



Research messages 2017

National Centre for Vocational Education Research

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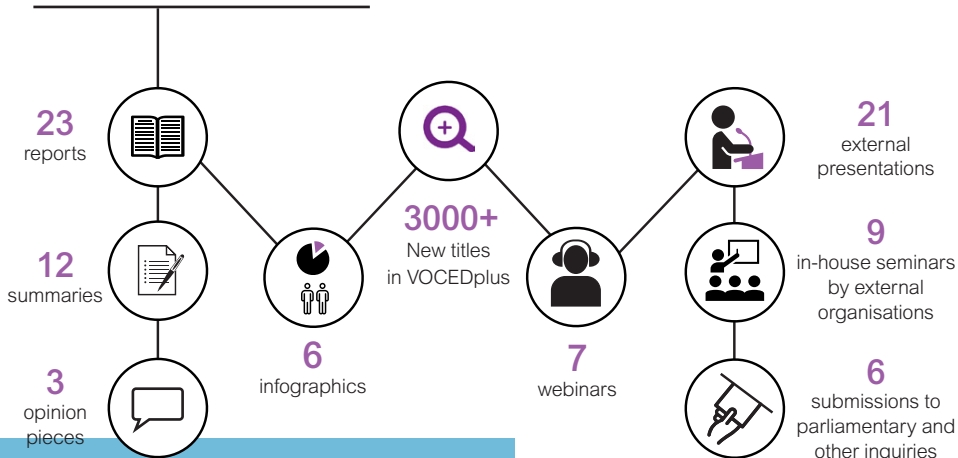
Introduction

Research messages 2017 brings together research publicly released by the National Centre for Vocational Education Research (NCVER) over the year. The 2017 compilation reflects an extensive collection of NCVER research activities undertaken during 2017, comprising reports, summaries, infographics, occasional papers, presentations and webinars.

NCVER is an independent national body responsible for collecting, managing, analysing and communicating vocational education and training (VET) research and statistics. The NCVER research program aims to contribute to improvement in VET policy and practice for government, training and industry organisations. NCVER research products strive to harness the power of integrated data and analytics that provide comprehensive insights to inform and influence the VET sector.

NCVER's research program is continually evolving to adapt to changing expectations and needs of stakeholders and to produce cutting-edge and innovative research to support VET sector policy and practice. The research program directed and commissioned under the *Research prospectus 2015–16* (available at <<https://www.ncver.edu.au/ncver-research-prospectus-2015.pdf>>) neared completion during 2017, making it a transitional year in this regard. Research published during 2017 encompasses a wide range of themes and topics, which reflects this transition. In addition, the sourcing, prioritising and commissioning of research from 2017 and onwards is now implemented under, and research topics determined through, a Skills Senior Officials Network (SSON) Research Working Group. This further strengthens the integration of data, evidence, research and outcomes to inform national VET policy.

2017 research activity



Key research areas: 2017 onwards



Structures and systems for skilling and learning

Examining the impact of policy, institutional, funding and market frameworks on the provision of education and training

The VET system in Australia is going through a period of rapid change, moving from being predominantly government-funded to a demand-driven market. Moreover, the future skills and jobs landscape continues to evolve, blurring the boundaries between higher education and VET, making it imperative that VET systems and structures are well placed for learning and training. Key research focus areas within this topic include governance, training markets, models for skill development and funding, compliance and regulation, measuring outcomes, partnerships, apprenticeships and traineeships, international systems of skilling and learning and comparisons with Australia, and accredited and non-accredited training.



The impact of vocational education and training

Ensuring individuals and employers get the highest return on investment in education and training

Understanding the return on investment (ROI) in education and training helps individuals and enterprises to determine changes in the employability of workers following training or to provide a measure of productivity improvements within firms. For governments, it provides crucial information on the performance and justification for public expenditure. The VET sector continues to serve a dynamic and diverse group, including early school leavers, disadvantaged students, and increasingly, mature students. Primary areas of research in this category aim to capture relevant issues including, economic and social outcomes, the future of employment, learner diversity and trends, social cohesion and foundation skills.



Teaching and learning

Understanding the needs of learners to ensure meaningful engagement with the education system and examining what works to ensure quality of outcomes across teaching and learning models, assessment and reporting

The journey from education and training to employment is not a linear or straightforward pathway. The shifting boundaries between traditional sectors of education provision (such as schools, VET and higher education) and the ‘casualisation’ of labour markets, add to the complexity and multi-dimensional nature of these transitions. Individuals may access the VET system at different points in their lives for a variety of different reasons. It is therefore important that the teaching, learning and assessment practices within the VET sector are meeting their needs. NCVET research priorities in this category include student aspirations and choice, outcomes, pathways and transitions, VET workforce, pedagogy, assessment and workplace learning.

Conferences, forums and webinars

During 2017, NCVER provided a number of other opportunities to discuss and disseminate research via conferences, tailored discussion forums and a series of webinars.

'No Frills' 2017

Co-hosted with TasTAFE, the *26th National Vocational Education and Training Research Conference 'No Frills'* was held in Hobart on 5–7 July 2017. The conference theme, *Skilling for tomorrow*, highlighted research across three sub-themes: explore, translate and evolve. Drawing out points relevant to the themes and to set the scene, the NCVER discussion paper *Skilling for tomorrow* (see page 38), which provides a summary of research and discussion on the future world of work, was circulated to 220 attendees prior to the conference.

Higher apprenticeships forum

NCVER hosted the *Higher apprenticeships: opportunities and barriers forum* in Melbourne on 31 August 2017 to help inform a commissioned project of the same name. Attended by 22 industry representatives, a key component of the project was to engage with a wide range of stakeholders with a vested interest in the VET sector, in particular apprenticeships, to discuss and gain insight into the potential value that higher apprenticeships could provide to the employee and employer, as well as the roles of policy-makers and training providers. The forum involved discussion on various elements of international approaches and the perceived value and feasibility for different industries.

Webinars

NCVER hosted webinars on a broad range of topics relevant to the tertiary education and training sector. Recorded webinars are available on the NCVER Portal. See page 60 for an overview of topics presented during 2017.

VOCEDplus

In 2017, over 3000 new titles were added to VOCEDplus <<http://www.voced.edu.au>>, NCVER's free international research database for tertiary education relating to workforce needs, skills development, and social inclusion. This brings the current collection to over 76 000 items, which was accessed by over 250 000 people from 219 different countries over the year.

The Pod Network

VOCEDplus' Pod Network <<http://www.voced.edu.au/pod-network>>, which provides a single entry point to a suite of up-to-date information on a range of topics, was launched in 2016. With an initial release of 10 Pods and a selection of Podlets (smaller Pods that focus on more specific topics), the full network of 20 Pods and 76 Podlets was completed in June 2017. The Pods were also enhanced over the year with the addition of new features, including:

- author profiles, which detail the research of authors who specialise in the subject area of the Pod
- embedded tweets, which show real-time Pod-related tweets from key organisations and researchers.



Structures and systems for skilling and learning





Are we all speaking the same language? Understanding 'quality' in the VET sector

Tabatha Griffin

Quality in vocational education and training (VET) is a perennial topic of interest, attracting much attention from participants, providers, funders, regulators and public commentators. Quality is as much subjectively in the 'eye of the beholder' as it is objectively assessed through hard data, measures and surveys. This paper summarises the quality of the VET system in Australia from the lens point of the eye of the beholder. It considers the perspectives of five key stakeholder groups: learners, employers/industry, providers, government and regulators. The paper explores, from the perspective of each of these groups, what is important in regards to the VET system, what constitutes and promotes a good-quality VET system, and what are the enablers and barriers to having a system that meets their expectations. The paper then examines the usefulness of the measures of quality currently available, as well as approaches that might be more effective.

Key messages

- Quality is context- and purpose-specific and means different things to the five stakeholder groups. For students it is obtaining skills to get a job, or a better job; for employers it is staff with workplace skills; for providers it is optimal outcomes for all clients, along with provider reputation and viability; and for regulators it is all providers meeting and exceeding national standards. The common ground for all, including for governments and funders, is that learners are provided with the skills they are training for.
- These multiple perspectives on quality operate at differing levels – at the training program, at employment outcomes and at higher systemic levels. This makes explaining and measuring quality deceptively difficult: it does not simply involve interpretation of data and measures to produce widely available and understood market intelligence. Based on experience and perception, quality is also highly subjective and either drives or erodes reputation and overall trust, at all levels.
- Effective, fair and prompt regulation is foundational and essential in removing poor quality training from the system. The advice to emerge from the present review of the *National Vocational Education and Training Regulator Act 2011* is expected to strengthen this essential cornerstone of VET quality.
- A number of enabling factors have the potential to either support or detract from VET quality. These factors may impact both objective measures and subjective views of quality. Such factors include:
 - integrity and quality of course assessments
 - professional qualifications and experience of trainers

- clear, trusted and relevant-to-purpose information with ease of access for all VET stakeholders
- quality and frequency of VET data collection, to allow pertinent systems and performance information to be published closer to real time, thus increasing its value
- the complexity of VET market structures, in both providers and training products, which, at a systems level, has the capacity to risk informational, operational and administrative overburden.

A companion piece to this paper, *Factors that drive RTO performance: an overview*, is available at <<https://www.ncver.edu.au>>. It reviews the substantial work on performance indicators and drivers of registered training organisation performance and suggests areas where future research might be focused.



Australian apprenticeships: trends, challenges and future opportunities for dealing with Industry 4.0

Phil Loveder

The Australian economy is in transition. Its future prosperity will depend on greater economic diversification and on innovation and entrepreneurship, hallmarks of Industry 4.0. This has implications for skills development for future workers and for those needing to move into new jobs or roles. It also has a direct impact on apprenticeships – an enduring and well-respected feature of Australia’s skill-development landscape. It is concerning then that overall apprenticeship commencements and completions have been declining.

What impact does Industry 4.0 have on the future of Australian apprenticeships? This paper was presented to the 4th KRIVET International Apprenticeships conference in Seoul, Korea, 28th September, 2017, and explores the challenges and constraints in the capacity of the Australian system of apprenticeships to respond adequately to Industry 4.0. It also covers directions in government policy, and the opportunities to create change found within industries and the training system itself.



The boundaries and connections between the VET and higher education sectors: 'confused, contested and collaborative'

Dr Craig Fowler

Internationally, Australia's tertiary education system, comprising the higher education and vocational education and training (VET) sectors, is highly regarded, with both sectors subject to ongoing national review and reforms. This paper explores in detail the multiple issues that lie at what might be termed the 'boundaries and connections' between these sectors.

One marker that delineates the sectoral boundaries is the Australian Qualifications Framework (AQF), in particular AQF level 5 (VET diploma) and AQF level 6 (associate degree/advanced diploma). VET diplomas sit on one side of this boundary, and those financed under the previous VET FEE-HELP program (to be replaced by the new VET Student Loans program) have recently attracted considerable public scrutiny.

The conditions for the operation of the tertiary education system, especially the boundaries and connections between the VET and higher education sectors, are set by national and state/territory policies, embodied in regulations, programs and funding. In exploring the multiple issues that have evolved at the sectoral boundaries and connections, this paper highlights examples that have eroded clear differentiation between the sectors, as well as their mutual value within a coherent tertiary education system. The present situation has been caused by a combination of: differing sector-specific national policies and agreements; differing sectoral financing/funding; and differing sectoral legislation, regulation and standards, as well as overlapping qualification frameworks and different standards for courses and qualifications.

Key messages

- VET participation is declining in relation to higher education participation as a consequence of policy and funding reforms that have travelled along 'different tracks' over the last six to eight years.
- The boundaries and connections between the sectors present examples of significant confusion and of considerable inter-institutional contest, as well as willing collaboration. In aggregate, this imposes an unquantifiable national cost burden.
- The establishment of student 'loans', spanning VET diplomas to degrees, has, by design or not, reset higher education and VET sector policy, program and funding boundaries.
- From the perspective of students, the ability to pick and mix the best from university and vocational education and training, be it skilling, academic study or work experience, can only be beneficial to the needs of employers and to students' future jobs.
- Policy and incentives need to ensure the equitable funding of mid-level professionals, including, for example, associate degrees and higher apprenticeships.
- Improving and systematising cross-sector transfer arrangements for students is a priority, supported by use of common data standards and a system-wide unique student identifier (utilising existing sectoral numbering).



The changing nature of apprenticeships: 1996-2016

Jo Hargreaves, John Stanwick, Peta Skujins

Reforms to the apprenticeship system over the past 20 years have focused on broadening and enhancing the system to benefit both apprentices and employers.

The purpose of this research summary is to provide evidence of change during this time, with a focus on measures that have facilitated more flexibility in the system; for example, initiatives to encourage the growth of adult apprentices - aged 25 years and over - and alternative training models. A comparison between trade and non-trade apprentices is also included.

An accompanying interactive infographic, which enables you to filter data, is available at <https://www.ncver.edu.au/data/data/infographics/changing-nature-of-apprenticeships-1996-2016-infographic>.

Highlights

- Adult apprentices now represent a significant proportion of all apprentices in training, with 28% in the trades and 45% in the non-trades compared with 8% and 22% respectively, 20 years ago.
- For the first time since 1996, a decline in the number of non-trade apprentices has resulted in the proportion of trade and non-trade apprentices converging, across both age groups, but more so for the younger group.
- The increasing prevalence of and support for alternative models of apprenticeship delivery, in particular, the proportion of adult apprentices completing a trade apprenticeship in two years or fewer, has increased markedly over time, from around 28% in 1996 to over 50% in 2016.
- Adult trade apprentice completion rates have steadily increased over time, while younger trade apprentice completion rates are on a slow but steady decline.

The changing nature of apprenticeships: 1996–2016

Infographic supporting the research summary

The purpose of the research summary, *The changing nature of apprenticeships: 1996–2016* is to provide evidence of change in the apprenticeship system over a period of time. The focus is on measures facilitating more flexibility in the system, such as the growth of adult apprentices and alternative training models.

This infographic presents the data from the research summary in an interactive way, allowing for easier comparison between trade and non-trade apprentices by age groups (15–24 years and 25–64 years).

Explanations on trends can be found in the research summary. In addition a timeline of major policy changes affecting apprenticeships and traineeships in Australia from 1901 to 2016 is included at the bottom of the infographic.

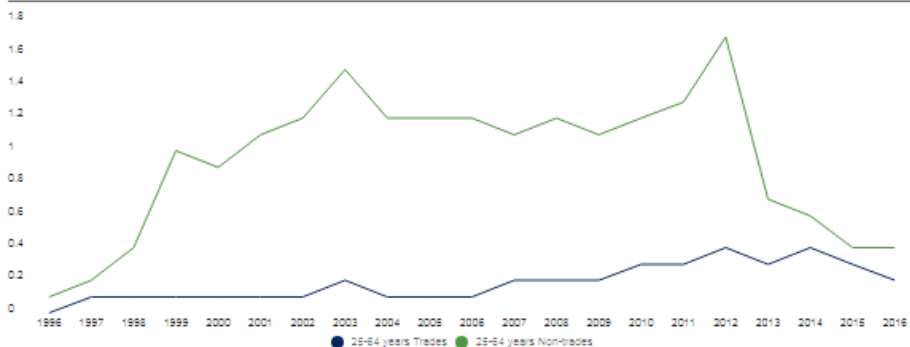
Readers may also be interested in: ["Historical time series of apprenticeships and traineeships in Australia"](#), which provides an interactive overview of the number of apprentice and trainee commencements and completions from 1963 to 2016, together with the specific economic and labour market contexts and the number of trade and non-trade commencements and completions from 1995 to 2016.

Apprenticeship and traineeship commencement rates by trade/non-trade occupations for 15 to 24-year-olds, 1996–2016 (%)



Note: Commencements are based on financial year starting from July 1996 – June 1996 and ending with July 2015 – June 2016. The rate is expressed as commencements as a proportion of the 15 to 24-year-old labour force.

Apprenticeship and traineeship commencement rates by trade/non-trade occupations for 25 to 64-year-olds, 1996–2016 (%)



Note: Commencements are based on financial year starting from July 1996 – June 1996 and ending with July 2015 – June 2016. The rate is expressed as commencements as a proportion of the 25 to 64-year-old labour force.

The full, interactive infographic is available on our Portal, at:
<https://www.ncver.edu.au/data/data/infographics/changing-nature-of-apprenticeships-1996-2016-infographic>



Continuity and change: employers' training practices and partnerships with training providers

Erica Smith, Andrew Smith, Jacqueline Tuck, Victor Callan

A number of factors influence the motivations of employers to train their workforce and the ways in which they engage with the training system. This study combines a national survey and interviews with Australian employers and registered training organisations (RTOs) to provide a comprehensive picture of the way in which employers navigate the Australian training system and how partnerships with RTOs are established. The study also provides insight into how practices have evolved over the last 20 years.

Key messages

- Despite changes to the business and vocational training policy environments, the reasons why employers train their employees have altered only slightly over the past 20 years.
- There is an enhanced focus on quality and partnerships, with the following main changes:
 - The role of the training function and training staff in organisations seems to be more proactive than previously, with training staff now having direct relationships with external providers of training.
 - The take-up of nationally recognised training appears not to have increased substantially, but this type of training is being used in more diverse and flexible ways; for example, support for skill sets over national qualifications.
 - The nature of the partnerships between RTOs and employers has changed from a relationship based on fee-for-service provision to one based on long-term mutual collaboration.
- The main reasons why employers train their employees are: to improve the quality of goods and services because of new technology; as a business strategy; and to meet licensing and workplace health and safety requirements.
- Employers want to provide more training for their employees but are constrained by the time it takes and the financial resources required.
- Partnerships between industry and RTOs bring a range of benefits to both parties, but the financial benefits to RTOs are generally quite modest.
- Employers use both TAFE (technical and further education) and private RTOs as their main source of information about vocational education and training (VET) and increasingly use them as 'navigators' of the VET sector in collaborative partnerships.

The research clearly shows that nationally recognised training is valuable to employers and has many 'spin-off' effects. It confirmed recent directions by governments to encourage the use of such training. The redeveloped models described in this report may aid future planning and policy by governments in relation to employer training and partnerships between RTOs and industry.



Developing and sustaining successful partnerships between employers and training providers: good practice guide

NCVER

The nature of partnerships between public and private registered training organisations (RTOs) and employers has changed over time, from a relationship primarily based on provision of particular services to one based on longer-term mutual collaborations.

RTOs work directly with employers to help meet a range of business needs and provide expert guidance to the employer in navigating the vocational education and training (VET) system. RTOs are a significant and important source of information for employers on nationally recognised training.

This good practice guide provides insights into developing and sustaining successful partnerships and identifies the potential benefits and challenges of these partnerships. It provides valuable information for both training providers and employers seeking to establish or strengthen a partnership arrangement.

The findings are based on an extensive research project with employers and training providers: *Continuity and change: employers' training practices and partnerships with training providers* by Erica Smith, Andy Smith and Jacqueline Tuck from Federation University and Victor Callan from the University of Queensland. In the study, surveys of employers and of RTOs were carried out, augmented by sets of matched-pair interviews with both parties engaged in employer-RTO partnerships.



Evolution not revolution: views on training products reform

Francesca Beddie, Jo Hargreaves, Georgina Atkinson

At the request of the Council of Australian Governments (COAG) Industry Skills Council (ISC) and the Skills Senior Officials Network (SSON), a National Training Product Reform Group, comprising representatives from all of the jurisdictions, considered the longer-term reform of training products. This exercise, conducted during 2016, aimed to ensure that training products remain relevant and support skills development, in the face of technology, jobs and industry change. The role of the National Centre for Vocational Education Research (NCVER) was to convene a group of thought leaders to consider the challenges and opportunities for the reform of training products.

NCVER commissioned three essays to inform discussion at a symposium, held on 9 August 2016. The 60 or so symposium participants considered training product reform from the perspective of industry, educators, students and regulators. Their views are captured in this summary, which was prepared to assist the reform group. The areas of agreement are presented in the key messages that follow. The points of difference, about how to balance the various interests represented in the system, were also raised. This task will require deft negotiation to avoid the introduction of further complexity into training products, given that all participants agreed that training product simplification must be an essential goal of reform.

Key messages

- An industry-led training products framework remains a cornerstone of the national training system.
- Training products should:
 - establish occupational standards
 - enhance the capacity of learners to enquire and analyse
 - support dialogue between industry and educators
 - enable effective regulation to support training quality
 - encourage lifelong learner involvement and empowerment in the development of skills and knowledge.
- Reform efforts should aim to preserve the effective aspects of the current training products while also looking to the future. These efforts should concentrate on the fundamentals:
 - high-level national industry standards, along with educational standards
 - educator and industry involvement in design and delivery.

- Training products should reinforce principles for partnerships between industry and educators, as well as across education sectors, supporting more agile review and the efficient update of training products.
- For people with educational disadvantages, VET training products shouldn't be differentiated, but the learners should receive tailored support. They may be better assisted outside the current framework of training products.
- Testing initiatives before implementing wholesale reform was generally viewed as the best approach, with pilots and trials seen as good ways to further inform the design of the training product system.



The future of Australian apprenticeships: report of the stakeholder forum

Margo Couldrey, Phil Loveder

The forum was attended by over 60 key stakeholders from across the vocational education and training (VET) sector, including representation from the business community, industry peak bodies, unions, training providers, government agencies, and VET researchers.

Discussions were structured around three main themes: benefits and value; attraction; and, retention and completion. To encourage informed debate, NCVER commissioned three discussion-starter essays which were provided to participants prior to the forum. Participants considered apprenticeship reform from the perspective of industry, educators, policy makers, career professionals and unions. Their wide ranging views are captured in this summary report.

Key messages

- The core of the apprenticeship model continues to be highly relevant in today's modern economy. However, the system and architecture surrounding the model, including funding and regulatory arrangements, were described as complex, inconsistent and confusing. This is particularly so for national employers, despite long efforts to harmonise and streamline them.
- There is an identified need for a continued focus on the employment relationship in training, particularly the integration of on- and off-the-job training, and the strengthening need for the tri-partite involvement and commitment of the employer, apprentice and training provider.
- A significant opportunity and challenge exists as to how the whole of the VET sector can work together to raise the profile of apprenticeships and the reputation of vocational careers and pathways. This includes applying new thinking as to how to effectively reach and inform the key influencers for young people – parents, career professionals and classroom teachers.
- There is a continued and growing need for in-depth and contemporary data and research analytics that will provide improved understanding of the reasons apprentices and employers are attracted, or not, to apprenticeships and why they chose to stay in or leave the system. It was recognised that there could be significant value in recommissioning the 2010 Apprentice and Trainee Destinations Survey.
- Extending the concept of apprenticeships to higher-level qualifications, such as diploma and associate degrees, was seen as a logical progression of the model to meet the needs of the fourth wave of industrial development and to ensure we are preparing for the skilled workforce of tomorrow.
- Investigating strategies for engaging small enterprises more holistically in the apprenticeship system, and identifying how widely the support services offered through the Australian Apprenticeship Support Network and third party intermediaries are recognised and utilised.



Identifying work skills: international approaches

Gitta Siekmann, Dr Craig Fowler

The digital revolution and automation are accelerating changes in the labour market and in workplace skills, changes that are further affected by fluctuations in international and regional economic cycles and employment opportunity. These factors pose a universal policy challenge for all advanced economies and governments. In the workplace, people seek to acquire contemporary and relevant skills to gain employment and retain transferable skills to maintain employment.

The central purpose of this paper is to investigate how other nations or regions are dealing with these issues. What approaches are they taking to understanding the mix and dynamics of the skills attained by individuals and, more broadly, the totality of skills that in aggregate constitute a highly capable and adaptable labour force, one that supports firm viability and greater national productivity.

This research has examined a range of initiatives and approaches being developed or in use in selected countries, including the United States, Singapore and New Zealand, and agencies/organisations; for example, the European Commission and the Skills for the Information Age Foundation. In doing so, it showcases the good practices used to ensure that occupational-level skills information remains current and widely accessible.

- International practice is moving to establish and maintain a more dynamic inventory of job-specific skills, with these organised, classified and interrelated by means of a practical skills taxonomy, and set within a coherent skills information framework. Such a categorisation is more detailed than qualifications and occupational titles; these are poor proxies and become outdated by comparison with the real-time skills needed and performed in workplaces. Well-integrated and well-organised skills intelligence is becoming increasingly useful to multiple end-users for many different purposes.
- Policies to reduce skills imbalances and prepare for future skills in demand can be more successful if they are underpinned by accurate and timely information about skills needs. A good practice approach to this issue is a comprehensive skills framework, into which a variety of data are integrated, including up-to-date information directly sourced from workers and employers, complemented by, for example, online job-vacancy data analyses.

This paper, as well as the companion case studies of both international best practice and evolving practice, provides content upon which to reflect on current Australian approaches. These issues appear to deserve separate and wider public discussion. As a preliminary and debatable observation, Australia has multiple and valuable skills information resources and existing repositories, although their full potential remains unrealised, given the lack of an integrating skills framework of the ambition, scope and complexity of other nations.



VET applied research: driving VET's role in the innovation system

Francesca Beddie, Linda Simon

Innovation has become an increasingly important concept for Australian businesses in enabling them to continue to compete in an international market, but where does vocational education and training (VET) sit in this?

To date, VET has been largely overlooked by the National Innovation and Science Agenda as a potential contributor in this field. This research investigates how and in what way VET can contribute to the innovation system. The answer, the authors suggest, is through VET applied research.

Key messages

- There is an opportunity for the VET sector to be a contributor to the innovation system through an applied research agenda. In this context, applied research refers to research with a focus on solving real-world problems. Through its ties to industry, VET can play a role in translating this knowledge to the workforce.
- Registered training organisations (RTOs) do not need to start from scratch to be involved in the innovation agenda: they can build on their existing business models to develop innovation within industries. Other possibilities include capitalising on their infrastructure, expertise and community connections or hosting innovation hubs or enterprise incubators.
- Many practitioners already possess the skills relevant to applied research projects, but these need to be further developed, either by practising them or by undertaking professional development. The proposed VET applied research developmental framework can help to determine the additional skills needed.

Independently of this work, the House of Representatives has recently released its report on innovation and creativity (*Innovation and Creativity – Inquiry into innovation and creativity: workforce for the new economy*), and some of its recommendations relate to specific elements of this research, in particular:

- expanding the National Innovation and Science Agenda to include the VET sector (Recommendation 16)
- adopting elements of the Canadian Applied Research and Innovation Services model to strengthen connections between VET providers and small- and medium-sized enterprises (Recommendation 29).

The accompanying documents to this research, *Developing VET applied research: steps towards enhancing VET's role in the innovation system* and *Explaining the VET applied research developmental framework*, provide further insights into how the VET sector can be involved in applied research and the capabilities required.



Developing VET applied research: steps towards enhancing VET's role in the innovation system

Francesca Beddie, Linda Simon

This guide suggests ways the vocational education and training (VET) sector can develop an applied research capability to help secure its place in Australia's innovation system. It is based on a project examining VET applied research, which also created a development framework for VET applied research capabilities.

The overall benefits of an improved applied research capability for different players in the VET system are highlighted below.

Registered training organisations (RTOs)

- Greater evidence base for strategic planning and quality assurance.
- More sophisticated partnerships with industry, the community and other research organisations.
- More employable graduates.
- New income streams.

Educators

- Effective ways to maintain industry currency, improve teaching and develop capabilities and qualifications.
- Opportunities for promotion.
- Job satisfaction.

Students

- Additional capabilities and attributes, such as creative thinking, project management and presentation skills.
- Real-world experience and industry contacts.

Employers

- New research and problem-solving partnerships, sometimes with inexpensive student engagement.
- Mechanisms to allow for risk taking and experimentation that suit the business in terms of cost and timeframes.
- Opportunities for recruitment of a greater diversity of talent.
- Ways to bring new ideas into business operations and commercial endeavours.

System-wide

- Wider dissemination of innovation ideas in the real world and more potential for commercialisation.
- Improved VET graduates, with an innovation mindset.
- Better use of public infrastructure.
- Stronger place-based innovation.



Explaining the VET applied research developmental framework

Linda Simon, Francesca Beddie

This document explains the VET Applied Research Developmental Framework, created as part of a project that explored how the vocational education and training (VET) sector could broaden its engagement in Australia's research and development (R&D) and innovation systems. Achieving this engagement will rely significantly on building the capabilities of VET educators and other professionals to undertake applied research and manage innovation projects.

The sort of research we are talking about has a strong focus on solving real-world problems in industry. Such activity can create new knowledge, and/or use existing knowledge in new and creative ways; it can also contribute to the development of 'specialist pedagogy for industry expertise',¹ an important element in building a workforce capable of innovation.

Our project has concluded that a distinguishing characteristic of applied research in VET is the sector's potential to bring together research and innovation, with the dual aims of investigating industry's problems and bringing about change in the workplace. While research and innovation are not synonymous, the skills required to create and diffuse knowledge overlap. Both call for inquiry, reflective practice, communication and collaboration. These facets of activity underpin the framework and are explained below.

Another feature of VET applied research is the close link between research and efforts to improve VET pedagogy. These endeavours can lead to innovative thinking, new teaching practices and training products, and ultimately more creative graduates.

1 Corbel, C, Wheelahan, L, Forward, P & Darwin, S 2014, Building future capabilities for vocational education: why high-level teaching qualifications matter for TAFE teachers, Australian Education Union, Southbank, viewed 16 April 2017, <<http://www.aeufederal.org.au/application/files/9214/4538/1999/BuildingFutureCapabilities2014.pdf>>.

VET provider market structures: registered training organisations

This infographic presents a summary of registered training organisations (RTOs) in the Australian vocational education and training (VET) system from 1988 to 2016. Using data on training organisation registrations, it analyses the number of RTOs entering and leaving the nationally accredited system.

This data has been collated and supplied by training.gov.au and covers registrations with current regulators (including Australian Skills Quality Authority; Victorian Registration and Qualifications Authority; and Western Australia's Training Accreditation Council), and former regulators (including ACT Department of Education and Training; Queensland Department of Education, Training and Employment; NSW Vocational Education and Accreditation Board; NT Department of Education; Tasmanian Qualifications Authority; SA Department of Further Education, Employment, Science and Technology).¹

This infographic is a companion to the [VET provider market structures: history, growth and change report](#). It contains updated and more extensive data. For further analysis and explanation, please consult the report. It is also supplemented by the infographic, [VET provider market structures: students and enrolments](#), which analyses how students and enrolments are distributed across the providers in the system.

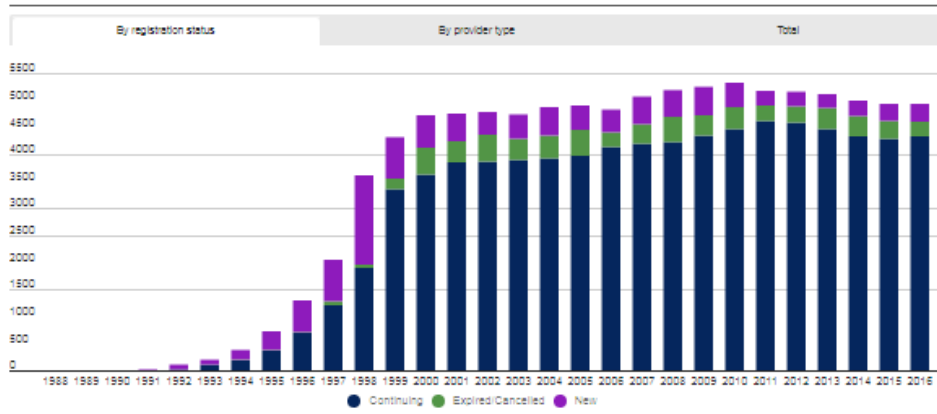
Total number of registered training organisations

The total number of training organisations registered in each year includes training organisations who registered during the year, those whose registration expired or cancelled during the year, and continuing providers (i.e. those who had registered in a previous year and were registered for the whole year).

The total number of RTOs peaked in 2010 at 6314 and the number of expiries/cancellations peaked in 2002 at 496. The number of private providers peaked in 2010 at 3874 and the number of other providers peaked in 2000 at 1610.

The increase in registrations in the late 1990s is in part a consequence of the implementation of the National Training Framework (underpinned by the Australian Recognition Framework) in 1996. Providers had to be registered to deliver nationally accredited training, whereas previously the registration process applied mainly to private training organisations (ANTA 1997). It was at this point that many of the providers that were currently operating and delivering training registered for the first time (including TAFE institutes).

Mergers or restructures of RTOs can result in the expiration or cancellation of previous registrations and a new registration associated with the merged and restructured organisation. This reflects changes in the regulatory governance of the provider and not necessarily fundamental changes in its operation (e.g. the campuses and facilities it runs). For example, three separately registered TAFE SA providers were replaced by a single new registration for TAFE SA as part of a restructure in 2014.



Initial training organisation registrations

There was a peak in registrations in 1998 in part due to the implementation of the National Training Framework, which required providers to be registered to deliver nationally accredited training (ANTA 1997). Schools and TAFE institutes represented a larger than usual proportion of registrations in that year. The percentage of initial registrations associated with each type of provider can be seen by putting the mouse cursor over the corresponding section of the column.



The full, interactive infographic is available on our Portal, at
[https://www.ncver.edu.au/data/data/infographics/
 vet-provider-market-structures-registered-training-organisations](https://www.ncver.edu.au/data/data/infographics/vet-provider-market-structures-registered-training-organisations)

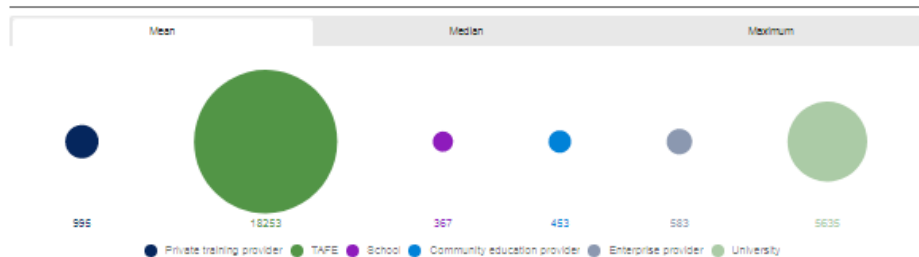
VET provider market structures: students and enrolments

This infographic presents a summary of students and program enrolments in the Australian vocational education and training (VET) system in 2015. Using data from the 2015 [National VET Provider Collection](#) and [National VET in Schools Collection](#), it analyses the distribution of students and program enrolments across different types of provider.

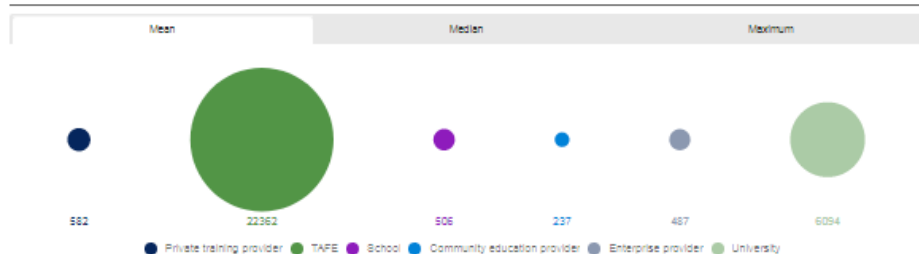
This infographic is a companion to the [VET provider market structures: history, growth and change report](#). It contains updated and more extensive data. For further analysis and explanation, please consult the report. It is also supplemented by the infographic, [VET provider market structures: registered training organisations](#), which analyses the number of registered providers in the system from 1988 to 2016.

Students by provider type

Data presented here (i.e. mean, median and maximum) by type of training organisation counts all activity at such organisations and is not adjusted for (the small number of) students that attended more than one type of training organisation (see table 3 in [Total VET students and courses 2015](#)). As a result, data presented by training organisations may not necessarily match data presented in [Total VET students and courses 2015](#) and other NCVET publications.



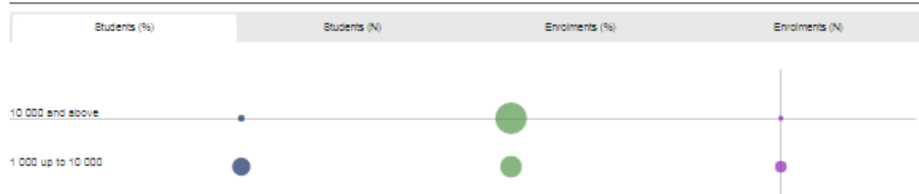
Program enrolments by provider type



Providers by size (students and program enrolments) and type

Providers were categorised according to the number of students and program enrolments they had in 2015. The percentage tab shows the percentage of providers within each type that were that size.

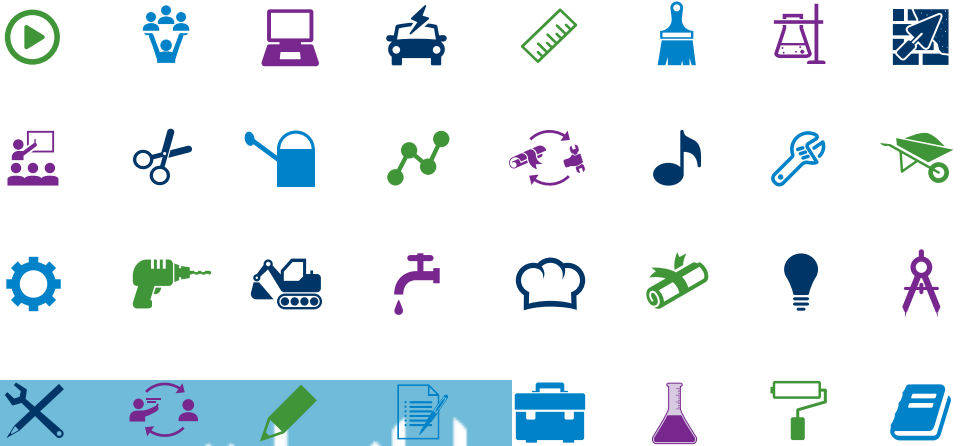
The 487 private training providers and 207 other providers that had zero program enrolments only had subject enrolments in 2015. Providers are limited to providing training within the scope of their registration and some may not be approved to provide full programs. Providers may also be conducting accredited training under auspicing arrangements for another registered training organisation (which was reported by that other provider) or other non-accredited training (that was not required to be reported).



The full, interactive infographic is available on our Portal, at <https://www.ncver.edu.au/data/data/infographics/vet-provider-market-structures-students-and-enrolments>



The impact of vocational education and training





A framework to better measure the return on investment from TVET

Jane Schueler, John Stanwick, Phil Loveder

This report is the result of research collaboration between NCVET and the UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training (TVET) in Bonn (Germany) and presents a conceptual framework for understanding the return on investment (ROI) equation in TVET from different stakeholder perspectives.

The framework uses three main stakeholder groupings – individuals, business and the economy. Although the framework separates these three perspectives, they are not independent of each other. There are flow-on effects. To provide a complete ROI picture both economic and social impact dimensions are featured. Understanding the interaction between the economic and social benefits is important in assessing the true and full value of TVET. The key indicators were selected on the basis of their usefulness, practicality and capacity to value-add along with the ability to apply to different types of training and contexts.

The authors highlight the following key observations:

- The key types of ROI for individuals arising from TVET are primarily employment and productivity supporting higher wages. Attainment of employability skills and improved labour force status are also highly valued job-related returns. Non job-related indicators focus on well-being such as self-esteem and confidence, foundation skill gains, along with social inclusion and improved socio-economic status.
- The key indicators of ROI for employers arising from TVET cover employee productivity, business profitability, improving quality of products and services and business innovation. Businesses operate similar to small communities and as such generate social and environmental benefits. In particular employee well-being, employee engagement (which reduces absenteeism and staff turnover), a safe workplace and environmental sustainability practices are key non-market indicators of business returns.
- The key indicator of ROI in the economy from TVET is economic growth. This relates to labour market participation, reduced unemployment rates and a more skilled workforce. TVET returns to education and training, bring other benefits to society, including improved health, social cohesion (increased democratisation and human rights), and improved social equity particularly for disadvantaged groups and strengthens social capital.

The report recognises that analyses of ROI in TVET can result in highly variable estimates; and that it is particularly difficult to untangle the financial and non-financial benefits of training. Further, the ready availability of data to populate such a framework is a challenge for it to gain greater practical value and allow estimates of ROI across economics.



Developing appropriate workforce skills for Australia's emerging digital economy: working paper

Victor Gekara, Alemayehu Molla, Darryn Snell, Stan Karanasios, Amanda Thomas

The aim of this project is to identify digital skills requirements in the broader Australian workforce and examine the capacity of the VET system and industry training packages to effectively meet this growing need for digital skills. There are three broad categories of digital skills requirements¹:

1. Basic computer literacy for everyday life
2. Digital skills for the general workforce, enabling them to effectively use information technology (IT) systems and general technology processes across all sectors
3. Digital skills for professionals specifically working in the information and communication technologies (ICT).

While there is an abundance of research on Category 1^{2,3} and Category 3 digital skills,⁴ little attention has been paid to Category 2 skills. The evidence suggests however that there is a growing lack of skills essential to effectively implement the new, highly digitised and mechanised systems of work, and, furthermore, that the Australian economy is struggling to meet Category 2 digital skills requirements.^{4, 5} The consistent message is that for the Australian economy to 'take full advantage of the opportunities presented by new technologies ... the workforce must be equipped with digital skills'.⁴ Recent National Centre for Vocational Education Research (NCVER) studies show that the challenge lies not merely in adequately skilling new workers, but more importantly in how to upskill the existing workforce for ongoing productive employment.^{6,7}

This study therefore focuses on a very important aspect of the workforce skills challenge facing Australia; that is, how to effectively equip the workforce with the appropriate digital skills for enhanced workplace participation and sustainable economic productivity. The research is guided by three key questions:

- What are the areas of digital skills-formation gaps (defined as the gap between the skills that industry employers want and what the training system is able to produce and supply) in the general workforce?
- What are the weaknesses and shortcomings in existing industry strategies, government policies and training programs, with specific regard to developing workforce digital skills?
- How can these shortcomings be addressed in order to eliminate the skills gap and effectively meet Australia's growing demand for digital skills?

- 1 ECORYS 2016, *Digital skills for the UK economy*, viewed December 2016, <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/492889/DCMSDigitalSkillsReportJan2016.pdf>.
- 2 Bowles, M 2013, *Digital literacy and e-skills: participation in the digital economy*, Innovation and Business Skills Australia, Melbourne.
- 3 Bynner, J, Reeder, S, Parsons, S & Strawn, C 2010, *The three divides: the digital divide and its relation to basic skills and employment in Portland, USA and London, England*, National Research and Development Centre, London.
- 4 Deloitte 2016, *Australia's digital pulse: developing the digital workforce to drive growth in the future*, Australian Computer Society, viewed January 2017, <https://www.acs.org.au/content/dam/acs/acs-documents/PJ52569-Australias-Digital-Pulse-2016_LAYOUT_Final_Web.pdf>.
- 5 Hajkowicz, S, Reeson, A, Rudd, L, Bratanova, A, Hodggers, L, Mason, C & Boughen, N 2016, *Tomorrow's digitally enabled workforce: megatrends and scenarios for jobs and employment in Australia over the coming twenty years*, CSIRO, Brisbane.
- 6 Snell, D, Gekara, V & Gatt, K 2016, *Cross-occupational skill transferability: challenges and opportunities in a changing economy*, NCVER, Adelaide.
- 7 Callan, V & Bowman K 2015, *Industry restructuring and job loss: helping older workers get back into employment*, NCVER, Adelaide.



Engaging young early school leavers in vocational training

Eric Dommers, George Myconos, Luke Swain, Stephanie Yung, Kira Clarke

With almost one-third of young people unemployed or underemployed, it is important for early school leavers to gain skills that improve their employment opportunities. The role that vocational education and training (VET) plays is critical, particularly for young early school leavers. They have a greater risk of experiencing disadvantage in multiple areas of their lives – economic, social, health – than those who complete Year 12.

But getting young people into VET can be difficult. The proportion of those in VET aged between 15 and 19 years declined by about 2% between 2015 and 2016, and the number of students in this age group has been in a steady decline since 2012.

Through interviews and focus groups with young people and those from organisations and agencies serving the interests of young people, as well as with training provider staff, this study sought to determine what actions and initiatives would maximise the successful entry into and engagement with VET for young early school leavers. The focus of the study was on selected economically disadvantaged areas in Queensland, Victoria and Tasmania.

A theoretical framework drawn from existing literature guided the direction of the data collection and analysis. The framework took into account the various factors that may impact upon a young person's likelihood to engage with the VET sector at three critical times: just before commencement, at the enrolment phase and then during the subsequent training.

Key messages

- At the pre-enrolment stage, information is vital. Training providers and support services need to work together to demystify the VET sector for young early school leavers to enable them to gain a greater awareness of what VET is and what it can offer them. Connecting with families, schools and other community groups will help to raise awareness among young people about VET options.
- At enrolment, the complexity of the process, as well as of VET funding and subsidy structures, can be overwhelming for young early school leavers. Engaging young people in the process through the provision of well-communicated information on course choices and financial support, and making the enrolment process as simple as possible are crucial changes needed at this stage.
- During training, the provision of multiple supports – logistic, academic or social – from both training providers and support services working together is needed. For example, support may take the form of scheduling timetables around public transport availability or helping the young person to plan how they will travel to and from their course; or offering assistance or referrals to other organisations to help them to develop their language, literacy, numeracy or learning skills.



Indigenous VET participation, completion and outcomes: change over the past decade

Georgina Windley

It has been eight years since the National Indigenous Reform Agreement (also known as ‘Closing the Gap’) set out a series of areas and targets designed to close the gap between Indigenous and non-Indigenous outcomes on a range of measures. A key objective was to halve the gap in employment outcomes between Indigenous and non-Indigenous Australians within a decade. The links between tertiary education and employment are well established, and the education participation of Indigenous people is increasing. Nevertheless, what is questionable is whether the qualifications gained are improving employability, boosting employment outcomes and reducing employment disparity: while the gap is closing in educational attainment, it is not closing in regards to labour market participation.

This report examines, and provides a clearer picture of, how Indigenous participation in vocational education and training (VET) and outcomes have changed over the last decade. Drawing on data from the NCVER National VET Provider Collection, National Apprentice and Trainee Collection and Student Outcomes Survey, this report focuses on Indigenous participation and completion in VET (including apprenticeships and traineeships), as well as on the employment, further study and personal outcomes of training. It identifies high-level trends in VET participation (including location and specific student and training characteristics), how completion rates vary, where employment outcomes are strongest, and the extent to which further study is being undertaken.

Key messages

- The overall picture shows that, despite fluctuations in the wider VET sector, Indigenous participation in vocational education and training remains high.
- While Indigenous enrolment in lower-level qualifications is higher than in non-Indigenous enrolments, there has been a shift away from enrolments in lower-level certificates, with increasing proportions of Indigenous enrolments in higher-level qualifications (certificate III and above). This is a positive sign, given that employment rates are higher for those with higher-level qualifications.
- Despite downturns in overall apprentice and trainee commencements in recent years, Indigenous people have a higher rate of participation in both trade and non-trade apprenticeships and traineeships compared with non-Indigenous people.
- Indigenous VET completion rates (for all VET) and Indigenous apprentice and trainee completion rates vary according to location and certain student and training characteristics, but despite slight increases in recent years, they remain lower than non-Indigenous VET completion rates.
- Overall employment outcomes for Indigenous VET graduates are lower than those for non-Indigenous graduates, with the proportion of Indigenous VET graduates employed after training lower than non-Indigenous graduates. Employment outcomes do vary, depending on student and training characteristics, field of education and occupation,

and it is clear that some Indigenous graduates, such as those undertaking trade apprenticeships, have better employment prospects than others.

- Indigenous graduates are less likely to be employed before training. However, Indigenous and non-Indigenous graduates not employed before training are equally likely to be employed after training.

While there is steady, positive improvement in Indigenous students enrolling in higher level qualifications (certificate III and above) and good employment outcomes for those completing an apprenticeship, there has been little improvement in program completion and in the employment outcomes of Indigenous VET graduates over the last decade. It is critical that the VET sector considers different approaches. This could include the introduction of targets and the implementation of strategies, policies and programs analogous to those operating in the higher education sector.

The aim of these initiatives would be to promote the uptake and support the completion of VET qualifications, which, based on the evidence, lead to higher-level skills and successful employment outcomes. A more targeted approach to VET provision for Indigenous learners, particularly young people who do not have previous employment, may also strengthen VET's effectiveness in improving employment outcomes for Indigenous learners.

Developing policy, programs and practice, and subsequently evaluating them, needs to account for the rich qualitative data available in this field and is discussed in more detail in the companion piece to this report, *Indigenous participation in VET: understanding the research* (Ackhurst, Polvere & Windley 2017).

While quantitative evidence from the national data collections provides insight, this is only part of the story when it comes to Indigenous participation in vocational education and training. Qualitative experiences are vital for understanding and responding to the diverse circumstances of Aboriginal and Torres Strait Islanders and their connections to varied regional and language groups. The report *Enhancing training advantage for remote Aboriginal and Torres Strait Learners* by John Guenther et al. examines some of the factors that can influence training retention in very remote areas and which ensure that training is relevant to the unique labour markets in those communities.



Indigenous participation in VET: understanding the research

Maree Ackehurst, Rose-Anne Polvere, Georgina Windley

Indigenous educational and employment disadvantage is a much researched and discussed subject. The latest Prime Minister's Closing the Gap report¹ shows that, while the gap is slowly decreasing in regard to participation in tertiary education, reducing employment disparity, particularly in remote areas, lags behind. This is despite clear evidence that higher levels of education lead to higher levels of employment. This research summary provides an overview of the extensive research undertaken on the topic over recent years. It brings together the key findings to highlight current evidence on what works, with a particular focus on vocational education and training (VET).

This summary is part of a suite of papers and interactive products that look at Indigenous participation in VET and employment, and other outcomes – from the data, research and policy perspectives. This paper provides a contextual background to Indigenous participation in VET and employment, with the aim of setting the scene for the research reports *Indigenous VET participation, completion and outcomes: change over the past decade* (Windley 2017) and *Enhancing training advantage for remote Aboriginal and Torres Strait Islander learners* (Guenther et al. 2017).

Highlights

What we know

- VET and higher education lead to higher levels of employment.
- Successful engagement is built on community ownership, genuine partnerships with communities, respect for cultural knowledge and local capabilities, integration of cultural knowledge into training, and alignment of education and training with aspirations and, in the case of remote areas, local employment opportunities.

What we don't know

- Why increasing training completion remains a challenge.
- Why increases in tertiary education levels have not led to improved employment outcomes.
- How the VET sector can adapt to better meet the needs of Indigenous communities, acknowledging and responding to their educational aspirations and local employment opportunities.

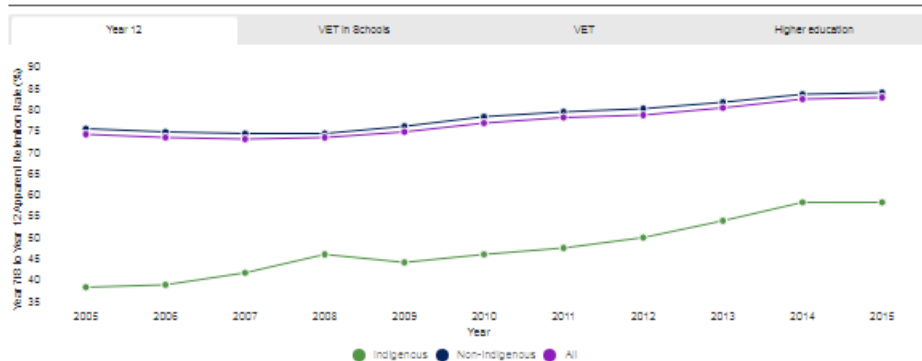
1 Department of the Prime Minister and Cabinet 2017, Closing the Gap: Prime Minister's report 2017, Closing the Gap, Australian Government, Canberra, viewed 14 Feb 2017, <<http://closingthegap.dpmc.gov.au/>>.

Indigenous VET participation, completion and employment outcomes: changes over the last decade

The recent [Overcoming Indigenous Disadvantage](#) report and [Closing the Gap](#) reports show there have been increases in Indigenous participation in education across the board, from increasing Year 12 completions through to increased participation in tertiary education. However, these increases do not appear to be translating into improved [employment rates for Indigenous people](#), which has plateaued since 2008. This infographic seeks to highlight some of the trends in vocational education and training (VET) participation, completions and outcomes data to provide a more nuanced picture of Indigenous engagement in VET and employment outcomes. It is based on the research report [Indigenous VET participation, completion and outcomes: change over the next decade](#), which focuses on 2008 to 2015.

Increases in education across all sectors

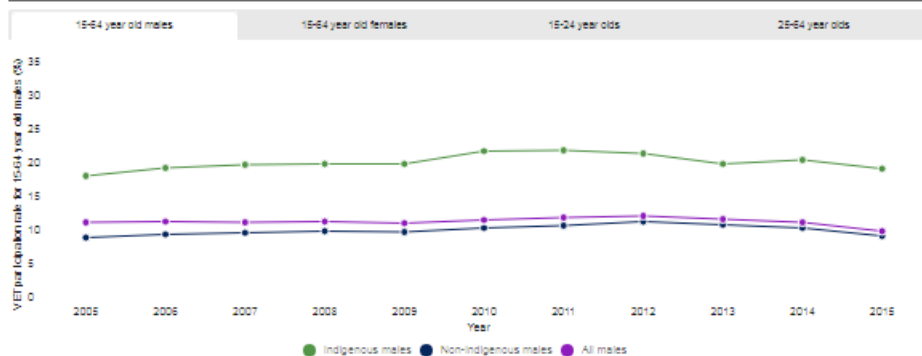
Despite the substantial increases over the past 10 years, Indigenous retention to Year 12 and participation in higher education remain low compared to the non-Indigenous population. In contrast, Indigenous people participate in VET and VET in Schools at a higher rate compared to the non-Indigenous population¹.



Indigenous VET participation rates: who has the highest participation?

The growth in VET participation rates for all students between 2008 and 2012, is largely due to the National Agreement for Skills and Workforce Development and the policy levers which were enacted to encourage growth in the sector. This initial growth has been followed by a decline in participation across the board from 2012 onward.

Despite the fluctuations in participation rates, Indigenous people continue to participate in VET at higher rates than the non-Indigenous population, across all age groups and sexes.



Indigenous & non-Indigenous qualification levels: where are the increases?

The National Agreement for Skills and Workforce Development, and its emphasis on increasing higher level qualifications (certificate III and higher) also contributed to the growth in higher level qualifications. For both Indigenous and non-Indigenous enrolments, we can see there has been growth at higher level qualifications, with a decline in lower level qualifications.

This is particularly important for Indigenous students, who historically have been more inclined to enrol in lower level courses than higher level courses. Existing [research](#) shows that [employment rates are higher](#) for Indigenous people who gain a certificate III or higher.

The full, interactive infographic is available on our Portal, at

<https://www.ncver.edu.au/data/data/infographics/indigenous-vet-participation-completion-and-employment-outcomes-infographic>



Policy snapshot: Indigenous training and employment

Georgina Windley

National Indigenous training and employment policy falls under the auspices of the Indigenous Advancement Strategy (IAS), an initiative which covers all facets of Indigenous social, economic, health and wellbeing across multiple Australian Government departments. Two of the main aims of the Jobs, Land and Economy component of the IAS are to increase the number of Aboriginal and Torres Strait Islander people in 'real jobs' and train more people for local jobs in their communities. Some of the initiatives which lie under the Job, Land and Economy banner include the:

- Community Development Program¹
- Employment Parity Initiative²
- Vocational, Training and Employment Centres (VTEC)³
- Indigenous Cadetship Support Programme.⁴

Much of the current policy agenda has been adopted from the recent Forrest Review⁵ recommendations. While it is too soon to critique the effectiveness of these initiatives in closing the gap in employment parity, this policy snapshot provides some insight into the recent trends in national Indigenous employment and training programs. It only focuses on national policy directions and programs. However, we acknowledge that the jurisdictions have their own policies and programs aimed at improving training and employment outcomes for Indigenous people, which contribute to the broader policy landscape.

1 <https://www.dpmc.gov.au/indigenous-affairs/employment/community-development-programme-cdp>

2 <https://www.dpmc.gov.au/indigenous-affairs/employment/employment-parity-initiative>

3 <https://www.dpmc.gov.au/indigenous-affairs/employment/vocational-training-and-employment-centres-vtecs>

4 <https://www.dpmc.gov.au/indigenous-affairs/employment/indigenous-cadetship-support>

5 <https://www.dpmc.gov.au/indigenous-affairs/employment/indigenous-jobs-and-training-review>



The role of VET in the entrepreneurial ecosystem

Don Scott-Kemmis

How the vocational education and training (VET) sector can respond to changes in the economy to ensure development of the required skills for a contemporary labour market is a perennial topic of interest. The role of VET in developing entrepreneurship – an important element of the Australian economy – has recently attracted an increased focus internationally. However, there has been limited research in Australia on how the VET sector might play a larger role in the development of entrepreneurship and, more specifically, on how the sector might better position itself in an entrepreneurial ecosystem, defined as the formal and informal institutions and relationships that facilitate access to entrepreneurship-relevant resources such as information, finance, reputation and specific knowledge.

This research draws together international literature on teaching and learning for entrepreneurialism, with the goal of informing potential Australian developments in this area. The report also provides an Australian case study of the Australian Capital Territory, as an entrepreneurial ecosystem, to explore the extent to which the VET system has contributed to the development of the skills used by entrepreneurs in the early stages of forming new ventures. The ventures of interest were those that had been started in the past 25 years with the aim of expansion and high growth.

Key messages

- The literature shows that the case for initiatives to promote and support the development of entrepreneurship skills is widely accepted internationally, particularly across Europe. However, many of the initiatives in place are experimental and person-driven, rather than strategic or systemic.
- The ACT case study showed that either the company founder, or a member of the founding team, had a VET qualification in about 20% of the 97 start-up organisations identified. In most cases this person also had a university degree or considerable professional experience following graduation. Aside from some recent start-ups in the digital games market, that were supported by a specific and targeted VET program, none of the interviewed VET-qualified founders considered that their VET course had provided them with entrepreneurship skills.
- The increasing importance of entrepreneurial skills in the Australian economy provides an argument for the development of these skills in at least some VET qualifications, perhaps particularly those in information technology. Examples of how a program for entrepreneurship can work in the digital games market were uncovered in the ACT case study.
- Should a broad fostering of entrepreneurial skills be seen as necessary, a more strategic response would be required. The strong regional dimension of entrepreneurship could be used to shape the development of such a strategy, engaging regional VET organisations and systems. Of course, such a strategy will need to address how entrepreneurship skills should be taught, by whom, and for whom.



VET and entrepreneurship: research overview

Don Scott- Kemmis, Tabatha Griffin, Craig Fowler

Entrepreneurship is an important component of the Australian economy, given its capacity to generate significant employment opportunities. While the role of education in developing skills for entrepreneurship has attracted an increased focus internationally, how the vocational education and training (VET) system contributes to entrepreneurship in Australia has received very limited research attention. This overview, drawing largely from *The role of VET in the entrepreneurial ecosystem* (Scott-Kemmis 2017), looks at the role VET currently plays in developing the skills of entrepreneurs, and how this may be further developed in the future.

The terms ‘entrepreneurship’ and ‘enterprise’ are two related, yet distinct, concepts, with definitions not always universally agreed. Enterprising behaviour can be characterised as an active approach to problem-solving, learning and professional development and such behaviour can be applied broadly, such as in the workplace or in self-employment. Entrepreneurship, in this research, is defined as the establishment of firms through the use of innovative products or services, or the organisation of work, and can occur in any industry.

While enterprise and entrepreneurship require an overlapping set of skills, additional skills – those specific to establishing an innovative venture – are required for entrepreneurship, as defined here. Given that new enterprises and self-employment are becoming increasingly valuable to the national economy and labour market respectively, education and training to address these skills at a national systemic level is vital, and should include VET.



Skilling for tomorrow

Anna Payton

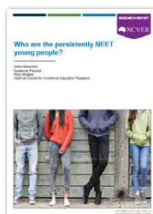
Could we be the last generation of people to have traditional workplace arrangements, in permanent, ongoing full-time roles with one employer at a time? It's a reasonable question, considering the changes we see flowing through the labour market. In the year between April 2016 and April 2017, two-thirds of jobs created in Australia were part-time¹ and the data show that part-time employment has increased three-fold since the 1970s.²

This steady and ongoing shift in the labour market is occurring at the same time as the economy adjusts and diversifies following the mining-boom between 2003 and 2013³ and is being reshaped by significant technological, economic, demographic and social shifts, shifts that are 'disrupting' business models and substantially changing the way we work and live. Think of the emergence of the 'gig' economy (working independently on a task-by-task basis for various employers)⁴ and portfolio workers. Combined, these fundamental transformations are known as the Fourth Industrial Revolution.⁵

Given that the vocational education and training (VET) sector provides students with the skills they need to get a job or change jobs, the Fourth Industrial Revolution will change VET too. This will require new thinking by governments, training providers, employers and students.

This paper provides a summary of research and discussion on the future world of work, drawing out points relevant to the theme of the *26th National VET Research Conference 'No Frills' – Skilling for tomorrow*. It explores the drivers changing the world of work, the skills we're predicted to need in the future and what this means for training. The paper aims to encourage conversations and discussions on the question of your role in skilling for tomorrow.

- 1 Australian Bureau of Statistics (ABS) 2017, *The labour force, Australia*, cat.no.6202.0, ABS, Canberra.
- 2 Committee for Economic Development of Australia 2015, *Australia's future workforce?*, CEDA, Melbourne, viewed May 2017, <<http://www.ceda.com.au/research-and-policy/policy-priorities/workforce>>.
- 3 Hajkowicz, S, Reeson, A et al. 2016, *Tomorrow's digitally enabled workforce: megatrends and scenarios for jobs and employment in Australia over the coming twenty years*, CSIRO, Brisbane, viewed May 2017, <http://www.csiro.au/-/media/D61/Files/16-0026_DATA61_REPORT_TomorrowsDigitallyEnabledWorkforce_WEB_160204.pdf>.
- 4 AiGroup, *The emergence of the Gig Economy*, viewed May 2017, <http://cdn.aigroup.com.au/Reports/2016/Gig_Economy_August_2016.pdf>.
- 5 World Economic Forum 2016, *The future of jobs: employment, skills and workforce strategy for the fourth industrial revolution*, Global Challenge insight report, World Economic Forum, Geneva, viewed May 2017, <http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf>.



Who are the persistently NEET young people?

John Stanwick, Cameron Forrest, Peta Skujins

Of enduring policy interest and concern are the transitions of young people from school to further education and the labour market. Young people represent the future workforce of this country so it is of great interest that young people make successful transitions. However, they do not all make these successful transitions and for some this may result in poorer outcomes later in life.

Using data from the Longitudinal Surveys of Australian Youth (LSAY), this investigation focussed on the group of young people not in education, employment or training (NEET), which is seen as a key indicator internationally of youth disengagement - and more specifically on those people who are NEET for longer periods of time, six or more months continuously, referred to as persistently NEET. While many young people experience episodes of being NEET in their early post-schooling years as they make their transition from education to the world of work, there is a small, more vulnerable group who experience periods of being persistently NEET.

It is argued that this group may represent those who are more at risk of poorer outcomes in the longer term than those who spend fleeting amounts of time being NEET; recognising that even within the more contained group of the persistently NEET there will be some who are not as vulnerable. Clearer information on this group of young people can help to develop nuanced policy responses that cater for the diverse individual and also broader labour market and institutional circumstances facing them. There is a need to better characterise this vulnerable group of young people in order to help target early and effective policy interventions.

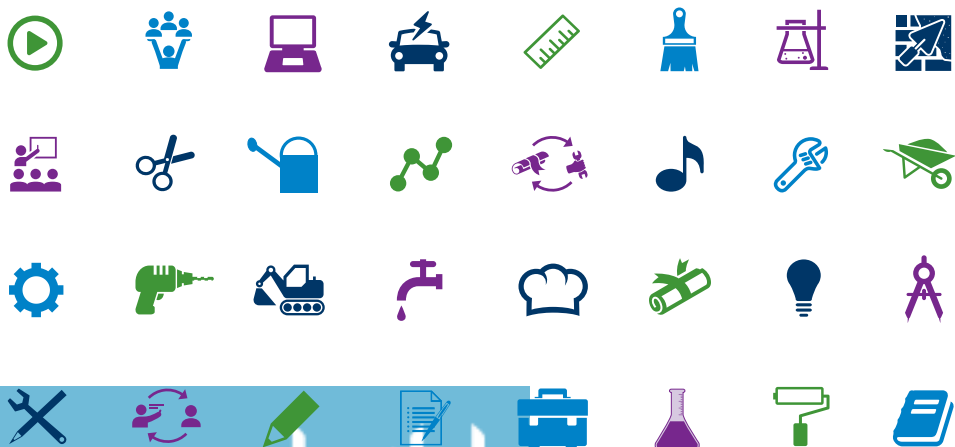
This research investigates the incidence of being persistently NEET among those aged 15-24, the socio-demographic characteristics associated with the NEET state, and the outcomes at ages 20-24 for those who had one or more periods of being persistently NEET from ages 15 through to 19, as compared to their not persistently NEET counterparts.

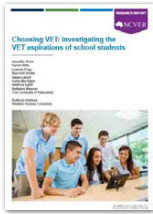
Key messages

- Persistently NEET status is shown to be correlated with non-completion of year 12; having a child; and to some degree coming from a more disadvantaged background.
- There are some observed gender differences in the activities of the persistently NEET with males being more likely than females to be unemployed.
- The largest single activity for females with persistently NEET status and not in the labour force, was home duties or caring for children, whereas for males there was a variety of activities.
- Persistent NEET status at ages 15-19 is associated with further persistent NEET spells at ages 20-24. It is also associated with poorer education outcomes by age 24.
- Labour market conditions at the time that young people are transitioning from school to work can also impact on the probability of being persistent NEET. There is evidence that the Global Financial Crisis had an impact but differentially for those who were 18 at the time the effects were felt and those who were 21 at the time. This reflects their different underlying life stage dynamics.



Teaching and learning





Choosing VET: investigating the VET aspirations of school students

Jennifer Gore, Hywel Ellis, Leanne Fray, Maxwell Smith, Adam Lloyd, Carly Berrigan, Andrew Lyell, Natasha Weaver, Kathryn Holmes

This study explores students' post-school aspirations for vocational education and training (VET), focusing on the interest in vocational training among both primary and secondary school students, from the perspective of the students.

The views of more than 6000 students from Year 3 to Year 12 in New South Wales government schools were canvassed over a four-year period for possible interest in VET. This data was collected as part of an Australian Research Council (ARC) Linkage Project (2012–15). Survey, focus group and interview data involving students, as well as some of their parents/carers, teachers and careers advisers, enabled a unique account of interest in VET. It includes a detailed exploration of when VET begins to feature in students' thinking about their futures, the kinds of students who think about VET, and under what conditions.

This research will inform how teachers, schools and VET providers might enrich the information available to students and their parents/carers and address current gaps and misunderstandings in students' knowledge about VET.

Key messages

- There is more interest in VET-related occupations than in VET as an educational pathway and clear misalignment between educational and occupational aspirations, along with confusion about what TAFE offers and the pathway required to a VET-related occupation.
- Gender stereotypes pervade student ideas about their futures, particularly with regard to career choice.
- Primary and junior secondary students seem to have formed negative perceptions of TAFE (technical and further education), and their views of TAFE do not reflect contemporary realities.
- School students, even from a young age, and with limited understanding, form and firmer retain an impression that university is preferable to VET as a future study aspiration.
- VET and VET-related occupations appeal to certain kinds of students; these students are demographically opposite to those more likely to choose a university option. Students who indicate choosing a VET-related occupation are most likely to be characterised by one or more of the following: male, English-speaking background, from more disadvantaged backgrounds, and see themselves as average or below in academic ability compared with their peers.
- Primary and secondary schools have a significant role to play in the timing and substance of careers education, particularly in relation to VET study and careers requiring VET qualifications.



In their words: student choice in training markets - Victorian examples

Justin Brown

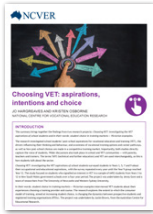
This research offers new insights into the options available to individuals as they navigate an increasingly complex vocational education and training (VET) system. It explores the extent to which the consumer model of training, aimed at increasing student choice, is changing the dynamics between prospective students and registered training organisations (RTOs). The focus here is on examples from Victoria, the first state to initiate market reforms, by means of the Victorian Training Guarantee.

Importantly, this study directly represents the voice of students, asking how their choices were made as they navigated these new policy settings, and whether their choice, if one existed in the first place, was sufficiently 'informed'. It explores the drivers influencing student behaviour and their impact on choice of provider and course in a competitive training market. The way in which choice is restricted by the training available locally and labour market needs is also considered. The student voice is contrasted with recent literature and data on measures of choice. Implications for policy and practice are explored, as are strategies for improving and broadening choice.

Key messages

- The factors that matter most to students are: training location; those offering advice and information (trusted influencers); timetables; fees and affordability; and the perceived quality of the training provider.
- Ultimately, many students have limited control over choice, given that influential factors such as location, timetables, course content and fees are 'fixed' – often there is 'no or very limited' choice.
- While trusted sources of advice and information are growing and improving, the primary concerns for prospective students relate to information accessibility and whether the information is straightforward, independent and trusted.
- The concept of student choice in VET is a worthy policy aspiration, although the potential problems associated with the concept have not been adequately defined. The choices available to students are not unlimited, and the issue of choice is currently imprecisely measured through the routinely used indicators of numbers of students participating, the reasons (often predefined in surveys) for choosing a provider, and the numbers of RTOs in the system.

While choice is a necessary component of a well-functioning competitive training market, this research suggests that segments of the VET student population lack both access to choice and control over their choice of course and RTO. The findings caution against assuming implausibly direct relationships between the choices made, statistical participation and/or the quantity of choices available, while giving little consideration to the availability of choice, how the choice was made, or the types and quality of choice available in the first place.



Choosing VET: aspirations, intentions and choice

Jo Hargreaves, Kristen Osborne

This summary brings together the findings from two research projects: *Choosing VET: investigating the VET aspirations of school students* and *In their words: student choice in training markets – Victorian examples*.

The research investigated school students' post-school aspirations for vocational education and training (VET), the drivers influencing their thinking and behaviour, and awareness of vocational training options and career pathways, as well as how post-school choices are made in a competitive training market. Importantly, both studies directly capture the voice of students. Wider discussions also took place in school and VET communities – with parents, teachers and trainers. The terms TAFE (technical and further education) and VET are used interchangeably, as this is how students talk about the sector.

Choosing VET: investigating the VET aspirations of school students surveyed students in Years 3, 5, 7 and 9 about their occupational and educational aspirations, with the survey repeated every year until the Year 9 group reached Year 12. The study focused on students who signalled an interest in VET in a sample of 6492 students from Years 3 to 12 in New South Wales government schools over a four-year period. The project was undertaken by Jenny Gore and a team of researchers from The University of Newcastle and Western Sydney University.

In their words: student choice in training markets – Victorian examples interviewed VET students about their experiences choosing a training provider and course. The research explores the extent to which the consumer model of training, aimed at increasing student choice, is changing the dynamics between prospective students and registered training organisations (RTOs). The project was undertaken by Justin Brown, from the Australian Centre for Educational Research.



Continuing professional development for a diverse VET practitioner workforce

Mark Tyler, Darryl Dymock

Vocational education and training (VET) practitioners play a critical role in skilling Australia's workforce. The need to ensure that both their teaching practices and industry skills and knowledge remain current has never been more paramount, especially when faced with rapidly changing industrial, technological and economic environments.

This occasional paper synthesises the literature relating to continuing professional development (CPD) for VET practitioners, with a focus on identifying the elements impacting on their ongoing learning. It looks further afield to international examples and to CPD in other professions. These examples, while quite different from vocational education and training, provide insight into whether CPD for VET practitioners is ahead of or behind other professions in their approach to ongoing skilling for the workplace.

Key messages

The authors highlight a number of the enduring issues affecting continuing professional development for VET practitioners, including:

- The VET workforce and the organisations that employ them are varied. VET practitioners come from a range of backgrounds, are employed under various conditions (part-time, casual or on a contract basis) and have significantly diverse career paths when compared with the schooling or university sectors. This diversity means that no single approach to continuing professional development for VET practitioners can meet the needs of every industry, organisation, teacher or trainer.
- A challenge for VET practitioners is ensuring their currency of skills in both educational expertise and industry practices. Continuing professional development for VET practitioners needs to take into account the duality of the role.
- Continuing professional development for VET practitioners is largely institutionally specific, rather than nationally systemic. Some proponents have argued for the establishment of a professional association for the VET sector, which could register VET practitioners, track professional development and be the organisation publicly accountable for the quality of VET delivery.
- VET practitioners are currently required to have a Certificate IV in Training and Assessment in order to deliver training packages. There are concerns that this qualification in isolation does not adequately prepare VET practitioners for the variety of teaching and assessment scenarios they will encounter. More readily accessible and recognised continuing professional development could complement the minimum qualification by providing additional training as practitioners' responsibilities change.

There is an obligation for registered training organisations (RTOs) to ensure that their VET practitioners meet the requirements for teachers and assessors, as outlined in the

Standards for Registered Training Organisations 2015. Clause 1.16 specifically stipulates a requirement that 'trainers and assessors undertake professional development in the fields of the knowledge and practice of vocational training, learning and assessment including competency based training and assessment'. There is insufficient evidence collected and collated on how this is done. Any assessments gathered during field audits do not make judgements on the value or adequacy of this training, and RTOs are only measured as being compliant or non-compliant. The school system, by contrast, requires teachers to undertake a certain number of CPD hours per year to remain registered.

The study underlines the paucity of current data on the VET practitioner workforce and the lack of focused attention on this aspect of supporting quality across the national VET system. The last significant VET workforce review was undertaken by the Productivity Commission in 2011. A recurring national survey conducted at least every five years would provide a better informed picture of VET practitioners, including their qualifications, employment status and any professional development undertaken. An appropriately designed survey could serve as a tool to assess if, and how, VET practitioners are gaining access to CPD in accord with the regulatory standard. The importance of quality in training and assessment means this information should be just as relevant and critical as other national VET collections.



Employers' perspectives on training: three industries

Chandra Shah

This research examines workforce training from the perspective of employers in 10 firms across three industries which span urban and regional areas throughout Australia's eastern seaboard.

The industries included were: red meat processing, road freight transport and freight forwarding.

Key messages

- Employers believe in the critical importance of ongoing workforce training for the survival of the firm. Some firms are placing ongoing, whole-of-workforce skills development at the centre of their strategy for the future sustainable growth of their businesses.
- While training practices vary across industries, and sometimes across firms in the same industry, there are many similarities.
- Employers' training decisions are affected by a number of issues. These include the:
 - need to comply with industry regulations, particularly those relating to hygiene, and health and safety
 - quality and source of entry-level labour supply, which is affected by working conditions and turnover in the industry
 - availability of a public subsidy for training, which may affect whether firms support full qualifications
 - quality and flexibility of training providers
 - availability of reliable information on the training market.
- Public subsidies for training help firms to offer formal training and partly offset costs, but a firm's decision to provide training support to an employee is generally independent of the receipt of a subsidy. However, in the absence of a subsidy some firms may choose to ration training support for formal qualifications.
- A co-contribution for the cost of training is usually only expected from workers for higher-level qualifications.
- Firms use a combination of learning modes – formal, non-formal and informal – for the delivery of training, with the emphasis often reflecting industry practices, the availability of a public subsidy, the level of employee experience and the logistics involved in organising training delivery.
- The experience of small firms in the training market can be quite different from that of large firms. Small firms could benefit from access to reliable and objective information about the training market.



Workplace training: employer and employee perspectives

NCVER

According to the 2016 Organisation for Economic Co-operation and Development (OECD) report, Education at a glance, much of the learning at work takes place through employer-supported training. Both employers and employees recognise the benefits of such training because skilling the workforce can lead to better jobs, greater firm competitiveness and higher national productivity. Therefore, a better understanding of the factors of supply and demand for employer-supported training can help address inequalities in access and participation, as well as direct incentives or subsidies to such training.

This research summary draws out the main findings of research by Chandra Shah (Monash University and Victoria University), published in two key reports:

- Employer-supported training in Australia: participation, demand and supply¹
- Employers' perspectives on training: three industries²

It focuses mainly on the first report in which Shah, using Australian data from the 2011–12 Survey of Adult Skills, investigates the factors of participation in training, and how these factors affect employees' demand for training and employers' willingness to provide training.

1 Shah 2017, <<http://hdl.voced.edu.au/1707/439226>>

2 Shah 2017, <<https://www.ncver.edu.au/publications/publications/all-publications/employers-perspectives-on-training-three-industries>>



Enhancing training advantage for remote Aboriginal and Torres Strait Islander learners

John Guenther, Melodie Bat, Anne Stephens, Janet Skewes,
Bob Boughton, Frances Williamson, Sandra Wooltorton, Melissa
Marshall, Anna Dwyer

Across Australia, Aboriginal and Torres Strait Islanders have embraced vocational education and training (VET), with participation in VET increasing, particularly at higher qualification levels. This report shines the spotlight on remote Aboriginal and Torres Strait Islander learner engagement in, and completion of, vocational education.

The proportion of remote Aboriginal and Torres Strait Islander learners holding VET qualifications is growing and the evidence shows they are engaging in VET in increasing numbers; however, qualification completion rates remain low and employment outcomes are not noticeably improving. Of real concern is that vocational training is not demonstrably translating into employment for many remote community learners.

Key to increasing the translation of training into employment is determining how retention and completion in VET can be improved, in conjunction with identifying how VET can enhance the employability of Aboriginal and Torres Strait Islanders living in remote communities. Also of importance is understanding the indicators of success – other than completion – and how these can be used to evaluate the outcomes of training in remote communities.

This project focused on providing insight by investigating five unique training programs. Specific sites were selected across remote Australia, each of which was considered to be successful in training and training completions in their respective communities. In each site students, trainers/training providers, employers, job service providers, community organisations and cultural advisors were interviewed to gain a wide range of perspectives on the factors that contribute to retention in training programs, as well as the indicators of successful training.

Key messages

- Factors identified that contribute to retention include:
 - trainer factors such as trainer qualities and the characteristics of delivery that helped learners stay on track
 - family and community support, given that family, personal, community and cultural factors were more likely to be inhibitors to completion
 - training coordination and support, which helps learners to remain in the training course; particularly important is communication, administrative support with paperwork, organising transport and sitting and listening to the needs of students
 - relationships with other students, including being a member of a team, having a sense of solidarity, and being part of a tight community of learners.
- Indicators of successful outcomes from training include:
 - enhanced self-confidence and identity, with students proud of their

- achievements and trainers seeing the transformational impact of training
- the development of foundation skills, including literacy and numeracy skills, communication and work-readiness skills
 - the extent of local community ownership with training, which is especially valued when it is connected to aspects of culture and local knowledge
 - training that leads to employment or improved career prospects.

Although there are employment-related advantages to completing courses (such as registration to work as paraprofessionals in health fields), for many Aboriginal and Torres Strait Islander learners from remote areas, the advantages of training relate to cultural, personal and social transformation, which can be achieved through building local knowledge and cultural resources and local community ownership into training programs.

NCVER has also published the report *Indigenous VET participation, completion and outcomes: change over the past decade*, available on the NCVER Portal.



VET retention in remote Aboriginal and Torres Strait Islander communities: good practice guide

NCVER

This good practice guide is based on the research project *Enhancing training advantage for remote Aboriginal and Torres Strait Islander learners* by John Guenther et al. on behalf of Ninti One Limited. The project examines five unique and successful vocational education and training (VET) programs in remote areas and identifies how retention and completion can be improved (to improve employability) and what other indicators of success (apart from completion) are important outcomes of training in remote communities. The project makes a vital contribution to furthering our understanding of Aboriginal and Torres Strait Islander experiences with VET in remote areas and explores the factors that boost engagement and retention in training and ensure that training meets the needs of these learners and their communities. This good practice guide synthesises the findings of the five case studies and looks at the factors that are important in enabling retention and ensuring good practice. More information on the research methods and individual case studies are available in the full report and the supporting documents.

Highlights

- Family, personal, community and cultural factors can prevent completion, but supportive families and communities can contribute to higher retention and completion. Trainers/providers can play a role in actively encouraging this family and community support.
- Positive, supportive and respectful trainers are necessary for helping students stay on track to complete their studies. Trainers need to facilitate communication between themselves, students and employers, listen to their students and provide administrative and advocacy support to students where required.
- Student peer relationships are important for creating a supportive learning environment, and trainers have a role in fostering this collegial learning environment.
- Local community ownership, along with cultural and local knowledge embedded in training programs, is vital for adding value and enhancing engagement in education and training, as well as strengthening the link between education and training and relevant local employment opportunities.



Making 'good' choices: the impact of entitlement models on up-skilling later in life

Cain Polidano, Justin van de Ven, Sarah Voitchofsky

In 2008, the Council of Australian Governments (COAG) initiated the National Agreement for Skills and Workforce Development, a component of which focused on reforming the training market to be more learner-driven and responsive to the labour market. This resulted in the implementation of national training entitlements for government-subsidised training places. An underlying premise of entitlement models is that, by giving the student a choice in where they train and the capacity to choose their course, they will more likely choose courses that will benefit them economically and, therefore, the wider labour market.

This research looks at the responsiveness of individuals – aged 25 to 54 – to government subsidies designed to support upskilling through the Victorian Training Guarantee (VTG). The timeframe for analysis was 1 Jan 2011 – 30 June 2012, reflecting the first 18 months that the reforms introduced through the VTG were fully implemented for the target age band. This timeframe is also prior to the reforms introduced in July 2012 that focussed on targeting subsidies to influence course choices, and the introduction of Skills First on 1 January 2017, which superseded the Victorian training and TAFE system. Therefore, while this research does not consider reforms post July 2012, the findings are still relevant in the current environment as the criteria for 'older' learners remains unchanged, namely government-subsidised training places available to individuals aged 20 years or older that are looking to upskill.

This research builds on that supported previously by NCVER, which explored the early impacts of the VTG on enrolment numbers and graduate outcomes among 15 to 19-year-olds (Leung et al. 2014). A particular focus here is on the impact of the subsidies on enrolments, as well as the alignment of course choices with labour market needs. The research explored how enrolment and course choice responses varied by age, gender and across disadvantaged groups in the community, including the unemployed, people with little formal education, people from non-English speaking backgrounds, people from low socioeconomic areas, and people with disabilities.

Key messages

- 'Older' learners (25 to 54 years) responded positively to the upskilling entitlement of the Victorian Training Guarantee, with the uptake of vocational education and training (VET) by this group estimated to have increased by 4.2 percentage points by comparison with the rest of Australia between January 2011 and June 2012.
- The evidence indicates a significant improvement in the match between course choices and the officially recognised skills in demand, with enrolments skewed towards courses with relatively high expected wages upon completion.

- Importantly, these outcomes were also applicable to people from more disadvantaged backgrounds, such as the unemployed, people from non-English speaking backgrounds and people with disabilities.
- Improved alignment of course choice with the skills in demand should impact on the subsequent living standards of people from such backgrounds.
- The results underline the capacity of working-age individuals, including those who are more disadvantaged, to make sound course choices in relation to jobs if given the opportunity and access to relevant information.



Social media and student outcomes: teacher, student and employer views

Margaret Johnson, Victor Callan

Accessing and posting on social media has become a daily habit for many Australians. Social media is used by individuals to keep in touch with friends and family, by groups to inform their members of relevant information and by organisations to market their services and products. However, is there a role for social media in VET?

This report looks at how social media is being used within the VET sector as a tool in teaching and learning. The researchers conducted interviews with teachers, students and employers across three different registered training organisations (RTOs) to determine the types of social media most useful in teaching and learning, how they are being used, and whether the outcomes for students are being improved.

- Given the scope and purpose of this study, it appears that there are currently only a limited number of Australian VET institutions actively using social media in their teaching. These institutions all had clear guidelines and technological mechanisms for the positive use of social media in teaching. A larger study, one involving a more representative sample, is required to fully understand the uptake of social media in VET courses and its impact on outcomes.
- The main types of social media currently used in VET are Facebook and YouTube. Facebook is used for its group functionality and its capacity to make announcements, while YouTube is used to enable students to upload videos of themselves performing tasks, and teachers to share relevant content with students.
- Students prefer to use the form of social media that will be of most relevance to their future roles. For example, marketing students like to use Facebook and Twitter because these tools are widely used for promoting products and events.
- The use of social media in courses encourages greater engagement in learning in some students and, based on the anecdotal evidence presented, may result in higher completions than in those courses not using social media.
- In order to present evidence for audits of teaching and assessment that utilises social media, teachers are having to transfer exemplar information from the social media platform to the institute's learning management system rather than presenting it as is, thus double-handling information. Clarification from institutes and regulators on the forms of technologically enabled assessment that are acceptable as evidence for audits is needed.
- Another practical consideration for VET teachers and institutions is that students do not necessarily understand the privacy issues surrounding social media in the classroom context. Teachers find they first need to teach students about the relevant privacy options to ensure that posts remain out of the general public eye. This is important as RTOs are obliged to comply with the Australian Privacy Principles.
- Employers found social media prompted them to be more connected to the theory side of the student's learning. They also believed social media helped to smooth the transitions between the learning and work environments and they emphasised the benefits of Facebook as they affected the administration of training.



Social media in VET courses: good practice guide

NCVER

The use of various forms of social media for individuals, groups and organisations is now commonplace. Individuals use it to update friends and family on their experiences, groups use it to inform their members of relevant information, and organisations use it to market their services and products. With many current and future students already familiar with social media platforms, could there be a use for social media in vocational education and training (VET)?

Highlights

- Social media is used in VET as a tool to provide course information and for asking questions, to collaborate on group assignments, and to demonstrate skills that have been learnt.
- The use of social media in VET courses can lead to higher levels of student engagement and promote more collaborative learning and may encourage increased rates of course completions.
- Based on their past experiences, teachers recommend the development and promotion of guidelines for social media usage to help students understand its appropriate use and privacy issues. Teachers also believe they should control the administration of any group set up for their course to ensure regular monitoring of content.
- Some teachers may be more willing to use social media in their courses if their institutes provided clearer examples about how and in what way it can be used in teaching and assessment. This good practice guide is based on research by Victor Callan and Margaret Johnston, which looked at how social media is being incorporated in VET training and assessment.

The researchers undertook interviews with teachers, students and employers across three different training organisations. The research is largely qualitative and limited to selected case studies, yet it helpfully breaks new ground in illustrating how social media is being infused into VET teaching practice.



The contribution of VET student placement to innovation in host organisations

Steven Hodge, Raymond Smith, Jenny Field, Matthew Flynn

Vocational education and training (VET) has an important role to play in the Australian Government's National Innovation and Science Agenda. One of the obvious mechanisms for this contribution is through the development of skills. However, the authors of this report ask whether the student-placement process – whereby VET students are placed in a host organisation to practise their newly acquired skills – can also contribute to innovation in the workplace.

Through four case studies (in early childhood education, nursing, hospitality and community services), this research considers the role of the student, the host organisation and the registered training organisation (RTO) in the likelihood of innovation arising through the student-placement process.

Key messages

- The case studies did not provide unequivocal evidence of individual students contributing to innovation in the workplace, where innovation is defined, according to the Australian Bureau of Statistics (ABS), the development or introduction of new or significantly improved goods, services, processes or methods. While this might be reflective of the types of industries represented in the case studies, most participants in the research (including students, employers and trainers) believed it was not possible for learners to contribute to innovation due to their lack of experience.
- However, if the definition of innovation is expanded to include 'practice innovation', whereby improvements are made by introducing new ways of doing things that are integral to everyday work in an organisation, then there is evidence that the student-placement process may play a role.
- It was recognised that the new knowledge and skills learned by students in their formal studies may be more contemporary than those of staff in the workplace. The case studies revealed examples of knowledge diffusion, and students made small scale improvements to work practice at a local level, thus by default contributing to an increase in workplace innovation.
- There are opportunities to optimise VET-student placement as a knowledge diffusion mechanism to enhance workplace innovation but there needs to be a shift in the way in which all participants view and value the contribution of the VET-student.
- A suggestion emerging from this research is that host organisations and training providers could work together to capitalise on the student-placement process by identifying ways to encourage knowledge diffusion and practice improvements by students. This needs a changed mindset from 'the student is here to learn from the business' to 'the student whilst learning from the business can be encouraged to express their own knowledge and ideas'.



VET in Schools students: characteristics and post-school employment and training experiences

Josie Misko, Patrick Korbel, Davinia Blomberg

From the mid-1990s there has been an upward trend in student numbers in the VET in Schools (VETiS) program, including a recent rise in certificate III qualifications, with this pattern of steady growth in student numbers changing only slightly in the last few years. To date there has been limited study of the longer-term impact on participants of the VETiS program. As well as considering the longer-term trends in the VET in Schools program, this research looks at VETiS students in 2006 and asks the question: where were they five years later? In 2011, what jobs did they have and were these linked to their training, what other study had they done and is there a correlation between the VETiS program and their life pursuits after five years?

By analysing a new and specially constructed dataset, which links data from the 2006 national VET in Schools Collection to data from the 2011 Census of Population and Housing, we have a platform that assists us to answer some of these questions. Linking these two datasets has provided a large number of observations about the destinations of VETiS students from various demographic, cultural and educational backgrounds, as well as their employment and their further training destinations and experiences.

This unique data linkage has also demonstrated that this methodology has the capacity to provide a robust model for developing rich datasets with the ability to allow a deeper understanding of the outcomes from, and policy implications of programs akin to the VETiS program. The intent is to repeat the exercise with more recent 2016 Census data.

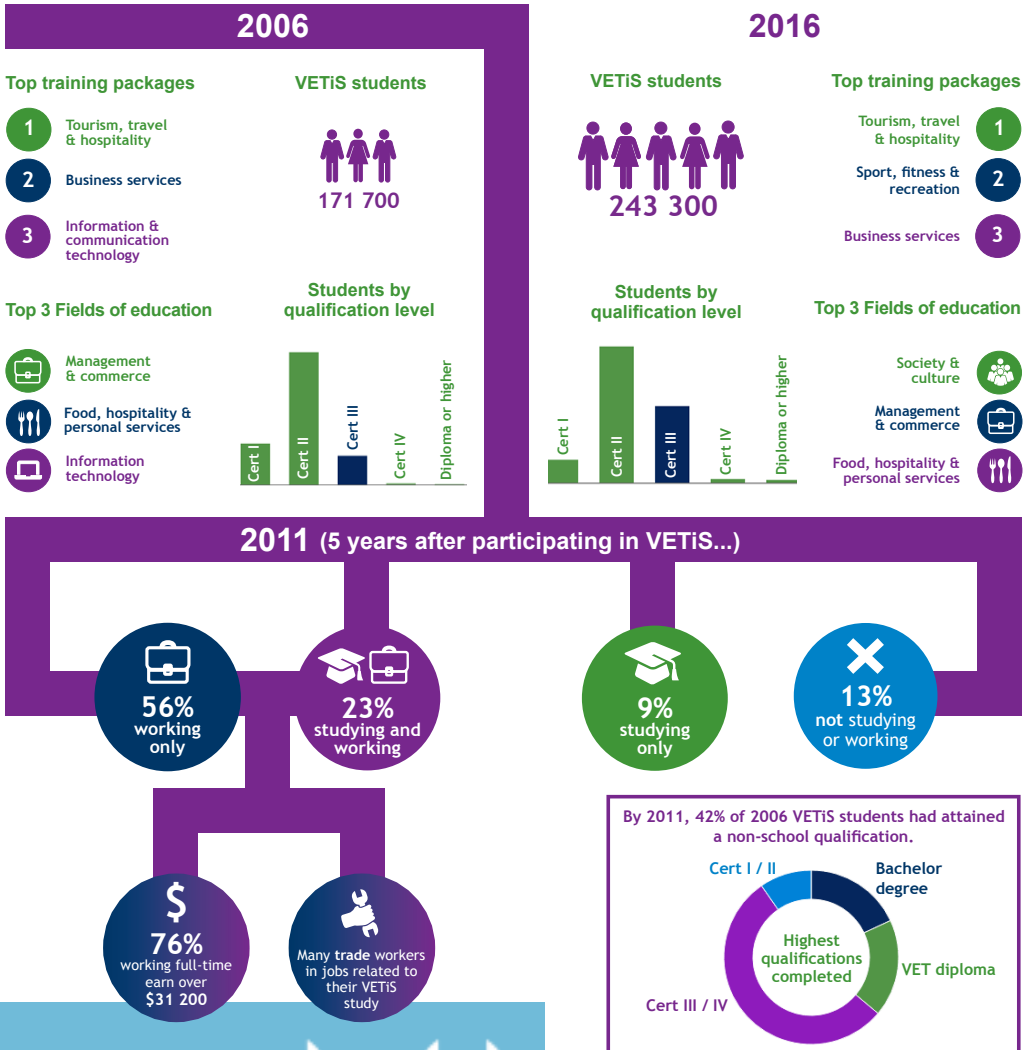
Key messages

- The number of VETiS students has generally trended upwards over the 20-year timeframe, from 60 000 (1996) to over 240 000 (2016), although this pattern of steady growth has changed slightly in recent years. During this time, the proportion of Indigenous students has nearly doubled (3.2% to 6.0%) and we have seen the VETiS participation rate in government schools exceed that of non-government schools students.
- There has been an increase in VETiS apprentices and trainees over the time period, from 13 000 (1996) to just over 17 000 (2016). In 2016 numbers declined from the previous year.
- Certificates II and III were the most common qualifications undertaken in 2015, a change from the 2006-11 period, where certificate I was more popular than certificate III.
- The gap is widening between male and female participation in the VETiS program, with the number of males involved dominating.
- The three most popular fields of education in 2006 for VETiS students were: management and commerce; information technology; and food and hospitality. In 2015 information technology was replaced by society and culture as one of these top three fields of education.

- A key factor enabling this investigation into the labour market and further training destinations of VETiS students was the linking of the 2006 national VET in Schools Collection with data from the 2011 Census of Population and Housing. The linked dataset was constructed using the principles of deterministic linkage; that is, including in the linked dataset exact matches on responses common to both datasets.
- From the linked set we can see that five years after participating in VETiS programs, of the total group of 2006 VETiS students:
 - 78% were in a job, with 29% of these also studying
 - 9% were studying only
 - 13% were neither working nor studying.
- For a sizeable proportion of the students, especially those in trade-specific pathways, VETiS learning relates to the destination occupations and to the non-school qualifications undertaken following school.
- Sizable proportions of VETiS students go on to undertake and complete further studies, with considerable proportions undertaking these in the same fields as their VETiS studies.
 - In 2011 approximately 70% of the 2006 VETiS students who had undertaken a certificate III or certificate IV in VETiS programs had completed a non-school qualification or were currently engaged in further studies.
 - Of those students who had completed a non-school qualification and had undertaken a VETiS program, a significant percentage of participants had moved on to studies at a higher level:
 - certificate I and II levels: almost 90%
 - certificate III: approximately 40%
 - certificate IV: approximately 58%.
- Around 10% of VETiS students went to university to attain a bachelor degree, thus demonstrating the dual functions of VETiS programs; that is, servicing the needs of the more academically able and interested and those of students who may be less so.

VET in Schools: a pathway to post-school employment and training – infographic

VET in Schools (VETiS) refers to the vocational education and training (VET) undertaken by school students as part of their senior secondary certificate of education. The VET in Schools arrangement offers two main options: most students undertake VET subjects and courses as part of their school curriculum while some students undertake school-based apprenticeships and traineeships.



2017 research

Are we all speaking the same language? Understanding 'quality' in the VET sector

Executive Centre for Vocational Education Research

Australian apprenticeships: trends, challenges and future opportunities for dealing with Industry 4.0

Paul Lissenden
Executive Centre for Vocational Education Research

The boundaries and connections between the VET and higher education sectors: 'confused, and collaborative'

Dr Cathy Jones
Executive Centre for Vocational Education Research

The changing nature of apprenticeships: 1986-2016

Dr Greg Ross, John Stenseth & Peter Dugan
Executive Centre for Vocational Education Research

The changing nature of apprenticeships: 1986-2016

Executive Centre for Vocational Education Research

Continuity and change: employers' training practices and partnerships with training providers

Erica South, Paul Lissenden, Peter Dugan, John Stenseth, Cathy Jones
Executive Centre for Vocational Education Research

GOOD PRACTICE GUIDE

DEVELOPING AND SUSTAINING SUCCESSFUL PARTNERSHIPS BETWEEN EMPLOYERS AND TRAINING PROVIDERS

Executive Centre for Vocational Education Research

Evolution not revolution: views on training products reform

Francesca Beattie, Suzanne Franks
Executive Centre for Vocational Education Research

The future of Australian apprenticeships

Report of the working group
October 25 October 2016
Paul Lissenden, National Centre for Vocational Education Research

Identifying work skills: international approaches

John Stenseth, Erica South
Executive Centre for Vocational Education Research

VET applied research: driving VET's role in the innovation system

Francesca Beattie, Suzanne Franks, Paul Lissenden
Executive Centre for Vocational Education Research

Developing VET applied research: steps towards enhancing VET's role in the innovation system

Francesca Beattie and Suzanne Franks
Executive Centre for Vocational Education Research

Explaining the VET applied research development framework

Linda Smart and Francesca Beattie
Executive Centre for Vocational Education Research

VET provider market structures, regional training organisations

Executive Centre for Vocational Education Research

VET provider market structures: diversity and inclusivity

Executive Centre for Vocational Education Research

A framework to better measure the return on investment from TVET

Alan Scullion, Marko Cvek, Peter Dugan, Michael Carter, and Catherine Scullion
Executive Centre for Vocational Education Research

Developing appropriate workforce skills for Australia's emerging digital economy: working paper

Alan Scullion, Marko Cvek, Peter Dugan, Michael Carter, and Catherine Scullion
Executive Centre for Vocational Education Research

Engaging young early school leavers in vocational training

Dr Cathy Jones, Dr Greg Ross, John Stenseth, Peter Dugan, Erica South, Paul Lissenden
Executive Centre for Vocational Education Research

Indigenous VET participation, completion and outcomes: change over the past decade

Executive Centre for Vocational Education Research

Indigenous participation in VET: understanding the research

Executive Centre for Vocational Education Research

Indigenous VET participation, completion and employment outcomes: change over the last decade

Indigenous VET participation rates: How has the proportion changed?

Indigenous VET completion rates: How has the proportion changed?

Indigenous VET employment outcomes: How has the proportion changed?

Policy snapshot: Indigenous training and employment

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Continuing professional development for a diverse VET practitioner workforce

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2017 opinion pieces

<<https://www.ncver.edu.au/opinionpieces>>

NCVER published the following opinion pieces during 2017:

- Busting myths about VET: why it pays to do your own research before making education and training decisions, by Georgina Windley
- A chance to be bold and ambitious: make apprenticeships the lynchpin to a better integrated tertiary education sector, by Dr Craig Fowler & Dr John Stanwick
- For richer, for poorer and for better or worse outcomes: policy opportunities, by Genevieve Knight.

2017 webinars

<<https://www.ncver.edu.au/about/news-and-events/events/webinar-series>>

NCVER hosted webinars on a broad range of topics relevant to the tertiary education and training sector. The following webinars were presented during 2017, recordings of which are available on the NCVER Portal.

- A world of tertiary education information at your fingertips: VOCEdplus and the Pod Network
Presented by Kelly Frazer, NCVER on 1 June 2017
- Aboriginal & Torres Strait Islander engagement in VET and employment outcomes: trends, challenges and strategies
Facilitated by Georgina Windley, NCVER on 7 June 2017
- What makes for effective partnerships between employers and RTOs?
Presented by Erica Smith and Jackie Tuck, Federation University Australia on 20 June 2017
- What factors explain VET qualification completions (invite only)
Presented by Michelle Circelli and Adrian Ong, NCVER on 31 August 2017 and 16 November 2017
- How to know what skills are needed for work (invite only)
Presented by Gitta Siekmann, NCVER on 12 October 2017
- VET applied research: driving VET's role in the innovation agenda
Presented by Francesca Beddie, Make Your Point and Linda Simon, Charles Sturt University on 19 October 2017
- Choosing VET: aspirations, intentions and choice
Presented by Jenny Gore and Leanne Fray, University of Newcastle and Justin Brown, Australian Council for Educational Research on 31 October 2017

2017 presentations

External presentations by NCVET researchers

Event/stakeholder	Topic
Australian Library and Information Association (ALIA) – February	VOCEDplus Pod Network
Industry Leaders and Educators Engagement Symposium – March	Future VET: training trends in the travel, tourism and hospitality industry
Australian Vocational Education and Training Research Association – April	Uptake and utility of VET qualifications
CiCan Celebration Conference 2017 – April-May	Measuring the Return on Investment from TVET: an analytical framework
Queensland Catholic Education Commission – May	VET in Schools: what are the prospects?
The National Information Technology Continuous Improvement Network – May	Research into Information and Communications Technology
Industry Leaders and Educators Engagement Symposium – May	Panel discussion
International VET Conference: sustaining quality – June	VET in Schools: student uptake, employment and further study destinations
26th National VET Research Conference 'No Frills' – July	Indigenous VET participation, completion and outcomes: change over the past decade
SA Council Adult Literacy Annual Conference – August	The domino effect in adult education: learning together working together
TAFE Directors Australia (TDA) – September	The boundaries and connections between the VET and higher education sectors: 'confused, contested and collaborative'
World TVET Conference - September	Causes and consequences of being persistently not in education, employment or training (NEET) among Australian Youth
ACAL 2017 National Conference – September	Points of contact for research and teaching: exploring NCVET pods to improve practice
2017 Eportfolio Forum – September	Preparing today's learners for tomorrow's workplace
Central Institute of Vocational and Technical Education (CIVTE) (China) – September	The role of NCVET in research and statistics in the Australian VET sector
Korean Research Institute for Vocational Education and Training (KRIVET) – September-October	Recent trends in Australia apprenticeships and strategies for Industry 4.0

2017 presentations

Event/stakeholder	Topic
Quebec Institute of Mines – October	The role of NCVET in research and statistics in the Australian VET sector
AVETRA (NCVER-run OctoberVET event) – October	Tracking student destinations and outcomes
New Zealand Vocational Education and Training Research Forum – October	Plenary address
The Inclusive Education Summit 2017 – October	Who are the persistently NEET people?
Youth Affairs Council of Victoria Conference – October	What do Australian youth say? Key themes that have emerged from LSAY over the last 20 years by highlighting those that are still pertinent today, and noting areas that we still need to learn more about

In-house seminars by external organisations

Organisation	Topic
Integrated Information Service	Apprentice and Traineeship Information Service (AATIS)
Australian Bureau of Statistics	ABS Transformation Program and data management
Konstanz University	Becoming a vocational teacher in Germany: structural and pedagogical issues
Gartner	Learning analytics
Goran Roos	Vocational skills in the fourth industrial revolution
Central Institute of Vocational and Technical Education (CIVTE) (China)	VET in Australia and China, contrast, challenges and strategies
Federal Institute for Vocational Education and Training (BiBB) (Germany)	VET in tertiary education across Europe - state of the art, discussions and challenges
West Nottinghamshire College	UK manifesto for institutes of technology and higher apprenticeships
Integrated Information Service	Insight into Australian Apprenticeship Pathways website

2017 submissions

Submissions to parliamentary and other inquiries, list also available at
<<https://www.ncver.edu.au/about/news-and-events/submissions/submissions-2017>>

- Gender segregation in the workplace and its impact on women's economic equality. Submitted on 9 February 2017.
- 2030 Strategic Plan for the Australian Innovation, Science and Research System. Submitted on 30 May 2017.
- Inquiry into school to work transition. Submitted on 31 July 2017.
- Review of the National Vocational Education and Training Regulator Act 2011. Submitted on 18 August 2017.
- The Digital Economy: Opening up the Conversation. Submitted on 30 November 2017.
- Inquiry into Career Advice Activities in Victorian Schools. Submitted on 14 December 2017.



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