

Innovation and creativity: a workforce for the new economy

Submission to the Standing Committee on Education and Employment's inquiry

The Standing Committee on Education and Employment has initiated an inquiry into how best to facilitate and coordinate investment in research, commercialisation and skills to promote new and emerging industries work that will contribute to progressing the Commonwealth government's National Innovation and Science Agenda (NISA).

In order to identify the opportunities and barriers to be overcome if Australian industry is to develop the culture, capital, talent and skills it needs to remain competitive, the inquiry is looking at two key issues:

- The capacity of Australia's education providers to offer the qualifications and skills needed to meet the needs of Australia's new and emerging industries; and
- The relationships between tertiary education entrepreneurship programs and private incubators and the factors that may discourage closer partnerships between small and medium sized enterprises, the research sector and education providers.

Scope of the submission

This submission, from Claire Field and Associates, examines barriers and opportunities related to the first issue. In doing so, it considers issues related to the inquiry's first and second Terms of Reference:

1. The extent to which students are graduating with the skills needed for the jobs of today and of the future; and
2. Matters relating to laws and regulations that may act as a barrier to education providers being able to offer qualifications that meet the needs of the new economy and fastest growing sectors.

The NISA recognises the important role of higher education and schooling in building Australia's innovation capacity, and directs funding to initiatives in these areas. Strategies to boost Australia's innovation capacity will *also* require the government to take account of the vital role played by the vocational education and training (VET) sector in delivering the qualifications and skills of the future. The barriers and opportunities identified in this submission are relevant to Australia's tertiary education sector more broadly, however the focus of the submission is on the VET sector.

Current issues in the VET sector and their impact on innovation

The last eighteen months have been a challenging time for the Australian VET sector, with major pressure on and changes to the VET policy and regulatory environment at both the Commonwealth and state levels. Even more disappointingly, when looked at through a longer lens, the VET sector has gone through constant and often contradictory change for more than two decades. The impact of such frequent, and often ill-thought through change, severely inhibits training provider business planning and decision making in both the public and private sectors. This in turn makes it much more difficult to successfully deliver on 'business as usual', let alone prepare learners for the innovative, creative jobs of the future.

In the past year the Commonwealth has introduced several iterations of legislative and regulatory amendments seeking to rein in excesses by a small number of providers exploiting serious gaps in the administration and monitoring of the government-run student loan scheme (VET FEE-HELP), which has seen unscrupulous providers offering over-priced, sub-standard courses, enrolling non-genuine students, and offering outlandish student inducements.

While there are a number of positives in the changes which have been introduced to the VET FEE-HELP scheme that will help to protect students, the introduction of caps on the revenues providers can earn (based solely on their 2015 activity) serves to limit flexibility and even modest growth by reputable providers looking to offer more innovative training. Instead the changes cement the market dominance of the 20 largest providers (who collectively earned 76% of all VET FEE-HELP revenues in 2014), five of whom have closed or are under serious investigation and some of whom have put revenue growth ahead of learner need (as evidenced by the recent ASQA strategic audit findings). While some of the government's statements have inferred that the VET FEE-HELP funding caps will only apply in 2016, elsewhere in their documentation it is clear that the caps are intended as a long-term 'solution'.² Implementing these funding caps in the way they are currently designed has been destructive enough on innovation within the system; leaving them in place threatens to derail Australia's ability to successfully transition the economy to the innovative, agile future articulated in broad terms by the Prime Minister and explicitly in the NISA.

At the same time that these changes to the VET FEE-HELP system are being implemented, further changes to the scheme in the form of a 'fundamental redesign' are being planned for implementation from 2017.³ Across the broader VET system, the Commonwealth is planning even more changes, as outlined in the recently released *Quality of assessment in vocational education and training: Discussion Paper*, which details potentially radical changes to assessment in VET to enhance quality and integrity in the system.⁴

In recent weeks, the Commonwealth has also introduced new Skills Service Organisations into the VET system, to develop 'modern and relevant' Training Packages. The five SSOs (and three currently continuing Industry Skills Councils) will be directed in their industry advice on skills issues by an additional 60-plus Industry Reference Committees. How this new level of bureaucracy will deal with one of the most fundamental problems affecting the training system (the unnecessary complexity of Training Packages) is unclear.

At the same time that all of these changes are underway, yet more reform is likely when the next Commonwealth-State funding agreement is finalised (always assuming that the Commonwealth does not succeed in its aim to take control of the entire VET system). Either option will deliver further change – it is only the extent of the change that is currently unknown.

¹ <http://www.asqa.gov.au/about/strategy/strategy-reviews/targeted-audit-of-vet-fee-help-providers-2015.htm>

² In its 'Questions and Answers for VET FEE-HELP providers' document, the Department makes the following statement "The Department's intended enhancements to IT systems to be able to provide systematic alerts to providers when they reach a certain percentage of the r cap." (text is from the answer to question number 33 in the document which does not include page numbers). <https://docs.education.gov.au/system/files/doc/other/faqs-20jan2016.pdf> It is understood that the IT changes are not due for implementation until January 2017.

³ <https://www.education.gov.au/vet-fee-help-reforms>

⁴ <https://docs.education.gov.au/system/files/doc/other/2016-02-08-quality-of-assessment-in-vet-discussion-paper-jan-2016.pdf>

At the State level providers are also trying to successfully navigate serious, systemic change. In September last year, the Mackenzie Review⁵ issued its final report on how the government can rein in abuses of the Victorian Training Guarantee (the state's training entitlement scheme under the National Partnership) and reform the system for a more sustainable future. The Victorian government has yet to provide a detailed response to Mackenzie's 109 recommendations. It is expected in the first half of 2016, with implementation of the final changes from 2017.

In the largest state, New South Wales, there have been similar design and redesign issues with their VET funding approach. While NSW has successfully avoided the cost blowouts and misuse of funding evident in the Commonwealth and Victorian schemes, the changes introduced in NSW instead resulted in such restrictive practices being placed on providers that 30,000 fewer students enrolled in the first year of the *Smart and Skilled* scheme.⁶ The NSW government has recognised the limitations of its approach and changes have been made to improve the flexibility and contestability of the scheme. Further changes are planned.

Ensuring a high quality training system that is efficient and effective in delivering the skills the economy needs is vital to Australia's ongoing prosperity.

No one argues that governments don't need to take action against unscrupulous and poor quality providers and to tighten up lax funding rules, or that systems can't be improved or shouldn't be changed. However, at the same time that new rules and regulations are constantly being implemented and major governance changes are being made to the sector, it is almost impossible for providers to systemically introduce successful programs to deliver the innovative and creative workers Australia needs now and in the future.

While the Committee will no doubt hear during its inquiry of case studies of providers who have introduced innovative new approaches, the challenge the sector faces is moving from one-off examples of good practice in delivering skills for the future, to a systemic approach that will foster innovation across the board, instead of forcing providers to weather the endless and often unnecessary reforms which bedevil the Australian VET system.

The jobs of the future and the skills students are currently graduating with

Hundreds of thousands of Australians enter the workforce or change jobs and industries every year, and need training to help them to gain their first job, upskill or prepare for career change. In addition, in the short to medium term, Australia's population growth, and a spike in the numbers of school age children, will increase demand for education and training services.

Future demand for skills is intrinsically linked to the future of the Australian economy and broader society. Australia's changing demographics and employment patterns – and those occurring globally – mean that the tertiary education sector, and particularly the training sector, must be able to keep pace with changing skills needs.

The Department of Employment provides regular updates on Australian employment trends. Its latest projections cover the five-year period to November 2020. Of the 19 major industries that make up the Australian economy, these projections indicate that only three – agriculture, forestry and fishing, mining, and manufacturing – are likely to experience an overall decline in employment,

⁵ http://www.education.vic.gov.au/about/department/Pages/vetfund_response.aspx

⁶ <http://www.smh.com.au/nsw/nsw-state-budget-2015-tafe-reforms-halt-students-hard-20150622-ghudj.htm>

and that decline is expected to be relatively modest (9,400 jobs in agriculture, forestry and fishing, 45,700 jobs in manufacturing 27,500 of which will result from the closure of car manufacturing plants and 31,900 in mining).

The remaining 16 major industries are expected to contribute over one million additional jobs in the next five years, with the highest growth expected in:

- Health care and social services (16.4% employment growth to 2020 or 250,200 additional jobs)
- Professional, scientific and technical services (14.8% growth, 151,200 jobs)
- Education and training (13% growth, 121,700 jobs)
- Retail trade (8.4% growth, 106,000 jobs).
- Accommodation and food services (12% growth, 98,800 jobs), and
- Construction (8.3% growth, 87,000 jobs)

The challenge for the Australian VET sector is to continue to meet the needs of workers in these key industries and at the same time to ensure it delivers the skills needed for new and emerging employment opportunities.

As the Committee notes, Australia's international competitiveness requires us to develop our capacity in new and emerging industries such as: medical research and biotechnology, software development, clean energy, agri-business, food processing, finance, and tourism.

Beyond science and technology skills

While it is to be expected that many submissions to the inquiry will focus on the need for more science and technology graduates (and indeed this is an explicit focus of the NISA), it is also important to recognise the important role of the non-science and technology workforce in developing and diffusing innovations.

In a literature review on workforce skills and innovation for the OECD, Toner⁷ notes that innovation is not the sole province of science and technology, and in fact "a key concept employed in these studies is the notion of 'incremental' innovation or gradual improvements in goods, services and organisational structures which improve the performance or expand the range of applications for existing technologies. The accumulation of these gradual improvements over time and across an entire economy accounts for much of the productivity growth and dynamism in capitalist societies." (p.8)

Toner's review also identifies that there is no 'simple or unambiguous' connection between a particular innovation and the demand for skills, and that skills and knowledge are both an input to and an output of innovation. Looking specifically at the role of VET in innovation, Toner finds that the quality of skills has a 'profound impact' on productivity, quality and innovation. He notes that "the UK government in particular has acknowledged the adverse effect that an inadequate training rate and variable quality of vocational training has on the UK innovation system." (p.61)

Entrepreneurship

In other work at the OECD, focussed on the link between education and innovation; while the need for more science and technology graduates is noted, the growing prevalence of specific programmes

⁷ Toner, // //P. (2011), work ng paper "Workforce Sk s and Innovat on: An Overv ew of Major Themes n the L terature", *OECD Education Working Papers*, No. 55, OECD Pub sh ng, Paris.
DOI: <http://dx.do .org/10.1787/5kgk6hpnhxzq-en>

for entrepreneurship education and “entrepreneurial skills”⁸ are also identified as being crucial for innovation.

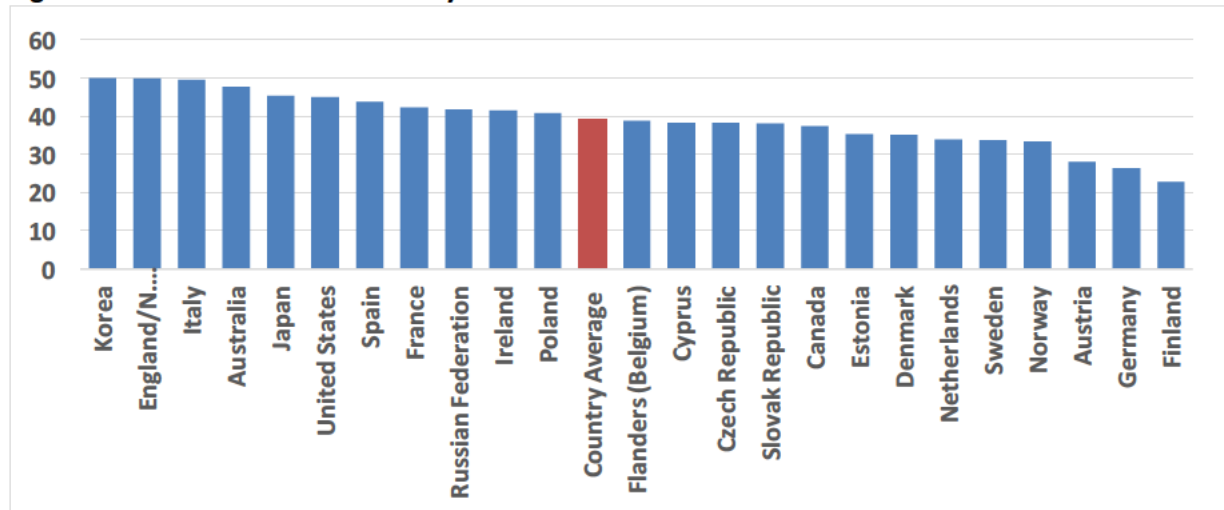
While the Inquiry’s fourth term of reference seeks advice on “relationships between tertiary education entrepreneurship programs and private incubator and accelerators” in the VET sector the nature and constraint of Training Packages mean very little emphasis is placed on entrepreneurship. Encouraging entrepreneurship programs in VET, and linking them to private incubators and accelerators, will thus be crucial.

Transferable skills

In Australia the development of transferable, generic skills is also important in ensuring VET graduates can adapt as the world of work changes. Despite the alarming reports saying that half of all Australian jobs are at risk from digital disruption in the future⁹, and that approximately 70% of young people are getting their first jobs in roles that will either look very different or be completely lost in the next 10 to 15 years due to automation,¹⁰ the truth is that we cannot confidently crystal ball gaze and decide today what skills students will need a decade hence, let alone over the course of their career.

Fortunately the evidence suggests that we do not need to panic just yet. The reality is that, despite the VET system containing nearly 2,500 different qualifications, this highly siloed system still produces graduates able to work across industries other than those they trained for. In fact, Australia has one of the strongest levels of ‘field of study mismatch’ across the OECD with nearly half of all workers employed in jobs outside the field of study they were enrolled in for their highest level qualification, see Figure 1. Rather than this being the problem it is often painted as, what this demonstrates is that there is already a surprisingly high degree of flexibility and transferability of skills built into the Australian tertiary system.

Figure 1: Prevalence of field-of-study mismatch across OECD countries¹¹



⁸ <http://www.oecd.org/st/outlook/e-outlook/stop-cyproff-es/humanresources/strengtheneducationforinnovation.htm>

⁹ Pricewaterhouse Coopers, 2015, *A smart move: Future-proofing Australia’s workforce by growing skills in science, technology, engineering and maths (STEM)* <http://www.pwc.com.au/stem.htm>

¹⁰ <http://www.acara.edu.au/verve/resources/fya-future-of-work-report-fna-r.pdf>

¹¹ Montt, G. (2015), “The causes and consequences of field-of-study mismatch: An analysis using PIAAC”, *OECD Social, Employment and Migration Working Papers*, No. 167, OECD Publishing, Paris. <http://dx.doi.org/10.1787/5jrxm4dhv9r2-en>

Recommendations

1. The implementation of the NISA must recognise the legitimate role of VET in the future innovation of the Australian economy.
2. The funding caps on VET FEE-HELP providers must be urgently reviewed and more appropriate measures put in place for those providers outside the Top 20 with a strong record of quality delivery.
3. Governments must cease introducing unremitting changes across the VET sector. Policy stability (beyond a single year or a three-year funding agreement) must be the key focus of future policy makers.²
4. Innovation requires more than simply more STEM graduates. The future focus of Australia's tertiary system must be on more flexible and creative education systems delivering more STEM and non-STEM graduates.
5. VET is hampered in its ability to foster entrepreneurship and engage its learners in entrepreneurship programs. The development and implementation of entrepreneurship skills for VET students (which can be integrated into learning across a range of industry areas) is crucial.
6. VET policymakers and the SSOs/ISCs must continue to focus on the importance of generic and transferable skills to ensure graduates have the flexibility to work in new industries and occupations.

Laws and regulations in the system which inhibit providers in delivering the skills the economy needs

In 2008 the OECD completed a review of VET in Australia. At that time, they made a number of common sense recommendations which are summarised below. Disappointingly, implementation has been patchy and crucial recommendations have been ignored.

1. Clarifying responsibilities for VET – the Commonwealth and the States should agree common principles for VET funding and provision and aim for a much greater degree of administrative consistency.
 - a. **Progress: No progress has been made to reduce complexity and clarify responsibilities**, in fact, if anything the system has got more, not less, complex since the review. While a driver behind the Commonwealth's intent to take over responsibility for VET is the desire to reduce complexity in the system, the lack of confidence the States have in the Commonwealth, mean that this is unlikely to be a short-term solution. Instead reducing complexity must be the central aim of the next Commonwealth-State funding agreement.
2. Funding reform – students should have access to free study up to and including Certificate three and then a HECS-type loan scheme should apply for higher level study.
 - a. **Progress:** This recommendation has mostly been introduced but not without major differences in design and implementation across States, uneven access to support for Certificate IV level study, and major problems in the administration of the VET FEE-HELP scheme.

¹² Some policymakers will argue that changes must be made when policies not being delivered as planned (e.g. to stop misuses of funding regimes). More time spent on developing the evidence base for policies *and* the implementation of successful VET policies to be introduced successfully, and for VET to remain relevant and not be overtaken by disrupted as other industries are (see below).

3. Making the market work for VET students who are entitled to government funding should be able to choose VET providers and increased competition should be accompanied by measures designed to ensure that a good range of provision is accessible to all, including disadvantaged groups, that better information is available to potential students on the quality of providers, and that different types of providers can compete on a fair basis
Progress: The implementation of a contestable market with little focus on the quality of provision and access to information on provider performance has severely distorted VET provision.
4. Planned provision and skills forecasts the OECD recommended a move away from central planning of the system given the unreliability of skills forecasting and a shift instead to student demand and employer willingness to fund workplace training.
Progress: Regrettably in the design of the training entitlement systems at the state level and in the existing worker traineeship incentives offered at the Commonwealth level far too little emphasis has been placed on designing a system which encourages employers to fund the training of their own workers.
5. Putting VET data to work the OECD recommended that a broader range of quality and outcome data at the provider level should be developed and made available.
Progress: Eight years after the review almost no public VET data exists at the provider level, and what data there is available is usually more than 12 months out of date and accessible only to insiders who 'know where to look' (eg the VET FEE-HELP provider level data is hidden many pages into the Department of Education's website and is not available on the *My Skills* website nor is other provider level data available on the *My Skills* site).
6. Improving the apprenticeship system the OECD commended Australia for its competency based approach and urged further reforms to improve flexibility in the length of apprenticeships, cost benefit analysis of apprenticeships and future reforms, as well as integration of apprentices into more productive work at an earlier point in their apprenticeships.
Progress: Regrettably despite the evidence base for the most recent reforms to apprenticeships, numbers in training continue to fall as a result of the level of funding available to support apprenticeships and the impact of design flaws in the States' training entitlement systems.
7. Reforming training packages the OECD urged that Training Packages should be replaced by simple and much briefer statements of skills standards, and that consistency in standards throughout Australia should be achieved through a common assessment procedure to determine whether the necessary skills have been acquired.
Progress: No progress has been made in this regard, in fact (as per the data below) Training Packages have become *much* more complex.
8. Investing in the VET teacher and trainer workforce while the OECD noted the benefits of trainers working part-time in VET and part-time in industry, they also recommended strategies to sustain the numbers and skills of the teacher and trainer labour force, and stated that better data on VET teachers and trainers should be systematically collected, published and used for planning and evaluation purposes.
Progress: no progress has been made on these recommendations.

While there is a need to be ever vigilant about the quality of VET and to make improvements to VET funding and policy, if Australia continues to introduce serious reforms without a strong evidence base, and to value complexity of regulation and additional red-tape for all providers in order to deal with the gross behaviour of a few, we run the risk of making the system too hard for most users. If the current approaches continue, not only will it be impossible for providers to introduce systematic responses to innovation, but an increasingly complicated and ever changing VET system will in turn

make accredited VET courses and qualifications less and less relevant to employers and communities.

The fact that eight years after its review, there has been only piecemeal implementation of the OECD's recommendations is damning. The fact that many VET officials currently designing and redesigning different parts of the system do not remember the review is even more worrying.

By way of example, rather than reducing the complexity of Training Packages, since the review the system has contrived to make them significantly *more* complex. Consider just two examples:

- In 2006 the Manufacturing Training Package contained eight qualifications and ran to 763 pages. The current version now contains 12 current and 8 superseded qualifications (ie 20 in total) and runs to 5,370 pages.
- In 2004, the Business Services Training Package contained 64 qualifications and ran to 4,257 pages. Just over a decade later, two additional qualifications have been added along with more than 1,000 extra pages.

While some will say that this growing complexity is one of the reasons behind the need to shift from Industry Skills Councils to the new Skills Service Organisations, the reality is that there is nothing in the current reforms that identifies the complexity of Training Packages as an issue to be addressed. Furthermore, many of the additional details introduced into Training Packages over the last decade have come about because of government requirements, not at the whim of the relevant ISC.

If we do not get the laws and regulations for the VET sector right, and if we do not stop the endless cycle of reforms at both the Commonwealth and State levels, then we run the risk of serious disruption to the sector, and the emergence of a thriving non-accredited training system as employers and learners 'go their own way'.

Writing recently in Vox, Alexander Holt has published a think piece imagining himself as Jeff Bezos, the CEO of Amazon, reflecting fifteen years hence on the success of 'Amazon University'. Holt admits that he's not sure that Amazon is looking to set up as a competitor to existing universities and colleges, but he points out a number of signs that they are already advanced in this space. These indicators include: Career Choice, a benefit for Amazon employees that pays 95% of their tuition costs in courses in 'in-demand fields' irrespective of whether the skills are needed at Amazon. Amazon now runs these Career Choice classes on site. In 2013 Amazon moved to certify the skills of their webservices employees, allowing the company to more easily train and hire workers with the specific skills needed by Amazon to run their IT infrastructure. Also in 2013, an Amazon subsidiary, Zappos, developed a range of competency based 'badges' to allow employees to learn and demonstrate the skills they have. From these underpinnings, Holt's article outlines the additional steps Amazon would need to take to make their current in-house education and training a competitor to established providers.³

Amazon is not alone in going outside the formal sector and setting up their own training and certification schemes to ensure that they, as employers, get the workers with the skills they need. The education start-up Udacity has partnered with leading technology companies to create online 'nanodegrees' recognised by Google, AT&T, and other companies as relevant workplace certification. The US\$1.5 billion purchase of the online learning website Lynda.com by LinkedIn is a further example of leading companies looking beyond the formal education sector for ways to teach and recognise job-specific skills people in employment need. At the same time, employers like

¹³ <http://www.vox.com/2016/1/27/10835038/amazon-h-gher-educat-on>

Penguin Random House and leading professional services firms like EY and PricewaterhouseCoopers have stopped requiring new employees to hold tertiary qualifications, because they have identified that professional success is not reliant on these qualifications.

What the shift to training by companies like Amazon, and the move away from requiring tertiary qualifications by companies like PricewaterhouseCoopers, tells us clearly is that the disruptors are already in the early stages of changing the way training is not only delivered, but recognised.

Recommendations

7. Policymakers must go back to the 2008 OECD review of VET in Australia and act on the recommendations made. The recommendations should form the basis of the next Commonwealth-State funding agreement.
8. Training Package simplification should be the number one priority for SSOs and the three remaining ISCs.
9. Governments must adapt in their approach to funding and regulating the VET sector (and particularly through the introduction of funding certainty for providers and students and risk-based, proportionate regulation) or it will remain ripe for serious disruption.

Summary

VET is crucial to the Australian economy and to millions of Australian's life chances. Too often lip-service is paid to that reality and governments continue to prioritise school and university education at the cost of VET, as the NISA does.

The VET sector is at breaking point as a result of ill-thought through, rushed and constant changes having been made to the sector over the past twenty-plus years.

Industry, employers, and students are likely to leave the formal VET system behind if the government cannot deliver on a training sector that:

- includes a greater focus on entrepreneurship
- reduces complexity
- delivers more transparent information on provider performance
- responds to current and emerging industry needs, and
- includes efficient and effective monitoring and oversight (the characteristics vital for confidence in the system).

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