EDUCATION: FUTURE FRONTIERS

Transforming School Education for The Smart Machine Age

EDWARD D. HESS | UNIVERSITY OF VIRGINIA

ABOUT THE AUTHOR

Edward D. Hess is Professor of Business Administration and Batten Executive-in-Residence at the Darden School of Business at the University of Virginia. He is the co-author of *Humility Is the New Smart: Rethinking Human Excellence in the Smart Machine Age* (Berrett-Koehler, 2017) and author of *Learn or Die: Using Science to Build a Leading-Edge Learning Organisation* (Columbia Business School Publishing, 2014).

EDUCATION: FUTURE FRONTIERS is an initiative of the NSW Department of Education exploring the implications of developments in AI and automation for education. As part of the Education: Future Frontiers Occasional Paper series, the Department has commissioned essays by distinguished authors to stimulate debate and discussion about AI, education and 21st century skill needs. The views expressed in these essays are solely those of the authors.

We are on the leading edge of a technology tsunami that will fundamentally transform how most of us live and work, and it will transform the environment in which our children and grandchildren will pursue their dreams.

This new era that I call the Smart Machine Age (the SMA) will likely be at least as disruptive as the Industrial Revolution was for our ancestors.

If not proactively managed, the SMA will globally unsettle capitalist economic systems and democratic governments, creating social strife. The SMA will fundamentally change the concept and meaning of work in our global society, generating existential questions about how humanity finds meaning in life and stays relevant in a world dominated by smart technology.

Adapting to the SMA will require all organisations in society, including public education systems, to transform into technology-enabled, high-performance, adaptive learning organisations. For many schools that means the demise of the current educational models that were built for the Industrial Revolution. The ideal school of the future will vastly differ both physically and pedagogically from most schools of today. To meet the challenges of the SMA will require many educators to transform themselves in order to transform the learning experiences of their students into learning that is more experiential, student-centric, and personalised. Ideally, students will co-create their learning both inside and outside of schools through internships, apprenticeships, and project-based learning communities.

Mission critical objectives of this transformed educational experience must include the following: "how to learn" skills; learning mindsets, behaviours and processes; digital, financial, functional and cultural literacy; numeracy; and emotional and social intelligence.

A technology tsunami

Technological advances will lead to an era of smart machines capable of taking over many of the tasks that humans have needed to perform on farms and in factories, offices, homes, hospitals, businesses and the military. This includes artificial intelligence; machine and deep learning; the Internet of Things; increased global mobile connectivity; increased computing power; virtual and augmented reality; distributed additive manufacturing; genetic, biomedical and cyborg engineering; nanotechnology; and smart robots.

In the SMA, technology will take over every job at which it can cost-effectively outperform human beings, including service jobs (e.g., retail and fast-food; manual labor and construction; long-haul trucking; clerking; administration; customer service; paralegal work) and professional jobs in accounting, finance, management consulting, investment management, law, journalism, architecture and healthcare. Fewer professionals will be needed even in the "safe-from-automation-at-least-for-the-near-future" professions, because technology will augment human activity. Any new jobs that technology generates will likely require advanced skills.

In the United States alone, over the next two decades, technological advances have a high probability of displacing as many as 80 million US workers[1] or 47 percent of the U.S. workforce.[2] According to a study by McKinsey & Company, by adapting technologies already demonstrated as of 2015, as much as 45 percent of current US job tasks could be automated *now* — that includes 20 percent of a CEO's work activities.[3] The totality of disruption likely will far exceed — by a magnitude approaching ten times — the loss of US manufacturing jobs to globalisation and technology over the last two to three decades.[4]

Globally, job losses due to automation will be massive as well. For example, according to research from Oxford University funded by Citi, the predicted average percentage job losses in countries making

up the OECD will be 57 percent. The corresponding number for India is 69 percent and for China, it's 77 percent.[5] The McKinsey Global Institute predicted that about half of global work activities could be automated, affecting 1.2 billion workers and nearly $15 trillion (US dollars) in wages worldwide.[6] This will give rise to major social, governance and economic challenges.

Some experts ("techno-optimists") say not to worry because advancing technology will generate plenty of new, better jobs to replace those automated jobs, because that's what happened during the Industrial Revolution. In other words, they believe history will repeat itself. I'm very skeptical of the techno-optimistic view for two reasons. First, that prediction minimises the widespread human misery caused by the Industrial Revolution, which in England lasted 60-80 years before society adjusted.[7] Can our global society withstand decades of economic upheaval? That's a risk with a huge downside. Second, the techno-optimists assume that technology will produce hundreds of millions of new jobs that advancing technology itself won't be able to do. That's highly questionable based on consensus predictions about the arc of AI innovation. Additionally, it ignores the fact that the new jobs created for humans by technology will inherently require new, highly advanced skills that many displaced workers won't have and may be unable to attain.

The future of work

In the SMA, human scale will no longer be necessary for organisational value creation in most fields. In the near future, most organisations likely will be staffed by some combination of smart robots, smart machines and humans, and the jobs and skill requirements of each will be in flux continually. Humans will be in a frantic race to stay relevant.

In addition, long-term employment at most firms will be rare. Technology will change who works and what work human beings will be needed to do.

Employable people will be those who can continually upgrade their skills to stay ahead in the race against advancing technology. Simply put, human beings will only be needed to do the tasks that technology won't be able to do well.

The consensus view is that those jobs for the near term will involve (1) **higher order thinking** (i.e. critical thinking and decision-making in situations involving little data or high uncertainty or ambiguity; thinking requiring moral judgments; or thinking requiring creativity or imagination); (2) **high emotional engagement** in the delivery of personalised services to other human beings; and/or (3) **certain trade skills** involving complex dexterity and real-time non-routine problem diagnosis and solving. In all cases, human beings will be needed to think differently than the machines or to perform jobs involving emotional and social intelligence (for example, pre-school and primary school teachers, home health care workers, psychologists, social workers, physical therapists).

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Full-time employment will be rare and, in many cases, it will be based on short-term contracts with renewal dependent on the individual having the skills needed by the organisation at that time. Many more people will need to find livelihoods as individual entrepreneurs, independent contractors, or freelancers who compete for part-time assignments from other people or organisations. It's highly probable that work as we know it today simply won't exist for many citizens. Without jobs, how will people meet their need for food, shelter, health and human dignity? How will they find meaning in life? How will they feel good about themselves? What will be the purpose of life?

For those without full-time work, life may become similar to the days of our hunter-gatherer ancestors in which human beings joined together to survive and find meaning by cooperating with each other and taking care of one another. Modern societies characterised culturally by extreme individualism, social Darwinism, and competition within groups could well be replaced by societies based upon cooperation and the common good—a focus on "big we" rather than "big me."

The future of organisations in the SMA

Over the last 14 years, I have been studying high-performance US based organisations. In the last seven years, I have focused particularly on high-performance learning organisations — companies that have built internal learning systems through cultures, structures, leadership models, measurements, rewards and processes that drive learning behaviours. With the significant AI advancements made in the last few years, I am now convinced that every organisation — public and private — must become a technology-enabled, high-performance learning organisation that continually evolves and adapts in order to be successful.

How else will the SMA impact public and private organisations? Here are some thoughts:

1. In most cases, the organisation of the future will likely be staffed by some combination of smart robots, smart machines and human beings, with humans doing those tasks that technology can't do well.

2. Operational excellence will likely be technology-driven, leaving innovation as the primary value creator and differentiator for many organisations. Operational excellence will be necessary but not sufficient for ongoing material value creation.

3. For most organisations, the only sustainable competitive advantage long-term will be the ability to learn and adapt faster than others.

4. Organisations will need people for jobs requiring higher-order critical and innovative thinking, creativity, and high emotional engagement with other people.

5. The role of organisational leaders will be to create the right conditions that enable the highest levels of human performance, and orchestrate the connectivity and integration of technology and humans, in order to continually deliver mission objectives in constantly evolving environments.

6. Organisational excellence in the SMA will be driven by technological excellence and excellence in human thinking and emotional engagement rather than by human scale and efficiency.

7. As a result, organisations will require their people to be agile and adaptive learners, continually updating their beliefs based on changing realities.

8. An organisation's competitive advantage from a human perspective will depend on how well it helps its people overcome their "humanness": their natural proclivities to be confirmation-biased, emotionally defensive thinkers whose thinking and collaboration abilities are negatively impacted by their ego and fears of making mistakes, failing, and/or revealing inadequacies.

9. Excelling at "how to learn" skills and a greater focus on others — what I call Otherness — will be key organisational and human competencies of the future.

10. Every organisation will likely confront two big existential questions:

    a. Will the organisation be able to continually learn, adapt and innovate to meet the needs of its stakeholders?

    b. Will the organisation be able to create an environment that enables and promotes the highest levels of collective human excellence cognitively and emotionally?

How does an organisation redesign itself to meet the challenges of the SMA?

The answer won't be found in economics, finance, strategy, engineering or computer science, but rather in philosophy, history, the science of human learning, and in cognitive, developmental, social, positive, educational and clinical psychology.

THE ANSWER WON'T BE FOUND IN ECONOMICS, FINANCE, STRATEGY, ENGINEERING, OR COMPUTER SCIENCE, BUT RATHER IN PHILOSOPHY, HISTORY, THE SCIENCE OF HUMAN LEARNING, AND IN COGNITIVE, DEVELOPMENTAL, SOCIAL, POSITIVE, EDUCATIONAL, AND CLINICAL PSYCHOLOGY.

Cultures of learning

To thrive in the SMA, every organisation, including every school, must create environments conducive to continual learning, leading to the highest levels of human cognitive and emotional development.

They'll need to create environments that help mediate the fact that we humans do not naturally excel at the types of higher-order thinking that technology can't do well. What does that mean? It means that every business person, teacher, principal, employee, and student (including you and me) is a suboptimal thinker, listener and collaborator, and it requires great effort by each of us as individuals as well as an environment conducive to learning to overcome these impediments.

The research shows that to optimally enable learning requires a culture based on three psychological principles:

1. **Positivity:** The practice of positive emotions and of providing an emotionally positive environment to reduce ego-defensiveness and fear. Scientific research has shown that positive emotions enable higher order cognitive activities while negative emotional environments narrow our focus and bring on our evolutionary "fight or flight" reactions.[8]

2. **Self-determination theory:** A psychological theory that correlates intrinsic motivation with an individual's need for (1) autonomy, (2) relatedness, and (3) effectiveness.[9] Meeting an individual's self-determination needs is mission critical for high-engagement learning in all organisations.

3. **Psychological safety:** A belief that members of a team are safe to take interpersonal risks. The research from high-performance learning businesses shows that cultures providing psychological safety enable candor; permission to speak freely; mutual accountability; an idea meritocracy; data-driven decision-making; rapid experimental learning; devaluation of elitism; and permission to fail (within human safety and financial parameters).[10]

It's ironic that while technology will de-humanise most organisations by materially reducing human headcount, it also will require organisations to become much more humanistic, people-centric places that proactively reduce the biggest psychological inhibitors to human learning: ego and fear.

In the SMA, I believe high performance businesses and schools will be quite similar culturally, and they will use similar experiential learning processes. Likewise, teachers and business managers and leaders will become "enablers" of human performance.

The Industrial Revolution business model of leading with its hierarchical, all-knowing, command and control approach will become obsolete because it will not optimise the type of human performance needed in the SMA. You can't command, control, direct or coerce the types of complex cognitive and emotional behaviours that will be needed. You can't optimise adaptation and learning in an environment of fear that lacks positive regard and trust.

New mindsets and behaviours

Successfully adapting to the SMA as described above will require many countries, organisations and individuals to make two other cultural adjustments: (1) adopt a new definition of what it means to be "smart" that I call **NewSmart** and (2) reject their individualistic focus on the "big me" in order to value **Otherness** and practice **Humility**.

NewSmart

A big obstacle to developing our cognitive and emotional capabilities is that today the dominant definition of "smart" is quantity-based. This notion of "smart" begins in our school system and continues in our work places. Today, whether at school or at work, I'm smarter than you if I know more than you and the way to determine that is by seeing which of us makes the fewest mistakes on "tests".

Many of us who are college graduates have probably defined ourselves in large part by being smarter than others in this way. A quantity-based definition

of "smart" won't work that well in the SMA because compared to us, smart machines will always know much more than us.

Another major problem with a quantity-based definition of smart is that it encourages a constant need for people to prove themselves by "looking" smart. That in turn motivates people to avoid experimenting and risking mistakes, which inhibits learning, improvement, discovery, innovation and creativity. And, it incites a fear of failure that inhibits learning and impedes critical thinking, creativity, innovation, effective collaboration and emotional engagement with others.

I believe we need to accept a new, *quality*-based definition of "being smart" called NewSmart.[11] NewSmart is based on the **quality** of our abilities to think, reflectively listen, collaborate, learn and emotionally engage with others as set forth in the following five principles:

1. **I'm defined not by what I know or how much I know but by the quality of my thinking, listening, relating and collaborating.**

This bedrock NewSmart principle is based on the following critical thinking mantra created by Richard Paul and Linda Elder in *Critical Thinking: Tools for Taking Charge of Your Professional and Personal Life:* "I will not identify with the content of any belief. I will only identify with the way I come to my beliefs."

2. **My mental models are not reality — they are only my generalised stories of how my world works.**

3. **I'm not my ideas, and I must decouple my beliefs (not values) from my ego.**

Paul and Elder admonish us not to identify with the content of our beliefs, and we know from cognitive science that our "mental models" — a term psychologists use to describe a person's beliefs and assumptions about how the world works based on his or her own experiences — are only our subjective stories of how the world works. Ed Catmull, the cofounder of Pixar Animation Studios, wrote a highly

acclaimed book[12] describing how he and his team created a high-performance company, and in it he explained the company's position on overcoming mental models: "Our mental models aren't reality. They are tools, like the models weather forecasters use to predict the weather. But, as we know all too well, sometimes the forecast says rain and, boom, the sun comes out. The tool is not reality." He also described the problem with ego this way: "You are not your idea, and if you identify too closely with your ideas, you will take offense when they are challenged."

4. I must be open-minded and treat my beliefs (not values) as hypotheses to be constantly tested and subject to modification by better data.

This NewSmart idea comes from the scientific method and was made even more powerful through my research[13] of the high-performance learning system at Bridgewater Associates, LP, the largest and one of the most successful hedge funds in the world. Have you ever heard of the phrase "being good at not knowing"? Like many of us, you've probably spent most of your career being paid to "know."

Being good at "not knowing" is included in Bridgewater founder Ray Dalio's fundamental *Principles*.[14] I found that more than any leader I had come across in 14 years of researching the DNA of high-performing organisations, Dalio had confronted head on the two big learning and thinking inhibitors — ego and fear — through his *Principles*, company culture, and daily learning processes. That's crucial for a high-performance learning system, because as the renowned Humanistic psychologist Abraham Maslow stated, a person "reaches out to the environment in wonder and interest, and expresses whatever skills he has, to the extent that he is not crippled by fear, to the extent that he feels safe enough to dare."[15]

In *Principles*, Dalio said that being wary about overconfidence and good at "not knowing" are crucial in the search for truth. In order to excel

in his business, Dalio has stated that he needs "independent thinkers"[16] — the kinds of people who aren't imprisoned by their mental models, strive to figure out what they believe and why they believe it, and are willing to have their beliefs tested by others.

The concept of not knowing is humbling and uncomfortable, but it's a concept we can trace back thousands of years to Socrates, who said, "I know nothing except the fact of my ignorance," and to Confucius, who is reputed to have said, "real knowledge is knowing the extent of one's ignorance."

All of this goes to the heart of intellectual humility and scientific thinking. In *Ignorance: How It Drives Science*, Stuart Firestein, professor and chair of Columbia University's Department of Biological Sciences, said: "Scientists don't concentrate on what they know, which is considerable but also miniscule, but rather on what they don't know."[17]

Good scientists are also open-minded, and they treat their beliefs as hypotheses to be constantly tested and subject to modification by better data. In *Character Strengths and Virtues: A Handbook*, psychologists Christopher Peterson and Martin Seligman provide a consensus definition of open-mindedness as the "willingness to search actively for evidence against one's favoured beliefs, plans or goals, and to weigh such evidence fairly when it's available."[18]

5. My mistakes and failures are opportunities to learn.

Max Tegmark, an MIT physics professor, said the following: "My mistakes and failures are opportunities to learn."[19]

Innovation, creativity, entrepreneurship, and most learning results from an iterative, trial-and-error process of trying new things, experimenting, and/or building prototypes that in most cases fail to achieve the desired results. Good innovation companies have told me that their failure rates on small experiments can be as high as 90 percent. As Steven Johnson

explained in *Where Good Ideas Come From: The Natural History of Innovation*, "The history of being spectacularly right has a shadow history lurking behind it: a much longer history of being spectacularly wrong, again and again. And not just wrong, but messy."[20]

In fact, the more willing you are to experiment and learn from mistakes, the faster you'll be at getting to a viable solution. In studying Intuit, Inc., a business and financial software company, I discovered that the company has a strong learn-by-experimenting culture and goes so far as to avoid using the term "mistakes" in order to mitigate the fear of making them. Instead, they call the unexpected results of experimentation "surprises".

Carol Dweck's research on motivation is also helpful here. She found that people who had *learning goals* — in which one pursues mastery and growth — greatly differed in terms of the type and the endurance of their motivation as well as with respect to actual achievement outcomes from people who had *performance goals* — in which one's goal is to impress others, look smart or receive extrinsic rewards — i.e. the "A," the award, the praise. Dweck also found that learning goals are associated with a *growth mindset*, in which one believes implicitly that intelligence and abilities are the result of effort and perseverance, while performance goals are associated with a *fixed mindset*, in which one believes implicitly that intelligence and skills are innate and fairly unchangeable.[21]

By adopting a belief that learning, improvement and growth are possible and that mistakes are learning opportunities, you can extricate yourself from the cycle of perfectionism and failure avoidance that limits motivation and learning. However, one caveat regarding work environments is needed: the organisational culture must embrace that mistakes made within safety and financial risk parameters are learning opportunities.

Old Smart v. NewSmart

Old Smart	NewSmart
I know	I'm good at not knowing
I tell	I ask
Defend my views	Improve my views
Seek confirmation	Seek truth
Closed mind	Open mind
Insecure if beliefs are challenged	Insecure if beliefs are NOT challenged
Mistakes are bad	Mistakes are learning opportunities
Perfectionism	Learning

NewSmart is the first required mindset for the SMA. The second is Otherness.

Otherness

The SMA will require us to reject an individualistic, self-centered, self-protective, survival-of-the-fittest approach to life and embrace Otherness for two important reasons: (1) social and emotional engagement with others is a uniquely human job skill; and (2) Otherness is a key to the continual learning and higher-level thinking that humans will also be needed to do.

Effectively connecting and relating to others builds positive regard and the kind of trusting relationships in which we feel psychologically safe to learn. Research shows that students who emotionally connect with a teacher do better in school, employees who emotionally connect with coworkers are more productive, and emotional connection improves client and customer service.

Also, the cognitive science is clear: to think at our highest levels we need the help of others because it's practically impossible for any of us to control our cognitive biases by ourselves. As psychologist Daniel Kahneman, recipient of the 2002 Nobel Prize in Economic Sciences, explained in his treatise on cognition: "It is much easier, as well as far more enjoyable, to identify and label the mistakes of others than to recognise our own."[22]

To stay relevant in the SMA, we must optimise our thinking, listening, relating and collaborating skills and that in turn requires us to value the opinions and perspectives of others, empathise with them, and learn from them. To develop this stronger sense of Otherness we need to prioritise emotional and social intelligence, not be so "me" focused, and practice the next crucial mindset: Humility.

Humility

Some people have been surprised by my belief that Humility is mission critical to human excellence in the SMA. First, let me explain that when I use the word Humility, I mean the psychological construct of humility, not the typical dictionary definitions of humility that include words and phrases such as *meekness, submissiveness,* or *feelings of inferiority.*

Psychologically, Humility is having a realistic view of your strengths and weaknesses. We all have weaknesses. We all make mistakes. We all know far less than we think we know. Humility is being able to acknowledge your mistakes and limitations. Humility also involves having a balanced awareness and appreciation of self and others.[23] C.S. Lewis is reputed to have defined it as not thinking *less of yourself,* but thinking *about yourself less.*

Humility is the opposite of arrogance, elitism, superiority and narcissism. It means stepping out of what Barbara Fredrickson, a leading positive psychology scientist, calls our "cocoon of self-absorption".[24] Psychological research correlates Humility with more open-mindedness, empathy, better listening and effective collaboration — all of which are necessary for high-quality critical and innovative thinking and high emotional engagement with others.[25]

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Think of Humility as the gateway to excellent higher-order thinking, listening, emotional engagement and collaboration — the learning behaviours that will differentiate human beings from smart machines.

NewSmart, Otherness, and Humility will be vital mindsets in the SMA, and teaching people how to embrace them should be part of our education system too.

The Industrial Revolution school model is obsolete

Already we're in a different age that requires us to fundamentally change the way we do business, the way we educate students, and the way we live in order for human beings to find purpose. As we know, this kind of change is hard. It requires leadership and new stories that people find meaningful. What will be the new story about education?

The school education system must be redesigned to enable students and adults to develop the mindsets, values, behaviours and cognitive and emotional skills that they'll need to thrive in the SMA. It also must become a vehicle for lifelong learning so adults can continually adapt to ever-evolving technology.

The ideal education system for the SMA is very different from the school systems that exist in many countries today, which were created to meet the needs of the Industrial Revolution era.

The Industrial Revolution created a business model based on human scale and human efficiency. Mass production factories required large numbers of employees who were trained in basic skills to do the same task over and over again with very few mistakes. Employees were viewed as resources, units of production, or sources of output to be directed and controlled by managers and leaders. In return for compensation, workers performed repetitive tasks every day with the goal of low variance. That system

needed employees who had been taught the basic skills and trained not to make mistakes.

Public education was there to meet that training need. Historically, schools were influenced by business efficiency experts to mass produce workers for factories and offices. While some countries have updated their education systems, many are stuck in the old model of teaching government-mandated content with government-mandated textbooks to students sitting in rows of desks in classrooms for the government-mandated number of hours and days per year. These anachronous systems measure the success of schools and teachers by how well their students perform on government-mandated standardised competency tests. In some countries, this has created a "teach to the test" mentality and grade inflation necessary to keep parents, students and teachers happy.

The Industrial Revolution is over. The SMA is here. A technology revolution is here. Likewise, the Knowledge Economy is over. The new economy will be a Learning Economy.

The school of the future

If one was establishing a new school today with the goal of educating students in preparation for a meaningful life in the SMA, what would that school look like physically? What would it teach? How would it teach? Who would teach? What would be the desired outcomes? Where would you start to create your new story about education?

I invite you to reflect upon the future of work and the societal challenges that the SMA will create for the school of the future. I suggest that it's not the teach-content-to-pass-government-mandated-tests model that dominates education in many parts of the world, and it won't be any type of mass production education.

So, let's start with a "clean sheet of paper". To begin, consider the science of how children and adults best learn. Most of this you already know:

1. People learn best when they have autonomy and choice in what and how they learn and when learning is contextually meaningful ("learner-centric" learning).

2. People learn best by doing — experiential and project-based learning.

3. People learn through iteration — having an idea or a challenge, coming up with a possible solution (a hypothesis), trying it (doing an experiment), and then learning from the results and adapting.

4. Most learning occurs from conversations with others and with oneself — through reflection.

5. "How to learn" skills are mission critical. These include learning *how to*: think critically and creatively; manage one's thinking and emotions; reflectively listen; effectively collaborate with others; be aware of and take into account the emotions of others; be present with an open mind; connect, relate and emotionally engage with people different than you; have the courage to try; and be resilient, empathetic and compassionate.

6. People learn best through personalised, frequent, real-time feedback from their environment and from teammates, enablers, guides and facilitators.

7. People learn best if the learning environment is emotionally positive, psychologically safe and meets students' needs for self-determination.

The school's objective must be to develop students into lifelong learners who find learning exciting and meaningful and who have the curiosity, open-mindedness and resilience of young children; the

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courage of explorers; and the ability to "think" like scientists, "make" like engineers and "create" like artists.

Schools must prioritise teaching students how to manage their thinking, emotions and behaviours; how to develop their emotional and social intelligence; and how to positively connect and relate to others in ways that build trust and enable effective teamwork. Schools also must update curriculums to include mastery of "how to learn" mindsets, behaviours, skills and processes. I believe the best way to accomplish all of this is primarily through experiential learning projects designed collaboratively by students and teachers. Note that curriculum design changes in turn will necessitate changes to the physical design of schools to enable collaborative and experiential learning.

In the classroom, teachers must share power over the learning process with their students and transform

themselves from content experts who direct their students' learning into enablers of learning experiences co-created with their students. This requires teachers to be more vulnerable, adaptable, flexible and personal in their teaching and to embrace and role model high-quality learning mindsets and behaviours, including: NewSmart, Humility, Otherness, critical and creative thinking, reflective listening, and emotional engagement with others. For example, teachers must learn how to think critically and how to make that thinking visible to their students, and they must develop and share their own processes for learning.

The rigorous daily use of learning processes was one of my key findings in researching high-performance learning organisations. The reason is that the regular use of learning processes helps tamp down our auto-pilot, reflexive ways of thinking and listening, and our emotional defensiveness. At a minimum, students need to learn how to regularly apply these learning processes: iterative experimental learning processes (scientific method, design thinking, "lean start-up"); root cause analysis; critical thinking questions; storytelling; collaboration processes; learning review processes; and managing-self processes.

Students need to learn content, of course, in the pursuit of experiential learning projects, including the basic principles of biology; physics; statistics; personal finance; engineering; mathematics; language and written communications; history; and philosophy. Content learning, however, must become a means to an end and not the end itself. Developing one's cognitive abilities, emotional and social intelligence, and "how to learn" mindsets, behaviours and skills should be the goal.

An invitation

The SMA will transform society, requiring school systems to transform to better prepare students and adults to live a purposeful and meaningful life in a world augmented by advancing technology. Schools can't transform unless their teachers, principals and school leaders personally transform. We all must embark on a new journey of unlearning and learning.

I invite you to embrace and join the Journey to Human Excellence in the Smart Machine Age.

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