood retirees. I smile thinking of two of my students who have decided to turn their stories, set in rural Louisiana and Japan, into sim-game plots. They are working with a professional game designer who is donating his time right now. I want to duck down to the study hall where they are meeting, but I can't. I've received a national teacherpreneur fellowship and work virtually with a group of accomplished teachers from around the country. We are funded by the federal government, writing a book about the future of education.

Things are changing quickly and we want to start creating the schools our children's children will need in 2050, now.

For current teachers, one element that might resonate most in this scenario is the frequent opportunities for Ariel to engage in embedded professional

development opportunities – as an individual, as a team teacher, as a community facilitator, and as a member of a research team of colleagues from around the country. Such school-day opportunities are precious and rare for teachers today.

But my TS2030 colleagues and I are adamant that if today's teachers ever hope to be fully supported as lifelong learners, they must create and embrace opportunities to model this kind of continuous professional growth. Which brings us to the next major force that I believe will shape the future of education – a dramatically different teaching profession.

Emergent Reality #2: Differentiated Professional Pathways

Outgrowing a one-size-fits-all profession

Listen to this slice of teaching reality today:

You're a new teacher, learning your job, working at it, trying to get better. It's hard, a rough slog, but you're trying those best practices, listening to smart people, and doing your best to learn and reflect. Things are bad, and worse before they get better, but after some time, you start to figure things out. You do get better, and that's when things get — for you — much worse.

Your quality as an educator has changed dramatically, but your title, position, responsibilities, and compensation have remained stagnant. You are so much better than you used to be, but nothing, nothing in the structure of your profession reflects this.

You know you need to learn more. The strategies you took from your credentialing program are running dry, and district-run professional development is either non-existent or dramatically disconnected from promoting student achievement. At best, you teach in a place where the best teachers teach the most vulnerable students. But probably not. You probably teach in a place where the best teachers

“earn the right” to teach higher performing students who more readily acquiesce to your wishes.

You look around and realize the energy and effort spent on developing better instruction and better assessments, the energy and effort poured into creating dynamic environments and learning experiences, the energy and effort directed toward making yourself that turnaround teacher who motivates, inspires, and ultimately closes gaps, all that grit and grind has no bearing on your professional standing whatsoever. None.

Professional frustration is clearly brimming from this account written by our TeacherSolutions colleague Kilian Betlach. If you follow the education policy debate, you know the new teacher attrition drill: Almost 25 percent of new teachers leave within the first three years, and most of them in their first year.¹⁴ The turnover rate is much higher in high-needs schools; some estimates say up to 50 percent are gone after three years.¹⁵ But perhaps most importantly, 57 percent of all outward mobility occurs within the first 10 years of a teacher's career. Those who leave are likely to be drawn to different careers that offer more intellectual challenge, professional prestige, and opportunities to influence their work.¹⁶ When it comes to teacher attrition, working conditions really matter.¹⁷

Public education was lucky to have Kilian for six years as a teacher. He came to teaching through Teach for America, staying on at his high-needs California middle school beyond the program's mandatory two-year commitment. In his widely read blog *Teaching in the 408*, he has written extensively about how TFA did not prepare him for high-needs schools — but neither did the education program that eventually credentialed him.¹⁸ Like too many new teachers, he had to learn by the seat of his pants, often at the expense of his students.

Kilian was given his most difficult possible assignment on the front end of his career —and just as he began to learn the art and science of teaching, he reached his absolute frustration point and made the decision to leave the classroom. Kilian was not a statistical anomaly. Researchers have found that the average talented but under-supported teacher gains traction

in terms of pedagogical effectiveness after five to seven years. Tragically, it's the same window of time when many promising young educators like Kilian, who are struggling to make a difference in our most demanding schools, give up the fight. Kilian was not given enough opportunity to lead, and was often stifled by school district bureaucracy and administrators who limited his creative approaches to teaching and learning.

The process of learning to teach well is at least as complicated as learning to engineer an interstate overpass or perform risky surgery. Early mastery of each requires a combination of research-based theory and practice supervised by experts. Yet we have too many teacher preparation programs that fail on one piece of the equation or the other. We have traditional schools of education that are too theoretical or decontextualized from classroom realities. And we have fast-track alternative certification programs that truncate training and prepare teachers with a narrow view of teaching and learning.

The result? Just as many rookie teachers begin to reach their pedagogical stride, they either leave the profession or give in to the isolation of the classroom. For the most part, those who remain have few expectations that they will be asked to demonstrate how their teaching helps students learn — or how they might use their expertise to help their colleagues improve their performance. Kilian puts it this way: “First we ask new teachers to do too much with too little preparation,” and “then we ask too little of them in what should be the second stage of a teaching career.”

After a year spent as a policy associate for the Education Trust, Kilian is returning to the front lines, this time as an assistant principal at another high-needs school in northern California. I have no doubt that students will benefit from his teaching expertise and deep commitment to their learning. However, even Kilian sees his new position as more

of a career change than a promotion. “Administrative roles are to teaching what hospital administration is to doctoring,” he observes. The primary lesson to be learned here is not about professional frustration but about a maddeningly flat career trajectory that is increasingly unappealing to talented members of Generation Y.

“We need a vehicle for un-flattening the profession that allows teachers an opportunity for advancement without needing to leave the profession or assume leadership positions as a second job,” 30-year old Kilian writes. “We need teaching promotions that don’t force you to stop teaching.”

Opportunities for teacher career growth *that remains rooted in the classroom* are exceedingly rare today. Among those of us working in the TeacherSolutions 2030 project, this is perhaps the most urgent issue to address if American public schools expect to attract and prepare talented, committed and highly

intelligent teachers who grew up in the post-industrial age and have career expectations very different from the post-war Baby Boomers now reaching retirement age. As we look to the year 2030, my teacher colleagues and I imagine and seek a much more flexible career path for teachers that provides many opportunities for

leadership and entrepreneurship while preserving a deep-down, everyday connection to students.

Redefining pathways and retention

The TeacherSolutions 2030 team has looked deeply into hybrid teaching roles like Ariel Sacks describes below — roles that rise above rigid, dichotomous thinking about who enters teaching and through which pathway, how they are prepared and supported, and how long they remain. While teacher education is getting better (Figure 1), it must be much different in the future to prepare teachers for teaching in 2030.

Teachers’ Perceptions of Training and Preparation

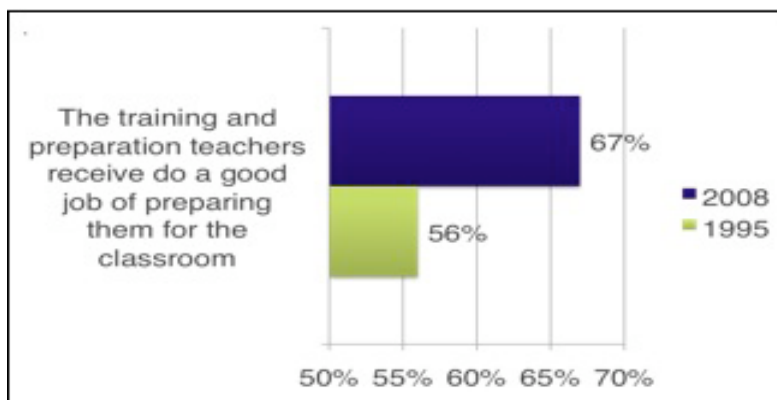


Figure 1 Source: Metlife Survey of the American Teacher: Past, Present & Future

I can imagine in 2030 that teachers like myself could play any number of hybrid roles. These roles could vary depending on the needs of my school and/or whoever is paying me. They could include developing curriculum materials for my school, mentoring teachers, or creating partnerships between my school and other organizations. I could also participate in policy work outside my school and/or be a freelance writer, where only half of my salary would be paid by a school....

The beauty of a hybrid role is that I would always maintain a classroom teaching practice. Teaching is the soul of my work in education. If I lose that, I think I'd feel disconnected from my purpose and passion. At least in my own mind, my work would lose relevance.

Not only do these differentiated roles increase the “stickiness” of the teaching career, they preserve and enhance the body of knowledge and expertise that define a profession. Kilian Betlach continues to flesh out his ideas of hybrid roles:

These new hybrid roles would replace the old notions of mentor, master teacher, or department chair, which insufficiently diversify professional standing and function as poor replacements for promotions that are part of a recognized and organized professional system. These new roles would ground the profession in the work of teaching, while recognizing that teacher leadership has a place and a value and a function beyond honorific titles and extracurricular duties. Leadership would no longer be a thing you ascribed to “after” teaching, or when you were “done” teaching. Nor would teaching need to be seen as something to master and move on from.

There are nearly endless combinations of endeavors that could compose a hybrid teaching position.... What remains central is the repudiation of the dichotomous nature of the profession: You either teach or principal, mentor or follow. The “or” in the equation represents an inauthentic choice, and one that limits the effectiveness of both individuals and the system as a whole. The removal of this “either-or” would bring a far greater array of skills and strengths to bear on student achievement, improving academic performance exponentially.

Laurie Wasserman, a veteran special education teacher reflects on her unofficial mentoring of Ben, a promising career-changing teacher, who recently gave up his 10-year law practice to enter teaching, which had been a passion of his.

Ben, like most other second-career teachers, is willing to work hard to become effective but is often overwhelmed by a lack of classroom management skills and tools for discipline, and the lack of time to develop those skills “on the job.” It is almost impossible to teach effectively in a high-paced, high-needs school while going to school at night to get a Master’s in education and perhaps holding down another job to pay for tuition. It’s too much; it’s too demanding on your body, mind, your very being. You can’t increase your effectiveness fast enough the way the system is structured.

Ben has talked to me about how he transitioned into law — how it was unlike the abrupt transition experienced by most new teachers. Most law students work as legal clerks in law firms prior to becoming attorneys. There is often a substantial salary in addition to the extensive professional learning and mentoring that they gain from daily association with one or more expert lawyers. This apprenticeship can often lead to being hired by a firm upon graduation and passing the bar.

Recruiting, preparing, and retaining effective teachers for high-needs schools, says former NCATE President (and CTQ Board Chair) Arthur Wise, will require a “new paradigm (that is) based on how professionals work”— a breaking away from “the egg-carton organization” of schools which “expects that every teacher will replicate the appropriate curriculum and instruction for 25 students each year, every year, from the beginning to the end of a teaching career.”¹⁹

Instead, why not take the best of both university-based and alternative approaches, recruiting from a large pool of talented teacher education students, recent college graduates in other fields and midcareer job-switchers? Rigorous performance assessments would determine who will teach what and how — and the most expert teachers would teach students as well as serve in hybrid roles as mentors, coaches, and teacher educators. All new teachers would have

a reduced teaching load in their first two years, with their progress assessed using objective measures of their performance and their roles and responsibilities adjusted accordingly. Some would teach under more supervision than others.

Then take it a step further. Consider how a team of six to eight teachers of varying expertise and experience (and with different career intentions) might work with 150-175 students over a number of years. Among the team might be several highly accomplished teachers who will supervise and work with a selection of novice teachers, supported by teaching assistants, content specialists (or adjunct faculty), community experts and other capable volunteers. Instead of continuing to pursue the impossible dream of finding a single expert, seasoned teacher for every classroom in every school, district-college-community compacts would focus on cultivating these close-knit teacher teams. In the best 2030 scenarios, this practical approach of re-thinking who is a teacher and how teachers work with one another will be at the core of teacher recruitment and preparation reforms.

High teacher turnover occurs most frequently in schools of poverty where building trusting relationships is essential for student growth – academically and emotionally. It is not an unpredictable event. The team approach will maximize the collective teaching strengths of individual teachers and minimize their collective weaknesses. When individual teachers do make the decision to leave a teaching career, the impact on school improvement efforts and student achievement will be curtailed. No longer will a single teacher, isolated from other experts, be responsible for a tightly defined group of students. The teacher team can create a common knowledge base around their shared students' learning styles, interests, strengths and challenges while also developing an interconnected web of high-trust teacher/student relationships.

Based on my frequent conversations with New Millennium teachers, I know most of them would eagerly anticipate the possibilities raised by hybrid specialization. There are certainly current areas of need that could benefit from English Language Learning experts, formative assessment architects, student data analysts, family and community liaisons

and instructional technology gurus. And the list is certain to grow as the future unfolds. Emily Vickery, a TS2030 team member with a particularly long view of education trends, envisions innovative teacher roles with job titles like Learning Architect, Modeler, Multi-User Virtual Environment (MUVE) Guide, Network Sherpa, Learning Concierge, Synthesizer, Gaming Expert, Connected Learning Incubator and the highly prized Change Agent.

As promising as these possibilities are, even a highly diversified teacher corps cannot maximize the potential for student learning in isolation. A third Emergent Reality speaks to the need for professional educators of the future to be fully connected to the world that surrounds their own teaching environments. “As 21st century professionals, we must set the table for conversation and reform,” says our TS2030 colleague Jennifer Barnett. “But as teachers, we do not completely control the agenda. We must listen carefully to parents and students, as well as the communities we learn from and serve.”

Emergent Reality #3: Seamless Connections In and Out of Cyberspace

A Hyper-Connected Age

Many teachers today are still not “wired” for using technology when they teach (Figure 2). But young teachers are far more likely to use new tools to teach and communicate with their colleagues—and they will in the future (Figure 3). In one of the most speculative essays written for our TS2030 project, teacher and technology coach Emily Vickery shared this perspective:

We are already living in the Hyper-Connected Age — imagine how much more interwoven the world will be two decades from now. Statistics surfaced in 2008 tell a compelling story:

- Every minute, 13 hours of video were uploaded to YouTube.

Teachers' Use of the Internet

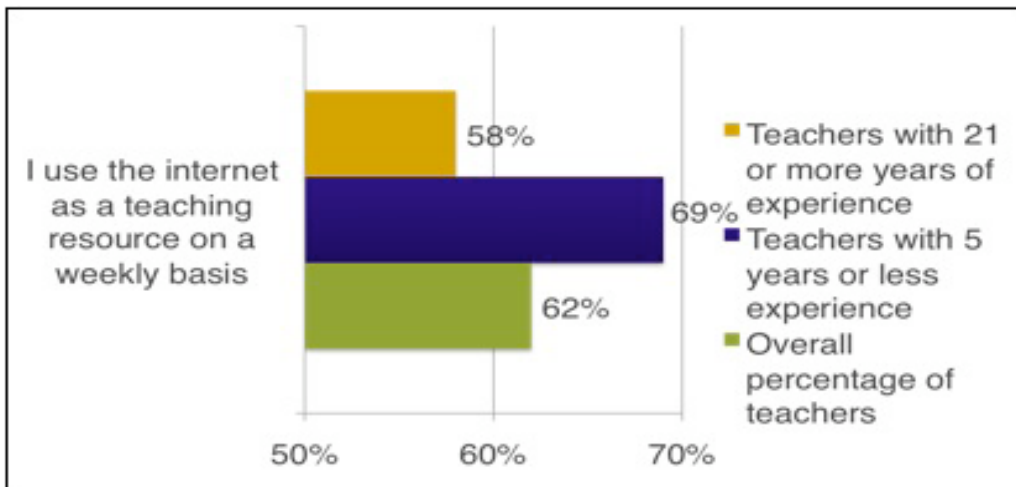


Figure 3 Source: Metlife Survey of the American Teacher: Past, Present & Future

- A trillion unique URL addresses could be found on the web.
- The average number of blogs posted in a 24-hour period was 900,000.
- Over 10 percent of online American adults used a micro-blogging service, like Twitter, to stay connected with others.
- Google processed more than 2 billion searches per day.

As of February 2009, there were 2.8 billion mobile phones, and Facebook's membership surpassed 175 million – making the social networking site the sixth most populous “nation” in the world.

The rapid pace of technological change is truly mind-boggling. And it's about much more than the physical network of hubs and routers and the digital tools we use. What is truly revolutionary is how we are using these tools to connect, engage, explore, and collaborate in order to meet our individual needs and to create communities. As Clay Shirky, author of Here Comes Everybody, has observed: “When we change the way we communicate, we change society.”

Some readers might be surprised that in writing about a project that explores the future of teaching and learning, I have not yet addressed the impact

of technology in any detail. This is not coincidental. To begin with, my TS2030 teacher colleagues have not come to a consensus around this question. As a team of educators and change agents working in diverse school settings — including schools of poverty with large percentages of minority students — they don't all agree that every student will have ready, affordable access to high-speed Internet connections in the year 2030. They don't all think that Second Life and

other immersive virtual environments will change education as we know it. Some even question whether all learning in the future will be technology-infused. However, we do agree with our colleague Emily Vickery that *changing how we communicate and relate with one another will transform society*, and teachers must prepare students for an increasingly interconnected and interdependent world.

George Siemens, associate director of Research and Development for Learning Technologies Centre at University of Manitoba, has outlined the principles of *connectivism*, which he defines as “nurturing and maintaining the connections needed to facilitate continual learning.”²⁰ In 2030, a connectivist world will allow students to learn as readily outside a classroom as within it. The learning exchange can take place with any number of individuals, from content experts to researchers to community and business leaders to fellow students. All could serve in the role of teacher-mentor. Professional teachers will broker learning relationships and ensure quality control.

It's easy to jump into the realm of technology when considering connectivism, but my TS2030 colleagues and I hesitate to make that leap. Instead, we return to our earlier concept of Potential Learning Units — preferring to view the forces of connectivism, in whatever form they may occur, as opportunities to expand students' human interactions and through this, the horizons of their thinking.

Not all of our students today are the texting, blogging,

Teachers' Engagement with Digital Tools



Figure 2 Source: Metlife Survey of the American Teacher: Past, Present & Future

tweeting types depicted in mobile phone commercials. Much of our ambivalence around technology comes from our desire to ensure that these currently “unplugged” students do not continue to be left behind, as they have been so many times before when the currents of educational reform sweep past inequitably funded schools and classrooms.

Connectivism should not be the proprietary domain of the affluent. Where technology access lags, teachers must serve as the facilitators of connections. In the mid-1990’s, high-speed Internet connections in the Mississippi Delta, where our colleague Renee Moore teaches in one of the nation’s poorest communities, were unthinkable. This did not stop Renee from connecting her students with a sister class in South Africa for a year of correspondence and knowledge sharing. Our colleague Jennifer Barnett led her high school juniors in rural Alabama in creating a simulation of the Ellis Island experience through research of primary sources and period photographs, shuffling them among the inadequate and outdated computers in her K-12 school.

We are concerned that such instances of teachers building temporary bridges across technological divides will not be sufficient to prepare students for the coming social transformations predicted by the KnowledgeWorks Foundation, The Institute for the Future and other trend researchers. With that concern in mind, we seek models beyond the virtual that will allow all students to grow into healthy, knowledgeable and resourceful citizens of a globalized world.

Some students will enjoy the flexibility and independence of increasingly “unbundled” educational options. Bolstered by support systems of knowledgeable adults and ready access to technology, these more privileged students will have the freedom to pursue personalized and largely virtual

courses of study. What if other students do not have access to these resources? Their families will still need to rely on the custodial supervision and safety of brick-and-mortar school buildings where their children receive two meals a day and rely on committed adults to look out for their interests. Once they leave school, of course, these young people will enter the same world of connectivism as their plugged-in peers. How do we prepare them to enter that world on equal footing?

Hennrick, a 12-year-old Haitian boy who, only a month before, lived in a little town near Port-au-Prince, finds his new American public school poorly informed about his past education and poorly prepared to welcome him and attend to his individual needs. In this scenario by TS2030 member Jose Vilson, our inner-city teacher colleague imagines “a more hopeful scenario in the not-distant future.”

As Hennrick and his mom register, he receives a handheld personal computer (HPC) no bigger than a deck of cards, which powers up when he puts his fingerprint onto the start button. Instantly, the device connects to the state central database, and displays all of his pertinent information (including his passport information and immunization card). It checks for his past performance records via a global student information system and arranges for academic progress assessments, as needed. Within a few minutes, the system downloads his personal profile, his personal schedule, homeroom teacher, student handbook, and other pertinent information

to his virtual hard drive. For Hennrick, the school is also able to upload language packages and multi-language visual dictionaries (namely, Creole and French).

When Hennrick has a question that his teachers can't quite make out, or he just needs a cultural connection with someone, he can be quickly directed to a trained individual in the building who knows French Creole. Even if the building doesn't have such a language speaker, he can instantly begin to communicate using his HPC.

On the first day, his teacher doesn't wonder who the new kid is. With help from his HPC, Hennrick already knows and repeats classroom rituals and routines. His teachers assign him a student to buddy with, someone who shares some of his variables. His teacher has been reading Hennrick's assessment data, and he's already assigned him a seat with all these criteria in mind.

Just as future virtual learning experiences are able to draw on the resources and expertise of diverse, physically distant community members, so must brick-and-mortar schools. Our colleague Carrie Jenkins Kamm works with the Academy of Urban School Leadership (AUSL), which oversees several turnaround schools in Chicago. The services offered by these schools include mobile health clinics and facilitation with the city's social support service providers. But, importantly, these schools don't stop at meeting students' and families' most basic needs. They also draw on the rich culture of Chicago to enhance student learning by supporting programs like artists-in-residence and interactions with experts and individuals who are community assets.

Community-centered urban and rural schools of the future could build upon such programs by supporting these and other services under a single roof or within an easily accessible perimeter, creating seamless paths for students and families to take advantage of opportunities while also leveraging the cost efficiencies of shared space. On-site services and facilities could include fully equipped gyms, health clinics, job centers, local university offices, local businesses dedicated to working with students as interns, performing and graphic arts centers, and yes,

technology hubs – where individuals in this thriving network can connect to communities outside their own locales.

After a successful “brick-and-mortar” education career, our TS2030 colleague Shannon C'de Baca became an online science teacher in a state-supported virtual high school. She reminds us that while physical school settings are important for many students, for the reasons I've touched upon here, we should not cling to the past for reasons of sheer nostalgia or unwillingness to change:

Public education is cluttered with the detritus of past traditions that are outmoded or — at worst — were not very good ideas to start with. We have in the past adapted well and let go of nothing. This leads to an overload of work for the keystone of education — the classroom teacher. An analysis of any teacher's day would show much of it is filled with repetitive tasks that could be automated with existing technology or eliminated as redundant or unnecessary.

There should be no sacred cows. All aspects of brick-and-mortar schools should be on the block: schedules, school day, classroom structure, administration, counseling, parent involvement, co-curricular activities, school year, teacher compensation, tenure, community connections, curriculum, standards, assessment and even lunch.

Our knowledge of how people learn continues to expand exponentially. We have some significant data and instruments that can help us determine individual learning preferences. And yet we adhere to a system of assembly-line education delivery that requires all students to reset their thinking every 50 minutes, all the while expecting them to master increasingly complex content that does not chunk easily into small boxes of time. It just doesn't work. And most of us who have lived in this system know it doesn't work.

We have to rethink the commodity of time, resources and learning for both teachers and students. Any path in the future will see a blend of face-to-face and online education. However, always at the core will be the students and their connection to good teachers.

My colleagues and I believe that as basic needs are more universally met and opportunities for enrichment broaden, the walls between virtual and brick-and-mortar worlds will continue eroding. Whether students enter into the world after creating and pursuing an independent course of study that brought the world's resources to their fingertips — or after they've experienced the full riches of a community unified in its goal of educating its youth — or, ideally, some combination of the two, these high-achieving young adults can move forward with their potential for lifelong learning realized.

Emergent Reality #4: Teacherpreneurism and the Global Educational Marketplace

Scaling and Spreading Teacher Expertise

Over the last decade, growing numbers of school reformers have identified educational entrepreneurship as a means to ramp up the process of transformational change. Some think tank analysts believe school districts are beset by an “asphyxiating bureaucracy” and a “culture of timidity and risk aversion” as well as “restrictive regulations and collective bargaining agreements.”²¹ The possibilities of real change, they say, rest on those whom researchers describe as “relentless” problem-solvers, possessing an internal locus of control and a tolerance for ambiguity.²²

The conventional wisdom for those proposing more unconventional reforms appears to be that most current teachers and administrators are not selected for their “propensity to conceive radical new ideas and build organizations to realize their visions.” Therefore, the argument goes, those working outside of education, or an entirely new generation of recruits with the right dispositions, must be “induced” to work in the public schools if meaningful reform is to take hold.²³

While a number of entrepreneurial enterprises — like Teach for America, the Knowledge is Power Program (KIPP), and New Leaders for New Schools

— have made a mark on public school reform, they cannot recruit and retain enough talent to take their programs to scale.²⁴ Many of these new enterprises have overcome bureaucratic barriers in both school districts and universities as they recruited and prepared teachers and principals differently. Many of these initiatives have chosen to focus primarily on closing the achievement gap on 20th century standardized tests, rather than advancing 21st century learning for all students. They recruit bright individuals who are “gritty” and prepare them to rapidly launch new organizations. They pay less attention to whether teachers are steeped in the new cognitive science of learning or know how to spread their teaching expertise to others. In other words, much of the current reform activity focuses on educational — not pedagogical — entrepreneurs. While 21st century exemplars — such as those at High Tech High and Big Picture Learning — abound, their efforts are rarely highlighted by the media or think tanks.

Spreading pedagogical expertise through deeply knowledgeable teachers is a venture with great potential. TeacherSolutions 2030 member John Holland describes why:

Smart networks, as Clay Shirky has described in his book Here Comes Everybody, have changed the world by making it easy for individuals to organize. Shirky describes how the Internet and mobile technologies have changed the social nature of our society by making communication between and among groups simpler and more instantaneous than ever before. Now that more people are online than offline, the way people define what and who is worth knowing and learning from has changed. This is what will be for teachers in 2030. It must.

With emerging technologies, by 2030 teachers will have numerous options for entrepreneurial activity and participating in the global trade in pedagogy. Most of us know Wikipedia and NING. They are powerful tools, but they are the technologies of 2010, not 2030. With advances in communications hardware and software, by 2030 master teachers will be engaged in a system of global trade, where they lead students through increasingly individualized learning experiences. The value they bring is not a series of prepackaged multimedia or online-delivered

products, but teachers' special abilities to identify the needs of their students and facilitate learning in physical and virtual environments.

John Holland describes how pedagogical entrepreneurs have already begun to emerge:

When publishing became “free” to almost anybody, and the Internet’s potential audience became the entire world, the line between expert and amateur began to blur. The idea is that there will always be experts, but those seeking expertise (including teachers and students) will be the ones who decide who is an expert. The combination of self-publishing and the use of the Internet as a platform for communication has given rise to “communities of practice” around topics ranging from collecting action figures to raising kids to performing the teaching act at the highest levels.

The Internet platform offers teachers who are eager to create and collaborate a “community of practice” that stretches far beyond the confines of their school or district – a virtual domain where they are able to both improve their classroom practice and impact the profession on a large scale. I have seen the value of a “community of practice” in my involvement with TLN.

TeacherSolutions team member and reading specialist Cindi Rigsbee witnessed the power of a “raised profile” when she became North Carolina’s 2009 Teacher of the Year and went on to become one of four finalists for National Teacher of the Year. Cindi spread her experiences and pedagogical insights as she spoke to teachers, university education departments and civic organizations across her state. But she has reached her widest audience thanks to the connectivism of the Internet. Her popular blog The Dream Teacher drew the attention of producers at ABC’s Good Morning America when she wrote of her search for the elementary teacher who had influenced her career choice. Ultimately she was reunited with that teacher on the national morning TV show, which led to a book contract from Jossey Bass – a volume that will not only recount her search but share her teaching practice insights.

Like dozens of other TLN members, Cindi has also

taken advantage of an entrepreneurial partnership between TLN and *Teacher Magazine*, an online magazine published by *Education Week*. Expert articles written by TLN members are promoted to an audience in the hundreds of thousands, and Cindi’s “Teaching Secrets: Five Tips for the New Teacher” has been among the most popular. Her pithy advice (“if you make them the enemy, you will lose”) was exactly the straight talk novice teachers were seeking. The magazine compensated Cindi for her time and expertise, and any new teacher with access to Google can easily find her advice and benefit as a result.

Connecting with and learning from peers

At the start of the 21st century, accomplished teachers see a growing need to connect and learn from their peers. Members of TLN, for example, engage and even challenge one another as they seek to sharpen their expertise. John Holland describes the knowledge and skills that teachers in 2030 must possess:

First, they must fully embrace the scientific and research-based aspects of the profession. They must be able to see through cracks in their practice, analyze data to make appropriate decisions about how best to teach their students, and understand complex content in a deep enough way to communicate its most important and tested aspects to their students.

The false dichotomies of the late 20th century (teacher education run by archaic university professors versus alternative certification run by ambitious individuals who offer a crash course) do not prepare teachers for the future John describes. He offers a new path:

I propose that teaching should be re-conceptualized as a creative profession. In the competitive world of design, the artist or designer is expected to take a product and create an ad or representation of the product that makes consumers want to buy it. If we change the word “buy” to “learn” and the word “product” to “content,” then we are basically describing what teachers do in the classroom and what they can do outside of the classroom.

Emily Vickery points out that our increasing

understanding of how students learn creates a demand that teachers know more and teach differently – transforming teacher education by extension:

As online learning communities continue to grow and more and more people interact with synthetic web-based environments, the skills that teachers need to know may sound more like something from the script of Star Wars than from traditional teacher workshops and pre-service courses.

Instead of reviewing lecture notes for Introduction to Education Psychology, teachers may need to cultivate expertise in the Psychology of Avatar Development; instead of Classroom Management, perhaps Orchestrating Learning in Synthetic Environments will be more useful. Teachers will, in fact, be orchestrators of learning – a concept we talk about today, while seldom doing much to accomplish it, but one that will force itself upon most everyone who expects to be a teacher in 2030.

As part of this “unbundling” of education, schools and classrooms will no longer be the center of all learning. Nor will state departments of education and curriculum committees be the sole arbiters of learning content, goals and objectives. Instead, like users of Wikipedia, learners will play a key role in defining the curriculum and debating what is important to know.

For students to thrive in this environment, teachers will need to be highly skilled at helping students screen and synthesize, sorting, vetting and categorizing vast amounts of potential information. Imagine teachers being prepared for and skilled as mavens of technological learning — helping students learn to determine what is good among ever-growing quantities of online content. Those teachers who do it best will get paid more for it.

Our colleague Ariel Sacks also argues that teachers can sell their ideas, products, and skills in the global marketplace – creating their own cottage industries as individuals and as collectives. No longer “just a teacher” — experts at 21st century pedagogy will emerge, she says, as *teacherpreneurs*.

John picks up on the concept and moves it further down the road to 2030:

Grassroots economics are usually considered local solutions to local problems. But just as the Internet has changed the meaning of local from geographic groups to affinity groups, this idea of teacherpreneurs in education takes on entirely new meaning. Long-tail and niche markets will become more viable areas for teacher entrepreneurs as learning becomes more entwined in the virtual environment. For the first time, teachers are being presented with the opportunity to act creatively to design and guide content based on their understanding of learning. The ability to create pathways for learning will be a marketable skill that teacher leaders can provide in online communities, serving novice teachers and other adult learners, as well as students and their families.

Imagine that in 2030 about 15 percent of the nation’s four million teachers are serving in hybrid roles where there are more opportunities for marketing themselves. No longer are school districts relying on canned curriculum and one- or two-shot workshops delivered to general teacher audiences by a consultant who has not taught students for over a decade. Instead, 600,000 teachers have “consulting” businesses that allow them to not only teach children regularly but to provide the highest-quality professional development via the connectivity of the wired world. As public support for this phenomenon grows, more teachers become participants in the growing global trade in pedagogy, producing web-based curricular materials as well as teaching online anytime, anywhere.

John Holland continues, writing in the future tense:

Teachers teach algebra all over the country. If a teacher in Connecticut who teaches immigrant students from Cambodia creates and publishes a way for these students to understand proofs, then through the Internet’s capacity for connectivity, a teacher in California can very quickly begin to use that approach with the same types of students.

For many years textbook companies controlled what was important for students to learn. They

created textbooks based on the standards of several large states, and other states either selected from those texts or did without. Now, with open source textbooks, community-embedded learning through the global positioning network, and the collaborative efforts of teachers, content can be created to meet local standards in more efficient ways than ever before. The instant publishing opportunities of the Internet have created better ways for teachers to develop and distribute their expertise.

Ariel draws on a current corporate example to suggest another way to restructure schools around the critical issue of time, so the most accomplished teachers can spread their teaching expertise:

A new trend in business has a number of successful companies giving employees on-the-clock “free” time to pursue independent projects of their choosing. Google grants its employees 20 percent of their work time to pursue “pet projects.” Blogging on the company’s website, Google employee Alex K writes: “You can use the time to develop something new, or if you see something that’s broken, you can use the time to fix it.” He fixed an annoying keyboard function on the Google Readers feature to allow him to skip sections of stories. He concludes, “...every time I use the new shortcut (‘shift’ and ‘N’), I get a... thrill at how easily I was able to get my idea implemented.”

This is the kind of real-time problem-solving teachers do constantly on a micro scale —like finding a new way to reach a struggling student — but we rarely have the time to do this large scale. However, teachers have some of the best ideas on macro because we know our students. If given the time to develop ideas and create solutions to problems, teachers could be of much greater value to our schools. According to research by University of Michigan professor Theresa Welbourne, “company performance increases when more time is spent on ‘noncore job roles’—for example, when leaders focus on roles such as innovator or team member.” School organizations would benefit similarly, when teachers are allowed to spend time in roles outside of classroom teaching developing ideas that could exponentially increase learning.

A 2009 study has provided hard evidence to support

what teacher leaders have said for years. While examining 11 years of student achievement data, researchers found that much of the value-added student gains were attributable to teacher teams, not individual teachers. Using sophisticated analyses, they discovered that peer learning among small groups of teachers (the spreading of expertise) seems to be the powerful predictor of student achievement over time.²⁵

TS2030 member Susie Highley offers an example of powerful professional development that illustrates how teachers can develop into instructional experts and then guide their colleagues in teaching more effectively:

The most valuable, lasting, and inspirational professional development I have ever experienced was through the Teacher Leadership Academy (TLA) — actually run by a state agency. My cohort group included over 30 teachers from other systems and nine teachers from my district (elementary, middle and high school). It was through this program that I first received in-depth instruction in Understanding by Design, problem-based learning, classroom applications of brain research, distance learning, differentiated instruction and more. Because the program lasted for two years, we had ample time to apply what we had learned in our own classrooms, and share that knowledge in faculty meetings and district trainings and by creating videos and participating in online cohort discussions.

To expand the opportunities that Susie describes, new school structures must be created. Ariel continues:

In order to break away from the hierarchical structures that keep us losing great teachers and moving at a snail’s pace, we’ll need to carve out significant time, like Google’s 20 percent, or up to 50 percent, for teachers to expand their roles as leaders and innovators to respond better and faster to the needs of students.

This time for teachers to develop differentiated capacities fits well into a profession that includes hybrid roles for accomplished teachers. Kilian Betlach expands on his ideas about the potential for strengthening students’ learning experiences and

achievement:

In the same way that a national economy based on a single industrial sector is inherently weaker than one that is sufficiently diversified, when the only job requirement for teachers is teaching, schools are inherently weaker than if some taught, some led, and some undertook a combination of the two.

The creation of hybrid roles allows for diversification of responsibilities based on teacher strengths. Teachers with exemplary abilities in curricular design could be given the freedom to plan units and courses of study for grade levels and departments. Teachers with the ability to coach and guide their peers could do so in afternoons, while teaching all morning. And those teachers who excel in the classroom, whose ability to grow student achievement trumps the other skills they undoubtedly bring to the table, would continue to teach at high levels.

The structures of team teaching and blended learning environments create the flexibility that teacherpreneurs need both to develop their craft and bring their expertise to their peers and students. Part of teachers' self-directed learning time described by Ariel could be used to connect to a host of teacherpreneurs to develop special capacities. Emily points us to the thinking of media consultant and "digital ethnologist" Marc Pesce, who posits that we must "transform the classroom, from inside out, melting it down, and forging it into something that looks quite a bit different from the classroom we've grown familiar with over the last 50 years."²⁶ Mr. Pesce imagines that:

In [the] near future world, students are the administrators. All of the administrative functions have been "pushed down" into a substrate of software. Education has evolved into something like a marketplace, where instructors "bid" to work with

students.

The key puzzle piece needed to complete Mr. Pesce's picture is the teacher, serving as the agent to empower students to negotiate a personalized, open-ended education — guiding them at every step along the way with deep content and pedagogical knowledge. Students, parents, and families, as well as a range of school districts and non-profits, would be able to bid for the best teachers, who offer their knowledge and skill as individuals and collectives.

What we must not lose sight of, as TS2030 team member Renee Moore has reminded us at crucial points, is the currency with which students from vastly different backgrounds are "bidding." This is a role that teachers themselves can take on — helping school districts make the best choice about where to allocate resources, and connecting students and parents to the vast opportunities available. The model of teacherpreneurship must not drive a wedge further between the 'haves' and 'have-nots.' With the right support and resources, teacherpreneurs can act as social entrepreneurs, developing innovative ways to spread their expertise where it is needed most. Ultimately, teacherpreneurship is not so much about establishing a new income stream for individuals as it is about propagating a new culture of innovation and creativity in a sector — education — that has been woefully lacking in one.

In 2030, leading the charge for equity and access is just one way teachers could develop their talents and ideas — and receive recognition for it. The kinds of teacherpreneurial opportunities I've described here would allow our nation's best to not only continue to teach students and spread their expertise, but to also earn significant and meaningful professional compensation — which I'll discuss in the next segment, "Levers of Change."

Levers of Change

Accelerating Change and Transforming Teaching

While not claiming to be clairvoyant, I believe the ideas shared in this paper about the future of teaching

Renee Moore reminds us that equity cannot be ignored as we move to a digital future.



can be realized. I am personally buoyed by optimism as I see positive shifts in the polling data on teachers' prestige — and the power of viral networking to spread not just the expertise of the nation's most effective teachers but to also connect their ideas to the minds and hearts of the public.

Teaching has had a stormy and convoluted past — often framed by the struggle to determine who teaches what and how, and colored by the conditions under which they do so. The history of teaching includes longstanding control by laymen, a lack of clarity and rigor in the process of becoming a teacher, and limited prestige and income — all constraining its professional possibilities.²⁷

My TeacherSolutions 2030 colleagues and I are convinced that the future direction of teaching will depend on how well teacher leaders can communicate to the larger public the choices we face in our education system and the potential of a fully-realized teaching profession to spark a learning renaissance in our public schools. Public opinion polls have revealed that most Americans want highly-prepared teachers for all our children.²⁸ These polls also suggest that most Americans are largely uninformed about the policies being promoted that, intentionally or unintentionally, undermine the development of a profession that can meet the challenges of a constantly changing world and also maximize the opportunities for learning presented by new technologies and the Internet.

Drawing on the annual *MetLife Survey of the American Teacher*, I would suggest that the profession is already moving forward, if not always consistently. While teachers in 2009 (compared to those in 1984) are less likely to believe standardized testing is helpful to their teaching, they do believe they are better prepared to deal with issues of students' health, parental support, second language learners, and poverty. Student learning differences are increasing rapidly, pressing teachers to want more teacher education, not less. And teachers today, compared to their counterparts of 20 years ago, are far more likely to encourage their students to enter teaching — and students are more likely to report they want to teach.

I believe the vision held and advanced by my TS2030 colleagues offers a “third way” for seeing the future of teaching and transforming the profession. Their vision imagines big policy changes over the next two decades — changes that we all recognize do not come about easily. Speaking in another context, about another divisive social issue — health care — conservative commentator and former Bush II aide Peter Wehner noted:

America in general is fairly non-ideological and pragmatic, and we tend to play within the 40 yard lines. Big policy changes don't come along very often, and when they do come along, especially when dealing with entitlement programs, you need a kind of civic propulsion to drive them through. If you don't have that intense public sentiment on your side, you're not going to get it through.²⁹

Helping policymakers, practitioners, and the public think differently is a precursor to getting them to act differently. In analyzing the historical problem of getting good educational practice to scale, scholar Richard Elmore noted that the problem is not the supply of ideas. There are lots of good ideas (and many of them are recycled). The problem is the demand for them.³⁰ Much like other products, a 21st century teaching profession needs to be marketed. Elevating the independent voices of our nation's expert teachers is the first lever for change I want to discuss here. Doing so, I believe, will require two additional, interlocking levers for change: professional (not merit) pay and new forms of teacher unionism, morphing old-guard labor/management distinctions into results-oriented professional guilds where teaching and learning are paramount.

Change Lever #1: Public Engagement for a Profession of Teaching

Engaging the public for a 21st teaching profession is a must — and a great deal of re-learning must take place not just among policymakers, community members, parents, and business leaders, but also practitioners themselves.

Over time America's collective of view of teaching has

been confounded by the occupation's large size, which makes it very difficult to change, and the fact that teachers are expected to fulfill a number of custodial responsibilities in the service of children and their families.³¹ Additionally, as workers in America's most widespread and visible public enterprise, K-12 educators are easy targets for those angry and frustrated about the nation's perceived shortcomings.

Most Americans have attended schools for 13 years — and have watched teachers teach them for over 15,000 hours. On the other hand, they have seldom seen doctors practice medicine all day, lawyers prepare a brief, or accountants negotiate an income tax dispute with the IRS. Doctors, lawyers, and accountants possess specialized knowledge. Teachers may as well — but it is not obvious, especially when so many teachers enter teaching without it and those with it are rarely recognized or elevated as experts.

In point of fact, America's familiarity with teaching breeds some contempt. When expert teachers teach effectively, teaching looks easy. When teachers teach poorly, their performance suggests that anyone with average intelligence and a strong work ethic can get by. My CTQ colleague Amanda Gladin-Kramer said it very well to me recently:

Teaching suffers from the overexposure of everyone's own public school memories. The odd or bad experience is likely to stick out in our thinking over the steady work that happens every day in millions of classrooms. We use our collective years of learning so comfortably as part of the fabric of our minds that we do not recall that what we know was *taught* to us.

Dan Lortie, the well-known education sociologist, called it the “apprenticeship of observation” — where the public has seen so much teaching that it seems common and simple. Lortie also documented how so many teachers themselves, as a result of their own childhood “internship,” believe that effective teachers are

born, not made, and that they have little to learn from formal, professional pedagogical coursework.³²

The mass media, for the most part, has worked against a profession of teaching — where teachers are viewed as well-prepared experts and where both intellect and preparation are critical to effectiveness and growth in student learning. Instead, decades of popular movies have painted portraits of teachers as willy-nilly nincompoops, such as Richard Mulligan as Mr. Gower in the 1984 film *Teacher* (starring Nick Nolte), or stupefying bores, like the economics teacher played by Ben Stein in the 1986 comedy classic, *Ferris Bueller's Day Off*.

The media and the public do have an affinity for teachers who are presented as anti-establishment heroes defying all odds — like Sidney Poitier as Mark Thackery in *To Sir With Love* (1967) or Robin Williams as John Keating in *The Dead Poets Society* (1989). True life depictions of Jaime Escalante, played by Edward James Olmos in *Stand and Deliver* (1988), and Erin Gruwell, played by Hilary Swank in *Freedom Writers* (2007), portray expert teachers who work alone, always against the system, and use their intellect and commitment to help students learn, improving lives despite the less-committed teachers who surround them.

The problem, of course, is that by 2030 our nation's schools will demand up to four million teachers — many of whom will be needed to teach more than

Teachers' Perceptions of Their Profession

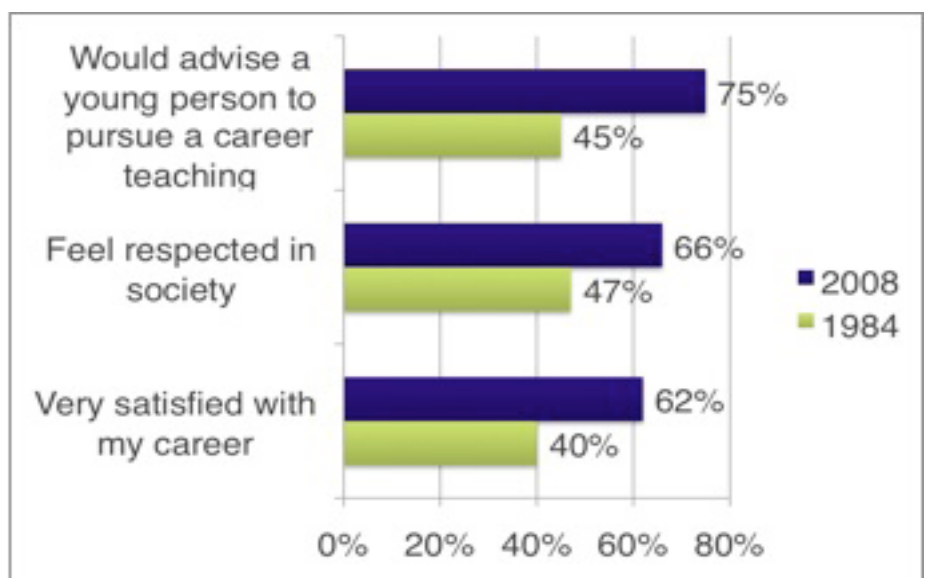


Figure 4 Source: Metlife Survey of the American Teacher: Past, Present & Future

the few years that Ms. Gruwell did in the mid-1990s. Where will we find four million heroes? Nowhere. But we do have a reservoir of public sentiment that could be intensified in ways that create the “civic propulsion” for change alluded to by Peter Wehner.

A 2008 Gallup poll suggests that the general public views teachers very favorably by comparison with other occupations — ranking them third in a list of most honest and ethical professions, just behind nurses and pharmacists. The public has more faith in teachers to do the right thing than even medical doctors, the clergy, and policemen. Perhaps, most importantly, the public thinks *much more highly* of teachers (65%) than lawyers (18%), labor union leaders (16%), Congressmen (12%), and business executives (12%).³³ And a 2008 Harris Poll measuring public perceptions of 23 professions and occupations found that firefighters, scientists, doctors, teachers, and nurses are seen as the most prestigious of a list of 23 occupations.³⁴

These trend data may be the most compelling. When the Harris Poll asked the public this question in 1977, only 29 percent rated teaching as a prestigious profession. With a 23 percentage point increase over three decades, the public’s respect for teaching has increased more than any other profession. This trend is matched by changes in teachers’ own attitudes. MetLife has surveyed teachers annually for 25 years, and among the many intriguing findings in MetLife’s 2008 poll is that teachers believe they are earning more social esteem. In 1984, only 47 percent of American teachers felt respected (with only 10 percent agreeing strongly). In 2008, two-thirds (66%) believed that the American people had respect for their work, including 17 percent who agreed strongly.

Teachers’ Views on Their Profession

So why do the public and policymakers not listen to teachers on matters of school reform? For the most part, there is no venue to hear them. Instead, when it comes to the collective voice of teachers, it is union leaders who are heard. And, as the Gallup poll reports, union leaders (deservedly or not) lack the credibility of classroom teachers themselves. I wonder how the public would rate the honesty and prestige of expert teachers — as opposed to any teacher? My hunch is that well-vetted expert teachers could “tip” the conversation — engaging the public in powerful

and provocative ways. Much like the way Malcolm Gladwell has described the beginning of other social epidemics, expert teachers — specially prepared as connectors, mavens, and publicists — could market the 21st century profession that students deserve.³⁵

It’s far from impossible. The American people have the capacity to think and act differently about the teaching profession. Consider how our nation’s adult population learned to think and act differently about cigarette smoking. In the early 1960s, cigarettes were “very cool” and the Marlboro Man, portrayed as a rugged cowboy, gave cigarettes a free-spirited, back-to-basics, all-American image. Cigarette smoking was common and often viewed as an important accessory to one’s lifestyle. Then studies began to identify empirical links between smoking and cancer. The Federal Communication Commission’s Fairness Doctrine (equal time for controversial issues) allowed anti-smoking advertisements to blanket network television. Early anti-smoking commercials, starring “Johnny Smoke,” showed cowboys keeling over with poisonous fumes in their lungs — parodying the Marlboro Man. Public awareness grew and behavior began to change as TV ads for cigarettes were banned and Surgeon General’s warnings on cigarette packages became more visible and stark. Over the ensuing 40 years, the percentage of American adults smoking cigarettes decreased from 45 to 20 percent.

So, what might be the components of a long-term campaign to remake the image of teaching — a campaign of sufficient intensity to convince Americans that teachers are not primarily an education problem but important contributors to the policy solution? Part of this messaging needs to emphasize that effective teachers are not accidents of birth but the products of smart actions by decision makers in support of comprehensive teacher development. We begin by following the basic tenet of good marketing: Show, Don’t Tell. The media and the public have yet to see consistent images of good teaching or observe expert teachers relating stories of what works and why in our nation’s most challenging schools.

Viral networks and Web 2.0 tools create the environment for expert teachers to make high-quality teaching and learning transparent. New statistical applications can link a range of student learning measures to different teaching in different contexts.

Teachers, parents and students can use handheld devices to share information and forge new forms of public accountability. Multimedia presentations of student learning products can encapsulate a richer variety of achievement data and inform a deeper understanding among policymakers and practitioners as well as the public and the media.

If we push forward with this vision of teaching's future, parents will not only be able to access a classroom calendar and group wiki on their child's school website, but also privately view and comment on their child's work and teachers' observations about his or her progress. Teachers, beginning with YouTube, can create their own mini-documentaries — telling stories of reform that link research to real-life practices and possibilities. Videos of effective teaching can be shared among teachers, but also among parents and other education stakeholders who serve as an informal but large-scale accountability mechanism, driving continuous improvement in teaching quality.

As expert teachers witness the power of their own voices, more and more will step up to share their insights and advocate for their students and their profession through blogs, forums, policy development opportunities and more. Lesser-prepared and less competent teachers will be more easily identified. The most effective practitioners will support these colleagues to improve, or serve in peer review roles to remove them from the profession. As a result the public will have even more trust in teachers — and be more willing to support deeper investments in teacher compensation, beginning with a professional pay system consistent with 21st century teaching and learning.

Lever #2: Professional Pay for the Profession of Teaching

Public education has been long criticized for paying teachers for “seat time,” as Renee Moore, a TeacherSolutions team member, puts it. Since 1921, when the cities of Denver and Des Moines began to offer “single salary schedules,” most teachers have come to be paid for the number of years they have taught and the number of workshop hours and formal academic credits they have accrued. As issues of racial

and gender equity gained traction in the 1940s, the single salary schedule became an accepted way of assuring at least a semblance of “fair pay” for women and teachers of color. School reformers who lament the continuing allegiance of teacher unions to this lock-step compensation system often forget the long history of teachers being paid on the basis of social prejudice, administrative whim, or political ideology.

Today, many school reformers (and a large majority of the public) support the idea that teachers should be paid, at least in part, for the effectiveness of their performance. It's not as easy as it sounds. Scholars have clearly documented failed merit pay schemes from years past — including those in the 1920s, 1950s, and 1980s.³⁶ These compensation reform initiatives floundered, in large part, due to unresolved technical and political issues.

In some cases, student scores from standardized tests could not validly and reliably measure individual teacher effectiveness — a problem that still besets researchers today.³⁷ In other instances, poorly trained administrators could not produce useful and trustworthy teacher evaluations. Union leaders argued against merit pay plans that focused on individual performance, ignoring the importance of teamwork in increasing student achievement. Ed Lawler, a professor of business at the University of Southern California (and expert in human capital systems), stated recently that most companies in America have some form of performance pay, but they do not do it well. In fact, he notes, “the corporate world (is) littered with companies whose employees regularly game their performance reviews to their advantage.”³⁸ Daniel Pink, drawing on the science of motivation, has shown clearly how current performance pay schemes, which focus on a “narrow band of circumstances” and “if-then rewards” typically undermine or even destroy creativity.³⁹

Despite these many barriers, my TS2030 colleagues and I agree that *differentiated professional compensation* is a critical lever to professionalize teaching for the 21st century — primarily because a smart pay system can broadcast strong signals (money and recognition) that clearly identify the best practitioners and help them spread their expertise. We draw a distinction between this approach to “performance pay” and the many current experiments

that focus primarily on motivating teachers to boost student scores on standardized tests. These plans, now being tried in a number of cities and schools, mostly ignore the possibility of rewarding teachers who learn from one another and translate that learning into greater student achievement.⁴⁰ This attitude prevails despite compelling evidence that students learn more over time when teams of teachers are encouraged to work together to improve instruction.⁴¹

In our ongoing TS2030 work, Renee Moore describes how performance pay *could* work to improve public schools. It must:

- Build on more rigorous and comprehensive evaluation measures of student and teacher performance, so that the right indicators can create true accountability for teachers and administrators;
- Draw on accomplished teachers as full partners in designing and implementing such measures, so the resulting accountability systems will be transparent and useful to policymakers, practitioners, and the public;
- Rest on a nuanced approach to paying teachers differently, so that our public school systems are more flexible in adapting to future changes, including the many forces and events we cannot yet delineate.

(Lawler, a current guru in the strategic management of human capital, writes that most companies reinvent performance pay systems every four years or so in response to shifting priorities and metrics.⁴²)

Renee asks us to imagine the shift in momentum for change likely to occur today if:

- Base pay for all teachers across the country ranged from \$45,000-70,000;
- All teachers were eligible to earn performance-based supplements to the base pay for helping their students make significant (and authentic)

academic gains;

- Local school districts had flexibility to distribute incentive funds for teachers based on specific community needs or shortages;
- Teachers received incentive bonuses for working together with their colleagues to produce better results for students;
- Teachers who chose to teach in high-needs, low-performing schools *and* demonstrate proficiency in doing so received significant incentive bonuses;
- Teachers were rewarded for leadership rather than seniority; and
- Teachers who had proven themselves accomplished at helping students achieve were given opportunities to shape policy, curriculum, scheduling, and other key decisions at the school, district, state, and national levels.

(Pink has shown that the key to high performance is not rewards and punishments — it is “unseen intrinsic drive” and “the drive to do things because they matter.”⁴³)

Several years ago, Renee Moore served on another TeacherSolutions project that studied performance pay and designed an early 21st century system with the elements she describes above.⁴⁴ In our TS2030 initiative, she takes those ideas one large and provocative step forward, as she imagines teachers negotiating (individually or in small teams) their own working conditions and compensation. She notes:

Unlike other comparably prepared professionals, teachers are seldom able to negotiate their own hours, calendars or compensation, or even to determine their own “deliverables” of teaching and learning. This lack of clear goals and opportunities for teacher entrepreneurship and empowerment can lead to mediocre outcomes for students and schools.

We have only begun to experiment with some of these options in a very few places, but the possible impact

of large-scale implementation of these changes would truly alter the future of education in the U.S. To be sure, changing the compensation system for teachers is only one crucial part of a multifaceted reformation of public education that must involve parents, students, educators, entrepreneurs, researchers and policymakers. Nevertheless, if we begin now to shift how our society compensates teachers for our professional services, we can accelerate student achievement — especially for those who have been historically left behind or left out in public education — while generating a critical mass of highly effective teachers for the mid-21st century.

Changing the way we pay teachers would have an immediate effect on the working conditions of teachers, which has been demonstrated directly to influence student behavior and performance. By changing the pay structure, we would establish new expectations for teachers' professional performance. This new pay structure would then necessitate a concurrent (and desperately needed) change in how teachers are evaluated, including how administrators are trained to do those evaluations — or even if administrators in the future evaluated teachers at all.

TS2030 participant Ariel Sacks, who just turned 30, is candid in discussing salary as one consideration (among others) in her career goals, as it is for any other professional:

I have often been asked what it will take to keep me in the classroom until 2030. My general answer is threefold: (1) freedom to develop, try out, and share my ideas; (2) leadership opportunities that extend beyond my classroom, but don't require me to leave teaching altogether; and (3) formal recognition (including salary) for the skills I acquire and contributions I make to my students, school and profession, as I progress in my career. These three conditions are also crucial to the creation of smart schools, starting today.

As the TeacherSolutions 2030 team brainstormed about different teaching roles and job configurations — and the powerful effect of differentiated compensation as a lever for change — a new pay framework began to emerge. The framework, which will appear in our 2010 book from Teachers College Press, recognizes that failed merit-pay systems have

not tied compensation tightly to meaningful measures of student and teacher productivity and have therefore done little to improve and spread good teaching practices.

In 2030, our most expert teachers will need to share what they know, not just nationally, but internationally, and earn more for doing so. But like other reformers have suggested, base pay must be fair and sufficient to attract and equitably reward teachers for the challenges of teaching. Teachers should be able to negotiate their base compensation, much like university professors currently do, based on their experiences and past performances, in and out of education. A newly minted graduate of a well-respected teacher education program who has passed a rigorous performance assessment and is specifically trained to work with high-needs students would be able to demand a higher starting salary than another teacher-education graduate with no special training and no interest in working in a high-poverty neighborhood. If the well-prepared recruit is willing to commit to teaching for at least five years, then he or she should be paid even more.

Teachers could earn considerable additional pay for a host of performances and roles. These pay supplements would be designed to encourage and reward best teaching practices — bolstering and accelerating the achievement of local, state, national, and international school improvement goals. They would reward the hybrid roles that New Millennium teachers tell us they are seeking and allow teachers to negotiate contracts, individually and collectively, not only with school districts but with non-profits and user networks.

Student learning metrics would be built from a range of assessments, all validated, with many created by expert teachers themselves. Novices would be judged on their efforts to help their students make gains on local assessments, while experts would be expected to do so on international benchmarks. Ever-evolving handheld computers and data management software are allowing teachers to keep track of student learning in once unimaginable ways — and would become tools to easily assemble reports for teachers' own performance pay reviews.

While novices, if well trained, could be paid more for teaching a high-need subject, advanced teachers would be rewarded when they teach in a high-need assignment (e.g., more challenging students in high-needs subjects and schools). Experts would be paid more when they supervise novices (and teaching assistants and adjuncts) in high-needs schools — and they would vet advanced teachers before those teachers are allowed to mentor and coach.

Teachers will be paid more for a range of leadership opportunities — local, state, national, and international. For experts, this means serving as local spokespersons for the district or developing and running a community outreach program that connects home and school and user networks. Experts, many of whom will serve in hybrid roles, will lead policy and research projects (in concert with university and think tank partners). Some will serve as chaired university professors of teacher education. Others will lead their unions — now more accurately labeled as professional guilds. Some expert teachers will be the highest paid anybody in a school district. These latter two ideas are intimately intertwined.

Lever #3: Professional Guilds for the Profession of Teaching

Any discussion of teacher unions is sure to elicit some controversy. Critics of public education tend to blame low student performance on unions that have fought against efforts to judge teachers solely on the basis of standardized tests results. Union defenders often point to the need to increase base salaries to recruit and retain talented teachers and argue for improved working conditions so they can teach effectively. Teacher unions, says one prominent critic, have tended “to oppose anything that induces competition among schools.”⁴⁵ However, Diane Ravitch, one of our nation’s most respected education historians, has documented how — yesterday and today — unions have been necessary to protect teachers against the “arbitrary exercise of power by heavy-handed administrators.”⁴⁶ In 2005 the union in New York City had to include in contract provisions language to explicitly keep administrators from “punishing” teachers with seemingly mindless rules related to the format of bulletin boards, the arrangement of classroom furniture, and the “exact duration” of classroom lessons.⁴⁷

Prior to the 1960s, public employees did not have authorization to engage in collective bargaining. Since then teacher unions have used that authority and their political clout to resist managerial indiscretions. Today the union is still necessary to protect teachers against the “arbitrary exercise of power” noted by Ravitch. In a 2007 poll, more than a majority of teachers (54%) described their unions as absolutely essential, and another third (31%) said they were “important.” Significantly, teachers were more likely to see their unions as critical in 2007 than just four years earlier.

Although only about 12 percent of all American workers are unionized (about 16 million), most teachers strongly value the traditional protections unions offer.⁴⁸ The same poll, conducted by Education Sector, found that almost three-quarters of teachers believed that “without collective bargaining, the working conditions and salaries of teachers would be much worse.”⁴⁹ These concerns are not without foundation. A recent study has shown that “teachers earn significantly less than comparable workers, and this wage disadvantage has grown considerably over the last 10 years.”⁵⁰

Progressive teacher unionists imagine associations that more closely resemble professional guilds and place the highest priority on matters of teaching quality and student learning. Many recognize that their efforts of late have had a “mixed record on fighting for an equitable and quality education for all children” and “too often have been accomplices in maintaining an unsatisfactory status quo.”⁵¹ Don Cameron, a former National Education Association official, has lamented that the nation’s largest union has suffered from a governance structure that has not favored a strong, centralized, single leader and often “hunkers down” in the face of education policies members oppose rather than finding solutions to endemic problems.⁵² The teacher unions are often viewed as saying “no” — rather than seeking ways to say “yes.” As Bob Chase, former President of the NEA, wrote over a decade ago:

While some of NEA’s critics aim only to dismantle public education, many others care about our schools, and we have been too quick to dismiss their criticisms and their ideas for change. The fact is that in some instances, we

have used our power to block uncomfortable change, to protect the narrow interests of our members, and not to advance the interests of students and schools.⁵³

Teachers themselves report that their unions have done little to improve teaching quality. While almost half the teachers in the Education Sector poll (46%) agreed that their unions provide support and mentor novices, very few believed that their formal bargaining agency did much to identify ineffective teachers and retrain them (17%) or guide ineffective teachers out of the profession (15%).

While most teachers, both newcomers and veterans, agree that without a union teachers would be susceptible to school politics or administrative abuse, few of them (especially newcomers) believe that their unions work in their best interests and promote “feelings of pride and solidarity.” Very few (11% of newcomers and 27% of veterans) are involved with their local union.

Taking the lead from the nation’s most honored teacher union leader, the late Al Shanker, a small but growing number of locals have attempted to go beyond the industrial unionism model. For over a decade, marginal changes have been made: for example, moving local contracts away from their primary focus on bread and butter issues to matters such as peer review and mentoring and coaching.⁵⁴

Shanker, called by some the George Washington of the teaching profession, believed that teachers should firmly establish and enforce standards among their ranks.⁵⁵ Decades ago Shanker began calling for peer review, and late in his life, he made the pitch that unions should no longer resist the use of student test scores in teacher evaluation systems. In the late 1980s, Shanker called for teacher-led charter schools; in the 1990s he called for a demanding test, administered nationwide, that teachers would have to pass in order to gain union membership.⁵⁶

All this said, with 80 percent of the teacher workforce unionized, the collective best ideas of teachers could become a much more powerful driver for local school improvement. The teachers’ unions have visibility — and rightfully so. In many ways, they control the

public perception of teaching. If the American people continue to perceive the teacher unions as recalcitrant or untrustworthy, then they may continue to resist investments that could transform the profession. For the public to get behind teachers as a collective force for good, the unions must organize their members as “mind workers,” not industrial workers subject to micromanagement.⁵⁷

This is the goal I, along with my TS 2030 colleagues, am pursuing. Imagine that by 2030, fueled by viral networking and the emergence of Generation Y (and Z) leaders, teacher unions have evolved into professional guilds where membership is based on performance — and a wide variety of contractual arrangements frame the work and compensation of teachers. As artist and craft guilds have framed the career path from apprentice to novice to journeyman to master, teaching guilds would do the same for teachers — but more.

In the late 1990s, C. T. Kerchner called for school-based compacts that loosen up the traditional union-district contract and replace it with “slender agreements” where “most of the decisions that lie at the heart of teaching and learning would shift to the schools.”⁵⁸ Setting school schedules, making teacher assignments (such as hybrid roles) and determining supplemental pay would be done in partnership with teachers at the school, not at the district level. These are important first steps — but insufficient to establish teaching as a 21st century profession.

Building off of the ideas posed by Shanker, imagine that teachers would earn differentiated membership into their unions, based on the quality of their teaching. Union leaders would be selected for their classroom expertise as well as organizational prowess. No longer would spending enough time in the union ranks assure higher responsibility. At the local, state and national levels, only the most effective teachers (and principal teachers) would rise to the rank of union president.

As a result, professional teacher guilds would wield even more influence among their members than traditional unions. Busy teacher leaders would call upon the resources of a trusted formal organization to broker complex roles for them to play in schools

and across the nation and beyond. Imagine that in the 2030 MetLife Survey of the American Teacher, over 90 percent of the responding teachers believed their teaching guild helped them become better teachers, and the guild's collective efforts were "virtually always" in the best interests of its members and the students they served. There would no longer be a reason to ask if teachers felt pride and solidarity as guild members – the answer would be obvious in the day to day interactions among teachers, the guild and the society at large.

The Keeper of the Flame

In some ways the 21st century ideas posed herein are not all that new. But none of them have ever been taken to scale – an enduring problem of educational reform. Drawing on historical data, Richard Elmore suggested that effective policies and practices do not scale up because too often reformers assume the good ideas will sell themselves, and the efforts themselves have relied too heavily on highly committed and talented individuals to "carry the burden" of change. These trailblazing teachers, he says, are too often isolated from their "less adventurous" colleagues. Rarely are there intentional processes for the reproduction of successes. Rarely are there structures that promote learning of new policies and practices – or incentive systems to support them.⁵⁹

The idea of "teachers leading the way" goes against the tide of history and the longstanding culture of American schools. I'm no Pollyanna. But I am very hopeful, primarily because social media and professional networking, driven by Web 2.0 and beyond tools, can transform the possibilities of scale. New tools can de-isolate teaching and teachers – instilling ideals and opening up organizations. Old debates can be left behind and third-way thinking and action can take hold. But there must be a keeper of the flame.

Laurie Wasserman gets to the heart of teacher professionalism: empowering teachers to give students the education they deserve.



TeacherSolutions 2030 team member Shannon C'de Baca, who identified this important variable during one of our early deliberations, said it best:

In an emerging model of medicine, there's a keeper of the flame, and right now that's morphing to be the general practitioner, who's not necessarily a specialist in eye, ear, nose and throat, but who is the patient's advocate, and the facilitator of services. Now, that's going to be a real popular model in medicine. It hasn't emerged yet, but it is certainly coming of age. In our world I think there are two emerging issues for me. One of them is that there are some standard metrics for quality assurances for the people who engage with kids. And how you communicate what those standard metrics are from specialty to specialty is very critical.

There has to be some — and I don't want to say it's uniformity — but there has to be some high level baseline skill. Maybe that's communication and collaboration, or even technology. It is this set of skills that everyone has when they come in the door. It's one we make sure is a deliverable. It's a social contract with parents that when we put people into the classroom, this is what they will have. Another thing that comes into play is that we haven't solved the question of who is the keeper of the flame. There has to be somebody who says, "I am going to watch over what goes on here with all the independent contractors, consultants and educators, and I am going to make sure that the vision of the school is still going to be there."

Under the guidance of expert teachers like my TS2030 colleagues and other members of TLN, I can say with some assurance that the future of education will burn bright. At the Center for Teaching Quality, we are continuing to fuel the flame by engaging many more young teachers and hearing their voices. Our recently launched New Millennium Initiative supports purposeful, energetic educators in their 20s and 30s as they create their own visions of a profession that must be both innovative and student-centered. And at the same time, we are building partnerships with other teacher networks, community-based organizations and progressive unions, all of whom can draw on some of the nation's most accomplished educators in transforming teaching into the profession that students deserve.

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The TeacherSolutions 2030 Team

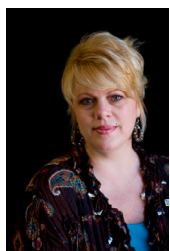


Barnett Berry is President and CEO of the Center for Teaching Quality, Inc., based in Hillsborough, North Carolina. Founded in 1999, CTQ seeks to close the student achievement gap by closing the teaching quality gap.

Barnett is a former high school teacher. In 2003, he created the Teacher Leaders Network — a dynamic virtual community designed to elevate the voices of expert teachers on matters of education policy that impact their profession and the students they serve.

Barnett also has worked as a social scientist at the RAND Corporation, served as a senior executive with the South Carolina State Department of Education, and directed an education policy center while he was a professor at the University of South Carolina.

He has authored numerous academic reports and publications and many articles for the popular education press. He frequently serves in an advisory capacity to organizations committed to teaching quality, equity and social justice in America's schools. Currently, he advises the Education Testing Service and its Teacher Leadership Initiative, The Rhode Island Urban Education Task Force, Urban Teacher Residencies United, the National Education Association Foundation, the Public Education Network, the Ford Foundation and its teacher retention project, and the Rose Community Foundation and its initiative around the strategic management of human capital.



After teaching over a dozen different Language Arts and Social Science courses in two Alabama school systems, **Jennifer Barnett** recently assumed the role of school-based Technology Integration Specialist in rural Talladega County at Winterboro School. A veteran teacher of nearly 20 years, she was

selected as Alabama's District III Teacher of the Year in 2001 and received the Marbury Technology Innovation Award, Alabama's most prestigious award recognizing technology innovation by a classroom teacher, in 2008. Leading a project-based learning

initiative on Global Warming, Jennifer's team was selected to attend Microsoft's Innovative Teachers Forum in 2007. She designed and continues to lead a 21st century learning initiative for her school system, implementing a protocol for integrating 21st century skills with content standards. Her work with the highly effective Alabama Best Practices Center and presence on the web has afforded Jennifer the opportunity to work with teachers on technology integration throughout the world. Jennifer is a member of the Teacher Leaders Network.



Kilian Betlach is the Vice-Principal of Elmhurst Community Prep (ECP), a middle school in Oakland, CA. Prior to coming on board at ECP, Kilian worked as the associate director of data and policy for The Education Trust-West, an advocacy group that fights for equitable access and achievement for

low-income students and students of color. He taught seventh grade Language Arts and English Language Development for six years in east San Jose, CA, and is the former Institute Director for the Oakland Teaching Fellows and the Oakland City Teacher Corps, alternative route credentialing programs. He has facilitated professional development workshops across California, worked as a professional learning community leader for Teach For America, and is an Adjunct Instructor for Alliant International University. He wrote extensively about teaching, learning, and equity in his blog Teaching in the 408, twice named one of the top-14 U.S. education blogs by the Washington Post.



Shannon C'de Baca, is a 31-year teaching veteran (K-12 science) who moved from face-to-face teaching to teaching online five years ago. She developed a lab intensive chemistry course for Iowa students who did not have an available chemistry teacher. She

has worked with seven states and two national organizations in the development of science standards and teacher professional development. Shannon's teaching has been recognized with honors from the Milken Family Foundation, National Science Teachers Association (NSTA), The Iowa Department of Education, Sertoma and PBS.

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The TeacherSolutions 2030 Team



Barnett Berry is President and CEO of the Center for Teaching Quality, Inc., based in Hillsborough, North Carolina. Founded in 1999, CTQ seeks to close the student achievement gap by closing the teaching quality gap.

Barnett is a former high school teacher. In 2003, he created the Teacher Leaders Network — a dynamic virtual community designed to elevate the voices of expert teachers on matters of education policy that impact their profession and the students they serve.

Barnett also has worked as a social scientist at the RAND Corporation, served as a senior executive with the South Carolina State Department of Education, and directed an education policy center while he was a professor at the University of South Carolina.

He has authored numerous academic reports and publications and many articles for the popular education press. He frequently serves in an advisory capacity to organizations committed to teaching quality, equity and social justice in America's schools. Currently, he advises the Education Testing Service and its Teacher Leadership Initiative, The Rhode Island Urban Education Task Force, Urban Teacher Residencies United, the National Education Association Foundation, the Public Education Network, the Ford Foundation and its teacher retention project, and the Rose Community Foundation and its initiative around the strategic management of human capital.



After teaching over a dozen different Language Arts and Social Science courses in two Alabama school systems, **Jennifer Barnett** recently assumed the role of school-based Technology Integration Specialist in rural Talladega County at Winterboro School. A veteran teacher of nearly 20 years, she was

selected as Alabama's District III Teacher of the Year in 2001 and received the Marbury Technology Innovation Award, Alabama's most prestigious award recognizing technology innovation by a classroom teacher, in 2008. Leading a project-based learning

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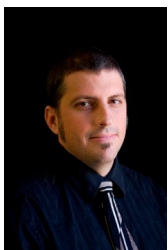
She hosted the Annenberg Television Series, "The Missing Link in Mathematics." She has also worked

with the PBS series *NOVA*, and served as a consultant for the National Education and the Economy, the Council of Chief State School Officers, the National Education Association, the NSTA, the United States Mint and the U.S. Department of State. Shannon currently serves as one of two Citizen Ambassadors to Bahrain. She has worked as a designer and a facilitator for the Iowa Statewide “Every Learner Inquires” initiative and guided development of the science component of the Iowa Core Curriculum. Shannon continues to pursue her passion for equitable access to exceptional online courses for all students through work with the Iowa Technology Task Force and Iowa Learning Online. Her essay on teaching online appeared at *Teacher Magazine Online*.



After 23 years as a science teacher, **Susie Highley** moved into the media center at Creston Middle School in Indianapolis to take advantage of exciting advances in technology and to see what she could do to help students develop a love for reading. She has received the Golden Apple Award, Lilly

Endowment Teacher Creativity Fellowship, GTE GIFT Grant, Indiana Teacher Technology Fellowship, and was her district Teacher of the Year (TOY) in 1999. She is a graduate of the Teacher Leadership Academy (TLA), a unique program sponsored by the Central Indiana Educational Service Center (CIESC) in which teachers from several counties embark upon a specialized two-year program. TLA incorporates current research and best practices while developing and providing leadership opportunities. She serves on the board of directors for the Indiana Middle Level Educators Association (IMLEA), the Association of Indiana Media Educators (AIME), and her local library board. Susie has also participated as a Teacher Academy Fellow and consultant at Indiana State University and has been a member of the Teacher Leaders Network since its inception.



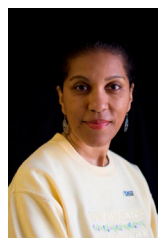
J.M. Holland has been a preschool teacher for the past 12 years. He is one of very few male National Board Certified pre-k teachers in the country and a member of the Teacher Leaders Network. As a member of the Center for Teacher Leadership at Virginia Commonwealth University he has

been the moderator for the Virginia Forum, an online community of accomplished teachers. John

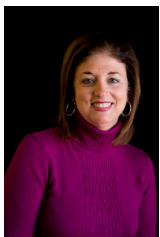
is pursuing a doctorate in Educational Leadership at Virginia Commonwealth University where he serves as a National Board coach, mentor, workshop presenter, and university student teaching supervisor. His current passions include ethics in educational policy, teacher leadership, creativity, and 21st century learning. He is also a relentlessly positive professional artist, education writer and professional developer.



Carrie Jenkins Kamm is a Mentor-Resident Coach for the Academy for Urban School Leadership’s (AUSL) Urban Teacher Residency (UTR) program at National Teachers Academy, a Chicago Public School. Carrie began her career in Chicago teaching fourth and fifth grades at R.N. Dett Elementary School for four years and then became a fourth grade mentor teacher at The Chicago Academy Elementary School, an AUSL resident teacher training academy for five years. During that time, she earned her National Board Certification as a middle childhood generalist and mentored several cohorts of teachers going through the NBC process. She earned her Ed.D. in Curriculum and Instruction from Loyola University Chicago in May 2007. In her current role as Mentor-Resident Coach she coordinates her site’s resident teachers, provides coaching and support to mentor and resident teachers, as well as provides professional development to the teachers in the AUSL schools network.



Renee Moore has taught English in the Mississippi Delta for 20 years. She is National Board Certified and the 2001 Mississippi Teacher of the Year. Actively involved in teacher-research, Renee is also a Writing Project Fellow and has received numerous awards and grants, including \$30,000 from the Spencer Foundation (Chicago) for her work on teaching standard English to African American students. She was the first active K-12 educator to serve on the Board of the Carnegie Foundation for the Advancement of Teaching (California), and is on the Board of Directors for the National Board of Professional Teaching Standards. She also currently serves on the State Commission on Teacher Licensure. Active for many years in professional development, her writings have been published as chapters in four books and several professional journals.



Cindi Rigsbee currently serves a hybrid role in Orange County, North Carolina. A former language arts teacher and reading specialist, she has returned from her year as North Carolina's Teacher of the Year to Gravelly Hill Middle School, where she is a Literacy Coach. She is also the

District Mentor supporting beginning teachers in their first three years, and she provides support to candidates for National Board Certification as well.

Cindi is a National Board Certified Teacher in the area of Early Adolescence/English Language Arts who enjoys writing about teaching. She has had several articles published by *Teacher Magazine* online, including "Grammar Interrupted," "Tips for New Teachers," and "What Makes a Principal Great." In addition, Cindi comments on education issues on her blog, *The Dream Teacher*, and is awaiting the release of her first book, *Finding Mrs. Warnecke: Doing Whatever it Takes to Make a Difference* in May, 2010.



Ariel Sacks has been teaching middle school English in New York City Public schools for the past five years. She is the eighth grade team leader and English department chair at School For Democracy and Leadership in Brooklyn.

She studied progressive pedagogy at Bank Street College of Education and is committed to implementing student-centered methods successfully in high-needs public schools. She writes regularly about her teaching practice and educational issues at her TLN featured blog, *On the Shoulders of Giants*. She has also written for *Public School Insights*, *Teacher Magazine* and other publications.



Emily Vickery is an innovator educator who has worked in a wide variety of settings, from teaching in an economically disadvantaged urban high school to serving as a consultant to a state governor. The constant in her work has been a love of teaching, learning, and technology. Emily has served

on the Alabama Governor's Council on Education Technology and represented the state of Alabama on a task force for the U.S. Department of Education.

From 1997 to 2003, Emily served as a private educational consultant focusing on technology. Her clients included the Governor of the State of Colorado,

the Education Commission of the States, and Apple, Inc. In 2003, she accepted a fellowship with the award-winning Teaching Tolerance Project of the Southern Poverty Law Center.

From 2004 to 2009, Emily served as a technology instructor and the Director of 21st century Learning for a private academy in Alabama. In 2009, she accepted the position of 21st Century Learning Specialist at an innovative parochial school in Florida. There, she supports teachers in curriculum, instruction, assessment, and technology integration.



Jose Vilson is a math teacher, coach, and data analyst for a middle school in the Inwood/Washington Heights neighborhood of New York, NY. He is beginning his fifth year as a teacher, having finished the New York City Teaching Fellows program in 2007. He graduated with a bachelor's degree in

computer science from Syracuse University and a master's degree in mathematics education from the City College of New York. He has worked on creating professional development for his fellow teachers on such topics as working on goals for the classroom and using the ARIS system, a data management system under the NYC Department of Education. He's spoken at Lincoln Center as part of the NYC Teaching Fellows' induction ceremonies, and writes regularly about education issues mainly at his blog. He is also a committed poet, web developer, and mentor to new teachers. He can be found at <http://www.thejosevilson.com>.



Laurie Wasserman has been a special education teacher for the past 28 years working with students of all ages, many of whom have had a wide variety of learning and health disabilities. Teaching middle schoolers and sharing stories from the classroom are her passions.

She currently teaches sixth-grade middle schoolers at The Andrews Middle School, in Medford, Massachusetts. Laurie mentors new teachers in her school district, and has also mentored new teachers through a partnership with the Center for Teaching Quality and the University of Connecticut. She has written articles for *Teacher Magazine* and *educationworld.com*, and written book reviews for the Teacher Leaders Network. This National Board Certified Teacher is also part of the National Writing Project and TLN.



The TeacherSolutions 2030 team taking on the future at a November, 2008 meeting

