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Meeting the Challenge

Envisioning Schools That Can
Address Both Academic and
Non-Cognitive Skills

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Throughout my 27 years of keynoting the Model Schools Conference, I have been privileged to share my perspective on the most pressing challenges educators face in preparing students to become independent and successful adults. In crafting my message every year, I look both inward, to leaders in education, and outward, to leaders in other fields, including information technologies, medicine, manufacturing, and finance.

As I began researching and writing this year's keynote, two prior presentations came to mind. I delivered the first in 1998, presenting the audience with a new search engine that I thought would profoundly affect children's lives. That was Google®, which would soon become the premier internet search engine. In 2007, I shared the new "PDA" technology that Apple® was sending to market—the iPhone®. This innovation, too, I suspected, would make a drastic impact on children's lives. In both cases, audience reactions ranged from unbridled excitement to arms-crossed skepticism. In both cases, my predictions were far too restrained.

In this year's keynote address, I will introduce another shift in the advancement of technology that, I believe, will have a profound and far-reaching impact on how our students will interact, work, and live. These technologic innovations, I am certain, will transform society even more than Google and the iPhone. Advancements are progressing at an accelerating rate and will fundamentally alter what our students will need to know, be able to do, and, even, *be like* to thrive and succeed in the very near future.

We stand at the dawn of the Augmented Age. Technologies developing and evolving over the next few decades will reshape society more than any technological shift over the last 3,000 years. I believe this Augmented Age will transform human life more completely than did the Agricultural Age,

which lasted for several thousand years, or the Industrial Age, which lasted two centuries. More so, even, than the Information Age, which has made its deep impact in a few short decades (TED, 2017).

The Augmented Age

Humans have lived and worked with and alongside machines for millennia—from the ax, lever, and wheel that enhance human power; to the steam engine and motor vehicle that transport things faster and more efficiently; to the calculator, personal computer, and smartphone that process information faster. Increasingly, people interact with machines more as partners than mere tools. This shift, with the emerging technologies that are driving it, is leading us into the Augmented Age. Here's what it will look like:

- 1. Computational systems to help us think.** Artificial Intelligence (AI), Machine Learning, and Cloud Computing are three examples with which we're already familiar. Machines can manage increasingly complex tasks. Many industries are already using AI to streamline production. The financial-services industry broadly applies pattern recognition (algorithms) and predictive analytics of massive amounts of data.
- 2. Robotic systems to help us make.** The impact that robots have and will continue to have on how products are made, and services are carried out, will reshape the labor market for humans. In Japanese car-manufacturing facilities, robots can work unsupervised around the clock for a month without interruption. Industries once thought to have zero crossover are now integrating. Honda, known for cars, motorcycles, and small engines, is now also manufacturing caregiver robots with the ability to empathize and reason.

3. Digital nervous systems to help us experience. Virtual Reality (VR) blocks out the physical world and transports the user to a simulated one. Augmented Reality (AR) places a digital layer over the physical world. Together and separately, VR and AR will transform media and entertainment. They will drive innovations in education, health care, manufacturing, transportation, and construction. The augmented world of 2030 seems a long way off. But today's first graders will then be graduating from high school and heading into a work world that looks radically different from today. For example, workers needing to perform an unfamiliar, complex task will put on special eyeglasses equipped with AR technology and be guided through the task in real time, with relevant information passing through their field of vision (Institute for the Future, 2018).

Cognitive Augmentation is arriving in three stages: passive, generative, and intuitive. Machines and AI are in the passive stage now. The passive stage, as we see with Google and Siri®, is characterized by Recognition Intelligence, algorithms that recognize patterns. The generative stage will come when machines can make inferences from data. In the generative stage, computers will take human instructions or suggestions, and then design a solution, taking into account human goals and constraints. For example, consider an engineering firm tasked to design a bridge. Today, a team will take months in the initial stages working through computations, codes, and specifications based on parameters they input, such as span length, material, load capacity, traffic volume, climate, etc. By 2030, given the same task, an engineer will complete the entire design—and offer equally well-considered options—in a matter of minutes. The intuitive stage will arrive, further into the future, when machines can reason with far greater subtlety than they now can.

Human Augmentation will occur as a function of people and robots partnering and collaborating to think, work, and learn. No doubt, the skills of the future will be vastly different from those of today. But if humans continue to do what they're good at—awareness, perception, and decision making—and robots do what they're good at—repetitive tasks done with precision—we will coexist productively (TED, 2017).

In this rapidly changing world, what will our students need to know, be able to do, and *be like* in the very near future to succeed? Labor and employment experts are predicting that 85 percent of the jobs today's students will be doing in 2030 have not yet been invented. The Institute for the Future (IFF) and Dell Technologies™ theorize that, by 2030, in-the-moment learning will be the standard. Because the world is evolving at such an accelerated pace, skills will be ever-changing, and an individual's ability to gain new knowledge will be valued more highly than how much knowledge they retain. Case in point is the prior example of the eyeglasses embedded with Augmented Reality technology. Workers will need to be adept at accessing information and skilled in improvising and adapting to new, immersive technologies (Institute for the Future, 2018).

Today's children will be 2030's youngest workers and will succeed by being skilled in areas that technology on its own cannot succeed, such as judging data for quality and interpreting output results from an algorithm.

Fun Fact

One such industry that is experiencing some of the most dramatic and rapid innovations is healthcare. How providers practice medicine has shifted from intervention and treatment to prediction and prevention. In the recent past, medicine was reactive: a medical diagnosis was based on a large repository of recorded data that the physician would cross-reference to the patient's symptoms. Present-day healthcare is proactive: the physician asks the patient a battery of specific questions that are put into a database that helps identify potential health risks for the individual. Healthcare will continue down this path and become predictive, with advancements in **genomics** reshaping the practice of medicine. A few years from now, a physician will be able to swab a sample of DNA to identify diseases to which the patient is predisposed and begin preventative treatment.

Imagine what smartphones will look like in 10 years. It's not easy, but it is safe to assume that connectivity to each other and our environment will be seamless and ubiquitous. We adults have come to view smartphones as extensions of ourselves; a necessary appendage used to conduct business, schedule appointments, be safe and social, and function fully in society. But what about students in school? Devices are mostly considered distractions, disruptions. Allowing students to use their devices in school gives them the opportunity to find answers to problems in non-traditional ways—but that's cheating, right?

If using technology to work together and share resources and information is a skill that is valued in adult life, it seems that perhaps we should be allowing—even encouraging—students to use it, too. Helping students to interact in school like adults interact at work would lend itself to effective Quadrant D learning—applying rigorous content to relevant, real-world, unpredictable situations.

Rapid Transformation

Our world is transforming rapidly, and so are our students' needs. Teachers and support staff will attest to seeing a dramatic increase of students with anxiety, bad coping skills, depression, low self-esteem issues, etc. Schools of all sizes and demographic compositions are experiencing an increase in mental health problems among students. There are growing mental health—or what the field of psychology terms "behavioral health"—issues among our children. The need for social and emotional support, in addition to meeting the needs of students with widely differing abilities, has never been greater. And it's impacting the effectiveness of teaching and learning in the classroom.

But why is this happening? We can point to four reasons:

- 1. Technology.** The nearly constant use of technology has caused a lack of deferred gratification; a lack of deep, personal relationships; an opportunity to bully other kids remotely; an exposure to inappropriate online content; and a digital footprint that can make what should be private, public.
- 2. Medicine.** The number of children born to substance-addicted parents has risen sharply, and the number of students addicted to drugs because they were prescribed legal narcotics (to treat a sports injury, for example) has increased drastically.
- 3. Home.** Many children have little adult contact at home because parents are working. Other children are so overprotected by their parents that they don't develop normal social-emotional skills.
- 4. School.** Students sense the importance of high-stakes tests and many feel that assessments are the most important thing they do in school.

The rise in reported mental health issues may be, in part, influenced by the fact that it has become more socially acceptable to discuss mental/behavioral health issues that affect us or our loved ones. We are beginning to address this appropriately as both a developmental and medical problem. As educators, we need to make it a priority to identify the developmental and preventative practices that best address the mental and behavioral health of our students. Doing this effectively requires a shift in a way that schools have functioned. School boards and administrators have allocated scarce funds to hiring social workers, counselors, psychologists, and other staff tasked with supporting teachers and building administrators. Those expenditures often result in fewer instructional staff and larger class sizes.

So, how can we combat these challenges so that we can collectively prepare students to be successful—cognitively, emotionally, and socially—in the future? We have reached a tipping point of focus; we must address social-emotional learning (SEL) in our nation's schools. SEL is now supported by the Every Student Succeeds Act (ESSA) and organizations such as the Collaborative for Academic, Social, and Emotional Learning ([CASEL](#)).

A national commission of the [Aspen Institute](#) has defined the skills and competencies that comprise behavioral health, including the CASEL competencies:

- Self-Awareness
- Self-Management
- Social Awareness
- Relationship Skills
- Responsible Decision-Making

Students need to develop these skills to build social-emotional well-being. But how can teachers measure each child's competency growth? How can school leaders build these competencies into the culture of the school and monitor all students' development in social-emotional learning? Comprehensive and sustained professional learning and experience for all staff is essential for this shift in focus to take hold. In my Model Schools Conference keynote, I will describe how the nation's most rapidly improving schools are meeting the challenge of addressing SEL for all students.

Rapid Transformation in Schools

I have spent 27 years analyzing the practices of nearly 800 Model Schools. Many of these schools tell a consistent and powerful story. The most rapidly improving schools—the ones that are successfully tackling the toughest challenges and effecting significant and documented change—share five central and foundational characteristics:

1. They are future focused, rather than forward focused. In forward-focused school districts, decisions for a new school year are made around the staffing, budget, and curriculum already in place, which leaves no room in plans or budget for the innovation our schools need. The nation's most rapidly improving schools, however, are "future focused," meaning that they look to the future world in which their students will live and work and start planning there. They put stakes in the ground three, five, and even eight years out, and ask, "What will our students need to know, need to do, need to be like, to succeed in that future world?" Once they answer that question, they work diligently to identify what must happen in their schools and classrooms now, soon, and as they approach each of those staked out future points to prepare their students for success. Lastly, they plan in detail the near-term changes that will put them on the path to their students' future success. These schools plan backward from the school's desired future instead of inching forward from the past.

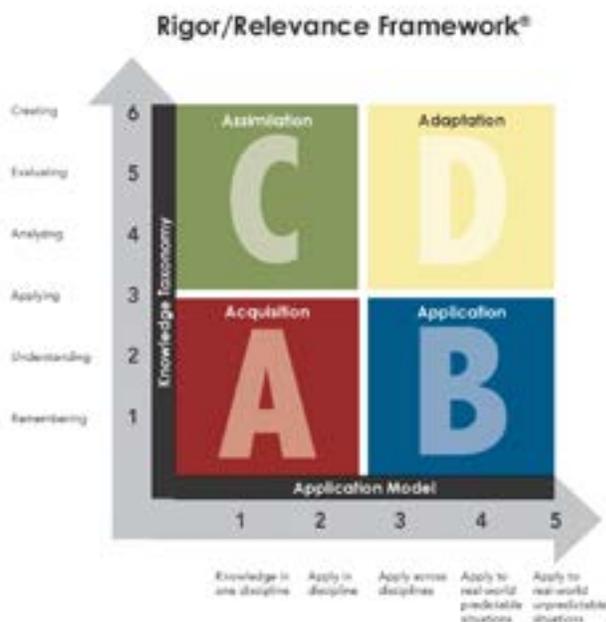
2. They focus on students first. In the most successful schools, content takes a back seat to students. Their educators understand that students themselves are changing far more rapidly than the content. Students today have technology in hand from birth. They learn differently from how we did, and their expectations for learning are different from what ours were. They are children in a world different from the one we were children in, one characterized by broad diversity and, in many cases, severe socioeconomic challenges. Meeting students' needs as their environment changes is priority number one at these rapidly improving schools. Their leaders understand that the traditional ways that schools and teachers are currently regulated, certified, tenured, and contracted around content-acquisition is fast losing relevance. They see that focusing on content first means focusing on students last—which leads schools down a failing path. The most highly successful schools find ways to reverse priority and put students first.

3. They use a growth model rather than a proficiency model.

In a proficiency model, 30 third graders show up on day one of school, each at dramatically different levels of achievement. Some are at grade level and others are below or above. They vary in how they learn and in their interests. They will each have different, unpredictable circumstances arise during the school year. However, by the last day of third grade, we expect them all to arrive at the exact same place of proficiency, as measured by one test, so that they can start fourth grade from the right place. Rapidly improving schools see the lunacy of the proficiency model and reject it. They understand that measuring learning by the passage of time does not work now, if it ever did. Rather, these schools embrace the growth model. They start by analyzing where each student is on day one. Then, using their available time and resources effectively, they continually adjust their plan based on individual development, bringing each student as far up a learning arc as possible. Many of these schools have studied their special education teachers' expertise in supporting student success using individualized instruction and a growth model, to generalize those practices among all teachers for the benefit of every student.

4. They use rigorous and relevant instructional practices.

Educators at these rapidly improving schools understand this: to be future-focused, to always keep students at the center, and to achieve growth for all students, instructional practice must be rigorous and relevant. They get students to think deeply. They assign learning tasks that are tied to the real world and student interests so that students gain skills and insights valuable to future careers. If you are familiar with the Rigor/Relevance Framework®, rapidly improving schools ensure much of their instruction falls within Quadrant D—high rigor, high relevance.



5. Executive coaching anchors their professional learning.

These schools realize that it is not enough to bring together teachers and administrators for just two professional development days a year. To successfully implement and sustain improvement in the four preceding points, they learned how other professions manage organizational change. The most rapidly improving schools have incorporated an executive coaching model into their professional development. They have adopted a mix of formal and informal professional-learning programs that engage them throughout the year, with executive coaching as the anchor. From classroom to boardroom, they supplement scheduled professional development opportunities with executive coaches to provide “just-in-time,” individually tailored support to staff at every level and members of their board of education.

The nation’s most rapidly improving schools have thrown aside fear and opened themselves up to having difficult conversations. They dare to ask even the most painful questions. They have developed the shared vision and team trust to work their way through understanding to solutions. They continually work together to improve—with openness, honesty, and respect—and as a result, have been able to drive incredible change and innovation. These schools have each created a unique culture with a shared vision. Every member of their team is empowered to make decisions, deliver deeply individualized instruction, and support every student. Keeping their eyes sharply focused on the future, these schools continually plan, innovate, and adapt instruction to meet *all* needs of *all* students. These schools are achieving the ultimate goal: preparing students to be independent and successful adults in the face of an ever-changing career landscape. Discover how this year’s Model Schools and Innovative Districts are making small changes that have made significant impact. I hope you and your team will commit now to join us at the **2019 Model Schools Conference in Washington, D.C.**, an opportunity to surround yourselves with like-minded educators. Dare to dream big, discuss the impractical, innovate solutions, and begin to craft workable plans for the success of all students.

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