

## **Education must play long game built on consistency**

**By Australia's Chief Scientist  
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*Australian Financial Review, 26 October 2015*

We are regularly told that the Australian economy has to change; to be less dependent on natural resources and more dependent on the talents and skills of our people.

There is no reason we can't change it. We can work out what we want Australia to be, and we can shape all the pieces so that they fit together to help us achieve our aspiration. Ends accomplished through means.

Too often, in my view, we seem to think that the pieces are the end game – the economy, for example, or the sundry policies that may or may not cohere. Higher education (and science) is a case in point.

I was first appointed a university deputy vice-chancellor in 1985, moving close enough to the sharp end to have to think about these things. Since then we have had 18 federal science ministers and 23 ministers for education and higher education.

Over those 30 years, the average tenure for a science minister has been almost exactly two years. But for the past five ministers, the average dropped to just under ten months.

And in the five years since I've had this job the average tenure for education ministers has been just over one year – less than one third the time it takes for a typical undergraduate degree, and a fraction of a research program.

Each of the ministers had views, opinions, and aspirations. Not all the same; not always pursued with the same vigour. But they were the ministers and they all had influence.

We need careful change recognising the long game, with the change shaped to fit with the other pieces. We need change built on a consistent core, using the best of the past as a platform. We don't need change designed to leave an immediate imprint and little else.

We need leaders who remind us that we can always do better – and they should also remind us to guard core values – especially as we change. And we will because we respect them; they underpin a respectable, tolerant and genuinely prosperous society – sustained even as it changes, and constantly enriched by new knowledge and ideas.

### **PEOPLE WITH IMAGINATION**

One of our challenges in education is to prepare graduates for today, and today's workforce, while at the same time building their capacity to cope with the unpredictable future. This year's graduates could still be in the workforce in five decades' time.

We need graduates who will be curious, nimble and not constrained by the narrow confines of the particular discipline they focus on today. Graduates who will see opportunity in challenge, and be quick to react. Graduates who understand the value of values. People with imagination.

If we want a knowledge-based economy, or one in which all our various talents and skills are used, every one of us needs to be capable of working in it, and we will need encouragement to build it.

So to grow the pie, and share the pie, we need a first-rate comprehensive system of education. One where the links between the levels are smooth – escalators rather than elevators. One that encourages curiosity, salutes achievement and recognises that a sound education will open multiple doors to future effort. It will encourage people to walk through those doors.

It will generate ideas and we will develop the talent, skills, and the will, to use them. It will help us develop our research capability, through which will come new and better ways of doing things, and new and better products to take to markets.

Australia is not presently regarded as a leading entrepreneurial economy; but we are not short of well-regarded universities, research credentials, or talented people.

A report that I commissioned and will release in the coming days on entrepreneurship compares our education system with those of countries that do better. It seems that most put an emphasis on entrepreneurship early in the school curriculum, and extend it into university-based programs. They appear to know that leaving it to the universities alone, important as they are, would be like putting icing on a brick and pretending that it's a Christmas cake.

The trick, it seems, is not just to give students content knowledge in the important disciplines that they will need, but to develop a parallel objective to encourage and reward imagination. As Carl Sagan once said: *Imagination will often carry us to worlds that never were, but without it we go nowhere.* But he also said: *every kid starts out as a natural born scientist until we beat it out of them...*

When we think about education and its critical role in Australia's future, we must think for the long-term, comprehensively, carefully and with imagination.

*On Tuesday, Professor Ian Chubb will deliver a speech at the 2015 AFR Higher Education Summit, and that evening, he will receive the inaugural Lifetime Achievement Award in Higher Education at the summit dinner. He is Chief Scientist of Australia.*