



Building a 21st Century U.S. Education System

Executive Editor
Bob Wehling

Associate Editor
Carri Schneider

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Teaching For the Future

Thomas G. Carroll

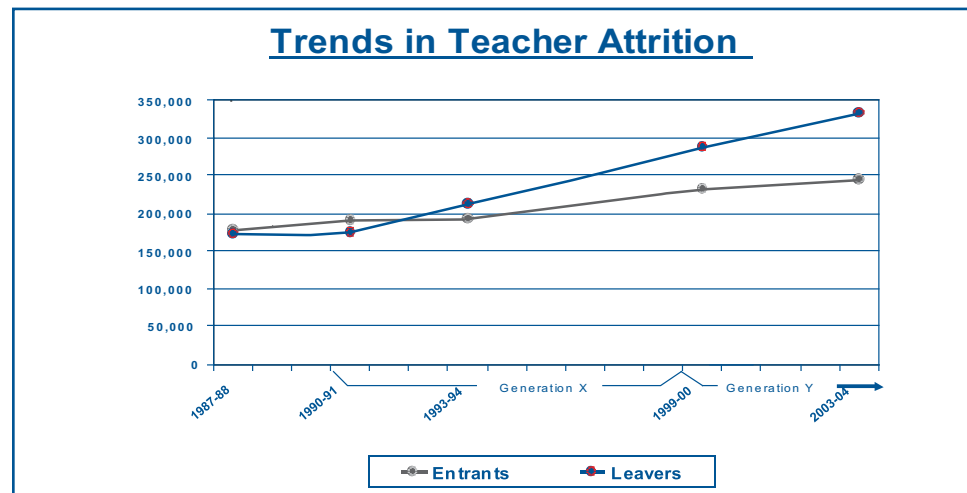
Over the next decade the foundations of our factory-era schools will be shattered, clearing the way for genuine learning organizations to emerge in their place. Changes in teacher and student demographics are converging with expanding learning opportunities and the demands of a knowledge-based global economy. In response, a new system of public education will emerge that empowers teachers and students to collaboratively create the knowledge and skills they need for successful participation in a “flat world”.

The flat world rewards continuous learning, sustained teamwork, and flexible adaptation to change. Today’s students need schools that are organized around these principles. They need teachers who know how to create a learning culture that fosters the communication and innovative problem solving abilities they will use throughout their careers.

A Massive Demographic Shift In Teaching

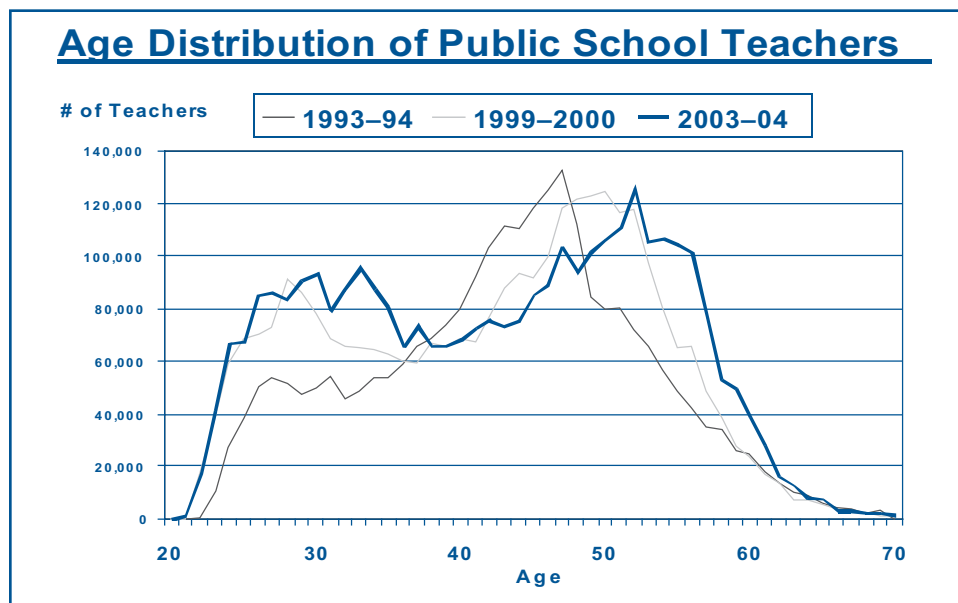
Today’s young teachers – the Millennials, who grew up digital – are ready to meet this challenge by working with their colleagues and students to transform their factory-era schools into 21st century learning centers. But they find themselves working alone in self-contained classrooms where they are bound to the teaching practices of the past. Faced with a choice between working in the last century or the 21st century, these new teachers are voting with their feet. The young people we are counting on to teach for the future are leaving our obsolete schools at an alarming rate.¹

Figure 1



And the brain-drain is about to get worse. Over one million of our teachers (a third of the teacher workforce) are Baby Boomers. For decades these teachers have been at the core of our public education enterprise – we have relied on them to deliver a quality education to millions of children – and now they are ready to retire, just as our increasing population of students is becoming ever more diverse. The good news, in some cases, may be that as they depart they will make room for a new generation of teachers who will bring fresh ideas and practices to our schools. But the bad news will be that many of these Baby Boomers² will take decades of experience and accomplished teaching with them, leaving young, inexperienced, and highly mobile teachers in their wake.

Figure 2



It doesn't have to be this way. In many cases these Millennials and Boomers are only leaving because they are searching for a more rewarding personal or professional opportunity. We need to keep them in education by giving them the chance to participate in multigenerational learning teams that can take on the exciting challenge of transforming their schools into 21st century learning organizations that will teach for the future.

The Conventional Wisdom Is Wrong

The initial response of most school leaders and members of the public will be to treat this demographic shift as just another manifestation of “the teacher shortage,” (ignoring the accelerating attrition of young teachers and the exodus of Boomers). The conventional wisdom will be that the “shortage” is simply getting worse, and that the teaching quality problems in today's schools can be solved by redoubling our efforts to recruit more teachers.

But the solutions of the past, which relied heavily on teacher recruitment as a primary strategy for improving schools will no longer work – strategies that are locked into replacing teachers who are leaving stand-alone classrooms that were designed to meet the needs of the last century will not support teaching for the future.

By focusing on teacher recruitment – and allowing excessive teacher attrition to continue unabated year after year – we have been digging a deep hole for ourselves. In 1994, former U.S. Secretary of Education, Richard W. Riley, warned the nation that we would need to hire two million teachers within the next 10 years to offset Baby Boom retirements. Over the next decade we beat that goal by hiring approximately 2.25 million teachers – but during that same decade we lost 2.7 million teachers, with over 2.1 million of them leaving before retirement.³ Our current school staffing model is in a state of collapse, and the industrial-era belief that we could recruit our way to better teaching will not solve our problem.

Until we recognize that it is time to develop new ways to organize teaching and learning, we will continue to engage in a costly annual recruitment and hiring cycle, pouring more and more teachers into our nation's antiquated classrooms only to lose them at a faster and faster rate. This will drain public tax dollars, undermine teaching quality, and stymie efforts to prepare students for the future.

We Have Reached A Tipping Point

We are at a tipping point that compels us to abandon schools that were designed to meet the needs of the last century. At the end of the 19th Century, the factory model of teaching and learning emerged in response to: the demands of an industrial economy; the prevalence of behaviorist learning theory; and the dominance of scientific management principles in the workplace. The convergence of these forces produced "Teaching 1.0", which enshrined the delivery of standardized content, by stand-alone teachers, who were expected to do uniform work in self-contained classrooms. In Teaching 1.0 the role of the teacher was to transmit a fixed body of knowledge and skills to students who would use it to engage in predictable careers and pursuits.

Now "Teaching 2.0," is emerging in response to a 21st Century convergence of forces that includes: a knowledge-based global workforce; a new understanding of how people learn; and a widespread adoption of collaborative teamwork in the workplace. Teaching 2.0 is customized to individual learning needs. In Teaching 2.0, teachers and students co-create coherence and meaning out of the wide range of learning experiences they can pursue in an open learning economy that is enriched by smart networking and user generated content.

Who Drives This Transformation?

For decades we have been working with school reform models that are rooted in industrial-era practices and policies. These models attempt to manage school improvement with command-and-control, regulatory, prescriptive, or market-based incentives. In each case the individuals at the core of the learning enterprise – the principals, teachers, students, and parents – have been treated like the targets of change rather than the agents of change. Because these change strategies are deeply rooted in the hierarchical organizational principles of the industrial-era, they generally disempower the members of the learning enterprise – they simply recreate and reinforce the factory model of schooling.

With the advent of the 21st century, new drivers of change have emerged that empower the core members of the enterprise to lead and shape the reinvention of their own learning organizations. These drivers include: grassroots economics; smart networking; and the principles of teamwork that pervade our global knowledge-work economy. If we enable teachers, principals, students and parents to use these drivers effectively, they will transform their schools into genuine learning organizations. Our policies must be directed at moving from managed change to empowered change.

Reinventing Teaching To Meet The Needs of 21st Century Learners

To meet the needs of today's learners, we must replace the antiquated normative traditions that have locked us into industrial-era schooling with research-based policies and practices that support 21st Century teaching and learning. Stand-and-deliver teaching to passive students in self-contained classrooms is the most persistent cultural tradition that stands in the way of teaching for the future. It is time to end this tradition, by changing the roles, rules, relationships, and tools that have replicated the factory-era culture of schooling from one generation of teachers to the next.

It is essential that we transform our schools into 21st century learning organizations as quickly as possible.⁴ Closing the education gap, so that every child has an opportunity to successfully participate in a flat world is a demanding challenge. No teacher should be expected to do this job alone. They need:

1. Schools that are genuine learning organizations;⁵
2. Preparation to teach effectively in those organizations;
3. Career paths that engage them in the growth of learning organizations; and
4. Authentic teaching standards and learning assessments to guide their work.

1. Transforming Schools into Genuine Learning Organizations⁶

Underlying the stand-alone teaching tradition is the mythical belief that a single person – the teacher-hero – can meet all of the individual learning needs of the diverse students in a classroom. It is time to abandon this obsolete notion.⁷ The future of education will be built around a clear understanding that quality teaching and learning are not individual accomplishments. Quality teaching and learning result from the collective effort of individuals who join forces to teach and learn at a level that is beyond what any of them can accomplish alone – teachers, principals, parents and students working together to prepare students for successful participation in a complex world. In a successful learning organization quality teaching is a team sport.⁸

The stand-and-deliver teaching tradition stands in stark opposition to what we now know about how people learn. Research conducted over several decades, and summarized by the National Academy of Sciences, has identified four essential elements of organizations that support successful learning. They are: learner-centered; knowledge-centered; community-centered; and assessment-centered.⁹

When schools become community-centered organizations they support collaborative reflection and assessment, and collective contributions to the growth of knowledge about how to improve teaching.¹⁰ Schools become genuine learning organizations by developing coherent social networks that focus teams of educators on improving student learning – this teamwork greatly enhances the school's ability to reach its student achievement goals.¹¹ To create and sustain such learning communities, teachers need time and space – built into the day-to-day fabric of work in their school – to collaborate with colleagues, mentors, and coaches who can help them advance their practice. They also should have an opportunity to use the Internet to extend the reach of their community beyond the

boundaries of their school to draw on the wealth of resources and expertise that can be used to strengthen their learning organization.

Schools become learner-centered organizations when teachers know and attend to the knowledge, skills, beliefs, and backgrounds each child brings to the classroom. When these individual variations are assessed and understood, teams of teachers can draw on their various levels and areas of expertise to teach every child to his or her strengths, at a pace and style that is adjusted to each child's developing knowledge and skill. Current information technologies make this personalization possible because they enable teachers to assess and monitor student learning from week to week, giving teachers powerful tools to customize activities to individual needs.

Schools that become genuine learning organizations are knowledge-centered, but knowledge mastery in these schools means more than the acquisition of facts and figures. In a knowledge-centered school, students learn to reflect on their knowledge acquisition, thinking, and problem solving strategies. This includes developing each student's ability to make sense of what is known in a field of knowledge, with a focus on applying emerging analytical skills to real life challenges. When teachers collaborate to improve their teaching practice in these schools, they model this development of knowledge mastery for their students as they work to improve their own understanding and effectiveness in their fields.

To sustain the cultural norms and traditions that enable them to function as successful learning organizations, schools must adopt new induction and professional development practices. These practices should be designed to incorporate new teachers into a network of relationships with colleagues that supports their continued learning and growth – ending sink or swim placements for novice teachers.¹² This goes far beyond the one-to-one survival support that is so typical of many of today's mentoring programs. Induction into a genuine learning organization reinforces an “open door” school culture with observations of both exemplary teaching and teaching that needs improvement. These observations are accompanied by candid conversations and structured opportunities to reflect on and improve teaching practice. Induction norms and practices that incorporate novice teachers into a professional teaching community are the hallmark of schools that have become genuine learning organizations.¹³ The expectation is that the members of this community share a responsibility for each other's continued growth and success, as well as for the success of all students in the school.

Educators across the country are actively working to develop these new learning cultures in their schools. For example at Richard Murphy School in Boston, teaching has become an open transparent process, in which teachers regularly observe and work with each other to improve their teaching practice. The teachers at this K-8 public school have redefined their roles, as they have become members of a professional community composed of accomplished teachers, novice and student teachers, and teacher coaches. School-wide teams of teachers meet on a weekly basis to develop and refine a collectively built body of teaching knowledge and skills that can be customized to meet each student's learning needs. The members of these school-wide teams talk about “our students and our school” instead of “my students” or “my class.” The students are majority minority,

with over 75 percent being school lunch eligible. In 1999, over 50 percent of the 4th grade students were in the failing category on state tests. Today, the majority of the students are performing in the advanced and proficient levels. With MetLife Foundation support and a PBS partnership, National Commission on Teaching and America's Future (NCTAF) has produced an eight-minute video documentary of the learning team at Richard Murphy School, which can be viewed at: www.nctaf.org.

Pearson Achievement Solutions, through its "Learning Teams" and "Lesson Lab" initiatives is working to transform the way thousands of middle and high school teachers participate in professional development. Pearson's goal is to act on reasearch-based findings which show that by working together teachers benefit from each other's strengths and become much more effective than they were individually. Los Angeles Unified School District (LAUSD), for example, will be the first large school district in the nation to adopt their Learning Team model in which teachers will work collaboratively in groups led by trained facilitators to maximize their skills in teaching Mathematics, Science, English Language Arts, and Social Studies. In these learning teams teachers will self-assess their own progress as they learn from each other to improve student performance. Based on 15 years of research, the Learning Teams model starts with the implementation of well-defined student instruction units, and includes teacher team meetings for periodic review and assessment of student progress. The model actively engages the groups around daily practice in the classroom and allows for continuous adjustment of instruction and intervention. Data from the Learning Teams pilot program in 15 LAUSD middle and high schools last year show high school student failure rates were reduced by as much as 19 percent.¹⁴

In Bellevue Washington, Superintendent Mike Riley has taken steps to move beyond the boundaries of individual schools to create a district-wide learning community. This initiative grew out of a "Curriculum WebIn" in 1996 during which the Bellevue School District began developing an intellectually challenging, unified curriculum that is connected from grade-to-grade with no gaps in topics covered in a subject area, and no unnecessary repetition of information from grade-to-grade. Supported by the Bill & Melinda Gates Foundation, the Web Curriculum incorporates modern learning theory and is accessible to a community of teachers, principals, students, and parents.¹⁵ Because it is a district-wide curriculum that can be adapted to individual learning needs, this online framework enhances learning continuity as students move across grade levels. It also enables a district-wide team of teachers to improve instructional rigor through a shared knowledge of curriculum, classroom practices and effective teaching methodologies.¹⁶

NCTAF is going beyond district boundaries to build a collaborative teaching support system across the continuum from pre-service teacher education to expert teaching. Funded by the AT&T Foundation and by the Microsoft "Partners In Learning Project", the Teachers Learning in Networked Communities (TLINC) initiative improves teaching quality and new teacher retention rates by giving novice teachers access to high-quality teaching resources, along with frequent access to mentors and coaches, and ongoing peer support from colleagues. Partnerships between universities and school districts in Denver, Seattle, and Memphis have tailored the TLINC platform to meet their particular needs for the delivery

of collegial support and skilled guidance to novice teachers who are able to move more rapidly into accomplished teaching that improves student learning.¹⁷

2. Preparation to Teach In Genuine Organizations: Closing the Gap Between Teacher Education and Teaching Practice

This vision for the future of teaching and learning in genuine learning organizations can only take root if the seed is planted and nurtured during teacher preparation. We need new teachers for new schools. Until we reinvent teacher education, the gap between traditional teacher preparation and the demands of teaching for the future will continue to undermine our ability to create 21st century learning organizations.

Schools of education and the colleges and universities that host them are under increasing criticism for the gaps between their teacher preparation programs and the needs of today's schools. These gaps have significant consequences for teaching quality and student achievement. First, the instructional strategies that many teachers develop during their preparation years are not well aligned to student learning needs in the schools where they will serve.

Second, most teacher preparation programs still prepare teachers for the traditional stand alone teaching role, with the expectation that they will be working in self-contained classrooms. Few of today's young teachers have been prepared to work as members of collaborative professional communities in schools that are becoming genuine learning organizations, and during their early years of teaching they receive inadequate coaching from their preparation program faculty and insufficient mentoring from the accomplished teachers in their districts.

Third, in the wake of this misaligned preparation and inadequate support, new teachers are leaving the profession in alarming numbers; dropping out before they master the skills they need to create a successful learning culture for their students. Today's young teachers have the potential to become the first "digital age" educators. They are ready to transform our factory-era schools into 21st century learning centers – if we give them the preparation they need to succeed. The attrition rate among these young teachers adds increased urgency to the importance of closing the gap between preparation and practice.

To close this gap, it is time to treat teachers like professionals whose preparation, practice, and career advancement are seamlessly aligned around a cohesive knowledge base that is focused on improved student learning. Teacher preparation should occur in schools where teams of college faculty, accomplished educators, and novice teachers can develop and refine a collectively built body of teaching knowledge and skills that meets student learning needs in specific districts. Teacher candidates should be inducted into teaching by these professional communities, and to sustain their growth over time they should continue their participation until they themselves become accomplished educators who are coaching the next cohort of novices.

The first step is to create "Teaching Residencies" that embed teacher preparation and continuous professional development in schools that are reinventing their learning culture. Drawing on many of the features of teaching hospital/medical residency programs, Teaching Residencies are specially selected training schools (sometimes called "teaching

academies”). Teaching residents integrate their daily classroom experiences with what they are learning from formal teacher education courses that are held on-site at their academy after school hours. The residents’ academic coursework is sequenced around the teaching cycle of the school year and their content and methods courses are well aligned to the specific host school district’s curriculum standards and student learning needs.

Teaching Residencies work on the assumption that teaching proficiency develops not through solo study but via collegial deliberation. They guide and facilitate the learning paths of novice teachers as they become rooted in the professional culture of a specific school district and its curriculum framework. Through Teaching Residencies, teacher candidates are inducted to the norms and traditions of a school culture in which experienced and novice teachers work together through shared inquiry to improve student achievement.

A few early versions of Teaching Residencies have emerged in high-need communities to ensure that every child has access to an education that will prepare him or her for successful participation in a knowledge-based global workforce. Notable among them are Chicago’s Academy for Urban School Leadership (AUSL) and the Boston Teaching Residency.

AUSL’s teaching residents are selected through a rigorous application process and are given tuition support and a stipend during their training year. In turn, they commit to teaching in Chicago Public Schools (CPS) for five years. Residents begin by spending the summer in full-time coursework. Beginning in September, Residents spend a full academic year in the classroom of a Mentor Teacher in one of three CPS “Teaching Academy Schools.” AUSL and National Louis University (NLU) partner to deliver graduate level coursework throughout the school year. NLU redesigned their traditional two-year Master of Arts in Teaching into an innovative “spiral curriculum” of weekly seminars that are delivered at the Teaching Academies, where they can be linked to the needs of urban school children and day-to-day realities of teaching in Chicago schools. At the conclusion of the 12 month training program, Residents earn a Master of Arts in Teaching from NLU and an Illinois Teaching Certificate. After completing the residency phase, graduates are grouped in cohorts and placed in carefully selected, under-performing schools in Chicago. During the first three years in the classroom, AUSL graduates receive professional development and mentoring support from “Professional Field Coaches,” who are experts in urban education, teacher induction, and curriculum development.¹⁸

The Boston Teaching Residency (BTR) is a four year old program designed around one central question: What does a new teacher in Boston need to know and be able to do to improve student learning in Boston Public Schools (BPS)? It is a 13-month program that begins with an initial two-month summer institute in which “Teacher Residents” assist and observe in a BPS summer school while participating in intensive coursework intended to lay the foundation for the first day of school. During the next academic year the Teacher Residents work closely with a Mentor Teacher four full days a week on strategies to help students learn. Teacher Residents also regularly collaborate and work with many other teachers in schools across the district during the year. On Fridays and after-school, Teacher Residents continue their own academic coursework leading to the master's

degree. Residents complete a final portfolio in order to demonstrate competence and graduate from the program. During a final one-month summer institute, the Teacher Residents complete master's degree coursework, which includes reflection on their residency year and continued development of the skills and strategies they will need to become teachers-of-record the following fall. The Richard Murphy School, discussed above, adds capacity and strength to its learning organization by serving as a host site for Boston Teaching Residents.¹⁹

NCTAF's TLINC program contributes to the reinvention of teacher preparation by supporting a professional learning community that blends face-to-face mentoring with online coaching and collaboration to improve teaching quality and student achievement. TLINC gives teacher candidates and novice teachers the support of an interactive network composed of their preparation faculty, their peers and colleagues, and accomplished teachers who are only a click away when they need help with student learning, classroom management, or a curriculum design problem. Because TLINC can be customized to each novice teacher's needs, it is similar to other smart social networks, such as Facebook and MySpace that young teachers already use to stay connected to the important people in their lives. TLINC forges a continuous two-way link between preparation and beginning teaching experiences within the context of the specific school districts where teachers will serve.

3. Creating New Career Paths that Engage Teachers in the Continuous Growth of Learning Organizations

The need for prepared teachers who know how to work in genuine learning organizations is clear. But to sustain those organizations and the growth of their teachers over time, the teaching career must foster continuous professional learning and multiple career paths. We will have to re-imagine the teaching career. The tradition of hiring young teachers in their twenties and expecting them to do essentially the same job for the next thirty years is a thing of the past. The norms that currently govern compensation step increases for teachers based on years of experience will be replaced by differentiated staffing plans, performance pay, recognition for accomplished teaching, and continuous professional growth opportunities.

Novice teachers should be inducted into a learning culture that enables them to become well grounded in the professional culture of the school as well as in their academic discipline.²⁰ Sustaining their growth throughout their careers calls for the creation of new roles and opportunities for teachers that might include: teaching resident, mentor, learning coach, content expert, learning network navigator, classroom manager, cognitive specialist, and expert learners who serve as learning team leaders. These new roles should accommodate intern and apprentice teachers who are developing their skills alongside more accomplished mentors, as well as ample opportunity for individuals who chose to serve in part-time and adjunct positions while they pursue other personal and professional opportunities. In these multi-generational learning teams the learner – teacher relationship will retain its central importance, but it will take on many forms in multiple formats.²¹

Teaching for the future will require principals and other leaders to be well-prepared and committed to changing the culture of schooling to support regular, sustained collaboration among teachers, principals, parents and students. The AUSL program recruits candidates

who view teaching as an upwardly mobile and challenging profession with continuous growth opportunities. Every program graduate is prepared to join a strong network of education professionals and future leaders who will work in a variety of roles across their career to support the transformation of under-performing Chicago Public Schools.²²

4. Create Authentic Teaching Standards and Learning Assessments

To support the growth of genuine learning organizations, it is necessary to replace industrial school metrics that have their roots in the era of scientific management theory, with authentic learning assessments and consensus built teaching standards. The spirit of a learning organization is broken when goal-setting, planning, and evaluation are conducted and imposed from outside.²³ To develop a successful learning organization, its members must become actively engaged in learner-centered reflection and action that augment external standards with internal processes for assessment and decisionmaking.

To meet the needs of 21st Century students, there is a pressing national need for today's teachers to create a collaboratively built, widely shared professional knowledge base. This calls for the creation of school cultures in which teachers, principals, students and parents hold themselves collectively accountable for improving student achievement. We must support their efforts to use assessments that are meaningful to the core members of the learning enterprise: the teachers and students. Assessments that are meaningful to them, not because they are imposed from outside and linked to high-stakes consequences, but because they are owned and used by the teachers and students as essential tools to improve learning.²⁴

Proficiency in the use of well-designed assessment tools makes learner-centered teaching possible. Sound assessment technologies and strategies that provide continuous feedback on what is being learned enable teams of teachers to make necessary revisions that personalize learning resources and activities to individual needs.²⁴

If we enable the members of schools that have become genuine learning organizations to work in teams with smart networks, they will establish a learning culture that will define 21st Century teaching norms and learning standards. Consensus built standards and authentic learner centered assessments can be created and maintained in an open Wiki-style environment. Our efforts to induct teachers into new learning communities, and initiatives to reward teachers for student growth, should be benchmarked against these new norms and standards.

The process of developing and using assessments is a powerful form of embedded professional development, which recognizes that teachers grow through well focused dialogue and reflection about student learning. Authentic assessment that includes students and teachers in a more inclusive learning community helps both students and teachers better understand what they know and how they learned it.²⁵ Such assessments empower teachers and students to collaboratively create the knowledge and skills they need for successful participation in a world that rewards continuous learning, sustained teamwork, and flexible adaptation to change.

In 1995, Linda Darling-Hammond, Jacqueline Ancess, and Beverly Falk documented the work of five schools that were using authentic assessment to transform their schools into genuine learning organizations.²⁶ They found that assessments created by the learning

organizations they studied “made more rigorous demands on students than the low-level recall skills that characterize standardized tests.”²⁷ Faculty in those schools reported their participation in the development of authentic assessments raised their expectations for students and heightened their standards for their own performance. The public nature of these assessments also led to more equitable treatment of students and increased accountability for student learning. This approach to developing more authentic teaching and learning standards builds the capacity of teachers and schools to be responsive to the individual needs of their students.²⁸ James Comer has more recently reported similar findings in the work of the schools he created through the Yale Child Study Center.²⁹

It is clear that when assessments are used effectively, schools can become organizations that empower teacher and student learning. But the recent emphasis of No Child Left Behind (NCLB) on high-stakes testing has stalled the growth of schools as learning organizations. NCLB’s focus on one-time, end-of-year tests that were designed to assess student performance in factory-era schools has made it difficult to focus on what must be done to ensure that teachers are prepared, and schools are organized, to teach for the future.³⁰ The adverse consequences of the current implementation of NCLB are unfortunate, because when genuine learning organizations are allowed to thrive, it is possible to create and meet high expectations for student learning without resorting to high-stakes assessments that are based on a narrow spectrum of learning.

A growing number of education leaders across the country are increasingly committed to moving away from NCLB’s reliance on single standardized assessments to more innovative approaches for holding themselves accountable for student learning. Student growth models are particularly encouraging. The teachers at Richard Murphy School, for example, do not teach to the test – they teach to the student, and as a result their school has moved from low-performing to high-performing on state assessments. At weekly meetings, school-wide teams of teachers assess the previous week’s performance of students against specific learning objectives for each student, and on that basis they plan their instructional strategies for the next week. The success of this approach has led to significant student achievement improvements in this high need community.

In the Bellevue School District (WA), every teacher has templates they can use to create websites with classroom expectations and standards that are linked to the district’s Web Curriculum framework, including the district’s K-12 learning goals and standards as they apply to the teacher’s grade or course. For the first time, all parents of high school and middle school students will be able to view their progress reports online, by logging onto a secure website with their student ID number. Students and parents will be able to review records of attendance, missing assignments, test scores and grades for each class the child is taking. Early feedback suggests that students are accessing the information daily to monitor their own progress and parents are using it to stay more connected to their child’s work. Because Bellevue is capturing data in new ways, they are building their capacity to understand how they are performing at the classroom, school and district levels. They will be able to track student learning over time to analyze the effectiveness of their various teaching initiatives, including special efforts to support struggling students.³¹

Conclusion

Ensuring that every child has an opportunity to successfully participate in a knowledge-based, global workforce is a demanding challenge. No teacher should be expected to do this job alone. We use teamwork to achieve success in every other sector of our society. Schools that are effectively preparing their students for college and 21st century careers are getting the job done by transforming themselves into genuine learning organizations. It is time to bring the spirit and power of this teamwork to every school in the country.

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