The Future of Higher Education in an Age of Artificial Intelligence

By

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Dedication

To my grandchildren – Lily, Oliver and Sam –
who already know a lot about AI
and they are not yet in high school.

This will be their world.

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Preface

In 1993, I led a small team of six at Athabasca University, Canada. The then-president labelled us the "skunkworks." We borrowed $1.5 million from the university's reserves and set up a business incubation centre to operate at arm's length from the "main campus" and operations of the university. We aimed to create the world's first fully online Executive Master of Business Administration – an EMBA. We were also instructed to become the prototype for what the university could become. One other key characteristic of this skunkworks was that, despite being a publicly funded university, the EMBA team would not receive and did not want government funds. The team wanted to demonstrate that a business program could run as a business and be successful by offering a unique focused, innovative, quality product for a Canadian market.

Pioneering new approaches to teaching, learning, and assessment was something "built-in" to my work at The Open University for over a decade (1973 -1985). Boundary-breaking courses on *Risk* or *Inquiry*, leveraging new technologies to support students with disabilities and exceptionalities, creative uses of television and audio media to teach statistics, experimenting with new technologies, including a "luggable" computer – the Compaq Portable II – enabled us to begin to imagine what learning might be like. Being able to see possibilities and to "read" where technology was headed was something I learned how to do.

I left the academic world to join a Canadian technology start-up. We acquired several companies worldwide, and I found myself back in Britain in 1999 as CEO of a consulting company full of smart people. I worked at a senior level with major companies – Heinz, Citibank Asia, Barclays, Tesco, Textron, and Oracle – on organizational change and transformation projects. As a psychologist, I found it fascinating how little many leaders knew about technology and how, once they did, it took them some time to realize the transformational power of technology for their business operations. By employing a human + technology approach, we were able to achieve significant gains in client performance.

Working around the world – especially with the team at the Hamdan Bin Mohamed Smart University of Dubai and the team at The Open Polytechnic of New Zealand – it has been possible to see unbundling, platform development and creative uses of technology (including AI) to help students achieve their ambitions and secure the credential that matters to them. Whether that is for a personal support worker, a librarian or a counselling psychologist, technology is enabling many who hitherto were denied access to higher education to achieve success.

My current focus is teaching leaders of business, non-profit organizations, school leaders and government agencies about the future in a world with AI. Both Athabasca University and the University of Alberta provide an opportunity to create learning spaces which focus on understanding the present moment, exploring the trends and patterns which will shape the future, and developing scenarios for the future which take account of the next steps in AI's evolution and then working on use cases shapes the learning experiences we create. My colleagues Jean-Claude Couture and Jean Stiles are co-conspirators in this work, and our graduate students teach us a lot each time we offer courses, boot camps or other experiences. School leaders are exploring ways in which AI can make the day-to-day work of teachers easier and the success of students more likely. One non-profit leader used AI systems to help secure a significant grant to support Indigenous learning. It is an interesting time.

This book captures some of this work. It outlines AI in terms of possibilities, challenges, and risks. It explores the ways in which colleges and universities are navigating the risk and uncertainty that AI brings. Scenarios focused on equity and inclusion are critically assessed in a world of intense technology use. The book ends with a short chapter on the danger of not embracing AI.

One challenge in writing about AI is that the technology is changing fast. Each morning, I review developments using *Ben's Bites* and *The Rundown AI*. I also quickly look at the website *There's an AI for that!* Around 20-30 new AI apps are released each working day – there are

13,000 apps on the site as I write – and some are making real progress on the challenges explored in this book (Chapter 3). In reviewing the big picture, it is important to look at each use case – how AI could be used in practice –to understand possibilities. Every effort was made to ensure that the information in this book was correct at the time of going to press.

The real power of AI will help us become more human – freeing up time and creating new opportunities to imagine, collaborate, and act based on evidence and deep learning. Our higher education systems must be at the forefront of making this happen. There are risks and uncertainties, but there are with any innovative development. What we need to avoid is the fear of the new. AI will change how we do what we do. If we are clear about purpose and use the skills available to innovate and show courage, then AI will help colleges and universities prosper.

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Chapter 1

The Challenges Facing Higher Education

Colleges, polytechnics, universities, and research institutes are undoubtedly facing significant challenges. A growing literature (Readings, 1997; Donoghue, 2008; Ginsberg, 2011; Neufield, 2016; Nelson, 2017; Battersby, 2019; Ellis, 2020; Fleming, 2021) makes clear that the "future is not what it used to be" for many of these institutions.

This chapter will explore the twelve fundamental forces creating a perfect storm for these institutions and those seeking to lead and govern them. A special challenge – currently underestimated – relates to the impact of new entrants who fully leverage emerging technologies for the future of these institutions.

What follows focuses on higher education in the Northern Hemisphere. However, some of these issues also apply to institutions in the global South (especially the advanced economies). There are additional challenges in emerging economies related to the place of higher education in social and economic development. For example, across Africa, there are issues of corruption and capacity, and in India, there are issues of infrastructure, hiring qualified faculty, and excessive political interference. The demographic forces shaping the global South differ, at least for the foreseeable future, from those faced by the North.

The Twelve Forces Reshaping Higher Education

These are the twelve forces that are reshaping the functioning and operations of colleges, universities, and polytechnics.

1: A Shift in Purpose

Colleges and polytechnics have always focused on the development of knowledge, skills, and capabilities related to the needs of the labour mar-

ket. Whether through apprenticeship, short forms of learning (micro-credentials, certificates and diplomas), or longer forms (applied degrees), these institutions prided themselves on their relationship with employer organizations and industry and were created, in many instances, in communities whose need for skilled and capable labour was growing.

A university, at least according to Saint Cardinal Newman (1852), is intended to be different:

> "[A university] is a place of teaching universal knowledge. This implies that its object is, on the one hand, intellectual, not moral, and, on the other, that it is the diffusion and extension of knowledge rather than the advancement. If its object were scientific and philosophical discovery, I do not see why a university should have students; if religious training, I do not see how it can be the seat of literature and science."

He also made clear that "an academical system without the personal influence of teachers upon pupils is an arctic winter; it will create an ice-bound, petrified, cast-iron university, and nothing else." He saw a university as a place of intellectual engagement – a place where professors explored the frontiers of knowledge and understanding and shared their learning with students to engender a sense of meaning and purpose in their pursuit of knowledge and understanding. He felt that students should leave university able "to think and to reason and to compare and to discriminate and to analyze."[1] Rather than being focused on creating human capital, the work was to create highly informed and engaged citizens capable of exploring, understanding, and changing the world.

Newman was writing in 1852 and doing so in Britain. At that time, less than 2% of the male British population attended university (women were not allowed to matriculate[2]), many of them reading theology. By 1963, just 5% of school leavers in the UK had attended university, and just a quarter of these were women.

In the 1960s and early 1970s there was a substantial expansion of higher

education, not only in Britain but around the world. In 1960, Britain had 22 universities, and by 1975, it had 45. Following Tony Blair's 1999 commitment to creating places for 50% of the UK's school leavers in British Universities, the UK now has 182 universities and higher education institutions, some of which (like the Open University) are substantial. In addition, sixteen other institutions have degree awarding powers – e.g. Royal College of Art, Royal College of Music and University College of Osteopathy. The newest degree-granting organization (known as "challenger universities") is the Dyson Institute, which builds on the opportunity for private organizations to offer degrees. Other such organizations include the New Model Institute for Technology and Engineering, The Engineering and Design Institute and the London Interdisciplinary School.

In 1963, there were 216,000 enrolled in the 22 universities in the UK. In 2018, this number rose to 2.32 million individuals, 81% of whom were UK citizens. International students are now a key component of the fabric of the modern university in the developed world. Of the 2.32 million, 6% were citizens of the EU (other than the UK), and 14% were from non-EU countries. On average, 15% of students at each university in the UK are foreign nationals.

In Britain in the 1960s and 1970s, tuition was paid by a variety of organizations but not by students. It was not until 1998, under a Labour Government, that tuition fees were introduced across the UK. Following devolution, Scotland abolished fees for 'young students' and Welsh students, who, whether they study in Wales or elsewhere in the EU, are eligible for tuition relief. Currently, student fees in England and Wales are currently (April 2024) £9,500 annually (app. $16,250).

Higher education across the global North is a place for knowledge and skill development, with a growing focus on human capital development and skills. Rather than a broad citizenship education, where the whole person and a student are free to pursue their interests and passions, colleges and universities are now seen as places of skill development linked to employment.

As technology and prosperity have grown, so have the demands for knowledge workers and highly qualified people (HQP), which are seen as essential for the growth of national and regional economies. The OECD, in particular, has systematically advanced the case for reforming higher education so that it not only produces more HQP but is also better aligned with the specific skills in demand for a national and regional economy. Indeed, the purpose of higher education, as far as major funders, regulators and governments are concerned, is human capital development (Lentjushenkova, 2021). Saint Cardinal Newman would have been appalled.

2: A Lack of Courageous Leadership

Many social science, fine arts, and humanities programmes have closed as an outcome of the change in focus, and the expansion of accountability measures related to college and university graduates' employability and pay has created new difficulties for institutional leadership. As evidence of this, 2023 research found that in the US, people's average tenure in the "top job" at a college or institution had decreased from the 10-year standard to 5.9 years. The situation is much worse in the UK, where vice chancellors of universities—known as presidents in North America—now hold their positions for an average of only 4.1 years.

The issue is not compensation; college and university administrators make adequate incomes in comparison to a large portion of their workforce. The issue lies in bravery. Few who take risks and make revolutionary changes in the industry survive. Navigating the intricate, conflicting, and demanding agenda of several stakeholders is what they are supposed to accomplish, and it may be tricky. Nearly 50% of university employees in the UK did not think their Vice-Chancellor was an effective leader, according to a 2017 study conducted by the UK's Guardian newspaper. Employees at the organization felt they were "too far away from the day-to-day reality" of affairs. All around the Northern Hemisphere, there are similar worries.

To understand the challenge for institutional leaders, imagine the com-

plex challenge of having to secure significant funds from donors who expect specific outcomes from their donation, which may conflict with what faculty wish to do. In a college environment, this can be challenging. In a university environment, where faculty use academic freedom and their independence as researchers to pursue their own interests, the conflict between external and internal expectations can be debilitating. Rather than courageous and bold moves, leaders focus on continuity and compromise. They do this to survive.

3: A Decline in Stakeholder Trust

Every year for the last twenty-four years, the Edelman organization has surveyed people across the world on the issue of trust. It explores which institutions people trust and do not trust for vital information. The survey shows that those with a higher level of education tend to trust key organizations – Government, business, media, and NGOs – more than those with a lower level of education. The survey also shows that scientists, especially those in colleges or universities, are highly trusted, though there are growing concerns that scientists are losing their independence – a special concern for the citizens of the US, China and emerging economies like Malaysia and India. The fear is that governments have too much control over what scientists study and what they can report, especially on key issues like climate change, the environment, the economy and technology (Edelman, 2024).

The stakeholders in higher education are seeking relationships characterized by participation in decision-making, information exchange, mutual trust, and inclusion in strategic planning aimed at creating greater value for their institutions (Langrafe, et.al., 2020). They want to build a competitive advantage in a complex, highly competitive marketplace for money, talent, and opportunity.

But they are not helped by some recent developments, all of which erode trust in higher education institutions:

- **The rate of retraction of academic papers** – one crisis impacting

higher education and the trust in the work of faculty is the rate of retraction of academic writing is increasing dramatically. In 2023, over 10,000 scientific research papers were retracted from publication.[3] – significantly up from the 1,000 reported in 2013[4]. Studies in medicine (over 400 papers related to COVID-19 have been retracted to date) and work related to climate change are especially hard hit.

- **Disputes over academic freedom and the right to free** speech – 30% of UK academics are "self-censoring" following a number of cases where colleagues have lost their positions due to comments made about transgender identity[5], climate change or other "sensitive" matters. The Academic Freedom Index[6] reports that academic freedom and expression exists in some 56 countries but is severely restricted in 23. They base these findings on five key indicators: freedom to research and teach, freedom of academic exchange and dissemination, institutional autonomy, campus integrity, and freedom of academic and cultural expression. Despite growing in the early part of the present century, academic freedom in 2024 is almost identical to the state of academic freedom in 1997[7] – little progress has been made.

- **Growth of academic misconduct** – academic misconduct occurs when a student plagiarises an essay or data analysis, cheats on an examination or test or pays a third party to do their work for them (sometimes impersonating them in an examination). This is not a new phenomenon – there are reports of this happening in the Ming Dynasty public service examinations (Wooldridge, 2021) – but it is growing. In a 2019 study, 14% of all undergraduate students at Yale admitted to cheating, with just 4% being caught.[8]. In its work on detecting cheating, the ProctorEdu company reports that some 60.8% of all college students report that they cheated, with 16.8% indicating that they had no remorse about doing so[9].

- **Cybersecurity and privacy breaches – Between 2020-21,** cy-

berattacks on higher education institutions increased by 75%[10]. Okanagan College in Canada was subject to a ransomware attack by an organization called Vice Society. They stole personal information and demanded payment or the full personal and financial data of students and staff would be published online. Similar attacks have occurred at other colleges and universities worldwide.

- **Abuse of donor funds** – philanthropy has become an increasingly vital source of funding for colleges and universities, but there are growing concerns about institutions failing to respect donor intent, especially for gifts made in perpetuity. This has led to some high-profile lawsuits, increased scrutiny from governments, and donors imposing more restrictions on their gifts. Trust has to be mutual.

Taken together, these observations suggest that creating and sustaining trust is a major and growing challenge within higher education, with some aspects of trust-building showing signs of worsening rather than improving over time.

4: Stakeholder Governance

Most universities are governed through what is known as the "bicameral" model. The academics serving on the academic decision body, commonly called the Senate, make decisions about what to teach, when, to whom and how students will be assessed. The Board of Governors is then expected to secure funds and the needed leadership to support this work. The governors generally respect the Senate's recommendations, though they may have to accelerate or delay some programs or actions due to financial issues. The Board has ultimate authority and can, under specific circumstances, overrule the Senate (e.g., where financial exigencies exist). A small number of universities remain unicameral organizations governed by the Board (e.g., University of Toronto, Royal Roads University Canada).

Colleges have adopted a range of governance models; some are very

similar to universities, but many have a single Board that makes all decisions, advised by expert committees and consultants. Increasingly, colleges are adopting a shared governance model, which emphasizes the various stakeholders engaging together in decision-making. They also use program advisory councils – instructors meeting and working with industry and employer organizations to design programs and work-based learning initiatives – in ways many universities do not.

The challenge here is to engage in creative and imaginative ways with a range of stakeholders to achieve strategic momentum and establish the conditions for success for the institution. As the varied literature makes clear, this is a major challenge (Fleming, 2021; Ellis, 2020).

5: Demographic Shifts

Fertility rates are falling worldwide.[11]. By 2050, 75% of countries will have birth rates lower than replacement for their population. By 2100, this could apply to all but 3% of nations. Replacement requires fertility rates of 2.1 children per birth mother. Currently, the UK is at 1.5 and predicted to fall to 1.38 by 2050. In Canada, fertility rates are currently 1.40 but may rise as Canada now relies on younger immigrants to sustain its population and economy. Fertility rates in Canada have fallen by 57% since 1950. The situation in the US and the EU are similar.

We can expect an ageing population, fewer young people entering the workforce and a major shift in the dependency ratio. The dependency ratio is the number of dependents (people younger than 15 or older than 64) to the working-age population (those ages 15-64). It is used to measure the pressure on the productive population. Currently, in the northern hemisphere, the ratio is between 52% and 56%. Forecasts suggest a dramatic decline, with many countries approaching a 1:1 dependency ratio by 2050. Not only will this mean fewer school leavers seeking higher education, but it also means that the taxation base is shrinking. High-income countries will face challenges such as maintaining their workforce and managing healthcare and social security for an aging population[12].

6: Equity and Inclusion

The COVID pandemic laid bare challenges around equity, diversity and inclusion in higher education. As the world shifted to "remote learning," many realized just how many students do not have reliable access to affordable broadband and appropriate technology. Also, the extent to which digital literacy (as well as language literacy) were challenging issues for the pursuit of higher education also became evident.

It has always been the case that certain groups are marginalized in higher education – single parents, the disabled, Indigenous learners, rural and remote learners, low-income learners, and racial and ethnic minorities. Though higher education access and attainment have increased overall in recent decades, significant disparities persist for marginalized and underrepresented groups in North America, the UK, and the EU. Targeted policies and support have been introduced to close these gaps and ensure more equitable outcomes, though some of these policies are being "deleted" in some US states (Florida, Texas, Arizona, Arkansas, Georgia, and Idaho)[13].

The emergence of more flexible approaches to learning – more online courses, more hybrid courses, shorter courses and boot camps, and micro-credentials – are all seen as a response to students' demands flexibility. With more mature students, more students balancing work and family, with a growth of skills-based learning, institutions are responding to the challenges of equity and inclusion in creative ways.

However, the underlying challenge is design justice. Designing the education and learning experience, not just admissions, from an inclusion and diversity perspective. In some countries (especially, but not exclusively) in the global south, this means both decolonization (Enslin & Hedge, 2023) and reimagining the design of learning based on traditional ways of knowing and being. Reimaging how students are assessed is also part of this challenge. Working on design justice issues leads to significant challenges to institutional assumptions, business models, and faculty and management skill sets. This is difficult and demanding work (Winn, 2023; Warren, 2014), which many seek to avoid.

7: Financial Challenges & Commercialization

Colleges and universities, given their social and economic importance, need to be seen as a public good and an investment in the future for any community, region, or nation. Yet they are chronically underfunded. So reliant are universities and colleges now on revenues from international students (especially in the US, Canada, UK, and Australia) and on commercial activities, philanthropic donations and other creative revenue sources that governments appear to think that modest annual funding increases linked to key performance indicators are all that the institutions need to survive and prosper. But they need more, especially in dealing with inflation, the global war for talent, and the growing costs of compliance.

Using Canada in 2023 as a reference case (Usher & Balfour, 2023), we can see that the overall income of colleges and universities rose by 77% between 2000 ($35.3 billion) and 2023 ($62.4 billion in constant $2021), with key sources of revenue (governments, students and other self-generating income activities) each rising by the app 5% each year. This is in part explained by the growth in enrolment in this time period. In 2020-21, Canada had 2.19 million students in its higher education system, two-thirds of whom were enrolled in colleges.

Canada has one of the world's best higher education funding supports – more GDP is dedicated to education (2.2%) than in any other G7 country except the US (2.5%). However, in 2016, income from non-government sources exceeded that from the Government for the first time and has continued to do so. Indeed, students from India paid more to colleges in Ontario than did the Government of Ontario.

Several Canadian provincial governments have reduced institutional expenditure at both colleges and universities – Newfoundland and Labrador, New Brunswick, Ontario, Alberta, and the North West Territories – since 2010. In part, this relates to a growth in enrollment, and at the same time, the level of government transfers to institutions remains flat.

Most of the expenditure in higher education is for the costs of people (app. 73% of expenditures in both colleges and universities), with the costs of physical facilities and IT infrastructure growing.

Some institutions have aggressively pursued international students to balance the books, who pay significantly higher fees than their domestic counterparts. In 1990, approximately 40,000 international students enrolled in Canada's higher education system. By 2024, this had risen to close to one million. Providing support (especially housing) to so many students is challenging. The Government of Canada (which has no direct role in postsecondary education other than in relation to research and development and support for innovation – e.g. through funding specific academic positions, like Canada Research Chairs) intervened to reduce the number of international students it will admit by 35% citing housing, social supports, and student wellbeing as the reason. This may well cause major financial difficulties, especially for institutions in Ontario that have dramatically increased international student registrations to offset declining income from the Government. Nine of the top ten destinations for international students are universities or colleges in Ontario.

Similar challenges are being experienced in the UK, where international student numbers have fallen by one-third[14]. More than 320,000 international students account for nearly half of enrolments on taught courses at UK universities, paying tuition fees averaging about £17,000 a year and accounting for 20% of the revenue for institutions[15]. Some – Royal College of Art, University of the Arts, London Business School – have close to 50% or more of their income from this source.

These kinds of developments have also forced colleges and universities to seek more commercial sources of revenue. Arizona State University has leveraged its assets (tax-exempt land, focused research teams, specialized capital equipment, legions of students seeking work-based learning experiences) to aggressively pursue growth. Its Innovation Centre in Scottsdale is projected to have a $58 million economic impact in that city. Several US universities secure a return of over $200 million

from sports activities (basketball and football)[16]. Successful technology transfer can generate substantial revenues for select universities. For example, Northwestern University earned $1.4 billion from its pain drug Lyrica. In 2018, the top US universities reported $2.94 billion in total licensing revenues, implying about $147 billion in product sales derived from academic technologies.

Some are concerned that these commercial activities skew the work of colleges and universities in favour of market-rich activities to the disadvantage of market-poor activities – e.g., fine arts, sociology, music, drama, philosophy, classics and medieval history. The critique is that the pursuit of commercial gain further distorts the purpose and work of the university, with industry influencing the teaching and research agenda, sometimes against the wishes of faculty (Thompson, 1970).

In the end, money – or the lack of it – is a major element in the alteration in purpose, the absence of courageous leadership, and the deteriorating trust amongst the stakeholders. When governments spend less per person, leaders look for more money from other sources, all of whom are interested in allocating monies and the recipients of those amounts. This results in non-trivial difficulties related to governance and participation from stakeholders.

8: Changing Nature of Work

As universities and colleges now focus more of their energies on "job-ready" learning and human capital development, they need to take into account what is happening to the nature of work itself.

Work – what it is, where it happens, who does it and how long they do it for – is changing quickly, not least because of technology but also because of a new set of realizations by employers and employees. Five big shifts impact higher education:

1. **A significant shift to non-routine cognitive tasks that require a high level of social-emotional intelligence**. More emphasis is placed on creative problem-solving, innovation, collaboration,

and teamwork. A significant premium is now attached to advanced skills, competencies and capabilities. Colleges and universities are increasingly pressed to include both more soft skills across their programs and to increase the depth of the programs they teach.

2. **A decline in middle-income occupations, coupled with uneven changes in the demands of work for those with lower education backgrounds versus those with higher education backgrounds**[17]. Though this favours higher education (especially for professions), it has led to colleges, in particular, moving towards applied degree-granting (undergraduate and graduate) and executive continuing education.

3. **A loosening of the link between employer and employee** – more remote working, more flexible working, more gig work, more work requiring collaboration with other organizations. Fewer employees now receive health and pension benefits, especially as gig work expands[18]. Another indicator of the weakening of the employer-employee link is the rate of job change. In 2000, it was expected that the average worker would change jobs up to 12 times during their working career. Now, the expectation is that this will rise to 20, with job hopping on the rise[19]. Frequent job changes allow workers to gain diverse skills and experiences but also create instability and make it harder to develop deep expertise. For employers, higher turnover means more hiring costs, as well as fresh talent and ideas.

4. **An ageing workforce**. Given the demographic shifts (see above) and the lack of pension and health benefits, many are choosing to stay in the workforce much longer. Employment rates for those 65 or older have been climbing steadily – it was 12% in 1980 in the US and is now 19.1%[20]. Upgrading and reskilling middle-aged and older workers has become a significant market for colleges and universities, with micro-credentials being seen as a way of accessing this market.

5. **New job types and forms of work**. Richard Riley, former US

> Secretary of State for Education, is credited with saying in 1990, "We are currently preparing students for jobs that don't yet exist, using technologies that have not been invented, in order to solve problems, we don't even know are problems yet." Yuval Noah Harari (2024) supports this assertion and raises concerns about what this means for identity. Rather than "training" for specific skills and competencies, a key focus for higher education needs to be the development of resilience, agility, creativity, problem-finding and solving and collaboration – the core skills needed to navigate the emerging world.

Each of these developments has implications for curriculum, teaching, learning, assessment, admissions and the design of the educational experience for students. Colleges and universities appear to be struggling to reimagine their work in light of these trends.

One other development is important here. A growing number of major employers – IBM, Apple, Google, Meta, McKinsey, Revolut, Steelcase, US Federal Government and sixteen US states – have shifted their hiring practices from qualifications-based hiring (reviewing degrees, diplomas, certificates, or professional designations) in favour of hiring on the basis of demonstrable competencies and experience. Using evidence of skills and capabilities coupled with activities aimed to test skills, companies see skills-based hiring as more likely to improve the fit between the new hire and the work they are asked to do. This poses a challenge for colleges and universities, which, even though they have significantly expanded their use of work-based learning, do not fully use competency-based assessment.

9: Emerging Technologies

There has been a discourse about the potential transformative qualities of a variety of educational technologies since the early 1920s, aptly captured by Audrey Watters (2019, 2021). Radio, television, CD-ROMs, teaching machines, and Smart Boards have all been seen to have the opportunity to personalize learning, provide adaptive routes to learning

and create the possibility of learning anywhere, at any time, anything at any level. None of these technologies delivered: all were over-hyped, as many can attest.

When ChatGPT 3.5 appeared in November 2022 (ChatGPT1 had been available since 2018 and GPT2 since 2019), many college and university faculty and administrators seemed surprised at its capabilities. They should not have been; the first chatbot based on a large language model was released in the mid-1960s[28], and a variety of large-scale assessment projects which made use of generative AI have been available for over twenty years.

Some began to take an interest when Professor Ashok Goel at Georgia Tech created "Jill Watson" as a teaching assistant for a course in computing science. Jill (in fact, IBM Watson) had been "trained" on 40,000 questions and answers collected since the Professor began teaching the course. When Jill was deployed in the class, the students were not told that one of the teaching assistants was an AI. Throughout the semester, Jill answered questions alongside the human TAs, and the students could not tell which was which. This can now be used for any subject, with the training Jill taking, on average, about ten hours using a set of routines known as Agent Smith.

Now, over 13,000 AI applications are available, with some thirty arriving each working day. Some are powerful tools that can analyze complex data sets based on simple natural language commands, others convert text to speech and text to video, and still, others can produce whole courses with assessments and multi-media material in a matter of minutes. AI is reshaping not only how things get done but also where students can access significant historical and current resources and analyze and summarize them in seconds on a smartphone from anywhere in the world.

But this is not all. Other technologies enable students to experience places and events (historical, current, or future) using immersive technologies such as AR/VR or to experience a simulated environment, such as a surgical procedure, flying an Airbus 310 or conducting a biological

experiment. Students can undertake a virtual tour of the Guggenheim Museum in New York or the Uffizi Gallery in Florence. Music students can create outstanding compositions using Apple's Garage Band (as have Lady Gaga, Katy Perry and John Mayer) or art using robots (as has Sougwen Chung, a Canadian artist) or immersive and interactive installations using large data sets and advanced algorithms (as has renowned Turkish artist Refik Anadol).

Nowadays, technology plays a significant role in every sector of study, occupation, and activity. Nonetheless, academic misconduct and plagiarism are major concerns for schools and universities, as is the potential influence of developing technology on their economic models and day-to-day operations.

10: Disrupted World – Climate Change, War and the Decline of Democracy

At the time of writing, there are over one hundred and fourteen armed conflicts in the world, ranging from the war between Ukraine and Russia, between Hamas in Gaza and Israel and the civil war in Yemen. Haiti's Government has collapsed, and vicious gangs rule the country. This has given rise to a growing number of refugees seeking a safe haven – currently, there are 36.4 million refugees, with three countries (Syria, Ukraine and Afghanistan) accounting for half of this number. In addition, a further 110 million are internally displaced by conflict. Some of these individuals see education and learning as a way out, and many countries in the global North have provided support for refugees and asylum seekers to access schools, colleges, and universities. Germany, for example, is home to 2.5 million refugees, and Canada has settled 162,500 Ukrainian refugees since the war with Russia began, with more due to arrive.

Climate change and extreme weather events greatly concern students and some faculty. "Climate anxiety," which can sometimes lead to clinical anxiety or depression, is experienced by 59% of the age group 16-25[21]. While a great many institutions are researching issues associ-

ated with climate, water and weather, almost all are developing plans for institutional resilience and sustainability. Some have to. They face flooding, drought, fire, excessive heat and storm damage.

But the underlying issue here is the collapse of the world order and the rise of popularism and fascism. This is best seen in the US, where attacks on the idea of equality (minority rights, women's rights, immigrant rights), the rise of nationalism, the rejection of one person, one vote and electoral systems are all coupled with "us and them" rhetoric always deployed by fascists. This is fuelled by conspiracy thinking, poor understanding of history and cult-like leadership. When seen in the context of the growing influence of China, India and Russia, the future looks problematic, especially if Russia and China act on their expansionist talk.

This impacts higher education in three ways. First, some governments have moved to weaken free speech and academic freedom – academic freedom has declined in twenty-two countries over the past decade[22]. Second, some governments require higher education institutions not to teach certain subjects or to do so in a particular way – e.g. critical race theory, gender identity, journalism – and to end work on equity, diversity, and inclusion. Finally, to ensure compliance, governments will often replace members of the governing body and use the newly constituted board to end the contracts held by leaders who do not tow the party line. This happened at the University of Florida, where the President was replaced by a former aide to the Governor of the state.

11: Faculty Uncertainty and Lack of Trust

Most students in higher education are taught by contracted and sessional staff. In Canada, for example, approximately 53% of university educators are untenured and earn approximately 67% of the salary of tenured university faculty, and the UK figures are very similar (54% of all instruction by sessional staff). In the US, 70% of all instruction is delivered by contracted sessional staff. This growing precarity of faculty (Standing, 2011; Cronin & Czerniewicz, 2024) is a significant con-

cern, not least in relation to both the quality of the learning experience for students and the governance of the institutions. Sessional staff are marginalized in institutional decision-making.

Precarity, financial uncertainty, and issues about the purpose of institutions are creating distrust between faculty (permanent and part-time) and the administration and leadership of institutions. This is not new (it has been the case since Socrates), but it is exacerbated by the range of issues that institutional leaders and governors have to deal with.

The leadership challenge is to balance the competing demands of internal and external stakeholders while at the same time "keeping the ship afloat" and engaging all internal stakeholders. Because internal and external stakeholders either unwittingly or knowingly misunderstand each other's motives, neither side (faculty versus administration) recognizes or works to understand what the other is trying to do.

These tensions are being made worse by the deployment of neo-liberal new public management (NPM). Neoliberal education policies, which Pasi Sahlberg has labelled the Global Education Reform Movement (GERM)[23], has a simple framework:

- **Universities and colleges are economic entities** competing in a free market for students, staff and revenue. This includes the encouragement of private entities entering into the market and the growth of new entrants and global providers.

- Governments, who provide some of the funds for universities and colleges, regulate and require specific outcomes so as to ensure **the best value for money and optimum efficiency in return for their investments**. The Government sees itself as a major "shareholder" on behalf of the public and seeks to "steer" and "supervise" the activities of higher education institutions from a distance – e.g. through mandate agreements, key performance indicators (KPIs) linked to funding and targeted funding. This leads to decisions on what constitutes "value," and the consequences are such actions as the University of Hull closing

its 100-year-old philosophy department because it no longer meets "the value equation" as seen by the University's "business partners."[24].

- **Students are "customers"** who need to make informed choices as to which college or university they "purchase" services from. As customers, they have rights and should also have a growing impact on the work of the institution. This is one reason why lawsuits are increasingly appearing in the US and Canada, with students suing for their college or university not living up to the employment promises made during recruitment and marketing.[25].

- **Universities, as economic entities, are regulated so as to provide a veneer of support to the idea of meritocracy (the idea that individual merit is always rewarded in educational institutions)** despite the growing evidence that this is not the case[26]. Indigenous learners, single parents, recent immigrants, and first-generation learners are significantly under-represented in universities despite significant improvements in their high school performance (and other indicators). Despite the massification of higher education, inequality persists, so much so that some jurisdictions (such as the UK) are considering regulating admission to "ensure" diversity.[27].

- **So as to increase efficiency and effectiveness, universities will engage in mergers and acquisitions**. In the UK, between 1995 and 2018, there were forty such mergers, mostly involving the takeover of small, specialized institutions by larger entities.[28]. Brexit is likely to trigger more mergers and acquisitions in the UK, and a coming recession could lead to the same in Canada, especially in jurisdictions where university enrollments are declining and not growing (i.e. Maritime Provinces, Northern Ontario).

- **The highest performing institutions (especially in terms of research) will attract the most funds** – e.g. the budget of the

University of Toronto's health system is larger than that of the World Health Organization. This is why there are tiers within higher education systems – e.g. research universities versus teaching universities and in the UK, the Russell Group of the top 24 universities.[29].

What this thinking has led to in universities and colleges in the global north are the following:

- **A constant decrease in the levels of service and quality** – larger classes, larger faculty: student ratios, fewer elective options, closure of some programs following "productivity and performance reviews," less ability for students to "design their own degree," and more focus on efficient classes and an increase in the number of classes cancelled due to low levels of enrollment.

- **The growth of online learning** – is seen by many administrators as a way of increasing access and overall student numbers at a lower operating cost, despite the evidence that cost benefits only occur at scale, not in the way most institutions operate online learning[30]. In Canada, some 1.83 million students take one or more 3-credit courses each year in a fully online mode, and the expansion of online learning continues, with all but two universities in Canada seeing online as part of their offer to students[31]. According to Holon IQ, 88% of higher education institutions see online learning as a central part of their future-focused strategy.

- **A growing separation of teaching and research**, with researchers being "bought out" of teaching and being replaced by contracted sessional staff. This is especially the case for lead researchers and major research project teams. This is not the case everywhere – MIT, for example, insists that its lead researchers teach first-year undergraduates. One reason for the separation of researchers from teaching is the focus on research productivity and impact as a basis for funding, especially public funding. In the 2019 review of research productivity, Canada is 3rd in the