The responsibility to lead: education at a global crossroads

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Introduction

Thank you for the invitation to address you at ACEL's President's Oration.

I would like to begin by acknowledging the traditional custodians of this land, and paying my respects to their elders, past and present.

It is a privilege to have this opportunity, to follow on from distinguished past speakers, and to reflect on some my adventures and experiences in the world of education and public policy reform.

It's in the nature of education to ask, what world are we preparing students for?

And it does not take much reflection to realise that we are living through strange and deeply unsettled times.

In my remarks this evening I want to address that global context and its relationships with education, and then draw out what I believe are the implications for educational leadership.

I will offer a broad sketch of some very big issues, and then some specific responses to questions that arise from these issues, which I believe are clearly made more urgent by today's global conditions.

1. A moment for reflection

For me, that reflection is an opportunity to look back to the points at which I first entered the public discussion of education, in the 1990s, when I was fresh out of university and found myself part of the exciting burst of new ideas and movements that overtook British politics at that time.

That was a time immediately after the end of the Cold War, when the Berlin wall had come down, the internet was a new thing, and the world seemed full of possibility.

The story of globalisation, while not without its challenges, was one of optimism and progress.

A knowledge-based economy, linking different countries, sectors and communities through a series of global networks and flows, created billions of new possibilities for people everywhere.

Education was central to this story – an engine of progress and opportunity, developing talent as fuel for this new economy, and recognising human diversity as a source of riches, both economic and cultural. A knowledge-driven economy and growing prosperity created new possibilities for social inclusion and for reducing poverty.

Working with Demos and its partners, all kinds of innovation opportunities were opening up, through the exploration of networks as a route to innovation and shared impact.

It's interesting, perhaps sobering, to reflect now on how easy it was to believe during that period that anything was possible, and how quickly the shared myth that 'things can only get better' was able to take hold. Australia, of course, was taking the early steps in what would become 26 years (and counting) of uninterrupted economic growth.

2. Existential threats

Now, if we cast a glance around the world, the scene appears very different; a much more complex, troubled and threatening place than those rosy millennial narratives within which many of our education efforts were framed.

A world in which the internet is used as a weapon of hatred, so that an exercise in national democracy, the plebiscite on marriage equality, creates fear of harm to some members of our community, including young people, will be damaged by the impacts of campaigning.

A world in which people drive cars and trucks into crowds to express their ideology and rage.

A world in which political leaders, unelected and elected, use news conferences and social media to threaten each other with fire and destruction; in which millions of people suddenly realise that a regional nuclear confrontation over North Korea could be only a few steps away.

A world in which the UK, the country I grew up in, has been driven by identity politics to pitch itself, via a referendum on EU membership, into a crisis of governance that threatens to become indefinite, and could soon also engulf its economy and society.

A world in which, for billions of people over the last decade, real wages and standards of living have contracted over the last decade. And in which the next waves of automation and machine-based intelligence apparently threaten the livelihoods of large sections of society.

A world in which news media struggles to find a viable, accepted place between the coercion of state control and the distortions of ideologically-driven corporate ownership.

A world in which evidence shows that democracy, as a form of government and culture of citizenship, is in retreat.

And, of course, a world in which dangerous climate change is inevitable, and still threatens catastrophic damage to our planet's ecosystems, and to every aspect of our lives.

When we survey this scene, there is another common thread running through all of those challenges.

While the threats are clear and immediate, the possibility of a positive, long term consensus on how to achieve peace, justice and prosperity in our world, seems a very long way away.

We are so far from that consensus that the very nature of 'fact' and 'truth' are currently the subject of bitter contest in our media, our politics, and our international relations, in a way that George Orwell would have recognised.

3. The inescapable reality of interdependence

These risks and threats also share a quality that I want to focus on, because it is so important for our later discussion of education.

Each of the crises that I have just briefly mentioned – in social culture, terrorism, regional security, the global economy, democratic governance and the environment, threatens the *context* in which we all live our lives, as well as threatening specific members of our society and parts of our institutional fabric.

They all illustrate how the interaction of billions of individual humans, taking their own autonomous decisions, combine to create systemic risks with potentially catastrophic consequences.

The pieces of the backdrop that many, especially in Western societies, might have assumed would help to hold that picture together and ensure ongoing global progress – pieces such as a global economic and security architecture, poverty reduction and commitment to human rights, a growing cultural commitment to economic and democratic freedoms – cannot be taken for granted.

The current state of the world shows that we cannot take the *context* in which we live our lives, or operate our education systems, for granted.

If we want these problems not to overwhelm us, or future generations, we must urgently learn how to sustain and renew that wider context, as well as to act properly within it, in ways that have contemporary relevance.

How should we prepare children and young people for such a world? And what roles should education play in the situation that we find ourselves in today?

One response to a more complex and threatening world might be to retreat from it; to draw clearer boundaries, to demarcate basic responsibilities, to focus on core business.

But we live in a connected world. Even if the shared norms and structures of our bigger picture break down, if conflict and dysfunction come to dominate, we cannot avoid being affected.

By acting in our own lives: connecting online, travelling, finding a home, choosing goods in the consumer economy, we are participating the myriad ripple effects of an interconnected planet.

In the same way, no country can avoid the effects of what happens over North Korea, how China's economy develops, what the US does next with climate

change, or how conflict in the Middle East and central Asia drive flows of refugees and asylum seekers across continents.

We can try to assert boundaries, but we cannot hold them against the reality of interdependence.

For an individual, facing this this uncertain reality can easily become a crushing burden. How can any of us hope to really make a dent on issues of such intractable complexity?

This is a version of the question that every one of our school students faces, as they grapple with the requirements and competitive dynamics of their schooling, and struggle to form a sense of their own identity.

In the current version of our interconnected world, we are grappling with how to prevent economic inequality and identity politics from spinning out in a way that magnifies the experience of poverty and humiliation, and hardens cultural and political identities to a point where their edges are so sharp that our conflicts become irreconcilable.

4. The pivotal role of education

In a world like this, it can be hard to find a vantage point, a place to ground ourselves and act with confidence.

Yet through all of the twists and turns of history, global events and competing claims, one thing does stand out very clearly. That is the pivotal role of education in enabling both social and economic progress, and in *mediating* the processes of technological innovation and market exchange to determine how opportunities and rewards are distributed across our societies, and how we respond individually and collectively to the challenges before us.

While all the above has been going on, we have also seen the steady expansion and growth of education services and institutions over the last two centuries: introducing universal schooling, lifting the school leaving age, developing technical and vocational education, expanding university education and, more recently, building universal and targeted early childhood learning services.

It is a commonplace that more and better education are fundamental to improving the prosperity and cohesion of our societies.

But I want to argue that the evidence only bears this out partially. That is, expanding education or spending more money on it will only work to support progress and opportunity under certain circumstances. Understanding what those wider conditions are, and how to share responsibility for creating them, is the major part of what I am seeking to address in this oration.

I would also argue that expressing the value of education in terms of its measured contribution to economic output and income mobility is also too

narrow a frame for understanding that education really plays in our lives, and in our society.

Given the nature of the challenges that we are addressing this evening, we also need to think about education in terms of its impact on the *perspective*, the *culture* and the *potential* of those who participate in it.

As I've argued before, this increasingly pivotal role is what partially explains the sense of ever-increasing demand and pressure that is felt by many, if not most, education practitioners and students. This translates into pressures to absorb more into the curriculum, pressure to improve exam results and research outcomes, and competition to access the educational places perceived to have highest value and status.

How to support and enable teachers and principals to learn as professionals, how to collaborate in teams and across professional networks, and how to design systems that support continuous improvement, innovation and sharing of knowledge, is understandably one of the greatest preoccupations of education policymakers, experts and leaders.

There are many important aspects of this effort, and many promising developments in systems around the world, including in Victoria and around Australia.

Some flow from two of the big contributions made by Brian to the development of thinking about school improvement, leadership and transformation: the roles played by school autonomy and by networking in creating the dynamics and relationships that can lead to school-level learning, continuous development, and the possibility of transformation.

Those discussions and leadership practices have evolved into a crucial series of discussions and experiments in reform, about how to achieve systemic change: system learning, system-wide innovation, purposeful collaboration that can lead to large-scale, ongoing growth in student learning outcomes and the positive impacts of education.

These efforts are grounded in the long term effort to develop and deepen the quality and impact of teacher professionalism, in ways articulated by such contributors as John Hattie, Ben Jensen, Geoff Masters, Field Rickards, Michael Fullan, Michael Barber and Andy Hargreaves.

I note in passing that this effort has progressed into a growing focus on levels of organisation that stand *between* the individual school and the central administrative authority – the growth of networks, collaboratives, regional groupings, professional learning communities, and so on. This is one reason why I choose to be based at RMIT, with its incredibly diverse students, multiple locations and networks, and rich tradition of collaborative, inter-discipinary learning.

That is a vital discussion, that we must progress further in Australia, if we want to achieve our education reform objectives.

Here, though, I focus on a slightly different set of system dynamics; in a sense, even deeper and more fundamental than the interactions between professionals, students and administrators within the formal education system.

That is, how the formation and evolution of educational institutions is actually integrated into the formation and development of our wider society.

While I will always advocate that student learning must be at the core of any educational effort, and that professional pedagogy is fundamental to that effort, I am also arguing that we have been missing part of the picture.

Addressing the current dynamics by trying to focus exclusively on data and practice about teaching and learning is a bit like trying to treat a population-based pandemic with a series of keyhole surgeries. The interventions can become ever more targeted and precise, but that won't stop many of the patients from being overwhelmed by the wider picture.

We can think about this is in the context of urbanisation. The origins of all cities are as places for meeting and exchange. These meeting points are partly shaped by geography, as well as by the technologies of communication and transportation. Over time, these exchanges quickly create shared needs, for places to live, work - and learn. And cities are constantly having to develop the institutions and infrastructure to meet these shared needs.

Education systems are born from this process. Over the last two centuries they have also become bound up with the formation of the nation-state, for example through national curriculum and funding systems. But educational institutions are in fact more deeply bound into the never-ceasing process of urban and regional development, in both their economic social dimensions.

So the formation of schools, early years centres, technical institutes, universities, is bound up in the process of urbanisation, which is still integral today to the global pattern of economic and social development.

In that process, those institutions which establish their identity, resourcing and critical mass earliest, will develop an advantage in the ongoing, evolutionary effort to survive and thrive, to learn and adapt, to attract the best minds and the most ambitious souls. That is one reason why the world's oldest universities also tend to also be the richest.

All of this forms the living, dynamic context for the ways in which we think about education's role in forming personal character, social identity, and economic status.

For me, education is woven into the community, whether urban or rural, and into the surrounding relationships of family and social network. The boundaries are

porous, and the crucial influences are distributed *across* these relationships. This is one reason why my first, and formative book, is called Learning Beyond the Classroom. For me, this is what gives education its great transformative power; but it also makes educational change a complex proposition!

In Victoria, and Australia, the mix of historical evolution and market-driven competition has produced an intriguing hybrid system, which melds together the co- development of independent schools, Catholic school systems, and secular public schools maintained by the state.

This has created a fascinating, but troubling situation, in which schools and sectors co-exist while furiously competing, funded simultaneously by billions of dollars of public funding, and by billions of dollars of property-based wealth and debt.

Last Saturday, I brought my daughter to play in a jazz band competition at the Australian Institute of Music in King Street, just around the corner from here. While there I heard a band from the Sir John Monash Science School. On the way, we drove past the city campus of Haileybury, a highly successful multi-campus independent school. The campus fully occupies the site of what was previously a large-scale international hotel.

The stuff of our education system is woven into the fabric of our cities, and the reality of interdependence applies at this level too. That is why it is impossible to fully understand or evaluate the impacts of our multi-layered education system simply by analysing schools as single and separate organisational units, and comparing their prices and output through the lens of prices and standard measurements.

Why does that matter? Because we must get to grips with the complex and cumulative impacts of our education systems if we want to understand their impact on economic and social progress, and help them create better responses to the challenges I've outlined.

We need to consider and decide whether education will act as a magnifying lens, concentrating advantage and opportunity in particular locations and widening the structure of inequality, or as a kind of mirror which enables our society to reflect on itself with honesty and accuracy, and distribute opportunities and rewards more widely, in ways that serve longer term global progress.

In order to grapple with that decision, we need to set it in the broader context of the recent failures of economics, and the unsettling effects of technology.

5. The recent failure of mainstream economics

Our discussion of education, and the brooding sense of global crisis that surrounds us, is also framed by the recent failure of mainstream economics to provide an adequate basis for explaining, developing or governing the world.

At the risk of over-simplification, the root of this failure lies in over-reliance on what became the core of the neo-liberal consensus: a theoretical model of rational, price-based economic competition as the basis for efficient allocation of resources, and the assumed driver of economic development and prosperity.

The manifestation of this consensus has been a policy framework in which in which competition, privatisation and deregulation dominated, not just of as principles of economic policy, but of public administration, for a generation following the economic and fiscal crises of the 1970s.

There are three key points to bring out for now.

First, the punctuation point for the end of this period of consensus is the Global Financial Crisis that began in 2007-8, and is still not over. This was a a crisis borne of the systemic risks created by financial globalisation; interdependence, the mis-pricing of risk and lack of effective regulation, which threw much of the world into recession, lifted unemployment rates to depression levels in many countries, and led to a period of austerity from which many are still trying to escape.

In that sense, the global financial crisis forms an essential backdrop to the live realities of education and of economic policy, because it has changed the context for decision-making and the impact of different policy decisions. I am very conscious of this myself, having worked through the process of national education reform in Australia, including the Gonski school funding reforms, in the immediate aftermath of the crisis.

Although Australia successfully avoided economic recession, in part by investing in education infrastructure and skills, the political, institutional and economic conditions enjoyed by Australia for the previous two decades were destabilised – and they remain so.

Second, although I believe there is growing recognition that the intellectual and policy framework that dominated since the 1980s has been overtaken and discredited by events, that does not mean that there is a clear and fully formed next consensus ready and waiting in the wings.

Around the world we are in a period when these questions are genuinely open and contested, and where the political and social conflicts now consuming us show that it not just the flavour of policy that we might adopt that is in question, but the existence of the very order which enables and underpins our lives.

As Stephen Metcalf put it in a recent essay on Hayek and neo-liberalism:

"What any person acquainted with history sees as the necessary bulwarks against tyranny and exploitation – a thriving middle class and civil sphere; free institutions; universal suffrage; freedom of conscience, congregation, religion and press; a basic recognition that the individual is a bearer of dignity – held no special place in Hayek's thought."

https://www.theguardian.com/news/2017/aug/18/neoliberalism-the-idea-that-changed-the-world

Globally, I think it's fair to say that these are the elements of our common context that hang in the balance. Even though Australia does relatively better in many o them, we would be foolish to take them for granted, or to ignore our responsibility to help renew them in the wider world.

Educational institutions and leadership therefore occupy a crucial role, not only in supplying the talent and expertise that will fuel the next iterations of our economies and societies, but also in forming and shaping the thought that will create the next consensus.

Although clear frameworks, strategies or consensus for addressing these challenges are not fully formed, there are some clear threads that are central to this next picture.

The crisis has revealed the extent to which our world is distorted and constrained by the growth of economic inequality, and how that inequality magnifies and focuses the other challenges we are discussing.

That recognition is demonstrated by the breakthrough impact of Thomas Piketty's book, Capital in the 21st Century, with its time series data over two centuries, showing how the distribution of wealth and income over time will diverge, pushing up inequality as a a function of market exchange, in the absence of other factors that can only be brought about through policy and institutional design.

Piketty's book has provoked worldwide discussion of the nature of inequality and the role of market exchange in widening it. The debate continues together with a practical search for new policy responses to the current situation: cost-effective ways to invest in education and skills, lift employment and develop vital infrastructure.

The one point I'll make about that discussion, is that for countries at every stage of development, the focus is on how to shift further towards a knowledge-based economy, in which innovation and learning are the central routes to the creation of value and to competitive differentiation.

As Piketty puts it,

"Knowledge and skill diffusion is the key to overall productivity growth as well as the reduction of inequality both within and between countries."

Piketty, T, Capital in the Twenty-First Century, The Belknap Press, 2014, p21

Once again, the role of education is fundamental.

6. **Education and inequality: the uncomfortable co-incidence of knowledge and wealth.**

But that central fact should not blind us to an uncomfortable reality. However well it currently performs, our education systems do not automatically serve the causes of long term productivity and social mobility.

More education, and more expensive education, will not produce better outcomes for society unless we ensure that some wider conditions also apply.

The recent story in Australia makes for uncomfortable reading, as it does in many places around the world.

While we know that Australia's overall performance is relatively good: above average performance with below average equity, according to the OECD statistics, we also know that it has declined over the last two decades, while enrolments in non-government schools, private spending on education, and competition between schools have all grown.

Our higher education system has an international reputation for high quality, and as a result of reforms in the 1970s, 1980s and late 2000s, participation in higher education has continued to grow. Early childhood learning services have also grown, and their quality may be gradually improving.

But our incremental progress in enhancing the accessibility and quality of education may be losing out to the cumulative of effects of deeper trends: the concentration of geographical advantage, growth in inequality of wealth and connections, and tendencies towards social and cultural segregation through education, as well as through the housing and labour markets.

While the story of Australia's shift towards a knowledge-based economy is one in which more people get more education, and education plays an ever-greater role in our economy, nonetheless it is not a story of growing opportunity and mobility.

Instead, it is a story of opportunity and reward being concentrated increasingly in the hands of people who begin life with access to wealth and knowledge.

Analysis by ACOSS shows that in Australia, over the 25 years to 2010, real wages increased by 50 per cent on average, but by 14 per cent for those in the bottom 10 per cent of the income distribution, compared to 72 per cent for those in the top 10 per cent.

Between 2004-11, average wealth for Australians in the top 20% of the wealth distribution increased by 28%, while for those in the bottom 20% of the wealth distribution it increased by 3 per cent.

ACOSS, A nation divied: inequality in Australia, 2015

At the same time, while participation in higher education has expanded as a result of the demand-based system introduced by Julia Gillard, commencement of degree courses by students from low SES background students at Group of 8 universities has remained stubbornly under 10 per cent since 2011, and actually declined from 2014-15.

The 2009 ABS Survey of Education and Training (SET) showed that while year 12 attainment of young people (20-24 years) rose from 70 per cent to 75 per cent between 2001 and 2009, it did not rise among those who are most disadvantaged.42 For those living in the most disadvantaged areas it fluctuated between 50 per cent and 60 per cent.

This is consistent with the story of a more knowledge-intensive economy that is emerging around the world, combined with the wider economic conditions that applied both before and since the Global Financial Crisis.

That is a story in which specialised knowledge and skills associated with higher levels of education, especially scientific, technical and professional education, command higher rewards. In Australia the highest earning, highest skilled 20 per cent of work has grown its share of employment in every decade. Jobs in lower-earning other categories have not grown.

Yet access to those jobs is getting more difficult, unless you are born into a family where higher levels of education and housing wealth are already present. ABS data recently showed that income mobility in Australia is falling.

In the knowledge-based, network-connected economy we currently live in, geography still plays a fundamental role in shaping economic activity and social organisation.

As our economy shifts towards regionalised hubs of production, linked together by global chains of supply and information, but concentrated in locations where comparative advantage can be built and renewed, so the distribution of knowledge and wealth also changes. NATSEM estimates that the wage premium for those holding a postgraduate degree, over a lifetime, is around $1 million dollars. (2013)

In Melbourne, 90 per cent of the new jobs created are in the central city. The value of Gross State Product created in the area covering the cbd, Parkville, Fitzroy, Southbank and Port Melbourne is six or eight times that of the equivalent population size in Geelong, Bendigo and Ballarat.

School and university choices are part of the social and economic magnetism of these knowledge hubs. Popular schools contribute to the stoking of house prices in their catchment areas. Studies show the correlation between high performing schools and house prices, estimating a premium of around 15%.
Catchments shrink, and either house prices or school fees increase above inflation, further segregating the urban population. People with fewer assets, income and education end up finding housing in suburbs further from the metropolis. The city is reshaped.

This is only about government or non-government schools. It is about the segregation of school students, in all sectors, by wealth and cultural background.

For example, 71 per cent of students at Melbourne High School (a select entry school and one of the highest achieving state schools in Victoria) come from the wealthiest quarter of the Australian population.49 That is nearly three times the concentration of wealth we would expect if academic success was blind to the advantages created by wealth – or in other words, was based solely on merit.

At Princes Hill Secondary College in North Carlton, the median house price in the local neighbourhood was $1.1 million in 2014. Students from outside the local catchment can apply if they have a specific 'curriculum ground.' The school will take students from wider Melbourne if they have learned to speak French or play two musical instruments by the age of 11. While it is possible to assess these achievements purely by performance, the demographic characteristics of children with these skills are not hard to predict.

The University of Canberra's NATSEM analysis of average family spending on education shows that between 2003-04 and 2009-10 spending on pre-school/primary education increased by 79 per cent, and average family spending on secondary education increased by 101 per cent.

At Clifton Hill Primary School, the My School website shows that 77 per cent of students come from families in the best-off quarter of the Australian population. This school raised more than $108,000 at its 2014 fete. Just 1.1km south is St Joseph's Catholic Primary School. The My School website shows that 70 per cent of St Joseph's students come from families in the lowest quarter of socio-economic advantage. They held a fete and made $14.36 profit.

My purpose in highlighting these dynamics is to illuminate the nature of the challenge: this is another level of interdependence which it is impossible to ignore.

It is not just about the story of who gets to be lifted by the rising tide. Last week the Victorian Ombudsman reported that more than 6000 students each year are being informally excluded from state schools, their destination unknown.

Just a couple of kilometres from Prince's Hill is the Parkville young offender's institution. A recent conversation with four of its residents aged under 14 revealed that all of them had been in custody multiple times, and all of them excluded from formal education before they got to high school. They all knew

that they needed to go to school, but none of them could find a school that would take them.

These questions take us beyond the tools and policy authority that is traditionally ascribed to education. But the causal relationships driving these relationships make it necessary to frame the problem more widely, and urgent that we do so now.

The logic of trying to capture market share, and to lift the raw output of education in a competitive system, simply reinforces inequality – promoting divergence, not convergence, in cities and regions, in economies and communities, in schools and universities, in jobs and incomes, in people's lives.

I've deliberately chosen to tell an Australian story here, but the story aligns with the global context.

Oxfam analysis shows that from 1998-2011 46% of the growth in global income went to the top ten per cent of income earners. The story of urbanisation and growing inequality applies on a grand scale in China, and in so many other countries.

210 Oxfam Briefing Paper Jan 2016 – An Economy for the 1%

Reviewing these trends overall, I believe that, even when we assume the best of intentions, there is not very much for our comfort.

In Australia, and all around the world, it turns out that when it comes to educational inequality, if you're not part of the solution, then you're part of the problem.

7. The unsettling effects of technology

Before we got to articulating the implications of this analysis for educational leadership and action, we need to deal with one last, and vital theme; the place of new technology in the processes of change, and the nature of the educational response.

We are increasingly familiar with the idea that technological innovation is driving many of the changes that are unsettling our world, restructuring our economy by 'disrupting' traditional business models, enabling the mobility of workers and production centres across global markets, and making many traditional skills and organisational processes obsolete.

This is true – and it always has been.

There is a next wave of innovation currently occurring, driven by ICTs and social networking technologies. The possibilities of big data – large scale analytics driven by the automatic collection of personal data and by the billions of data-points generated by the internet of things are also hugely significant. So are the emergent realities of automation, artificial intelligence, virtual and augmented reality.

The list could go on. But I believe the important thing about them is no that these technologies have significant and potentially disruptive implications for our economic and social structure, and also for the focus and organisation of our education systems.

The point is that they do not have any predetermined implications. It is the nature of our collective and systemic responses to these disruptions that will determine their outcomes – the continuous interplay between an emerging technological frontier and the range of cultural, social, institutional and economic ingredients that we can combine in response.

And this has always been true throughout history, especially over the last 500 years as the waves of industrialization, urbanization have intensified, together with innovations in knowledge and institutional design.

The implication of technology-driven change is that work and tasks involving more routine and less judgment tend to be eliminated by the introduction of new standardized and automated routines.

Again, that has always been true, and what is relatively novel in the current wave is that automation may replace and restructure jobs and tasks that have the preserve of professional and white collar workers.

There is a long history within education, of introducing new technology and software applications, with the hope of radically improving the learning process and the effectiveness of schooling organisation, only to find that only

incremental change is achieved, and that costs and complexity have also increased.

The way to avoid this is not to seek out the 'killer app' or the 'disruptive business model' that will somehow turn existing practices upside down, but instead learn how to identify, interpret and cultivate a capacity for *systemic* learning across the networks and organisations that collectively produce education outcomes.

One of the best recent discussions of these issues, economy-wide, is Creating a Learning Society, by Joseph Stiglitz and Bruce Greenwald. Another is learning and innovation in organisations and economies, by Bart Nooteboom.

However, here I want to focus framing the interaction between education and technology-driven economic change, and how to understand the dynamics of income inequality that are created.

In their landmark study, *The Race between education and technology*, Claudia Goldin and Lawrence F Katz offer an empirically grounded perspective on the interactions between technology, education and inequality.

Studying the US economy, comparing and analysing data about occupations, education levels and income, they show that the effects of what they call 'skill-biased technological change' are very different according to the supply and quality of educational opportunities.

Their key conclusion is that, when the supply of educational opportunities keeps pace with the demand for new skills arising from technological change, then the effects on wage premiums are predictable – the benefits of economic growth are spread more widely, and the differentials between people of different levels of education did not grow.

For example, for the period 1910-1930.."…schooling gains among the US-born were more than eleven times more important than immigration in explaining the faster skill supply growth after 1910 and were consequently the major reason for the collapse in the white-collar wage premium from 1910-1930." p320

By contrast,

"Had the relative supply of college workers increased from 1980 to 2005 at the same rate that it had from 1960 to 1980, the college premium, rather than rising, would have fallen. Late in the twentieth century, education lost the race to technology." p321

So in other words, whether or not the effects of technology-induced economic restructuring have the effect of widening income and wealth inequalities, or reducing them, depends fundamentally on the supply and distribution of education, and the growth of skills across the population. Exactly the same as Piketty's conclusion.

8. The unlimited nature of human potential

So can we do that? How can we approach the task, in this world of conflict and fragmentation?

I think we have to start by asserting that the history of humanity, and of technology-induced change, is a history of human ingenuity and potential.

History suggests, though it has many dark twists and reversals, that our capacity for imagination, innovation and adaptation is unlimited. Of course there are constraints, perhaps shaped by the nature of our past evolution, by our natural environment, and by the complexity we now collectively create.

But most importantly, for now, if we look at the history of educational change, I believe we can accept that the human potential for learning consistently goes beyond the institutional categories created by previous generations for the purposes of education.

To illustrate what I mean, let me tell you a story.

Meet Bodrul Hoque, a Londoner of Bangladeshi descent, who I have known for almost twenty years. When I first met him, he was slick-talking 15 year old at a local secondary school in Tower Hamlets, the east London borough where I also grew up. I was, for a period of time, his volunteer mentor. He was bright, popular and engaged young person, but his relationship with education was precarious. His parents had separated when he was 9, and he played a vital role in supporting his disabled mother, who also suffered from mental health problems, and his brother and sister. He was, and is, deeply connected to the networks of his local community.

Bodrul has lived through two decades of intense change in London – a period which as seen dizzying house price increases, large scale migration, intense development of technology and media industries, financial crisis, austerity, war in Iraq, Afghanistan and Syria, and now Britain existing the European Union.

When he left school, he was just on the margins of achieving the results that would have given him a clear academic pathway into higher education and a stable occupation. Though he was never in trouble, he was distracted and uncertain. He started college after high school, and then wavered over what to do. He retained his passionate commitment to voluntary youth and community work, and eventually worked out a pathway through college and a way to become a teaching assistant. For some of those years, he was working 7 days a week to study and support his family.

Ten years after that, Bodrul is the first ever head of a year level at St Paul's Way School in Bow, east London, who is not a teacher. He is a widely recognised and valued member of staff, connected to hundreds of students and dozens of local community partners. He has contributed to collaborative teams supporting

other schools through the London Challenge. Last month he texted me to tell me of the birth of his second child, a daughter.

St Paul's Way Trust is a community school serving students from the Bangladeshi and other migrant communities, as well as other local families. When I grew up in that area in the 1980s, it was a rough, unpopular school with a poor reputation. Now it is widely reputed as an outstanding community school creating excellent lifechances for its highly diverse students. It describes itself as 'the university school in the heart of East London'. Mulberry, a girls secondary school in the same borough, with a similar intake of student backgrounds, achieves equally glorious results and reviews.

These schools are part of a collective shift that has taken place in London education over the last two decades, driven by collaboration and a commitment to the whole community. I'm proud to say that my brother teaches in a primary school located between the two high schools.

St Paul's Way, required by central government legislation to become an academy school separate from local authority control, has decided to join with universities and other partners to become a community-driven trust working across several institutions, not just to offer excellent education, but to design new and better forms of education for the future.

Leaders and professionals from Mulberry school are working not only with fellow inner city schools, but also with rural schools adapting to their own distinctive challenges.

When I recently visited Mulberry school with a fellow Australian educationalist, she came away equally impressed by what she saw and the students we spoke to. As we left, she asked me: "So, is it a private school?" No, I replied. "Oh, is it a specialist academy" No – it's a local community state school, with a non-selective intake. Those schools are part of a continuous story of collaboration to transform individual learning experiences and remake both the educational context in which students learn, and the community context too.

That's just one story, although there is a lot of evidence behind the story of the London Challenge. Bodrul's story is not only story of education, but of family, of community and voluntary effort, of affordable housing, of an innovative career path and of his own individual character. That, for me is all part of the education story that we need to tell.

But what struck me about it, when I was thinking this through, was that I can't tell you an equivalent story about someone I know in Melbourne. I wonder how many of you can?

What is the point? As our societies change, so do our definitions of what a successful educational institution looks like. There is not a single structure, model or protocol that is the best for every circumstance, or that cannot be improved, with learning, over time.

Our institutional designs – the standards of intelligence testing or the ranking system of the ATAR – the ratios of executives and professors to teachers and cleaners, the professional hierarchies or those of research-intensive universities – represent nothing more than the best efforts of past generations of institutional designers. Sometimes they are not even that.

Some of our inherited structures and practices remain in place because they assist the process of continuous adaptation, the need for life to remain ordered, as other things change around us. Others remain in place because they serve and solidify specific groups in our society, who in turn become elites and interest groups able to exert disproportionate power in harvesting the benefits of change.

The evidence supporting the use general intelligence testing. Or early streamlining of school children. Or ATAR as a predictor of success in higher education, let alone in life. Or the use of competitive selection for high school entry.

So, if we want to avoid being overwhelmed and divided by the forces of disruption, if we want to remain true to the principles of equal access and opportunity, to honour the potential of every student, then we must be prepared to look beyond the institutional constraints of our status quo, and share responsibility for re-creating the future.

Let me give you two policy suggestions about ways in which we could do that.

First, rather than allowing education supply to drive house prices and inequality, we should take a much more dynamic and equitable approach to educational investment. Why not hypothecate a percentage of stamp duties from housing sales – or even better, a percentage of a land value tax, to investing in education for communities and students where need is greatest?

Second, we know that experienced and highly skilled teachers in Australia will often end up in schools serving more affluent local communities. Education systems maintain various incentives to encourage teachers to serve in remote, regional and disadvantage locations. But why not recognise and develop professionals who serve in those schools where the need is greatest, by also making sure they get the greatest opportunities for professional learning?

9. The responsibility to lead

In the story that I have told here, education has a formative role in shaping our collective response to the pressures that the world is now confronted with, as well as in forming the individual perspectives and capabilities that carry each of us through our lives.

This does create a dilemma, though. How do we formulate a response that we can act on? Given the connected, continuous, crushing, quality of the challenges, how do we work out where to place our energies and discharge our responsibilities?

My answer to that is simple, but I hope not simplistic. Do what you can, and achieve more by sharing the load.

I also think that we can be more specific about the leadership dilemma that is confronting education as a system, or as a group of institutions and professionals.

I would put that dilemma this way. We can assert the central importance of education, and use it to defend our current institutions against the waves of change and the threats of collapse. But if we stop there, at successfully asserting and incrementally enhancing the institutions we have got, then we will actually be contributing to a deepening of inequality and a worsening of the conditions in which common solutions to much problems now urgently need to be found. Even with the best of intentions, that doesn't strike me as an outcome that any of us would be comfortable with.

A different way of putting the question is, given education's current role of sorting those who are rewarded in our knowledge economy, are we comfortable with educational leadership only serving the interests of those who are already highly educated? Or do we recognise a deeper and broader responsibility?

This is a live question. Remember that Donald Trump, during his stunningly successful primary campaign, when he routed the US political establishment, declared 'I love the poorly educated'. Remember too, that his son in law Jared Kushner, who also become a multi-millionaire through property dealing, went to Harvard.

I propose three basic responsibilities of educational leadership to be fulfilled.

The first is to deepen understanding.

Following Howard Gardner, the Harvard intellectual who has most influenced me, I would argue that the primary purpose of education is not to impart knowledge, or facts, or skills, or qualifications, or relationships, or values, or even jobs and employability.

The primary purpose is to develop understanding.

"…a sufficient grasp of concepts, principles or skills so that one can bring them to bear on new problems and situations, deciding in which ways one's present competences can suffice and in which ways one may require new skills and knowledge."

Understanding involves knowledge and information, concepts and ideas, practical skills and intuitions. But fundamentally, it involves bringing them together, integrating and applying them, in ways that are appropriate to the situation at hand.

The crucial point about it is not just that understanding involves depth and integration of knowledge, but that demonstrating understanding always involves evaluating and deciding how to apply one's own knowledge in a given situation, and what else one might learn. An active, responsible role for the learner is built in.

This is one reason why education for understanding must involve a more diverse range of learning experiences and settings than the standard classroom format.

As Gardner goes on to say,

"Genuine understanding is most likely to emerge, and be apparent to others, if people possess a number of ways of representing knowledge of a concept or skill and move readily back and forth among these forms of knowing." The Unschooled Mind, p13

There are many promising signs that educational practice and policy are moving towards such an approach. The focus on learning for 'mastery' in Singapore and other school systems. The adoption of Education State goals here in Victoria which value scientific literacy, arts, creative and critical thinking, and physical development alongside the fundamental importance of numeracy and literacy.

Northcote High School, a government high school in Melbourne that both my daughters attend, has recently embraced a "Northcote model" which creates varied choices for students in years 9 and 10, in which students have the option to pursue greater breadth and depth in areas of learning that they are passionate or curious about, with a corresponding capacity to align and sequence other units of learning around those interests.

The Northcote model's vision for student learners includes

"…building their own capacity to work independently and collaboratively, recognise and reflect on their own learning, to know themselves as learners and to understand what they are ready to learn next."

The Northcote model is a very positive and promising development: I note that this depth and breadth cannot be pursued in the same ways into years 11 and 12,

for the simple reason that the VCE framework requires a different set of combinations.

That prompts me to make an overarching suggestion in this area: education for understanding will only progress significantly when the required content of the curriculum, and the scope of our existing standardized forms of assessment, are significantly reduced.

This is a task of educational leadership: to explain and advocate for curriculum and assessment which prioritise depth of understanding, and encourage breadth of engagement in learning across the community.

This priority is also consistent with the wider challenge to leadership, of building public understanding, through engagement, of complex and important issues in the world.

The second responsibility of leadership is to build a broader community

All the forces I've discussed so far connect us together and expose us to shared risk, while also creating division by promoting separate, competing identities and forcing us into contests with zero-sum or negative outcomes.

It is a great irony of this era of globalisation, that it encourages greater social diversity and greater exchange of knowledge and culture, while also promoting forms of commerce and organisation which undermine people's capacity to engage with confidence and dignity.

It seems clear, therefore, that another basic responsibility of educational leadership is to build a broader community – to reach outwards, and help to create the norms and relationships that in fact provide the context for civilized exchange; for learning, for democracy, for collective decision-making, for social cohesion and for an innovative economy.

Of course, educational leaders have done this for many generations. But nonetheless, there is a special responsibility now, and it requires going against the grain of the competitive dynamics and hierarchical bureaucracies that still dominate our institutions.

The kind of leadership I have in mind is exemplified by Beverley Hansen, principal of Dandenong West primary school and Marg Batt, recently retired as principal of St Anthony's Noble Park. As we described in our study *The shared work of learning*, these leaders developed an approach which intentionally strengthened social capital and community learning, in tandem with professional collaboration and classroom instruction.

It's an approach that crossed sectoral lines and formed alliances with other institutions like health services, libraries and local employers in an area of great flux, diversity and disadvantage. It's a form of leadership that sets out to develop more widely distributed capacity for collaboration as part of its own. It's not a

coincidence that the examples I've cited are women. But such leaders don't always have to be female.

As employers, religious, media and cultural organisations are transformed, education becomes one of relatively few institutions that can provide a meeting ground for people of very different backgrounds and experiences to come together and learn the practices and norms that will enable them to prosper and thrive.

The third and last basic responsibility is to challenge injustice.

Given the characteristics of education – its long term investment, public or publicly-funded nature, capacity to draw on evidence and deliberation, and respected position in the community, it must be part of the role of educational leadership to identify and challenge injustice.

I don't imply for a moment that there is one view of justice, that there will not be controversies, radical differences, or limits to individual interventions. But that is all part of a process; an open, reasoned, plural process, on which our societies rely. Educational leadership has a vital role to play in identifying injustice and helping to develop formative responses to it.

We can draw on much bigger issues of justice from around the world: the lack of access of children in many countries to basic education and sanitation. Or the issue of racism in contemporary American society. Or the experience and treatment of Aborginal Australians in our country. Or the exploitation of informal and undocumented migrants in the global economy. We have to grapple with all of these and more, and education is there to help us do that.

But we also need to be capable of speaking clearly about our own arrangements. My reflection on that is partly about the progress of the Australian debate about school funding.

For a decade in Australia, an effort has been going on to build a consensus around what an equitable, cost-effective, long term approach to school funding.

Quite a lot of progress has been made in forming that consensus – it's now much much more widely accepted than even two years ago. But on current legislated form, the Commonwealth government is proposing to guarantee four fifths of the agreed standard to every non-government school in Australia, while leaving the far greater number of disadvantaged students in government schools with a resource gap, as defined by the same standard, that will cost billions of dollars to address. The one reason they give for this disparity is that states have responsibility for government schools. Let me put the question in a form that many young people do. How is that fair?

This is part of a pattern that we can now observe over a few cycles, where the consensus can, really, be gradually shifted. But the political and institutional change needed to make the consensus lags far behind. And the parts of the system that benefit disproportionately in the meantime are those that already command the greatest wealth, the best connections, and the loudest voices.

So who is currently speaking out about the inadequacies of this arrangement? The best effort I can find so far is a kind of 'well, you can leave that to the Labor party to fix up'.

Let me say it as clearly as I possibly can. The current system of competitive, selective, secondary schooling, funded simultaneously by both levels of government and by rising private expenditure is economically wasteful, socially harmful, and morally dubious.

I would not deny anybody the fundamental right to choose the type of schooling that they believe is right for their children. But that is a long way from accepting that we should privilege and protect the institutions that dominate and the system dynamics prevailing today.

Australia is simultaneously one of the wealthiest, the best educated, and the most egalitarian, societies in the world. But our position is beginning to slip in all three of those domains, just as the reality of our interdependence with the rest of the planet, begins to dawn on a new generation.

Globally, we are all in a long moment of global uncertainty.

My experiences of learners and young people at different times and different places reinforce my confidence that they can rise to the challenges that our changing world is placing in front of them.

My experience of adult society; of the world of institutions and politics, of negotiations and hierarchies, of compromise and failure, tells me that if we want to honour the promise and commitment that our young people consistently demonstrate, then we must challenge ourselves to go further in remaking the context in which their formative educational experience will occur.

In truth, the possibility of honouring the untapped human potential that our children and young people carry in themselves, should be sufficient motivation to persuade us to act.

But as an additional incentive, there is another, greater reward. If we can be bold enough to embrace that challenge, and humble enough to learn openly from all valid sources of experience, then we have the chance to remake not just the context of our education systems, but the context of our whole societies.

Effectively, we're standing together at global crossroads. We can see the challenge. We don't have all of the solutions, but there are many promising and rewarding avenues through which to seek those solutions. The forces currently acting on our societies will remake them, one way or another.

In conclusion, I'm left with one question. What are we waiting for?

Thank you very much.