

Time to change our university graduate expectations by degrees

By Australia's Chief Scientist

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In 2012, Victoria hit a tipping point: 52 per cent of Year 12 school-leavers progressed to university. From that year on a bachelor's degree would be the majority choice, growing in popularity with every new college cohort. It is the mark of an unmistakable national trend: the era of mass tertiary education has arrived.

Higher education providers have been swift to remake their operating models – in the vocational education and training (VET) sector, often to regrettable ends. Australia's universities, by contrast, stand today with their enrolments greatly expanded and their reputations intact.

But if the providers have been swift to change, our expectations have proven resistant. We seem to be amazed at outcomes that are simply the logical extension of the massification message we have embraced.

Consider, for example, the fall in minimum ATAR entry levels observed across institutions and courses. If we recruit more students, it is a mathematical certainty that we will accept students we would have turned away before. Why the surprise? It's just the tenacity of the old expectations.

Then there is the current preoccupation with the growing number of graduates from professional degrees who cannot find linked professional roles.

Again, simple maths: in the mass education era we will have many more graduates competing for the specialist jobs.

Today we produce 15,000 law graduates every year and a legal profession with only 66,000 jobs, thus the odds of a graduate enjoying a long-term career in law are slim.

Only one in twenty economics graduates becomes a professional economist. Medicine is on the verge of oversupply; with similar talk of gluts in teaching and accounting.

So when graduates pivot from professional degrees into other worthy roles, why report it as a great revelation? And if we divert aspiring science students into other fields, what should we recommend – arts, music, accounting, economics?

Of course, there are genuine concerns regarding the preparedness of today's school leavers to enter universities. It is unethical and unfair to lower entry standards too far in order to achieve the recruitment targets of the university. Equally important, it would be wrong to lower exit standards, because we have a responsibility to give graduates something of value in exchange for years of work and possibly decades in debt.

But let's start by acknowledging how much of our thinking is still limited by the old instincts.

It is time to recognize that it is not a failure to progress to a job that has no obvious link to one's degree. In the mass education era, the capacity to pivot is probably the most reliable predictor of success.

Why do so many more jobs require tertiary credentials today than in the past? A modern economy, increasingly centred on services, demands workers with excellent analytical and communications skills. Skills acquired through a science, technology, engineering and mathematics (STEM) degree happen to be extremely useful for complex problem-solving in a technology-rich world.

However, it is worth noting that when analysts suggest that 75 per cent of new jobs will require STEM skills they do not necessarily mean the depth of expertise that comes from a bachelor's degree. They mean proficiency at using technology for daily tasks, which graduates from arts, law, medicine and indeed all degrees will need to display.

In short: STEM skills are needed for traditionally non-STEM jobs. And the idea that STEM graduates should do *only* STEM jobs is irrational. Think tanks, take note.

No-one should interpret this complex picture as a reduction in the value of undergraduate training. Universities have never turned out graduates who are 'job-ready' – robots ready to slot into the workplace.

Their value proposition is to produce graduates who are 'job-capable' – experts in their disciplines with the foundations of workplace skills.

Engineering students need to learn computational mathematics. Other skills such as communication, teamwork and project management must also be taught, but these workplace attributes will be honed year after year on the job.

Having mastered a discipline once, at university, it is not as difficult to do it a second time, on the job. I was trained as an electrical engineer, but my first working career was as a neuroscientist. It was an unconventional progression that might not have had an obvious link to my degree, but it was the first of several pivots that worked for me.

It is time for the narrative to change, in fairness to our graduates and in anticipation of the national needs. Let's abandon the historical expectation that degrees and careers should be tightly linked. Instead, let's unchain our thinking and embrace the opportunities.