



FRONT OF THE CLASS

It's taken years but teaching innovation is now on the political agenda as crucial to Australia's economic survival. **Geoffrey Maslen** reports.

Mark Twain famously said that everyone talks about the weather but no-one does anything about it. The same could be true of innovation in Australia: a lot of people talk an awful lot about it but is anything being done? And more specifically, what is being done in Australia's education sector to both foster and teach innovative thinking.

Nearly six years ago, the federal government jointly sponsored a national innovation summit in Melbourne. The summit attracted more than 550 delegates from business, industry, government and higher education - including a dozen vice-chancellors - and was marked by a pervasive spirit of goodwill and consensus.

The result was a series of sweeping proposals, but the calls to double spending on education over the following 10 years, boost research and development, increase the R&D tax concession for industry, and create a national innovation institute drew no immediate government reaction.

Despite the rhetoric, there was a silence that lasted more than a year until just prior to the 2001 election, when the government promised a \$3 billion injection over five years for Australia's research and development efforts. Vice-chancellors were ecstatic, saying the government had done what they had hoped it would do and responded comprehensively to the challenges posed by the summit.

"Crucially, the government has heeded the message that Australia's innovation capacity can only be developed in a sustainable way if it is built on a firm foundation of broadly-based education and research," said the then president of the Australian Vice-chancellors' Committee, Professor Ian Chubb.

But critics pointed out that after the Coalition's election in 1996, the government had slashed \$1 billion from spending on higher education and that the latest announcement actually gave universities much less than that proclaimed by the Prime Minister.

Indeed, of the \$3 billion offered, \$34 million was to go to school students, \$151 million was for creating more tertiary places, \$115 million was for tax concessions for business while \$995 million was to be allocated in the form of loans to postgraduate students.

NIAS to know

Still, it was a start, although another three years passed before the government finally took up another of the summit's recommendations - establishing a national innovation council. The council was created to provide advice on building an innovative culture in Australia and in November 2004 it launched an innovation website as part of the Commonwealth's National Innovation Awareness Strategy (NIAS).

The strategy is intended to promote the benefits of innovation and identify programs that will assist individuals and businesses. A \$14 million scheme under the government's Backing Australia's Ability initiative, NIAS aims to help build a culture that appreciates and rewards innovation and entrepreneurship.

One of its programs provides grants to tertiary and higher education institutions to run business plan competitions. The intention is to give students hands-on entrepreneurial experience and encourage them to explore the option of running their own businesses, rather than working for someone else after graduation. So far, NIAS has held eight

competition rounds with funding going to more than 50 institutions. RMIT University was commissioned to investigate the impact these business plan competitions have had. It concluded the effect on new business development and in promoting entrepreneurial skills in Australia had been substantial.

“Fresh Innovators” is another NIAS-funded national event where 16 early-career innovators are selected from research institutes, universities, government research laboratories, the CSIRO and private companies and put in the public spotlight.

So things have been happening, even if more slowly than the summit leaders had hoped. Ask Google for innovation websites in Australia and nearly 2 million are listed. Try education and innovation, and 750,000 turn up; check schooling and innovation, and 496,000 are available.

Educating innovators

Numerous government-commissioned reports refer enthusiastically to the need for an educated, innovative workforce. A committee of top educators, set up in 2003 to review teaching and teacher education, concluded that sustained innovation was the key to future growth and prosperity in a competitive global economy. “Building a culture of continuous innovation through education is an essential requirement, parallel to and supporting research and development,” the committee said in its report. “Innovation in the knowledge economy is not confined to a small group

Swinburne’s entrepreneurial approach

The Swinburne University of Technology in Melbourne was the first in Australia to set up an Australian Graduate School of Entrepreneurship whose specific focus is on innovation and entrepreneurship. The AGSE is an applied management school targeted at those wanting to build or develop enterprises.

Among its courses, the AGSE offers masters and PhD degrees in entrepreneurship and innovation. The masters program has various levels beginning with a graduate certificate and going on to a graduate diploma before running into the degree.

“This program has been developed for people who intend to start new, innovative businesses or play a leading role in an innovative unit of an established organisation,” an AGSE spokesman says.

“The core of the program provides the theoretical and practical skills required to produce a comprehensive business plan integrating marketing, organisational behaviour and financial planning via a flexible corporate strategy.”

Swinburne’s PhD students are undertaking studies into the commercialisation of Australian research, government policy on the development and performance of small manufacturing businesses, factors influencing strategic alliances in high-tech industries and “evaluating the value of training investment”.

of specialists. It must be supported by a highly educated workforce and citizenry. Schools have a major role. So too do families, businesses and the wider community.” As the committee pointed out, innovation and a culture of innovation have similar resonance in education as in industry, employment and social affairs in that it is through continuing systematic inquiry, research and well analysed practice that knowledge for practical application is generated.

It is increasingly through the systematic application of new knowledge and creative ideas that innovations of practical value are generated, the committee declared. And it is the “new knowledge” innovations that will in future underpin employment, economic growth, social development and people’s well-being.

In its report, the committee made a series of recommendations about the need to improve the teaching of mathematics, science and technology in schools, to reshape the curriculum in schools and teacher training courses, and to attract more graduates with mathematics and science degrees into teaching.

Again, the government has been slow to react but meanwhile, universities have responded to a demand from students, entrepreneurs and small business groups by setting up courses to aid innovation. They include:

- Swinburne University of Technology was the first to establish a graduate school of entrepreneurship [see box “Swinburne’s entrepreneurial approach”]
- The Australian National University runs programs on commercialisation of technology, entrepreneurship and new venture planning. ANU’s law faculty also offers courses in topics such as managing and commercialising intellectual property rights, patents and related rights, and registered trademarks.
- The University of New South Wales enrolls students interested in obtaining a diploma in innovation management.
- The University of Queensland has a range of courses on such subjects as biotechnology venture management and marketing technology. A bio-entrepreneurship and innovation development course provides help with ways of exploiting new biotechnology research.
- The University of Adelaide has established an education centre for innovation and technology commercialisation. The centre’s mission is to assist key research institutions, industry and individuals with advice on innovation and the commercialisation of knowledge, research and technology, as well as management of projects.
- Also in Adelaide, the South Australian Enterprise Workshop runs an intensive entrepreneurial skills program for people wanting to take their career or business further by harnessing the skills behind entrepreneurial achievers. The SAEW is managed by successful entrepreneurs who work with selected industry-specific mentors.
- RMIT University runs a bachelor of business degree in entrepreneurship. This is described as a “practical action-oriented degree program in entrepreneurship aimed at developing the student’s enterprising capabilities, knowledge and confidence, helping to identify opportunities and create and build his or her own ventures”.
- Curtin University of Technology in Perth has created a highly innovative unit called “Curtin Advantage”. This is a working model company with all relevant departments and divisions that exist in a real multi-tiered business environment. The only difference is that the employees are Curtin students and young people from the community who volunteer their time in return for experience in the field of their choice. The students are coached and directed by Curtin staff and mentored by volunteers from industry and government.

Finally, private organisations have also begun to realise the business potential not just in being innovative but in promoting it. In Perth, one group of entrepreneurs has set up the Applied Innovation Centre, a research-based organisation established to assist organisations become more innovative “as a means to improve competitiveness, efficiency, growth, effectiveness and profits”. The centre offers a range of innovation-related services that include consulting, education and training, research and innovation coaching. Says

managing director Sebastian Salicru, in today’s economy, only innovation can provide the competitive advantage that leads to significant growth and business success. He says that companies now have to face the reality that the strategies and tactics they used during the 1990s to drive share price and earnings have largely run out of steam or reached their natural limits.

“Cost cutting and staff reductions have their limits, creative accounting is harder to get away with, mergers and acquisitions are harder to find, and so on. What remains for most organisations to create above average growth and earnings is real innovation.”

He says the centre’s research in Western Australia confirms the results of international studies showing that while most senior executives endorse the need for innovation, they find this difficult to implement, for a variety of reasons. These include the prevailing corporate culture, risk aversion, short-term focus on the bottom line, capital allocation policies, being too busy and the perceived inability to measure progress and outcomes.

Paying lip-service

“Innovation means different things to different people,” he says. “There is a lack of understanding about what creativity and innovation means in business. When we started just on two years ago, we interviewed the CEOs of some big organisations and asked what was meant by their corporate value statements that included creativity and innovation.

“It was clear these items were there just because they looked good - the reality is that when you drill down and look at the strategies they had in place, few had anything serious.”

Salicru says that universities look at innovation from a technological point of view but that this is too narrow: “We see it as a more holistic approach to organisational innovation. That is why we’ve developed the Australian creativity innovation business framework so a company can address innovation not just from the research and development aspect but from the people, processes, culture, the climate ...”

Major companies that have sought the centre’s advice include Wesfarmers and Woodside Petroleum, as have government departments such as WA Main Roads. But government organisations are often risk averse, Salicru says, and are very cautious about being innovative, whereas people working in private enterprise tend to be “risk-takers” who are interested in radical innovation. He quotes the work of Richard Florida, the Carnegie Mellon University professor of regional economics who wrote “The Rise of the Creative Class”. Based on Florida’s “creativity and innovation index”, Australia comes 18th out of 20 countries.

“Most managers in Australia still see innovation as the province of technology and creativity as the province of artists,” Salicru says. “That’s why we are in trouble. There’s a lack of understanding in education - who gets taught about creativity at school or even in universities? I think Australia needs a shake-up.”

GEOFFREY MASLEN is a former industrial chemist and teacher who now writes on education for newspapers and magazines around the world.

