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The perfect storm for transforming education

It's a confronting time for a young person to be entering adulthood, and expectations of education to help every student build confidence and capabilities are growing alongside the uncertainty.

The good news is that momentum appears to be building for transformational change – the kind with the potential to help individuals feel equipped for challenges and to find a firmer footing when there is a tug on the rug beneath them.

Predictions of a future we want to avoid

Descriptions of what awaits young people, and is already upon us, are being presented by researchers, data analysts and essayists alike.

Among the findings they have to choose from:

- Almost one in 3 Australian year 12 students participating in the [Generation survey](#) have shared that they were in significant psychological distress.
- [Levels of anxiety and stress among students and teachers](#) are concerning, with general mental health considered to be [declining among youth more broadly](#).
- Socioeconomic precariousness has been [identified by the OECD](#) as a trend shaping education.

Whether the message is delivered emotively, or in a measured tone, it is still grim.

Anthropic's co-founder Dario Amodei, who estimates that 50% of entry level jobs in white collar industries will be 'disrupted' within 5 years, offered this comment in an article on AI in the New Yorker:

'I believe we are entering a right of passage, both turbulent and inevitable, which will test who we are as a species.'

Also in the US, former teacher turned neuroscientist Dr Jared Cooney Horvath described Gen Z as 'the first generation in modern history to underperform (the previous one) on basically every cognitive measure we have – from basic attention, to memory, to literacy, to numeracy, to executive functioning'

And the OECD summed it up in 2025, telling us that young people are 'increasingly anxious about the future' in a report looking at global challenges and transitions, including those prompted by technology and climate change. The report shares:

- More than half of those under 40 across 44 countries reported living from one pay to the next, with little financial ability to deal with emergencies, periods of unemployment, or housing.
- In most OECD countries more than half of those surveyed believe children today will be worse off than their parents when they grow up.

What's happening now in Australia and why

National assessments showing roughly one third of students [are not meeting expectations](#) in literacy and numeracy, and [international assessments](#) showing only 50 to 60% of Australian 15-year-olds are meeting expectations in science, reading and maths, continue to raise the alarm.

Less often reported – but just as concerning – is the finding that a significant proportion of students are between 5 and 6 years behind the most advanced peers in their grade level. It's a gap researchers say is common in many countries.

In response, the Federal Government has established the [Australian Teaching and Learning Commission](#) to spearhead change in schooling, and the [Australian Tertiary Education Commission](#) to reform the tertiary sector, and these bodies are now settling into their briefs.

In early childhood, work by the Australian Council for Educational Research (ACER) is continuing on the [Preschool Outcomes Measure](#) with a focus on executive function, oral language and literacy – areas considered essential to a child's development and foundational learning.

So there's lots going on; the question is, is it enough to transform education?

A deeper issue for students

Researchers call it self-efficacy – the belief that someone has in their own skills and capabilities. It could be called confidence.

Their findings from the Programme for International Student Assessment (PISA) have given us insights into the confidence levels of students and the connection to achievement.

For example, in Australia, [research on creative thinking](#) has shown fewer students from disadvantaged backgrounds than advantaged backgrounds feel confident about addressing social issues like pollution or thinking of many ideas for solving disagreements.

Girls have been shown to be significantly less confident than boys in applying creative thinking to science and innovation.

Other research shows that a strong belief in mathematical abilities has been [linked with](#) embracing problem-solving strategies, and persevering despite difficulties – highly useful skills in uncertain times.

But even in measuring self-efficacy, we see that gap; this [ACER snapshot](#) based on PISA 2022 shows that girls in the highest quarter of belief in their abilities in maths scored 147 points higher than those in the quarter representing the lowest level of belief. The difference ‘was equal to around 7 years of schooling’.

You might say that higher capabilities have led to higher confidence rather than the other way around, but it doesn’t really matter which comes first if you want confident and capable students.

On that note, the following finding shows some students are lacking in confidence at a very fundamental level – one that is likely to influence future achievement.

In a [study on engagement](#) among more than 1,200 Australian students, just 40% of those in primary school strongly agreed they were good learners. At secondary school, only 18% saw themselves this way.

The why and how of transforming education

Professor Geoff Masters AO, former chief executive of ACER, is about to release a book bringing together the evidence and examples supporting a transformative approach to education that ensures no child gets left behind.

It is a significant work that lays out clearly why the author has so ardently held his view that children need to get off the education ‘conveyor belt’ where they move ‘in lockstep’ with their peers into the next prescribed curriculum – regardless of whether they’ve achieved the skills in the previous year to take it on.

The Children We Leave Behind is focussed sharply on the machinery of schooling, and how it can be transformed so that every student can move at their own pace and continue achieving progress.

‘With few exceptions, the central machinery of schooling is built to treat everybody equally and to hold all students in a grade to the same expectations ...,’ Prof. Masters says.

‘Many lack prerequisites for the grade curriculum, struggle and are left behind by time-based grade expectations that become increasingly beyond their reach.

‘Put simply, the curriculum causes them to be taught at the wrong level, sometimes year after year. Not surprisingly, by the middle years, many have disengaged’

The book notes that what is missing in many education systems is

- an understanding of how knowledge is learned and progresses **across** time and year levels, and
- ‘clear, long-term, research-based pathways that students can follow to reach expected standards’.

To go forward, Prof. Masters says, requires changes to the ‘machinery of schooling’ to:

- give teachers more flexibility to help students move on from whatever point they are at in their learning, and
- empower students with greater control over the rate of their learning (which is likely to increase engagement, motivation and performance).

Specifically, what underpins Prof. Masters’ education transformation is an understanding of learning progressions – or descriptions of how learning progresses in learning areas – and a new curriculum.

‘In a redesigned learning system, the frame of reference becomes a long-term road map of learning’, communicating student success not by how much of the grade curriculum they’ve mastered but the level they’ve reached and where they are working now, he says.

How science could lead the way

Crucially, Prof. Masters gives examples of how learning progressions in subject areas can provide a typical path that students might follow **across** their schooling.

He points to Germany, where researchers adopted a ‘long-term perspective’ on science learning. Looking at energy, they described progressions of understanding that could occur across the lower secondary and ‘potentially upper secondary’ years. For matter, one team described learning progressions spanning grades 5 to 12, while another developed progressions for each of energy, matter and chemical reactions spanning grades 9 to 12.

Research in the US has also looked at how students' science understandings mature over time, with learning progressions shaping reforms of not just the science curriculum, but also science teaching and assessment.

The suggestion in the book is that science educators are leading the way because they see learning progressions as drivers of a future where learning is based on developing deeper understanding, rather than being taught and tested on 'bits' of knowledge.

What would a new curriculum look like?

A strength of Prof. Masters' book is the detail he provides on how learning progressions can be used to 'fundamentally change the structure of the curriculum'.

He gives ACER's mathematics learning progression as an example, noting it has 3 content areas and 4 interrelated competencies. Spanning primary and early secondary years, it also provides descriptions of related learning growth covering 12 levels of increasing proficiency.

Where learning progressions have been built into the science curriculum in the US, Prof. Masters outlines in his book, the focus was on core ideas, crosscutting concepts and science and engineering practices.

The book also explores an ambitious curriculum approach, applicable to children's learning from the ages of 3 to 16, that was proposed for Wales and Scotland.

Where are teachers in all this?

According to Prof. Masters, 'meeting students where they are (in their learning) depends on teachers having an expert understanding of the nature of progress in an area of learning as well as effective strategies for promoting progress'.

If we look at the latest [Teaching and Learning International Survey](#) it suggests Australian teachers might be open to the transformation outlined and, if supported with training and an aligned curriculum, highly capable of implementing it.

This is because TALIS shows us:

- A greater proportion of Australian teachers (than on average in OECD countries) have a growth mindset – a belief in every student's ability to grow and progress in their learning.
- More than 80% of lower secondary and primary teachers have a strong belief in their ability to vary strategies for classroom instruction and help every student progress.
- Most primary and lower secondary teachers (in higher rates than the average across the OECD) have collaborated in discussions on the learning development of specific students.

Of course, delivering personalised education places a whole other level of responsibility and demand on teachers, no matter how willing they are.

Prof. Masters argues that the trend of using technology to personalise services could assist teachers in adopting the new approach.

‘The real potential of emerging technology lies in its ability to support a paradigm shift ... to usher in more personalised teaching and learning,’ he says. ‘When aligned with a curriculum roadmap, technology can support teachers in the core tasks of establishing the stage that individuals have reached in their learning, diagnosing and remediating misconceptions and difficulties ... providing tailored learning opportunities that stretch and extend further learning and monitoring students’ long-term learning trajectories.’

Are we ready for transformational change?

There is evidence of an appetite for educational transformation in Australia, and the willingness to undertake it on a system-wide basis.

The belief that every child should be able to continue learning from whatever point they are at, regardless of their year level, was at the core of a significant partnership between a former Northern Territory government and ACER.

Dr John Cleary said of the [transformation’s early success](#): ‘When you’re talking about the most improving system, that means that everywhere, whoever you are, whatever your starting point, that you can improve and you will improve.’

There are also signs of a shift in the culture – from thinking about education as a 3-act play, to acknowledging learning occurs over a lifetime. This may have been assisted by a heightened focus on the early years, and pathways from schooling into further education – areas which can increase understanding of how learning progresses and the importance of removing barriers.

Removing barriers and promoting cohesion between education and the workforce is also a priority for Jobs and Skills Australia (JSA) which is leading work to develop a [National Skills Taxonomy](#) (NST).

JSA has explained: ‘The NST is a shared, evidence-based language for describing the skills Australians gain, develop and use across education and employment systems.

‘By moving beyond job titles and qualifications, the NST puts skills first – making all skills [visible, valued and transferable](#).’

While the shared language is intended for use across vocational education, higher education and the labour market, it would seem those words could be equally useful in thinking about transforming the school system.

If the learning achievements of all students were ‘visible, valued and transferable’ across year levels, the path of lifelong learning might be a smoother one for those students who regularly find themselves diverted into knowledge cul de sacs.

The time is now ...

As an OECD report says of the current climate: ‘These (global) developments challenge education systems to find new ways to support resilience and agility in the face of uncertainty, supporting people in their quest for self-actualisation, while ensuring that the skills they develop are relevant for the future and no one is left behind.’

Clearly the need to do better in education is pressing. The good news in Australia is, we’re in a new cycle of [evaluating the national curriculum](#), the focus on strengthening the teaching profession following the pandemic is still sharp, and new institutions tasked with reform stand at the ready. So it would appear the time is right for transformation.

In fact, it seems to be a perfect storm. All we need now is for educational leaders to generate the wave.

Links you may like to check out:

[The Children We Leave Behind](#) by Geoff Masters can be [pre-ordered](#) from Routledge on April 9. (Readers can get a 20% discount by using this code 26AFly2.)