CHANGING LANDSCAPES
ALBERTA 2020-2040

TREND 1 — RETURN OF WALLS

In our private lives, our communities and the larger world, we are seeing a return of walls as the outward-looking boundary crossing of the last few decades is replaced by a new inward-looking tribalism.

How will the new insularity affect our efforts as families and communities seek to ensure healthy, secure, open and democratic lives for youth? How will walls affect our ability to listen and learn from one another?

TREND 2 — SUSTAINABILITY GOES CRITICAL

We are, as a species, coming to grips with the urgency of the race between limiting our impact on the life-sustaining systems on our planet and growing our knowledge and capacity to live well and wisely while greening our economies.

How will we win the race with the damage being done to the planet and secure a sustainable future as we adapt to a growing global post-carbon economy? Will we be able to create a planetary vision and operator's manual soon enough to avert tragic outcomes for many people?

TREND 3 — SURRENDER OF THE SELF

Automation and networks are filling our lives everywhere, all the time, shrinking the space we leave for ourselves to act, interact and express our unique identities in a complex and shifting "real" world.

What do schools need to do to extend their concern for the well-being of students in digital ecosystems? To what extent will we be able to achieve a fine balance between the blurring boundaries of the human and the digital environments?

TREND 4 — REWORKING OF ECONOMIES

Our working lives are rapidly changing as both precariousness and opportunity increase and new economies and economics begin to challenge old assumptions about vocation and prosperity.

Where should the leadership come from to move Alberta toward new measures of economic performance? What are the implications for Albertans, especially our young people, arising from the churn and uncertainty in careers and economic growth?

Teachers and schools

Intensification of childhood
- One-third of Alberta parents have hired a tutor for their child. Typically, the child is already an honours student.

Cyber charters
- What are the implications for public education and society if learning is to be enacted any time, any place and at any pace in boundless environments?

Segregation grows
- Segregation between poor and non-poor students in public schools grew more than 40 per cent from 1991 to 2012. Rising residential segregation by income has fueled that growth, as most children attend their local public school. (Wall 2017)

Becoming self-aware of our future
- The Anthropocene is not only a period of man-made disruption. It is also a moment of blinking self-awareness, in which the human species is becoming conscious of itself as a planetary force. We're not only driving global warming and ecological destruction; we know that we are. (Blasdel 2017)
- The future may hold mass extinctions and climate catastrophes, but it may also hold green economies and ways of living well with a reduced carbon footprint.

Improved energy options
- ... unsubsidized solar and wind energy are now cheaper than coal, oil, and even natural gas ... Meanwhile, the price of storing and delivering renewable energy is falling quickly. (van Lierop 2017)

Technology dependence
- 45% of parents in Alberta report that their children have a mobile device with them every night after bedtime. 30% of parents feel "addicted" to their own technologies with social media as the area of greatest dependence. (Growing Up Digital (GUD) Alberta, 2018)
- The first army of machines wiped out well-paid jobs in manufacturing; the second army of machines is about to wipe out well-paid jobs in the service sector. In many cases, the people who will be surplus to requirements will have spent many years in school and university building up their skills. (Elliott 2017)
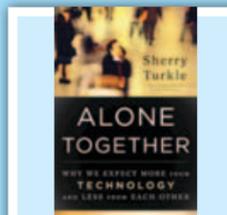
If we don't teach children how to be alone, they will only know how to be lonely.
(Sherry Turkle, MIT technology and society specialist)

Career challenges
- Within the lives of our parents and grandparents, assumptions about getting a good education that led to a stable career and economic security held. These assumptions began to crack a few decades ago when we began to hear about re-skilling, multiple careers and competition from workers in other countries.
- Young people now face greater career uncertainty, precarious income, and competition from robotics and artificial intelligence.

Families and communities

Domination of homophily
- For all the hope that comes from connecting with new people and new ideas, researchers have found that online behavior is dominated by "homophily": a tendency to listen to and associate with people like yourself, and to exclude outsiders. Social networks are bad at helping you empathize with people unlike you, but good at surrounding you with those who share your outlook. (Brooking and Singer 2016)

Adaptive learning
- Publishers and educational technology companies want to "atomize" students by collecting data that will profile them from kindergarten to adult life.

Human footprints
- ... the most significant event from an ecological perspective of the planet is "the rapid rise of the global middle class ... where people begin to increase their carbon footprint." (Mortillaro 2017)
- During the last 70,000 years "Homo sapiens became the single most important agent of change in the global ecology." (Harari 2017, 72)

... in our cities, the use of cars is being overtaken by altogether greener, more liberating possibilities.
(Harris 2017)

People just want to be part of the data flow, even if that means giving up their privacy, their autonomy and their individuality.
(Harari 2017, 385)

On the horizon:
- The distinction between us and robots is going to disappear. (Rodney Brooks)
- Three parent baby born in the U.K. – consumer genomics is biology's parallel to the computer revolution. (Dr Lone Frank, Weekendavisen, Denmark)

Big data
- ... ever more powerful processors and servers have made it possible to analyze all this data and to generate new insights and inferences about individual preferences and behavior. This is the reality of the era of "big data," which has rendered obsolete the current approach to protecting individual privacy and civil liberties. (Mundie 2014)

Age of automation
- The first army of machines wiped out well-paid jobs in manufacturing; the second army is about to wipe out well-paid jobs in the service sector. In many cases, the people who will be surplus to requirements will have spent many years in school and university building up their skills. (Elliott 2017)

... half of today's work activities could be automated by 2055. That threshold could be reached 20 years earlier or 20 years later ... depending on economic trends, labor market dynamics, regulations and social attitudes. (Lohr 2017)

We need to start thinking more about what makes life worthwhile.
(Yang 2018, 161)

Alberta and Canada

Gaps in values
- ... the gaps on several sets of political values in particular—including measures of attitudes about the social safety net, race and immigration—have increased dramatically. (Pew Research Center 2017)

Value of democracy
- ... millennials in Western Europe and the US attach significantly less importance to living in a democracy than older generations. Whereas the latter, born during the interwar and initial postwar years, consider democracy to be "an almost sacred value," millennials are far less inclined to rate living in a democracy as essential; in the US, only 30% did. (Heuser 2017)

Unpredictable consequences
- ... different sectors of the economy and different parts of the country will be harmed in ways that are difficult to predict. But one estimate projects that rising temperatures could cause losses in labor productivity of as much as $150 billion by 2099, while changes in some crop yields could cost as much as $53 billion. (Friedman 2017)
- ... emissions from Canadian oil could eventually gobble up 16 per cent of the world's total carbon budget if it is to keep global temperature increases below 1.5 degree Celsius ... (Nikiforuk 2017)

Disappearance of Alberta's caribou threatens centuries-old way of life.
(CBC News 2017)

It's all in your mind
- ... it is the interaction of the technology with our common, often subconscious psychological biases that makes so many of us vulnerable to misinformation, and this has largely escaped notice. (Carey 2017)
- We want to be interrupted, because each interruption brings us a valuable piece of information... And so we ask the Internet to keep interrupting us, in ever more and different ways. (Carr 2011)

Artificial intelligence (A.I.) will reach human levels by around 2029. By 2045, we will have multiplied our human biological intelligence a billion fold.
(Ray Kruzweil)

Some economists call for a shift from using gross domestic product (GDP) as an economic yardstick to genuine progress indicators (GPI) that "indicate genuine progress in people's quality of life and overall economic, social and environmental well-being."
(Anielski 2007, 30)

Sharing economy
- From November 2015 to October 2016, an estimated 9.5 per cent of persons (or 2.7 million people) aged 18 and older living in Canada participated in the sharing economy by using peer-to-peer ride services or private accommodation services. Overall, spending on peer-to-peer ride services in Canada and spending on private accommodation services both in Canada and abroad totalled $1.31 billion. (Statistics Canada 2017)

Global

The great divide
- ... our earth has bifurcated into two separate and unequal worlds: one inhabited by 200,000 ultra high-net-worth individuals and the other by the 7 billion left behind. (White 2017)

The precepts of globalization are under attack in a world that "grows more insular as nationalist politicians seek to convince voters the world consists of 'us' versus 'them.'"
(Maclean's 2017)

Climate change
- By 2030, global flood losses will be worth $300 billion a year. Food supplies are already suffering. In Europe and Britain, where the surviving flood plains are no longer adequate, property losses are expected to quintuple by 2050. (Brown 2017)

Plummeting insect numbers threaten collapse of nature: Insects could vanish within a century at current rate of decline.
(Guardian, 2019)

Do you know what's out there?
- The Department of Homeland Security will soon begin collecting social media data from all immigrants entering the United States ... It said the data would come from "publicly available information obtained from the internet, public records, public institutions, interviewees, commercial data providers." (Nixon 2017)

The future is already here—it's just not evenly distributed."
(William Gibson)

Bottlenecks to automation
- The Oxford-Martin project identifies three key areas where machines are not able to automate a task: creative intelligence, social intelligence, and fine motor manipulation. (Frey and Osborne, 2013; 2016)
- Rather than people chasing jobs, "work will chase people." In an extension of today's "gig economy," companies will set out tasks to be completed, then use information technology to match the task with the people and technology that have the necessary skills, anywhere in the world. (Tencer 2017)

CO-CREATING THE NEXT ALBERTA

The Alberta Teachers' Association

The future has an ancient heart. (Carlo Levi)

The future is not a result of choices among alternative paths offered by the present, but a place that is created ... first in the mind and will ... next in activity. The future is not some place we are going to, but one we are creating. The paths are not to be found, but made, and the activity of making them changes both the maker and the destination. (John Schaar)

This publication is part of an ongoing commitment by the Alberta Teachers' Association (ATA) to engage Albertans in a public dialogue about our shared future.

The reverse side of this document identifies four strategic trends that are impacting society. On this side of the document is a comprehensive blueprint for educational development—detailed in the ATA research study *A Great School for All: Transforming Education in Alberta*—that outlines a hopeful and bold vision for 12 dimensions of change necessary to transform education and ensure that the gifts and talents of all Alberta students are fully realized. This transformation can only be achieved by and with teachers at the centre of educational development focused on excellence through equity.

Background

Since the turn of the new millennium, the ATA has hosted a series of public lectures and invitational research symposia focused on the role that public education will play in co-creating the future of Alberta. These public lectures have featured leading thinkers including Sir Ken Robinson, Sherry Turkle, Yong Zhao, Pasi Sahlberg, Michael Adams, Justin Trudeau, Linda Duxbury, Jean Twenge, Gwynne Dyer, Dominic Barton, Andy Hargreaves, Thomas Homer-Dixon, Valerie Steeves, Wade Davis, Carl Honore, Michael Rich and Margaret Wheatley.

Strategic Foresight

Engagement with Albertans that focuses on the critical issues affecting children and education is one of the key elements of the Association's strategic plan—a document that conveys the Association's clarity of commitment and unites its preferred future with meaningful action.

Use the QR code to link to the ATA strategic plan and a digital version of this document.
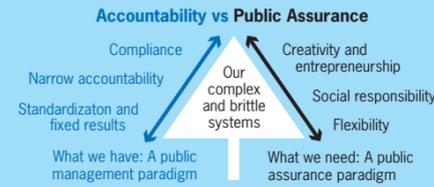
No one is coming to save us...
We are the ones we have been waiting for. (Hopi Elders)

These words by the indigenous Hopi Elders offer both an invitation and provocation as we engage the volatility, complexity, ambiguity and uncertainty of our shared future. As points of departure for an important public dialogue, the four strategic trends in this publication offer a glimpse of possible and probable futures, all worthy of our deeper reflection.

For more background information about this publication and ongoing partnerships with Alberta's teaching profession, visit teachers.ab.ca or contact Dr Philip McRae at philip.mcrae@ata.ab.ca or 1-800-232-7208.

Dimension 1:
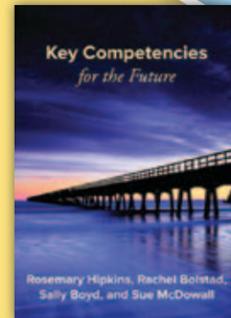### Assessing and reporting student learning

- Teachers' professional judgment is considered primary in responding to the individual gifts and talents of all students.
- School performance reporting reflects both the breadth and depth of Alberta Education's Goals of Education.

Accountability vs Public Assurance

Compliance — Creativity and entrepreneurship
Narrow accountability — Social responsibility
Standardizaton and fixed results — Flexibility
Our complex and brittle systems
What we have: A public management paradigm — What we need: A public assurance paradigm

Dimension 2:
Curriculum development and implementation

- Curriculum is developed through provincial, national and international networks that enable teachers to share innovative practices.
- The high school curriculum provides multiple pathways for student success.

We approach key competencies as metaphors to think with rather than as more concrete things that students possess. (Hipkins 2014)

Key Competencies for the Future
Rosemary Hipkins, Rachel Bolstad, Sally Boyd, and Sue McDowall

Dimension 3:
Digital technologies and learning

- Teachers have primary responsibility for determining the appropriate role of technology in shaping students' learning environments.
- Alberta schools recognize that teaching and learning are highly relational activities.

Dimension 4:
Inclusive education

- Schools have the funding they need to honour the right of all students to learn.
- Wraparound supports and services are available to help schools meet the unique needs of students.
- School leaders and teachers have the time and resources necessary to maximize student learning and create a great school for all students.

Dimension 12:
Governance and vibrant communities

- Schools are the hubs of vibrant communities that engage citizens to become their best possible selves.
- Albertans recognize that visionary leadership, engaged citizenship and a commitment to equity are key to effective community development.

The path to educational excellence is through equity. My dream is that every student will have access to a great school in their community. (Pasi Sahlberg)

Dimension 5:
Optimal conditions of practice

- Alberta schools are vibrant, creative working environments that enable teachers to grow professionally and personally.
- As professional employees, teachers view school authorities as progressive employers.

Dimension 6:
Differentiation for learning

- Alberta schools offer creative learning environments in which all students feel connected to their teachers and are fully engaged in their learning experiences.
- Differentiated learning is driven by considerations of relationships and community engagement rather than by technology and business models of customization.

Teaching is usually performed in imperfect conditions, in the face of conflicting expectations and demands. Sustained system improvement can never be done to or for teachers; it can only be done by and with them. (Andy Hargreaves and Michael Fullan)

Dimension 11:
Early learning

- Alberta is recognized as a world leader in early childhood development research and programming that is committed to equity.

THE GLOBAL FOURTH WAY
The Quest for Educational Excellence
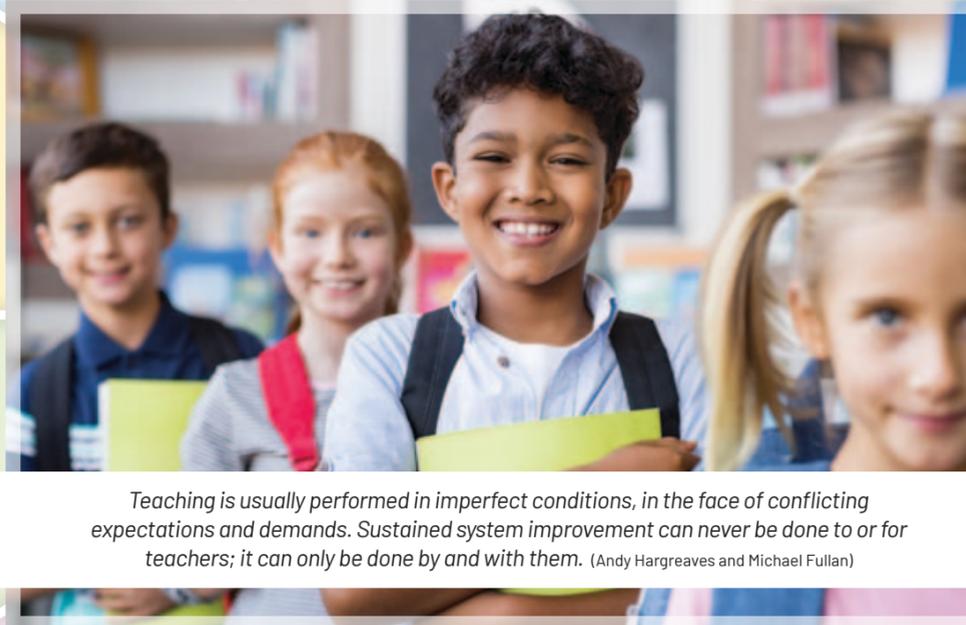ANDY HARGREAVES · DENNIS SHIRLEY
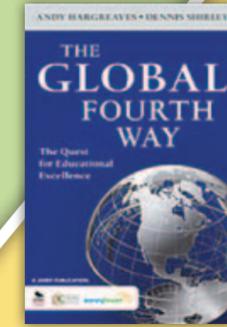
We need to establish platforms for teachers to initiate their own changes and make their own judgments on the frontline, to invest more in the change capacities of local districts and communities, and to pursue prudent rather than profligate approaches to testing. (Andy Hargreaves and Dennis Shirley)

Dimension 10:
Teacher leadership

- Teachers are at the centre of educational reform, not on the sidelines.
- Alberta teachers are recognized globally as leaders in educational development

Dimension 9:
School leadership

- School leaders across the province have the resources they need at the school and district levels to support student learning.
- The Alberta Teachers' Association, in collaboration with other stakeholders, provides programs and services that support the development of effective school leaders.

Dimension 8:
Public assurance

- Alberta schools have implemented a locally focused public assurance model.
- The Alberta curriculum is relevant and responds to the needs of the local community.

EGO **ECO**

Rather than governance structures that represent an "ego-system" (individuals within a hierarchy), we have moved to an "eco-system" recognizing the roles of all of those involved in the education sector as a complex living system.

Dimension 7:
Professional development and autonomy

- Teachers actively improve their teaching practice by collaborating and participating in communities of practice.
- The Alberta Teachers' Association governs the teaching profession in ways that ensure the growth of the profession and inspire public confidence in teachers.

PROFESSIONAL CAPITAL
Transforming Teaching in Every School
ANDY HARGREAVES MICHAEL FULLAN

PC=f(HC, SC, DC)