



Research messages 2016

National Centre for Vocational Education Research





Research messages **2016**

National Centre for Vocational Education Research

The views and opinions expressed in this document are those of the authors/project teams and do not necessarily reflect the views of the Australian Government or state and territory governments.

© Commonwealth of Australia, 2017



With the exception of the cover design, artwork, photographs, all logos and any material protected by a trade mark and where otherwise noted all material presented in this document is provided under a Creative Commons Attribution 3.0 Australia <<http://creativecommons.org/licenses/by/3.0/au>> licence.

The details of the relevant licence conditions are available on the Creative Commons website (accessible using the links provided) as is the full legal code for the CC BY 3.0 AU licence <<http://creativecommons.org/licenses/by/3.0/legalcode>>.

This document should be attributed as National Centre for Vocational Education Research 2017, *Research messages 2016*, NCVER, Adelaide.

IMAGES: GETTY IMAGES/iStock

ISSN	1838-8515	print edition
	1838-8531	web edition
TD/TNC	126.25	

Published by NCVER, ABN 87 007 967 311

Level 11, 33 King William Street, Adelaide SA 5000
PO Box 8288 Station Arcade, Adelaide SA 5000, Australia
P +61 8 8230 8400 E ncver@ncver.edu.au W <<https://www.ncver.edu.au>>

Follow us:  <<https://twitter.com/ncver>>  <<https://www.linkedin.com/company/ncver>>

Contents

Introduction	5
Productivity	13
Beyond mentoring: social support structures for young Australian carpentry apprentices	14
Costs and benefits of education and training for the economy, business and individuals	15
Cross-occupational skill transferability: challenges and opportunities in a changing economy	16
Defining ‘STEM’ skills: review and synthesis of the literature	17
Evaluation framework measuring Return on Investment (ROI) in TVET	18
Firms’ motivation for training apprentices: an Australian–German comparison	19
The Foundation Skills Literature Review Project	20
Measuring STEM in vocational education and training	23
Providing social support for apprentices: good practice guide	24
What is STEM? The need for unpacking its definitions and applications	25
When one door closes: VET’s role in helping displaced workers find jobs	26
Work-based learning and work-integrated learning: fostering engagement with employers	27
Participation and outcomes	29
Can VET help create a more inclusive society?	30
The impact of disadvantage on VET completion and employment gaps	31
Increasing survey engagement through gamification and the use of mobile devices	32
Shedding light: private ‘for profit’ training providers and young early school leavers	33

Uptake and utility of VET qualifications	34
Uptake and utility of VET qualifications: infographic	35
VET program completion rates: an evaluation of the current method	36
Teaching and learning	37
Graduate programs for VET students: is there a need?	38
The place and role of VET	39
Apprenticeships and vocations: assessing the impact of research on policy and practice	40
Assessing the impact of research: infographic	41
The development of Australia’s national training system: a dynamic tension between consistency and flexibility	42
Jurisdictional approaches to student training entitlements: commonalities and differences	43
Making sense of total VET activity: an initial market analysis	44
Student entitlement models in Australia’s national training system: expert views	45
Trends in VET: policy and participation	46
VET provider market structures: history, growth and change	47
VET provider market structures: infographic	48
Other research	49
24th National Vocational Education and Training Research Conference ‘No Frills’: refereed papers	50
Data on total investment in VET: what should be collected	54
Funding information	55
2016 research	56
2016 webinars	58

Introduction

The *Research messages* annual series presents a summary of the research-focused reports produced by the National Centre for Vocational Education Research (NCVER) each year. In addition to presenting the research reports published by NCVER during 2016, we have expanded this edition to include other relevant and informative resources, including summaries, infographics and statistical papers.

On behalf of the Ministers for Training from all Australian jurisdictions, NCVER undertakes and commissions strategic and applied research to help policymakers understand and improve the vocational education and training (VET) system. We seek to produce research that is far-sighted, tests new ideas and provides evidence to help inform policies and practices in the VET sector to ensure it meets the current and future skill needs of a wide range of relevant stakeholders, including individuals, government agencies, businesses and communities.

A key focus area of this research is the learning needs and educational pathways of students, who are at the heart of the VET system, and supporting individuals and organisations to make informed choices in skills development through the VET system.

NCVER's research prospectus

<<https://www.ncver.edu.au/about/research/national-research-priorities/research-prospectus-2015-16>>

NCVER's research is guided by our research prospectus, which outlines and categorises research themes and topics. This was developed following an environmental scan of the VET sector and its broader setting, the evaluation of outcomes and subsequent gaps from previous research, and strategic consultations with stakeholders from across the sector.

Based on the research prospectus, we have organised our research program into four priority areas, as reflected in the sections within this publication:

- Productivity
- Participation and outcomes
- Teaching and learning
- The place and role of VET

The following section presents some of the key findings from the projects that were published under each of these priorities in 2016.

Productivity

To sustain and build Australia's human capital.

Vocational education and training is central to economic growth and business productivity. Australia needs a VET system that ensures qualifications provide the skills that employers and industry need now and in the years to come. Efforts to improve workforce development and participation will be more effective if anchored on strong educational foundations, including sound literacy and numeracy and STEM skills.

Vocation in the 21st century requires capability beyond competence, and training cannot be narrow; it has to equip people to work in many jobs in shifting industry sectors and volatile economic cycles. Work needs to continue in developing reliable return-on-investment measures of vocational education, a complex task in a global economy.

Participation and outcomes

To support and build Australia's workforce diversity.

It has been shown that increased educational attainment is linked to better employment outcomes. The VET sector is continuously striving to address the dynamics of a diverse workforce, including the requirements of early school leavers and disadvantaged learners. Achieving good results for particular groups struggling in education and work prospects will benefit from more specific inquiry into their training needs and their prospects after training.

Greater refinement of how to identify regional and socio-economic disadvantage will help to target assistance. This requires solutions to be developed together at all levels of government and service provision. Students' aspirations to enter tertiary education must be fostered early and be accompanied by access to training and meaningful work experience.

Teaching and learning

To improve efficiency and drive new value-added products and services to Australia's VET system.

Learning, teaching and assessment practices continue to be key priorities in the VET sector. Learners need to be able to identify the relevance of their study. When their goals are vocational, the learning and teaching should be tied into the world of work and involve industry in both setting occupational training standards and in the assessment of the teaching of those standards.

The expansion in online delivery as well as other teaching tools, such as simulators, calls for a better understanding of how the system harnesses the power of technology. Funding needs to take into account the costs of good assessment (including recognition of prior learning), in terms of professional development for trainers and workplace assessors, moderation and validation. A number of research projects, such as those investigating student choice, are still in progress and these outcomes will be summarised in the next edition of research messages.

The place and role of VET

To improve efficiency and drive new value-added products and services to Australia's VET system.

Currently, the VET sector faces a variety of challenges, including a requirement to fulfil multiple purposes, contestable and variable training markets, differences in policy emphasis between federal and jurisdictional approaches and issues relating to provider quality. Structural change in the economy and broader labour market are having a major influence on the likely future focus for vocational training as it seeks to address the needs of new and emerging jobs while maintaining relevance for current jobs.

Much of Australia's tertiary education has a vocational purpose, as do some school offerings. This sandwiches the VET sector between the two and clouds understanding of its role. Clarifying this will help to produce smoother transitions, build trust and refine funding allocations. Further work on student choice allowing greater flexibility between VET and higher education is needed. All registered training providers juggle educational goals and business imperatives. Greater support for the VET teaching workforce is crucial to lifting quality. This means providing continuing professional development to ensure industry currency, creating opportunities for scholarships and addressing deficits in technological capability.

New in 2016

In 2016, NCVER introduced of a number of exciting information tools and resources that frame and complement our research activity.

Research prospectus: snapshot on progress <<https://www.ncver.edu.au/about/research/national-research-priorities/research-prospectus-snapshot-on-progress>>

This online resource presents a dynamic and current snapshot of the research activity undertaken against each priority area in the NCVER research prospectus (see pages 9–11 for a copy as at 31 December 2016).

VOCEDplus Pod Network <<http://www.voced.edu.au/pod-network>>

The VOCEDplus Pod Network is an online resource that provides continually updated access to relevant, quality VET research on various topics in one location. This resource enriches the user experience of VOCEDplus, NCVER's free international tertiary education research database of over 70 000 English language records, and showcases its content, coverage, relevance, and currency. Each 'Pod' includes latest news, NCVER research, events, links to other pods and more specific resources related to a theme.

Infographics

These highly-visual resources are designed to help people interpret NCVER's often-complex data and research quickly and clearly. Some examples included in this publication are:

- *Assessing the impact of research* infographic (page 41)
- *Uptake and utility of VET qualifications* infographic (page 35)
- *VET provider market structures* infographic (page 48).



Conferences, forums and webinars

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

No Frills 2016

<<https://www.ncver.edu.au/past-events/25th-national-vocational-education-and-training-research-conference-no-frills>>

Encompassing key community issues in the VET sector, the 25th National VET Research Conference 'No Frills' took place in July 2016 and saw 140 delegates come together at CQUniversity in Rockhampton to discuss and present research under themes of equity, engagement and evolution.

Training Products Reform Symposium

<<https://www.ncver.edu.au/publications/publications/all-publications/evolution-not-revolution-views-on-training-products-reform>>

NCVER hosted the Training Products Reform Symposium in August 2016 at Victoria University in Melbourne with approximately 60 delegates attending. A group of thought leaders articulated their views on the future development options for the design of training products (training packages and accredited courses) and synthesise these views into potential strategic options for the consideration of the Reform Working Group.

Future of Australian Apprenticeship Stakeholder Forum

The Future of Australian Apprenticeships Stakeholder Forum was co-hosted by NCVER with the Australian Government Department of Education and Training in Canberra in October 2016. The forum was attended by over 60 key stakeholders from across the VET sector. It aimed to stimulate thinking and robust discussion on the future of apprenticeships in Australia and to identify the potential future activities and actions that would enable apprenticeships to continue to service industry workforce needs.

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. Recorded webinars are available on the NCVER Portal. See page 58 for an overview of topics presented during 2016.



Research prospectus: snapshot on progress

Presented here is a snapshot (as at 31 December 2016) of the research activity undertaken against each priority area together with further research opportunities identified through the prospectus.

Productivity

To sustain and build Australia's human capital.



- Beyond mentoring: social support structures for young Australian carpentry apprentices, John Buchanan et al.
- Costs and benefits of education and training for the economy, business and the individual, Tabatha Griffin
- Cross-occupational skill transferability: challenges and opportunities in a changing economy, Darryn Snell, Victor Gekara & Krystle Gatt
- Data on total investment in VET: what should be collected, Gerald Burke
- Firms' motivation for training apprentices: an Australian-German comparison, Harald Pfeifer
- Industry restructuring and job loss: helping older workers get back into employment, Victor Callan & Kaye Bowman
- Measuring STEM in vocational education and training, Patrick Korbel
- What is STEM? The need for unpacking definitions and applications, Gitta Siekmann
- Work-based learning and work-integrated learning: fostering engagement with employers, Georgina Atkinson



- The contribution of the VET student placement process to innovation, Steven Hodge
- Employer training in a changed environment, Erica Smith
- Employer-supported training, prevalence, enablers and barriers, Chandra Shah
- Establishing an international framework to better measure ROI in VET, Phil Loveder
- Developing appropriate workforce skills for Australia's emerging digital economy, Victor Gekara
- The fourth industrial revolution - technological disruption implications for Australian VET, Pi-Shen Seet
- Skill use at work and future job opening for new entrants, Chandra Shah
- What is the current state of apprenticeships in Australia: a comparison of young and adult apprentices, Peta Skujins & Patrick Korbel
- What role for VET in the entrepreneurial ecosystem?, Don Scott-Kemmis



- Challenges within education and training systems in response to changing skill and knowledge requirements within industry
- Skills and knowledge utilisation and management
- The role of employers and industry in on-the-job skills formation and structured training arrangements

Participation and outcomes

To support and build Australia's workforce diversity.



- Shedding light: private RTO training for young early school leavers, George Myconos



- Disengagement in young people - how persistent is it?, John Stanwick
- Enhancing training advantage for remote Indigenous learners, John Guenther
- Factors enabling entry into and engagement with VET for young, early school leavers, George Myconos et al.
- Foundation skills literature review project, Michelle Circelli
- Improving student participation and success in post-school VET, Stephen Lamb
- Indigenous participation in education and training: understanding the gaps in the evidence base, Georgina Atkinson
- VET in Schools: training and labour market outcomes of VET in Schools students, Josie Misko



- Non-accredited training and the role of training outside the AQF
- Secondary-tertiary connections and articulation pathways
- Participation and outcomes for learners and employers based on various characteristics such as provider type and entitlement arrangements, using total VET activity
- National data on foundation skills

Teaching and learning

To strengthen learning, teaching and assessment practices for the VET workforce and students.



- Graduate programs for VET students: is there a need?, Bridget Wibrow & Laura Jackson



- Choosing VET: investigating the formation of VET aspirations, Hywel Ellis
- In their words: learner 'choice' in fully-contestable training markets, Justin Brown
- Positioned for the ideas boom: where does the VET workforce fit?, Francesca Beddie
- Revitalising the VET practitioner workforce for a changing world of work, Mark Tyler
- Social media and student outcomes: teacher, student and employer views, Victor Callan



- Quality and extent of consumer information
- Quality of teacher training

The place and role of VET

To improve efficiency and drive new value-added products and services to Australia's VET system.



- Data on total investment in VET: what should be collected, Gerald Burke
- Firms' motivation for training apprentices: an Australian-German comparison, Harald Pfeifer
- Jurisdictional approaches to student training entitlements: commonalities and differences, Kaye Bowman & Suzy McKenna
- Trends in VET: policy and participation, Georgina Atkinson & John Stanwick



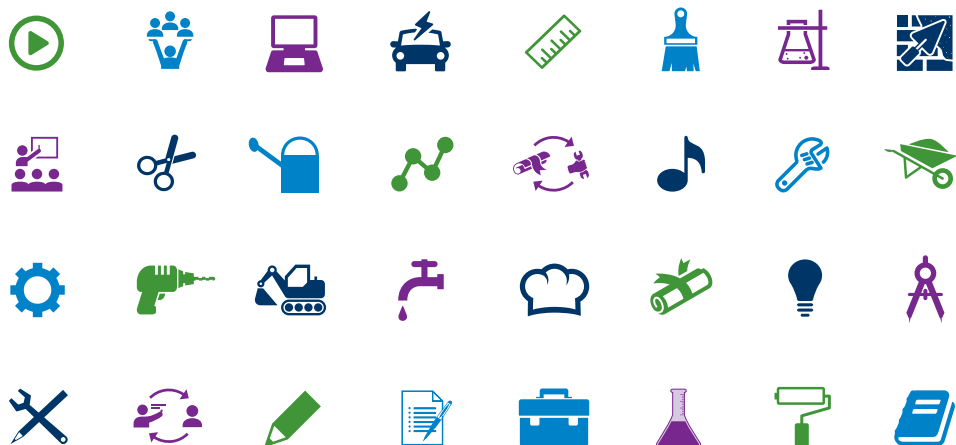
- Are we all speaking the same language? Understanding 'quality' in the VET sector, Tabatha Griffin
- The effect of the Victorian Training Guarantee on up-skilling later in life, Cain Polidano



- Entitlements, contestability, training markets and harmonisation across jurisdictions - impact and outcomes
- Foundations and frameworks for a whole tertiary sector



Productivity



Beyond mentoring: social support structures for young Australian carpentry apprentices

John Buchanan, Catherine Raffaele, Nick Glozier and Aran Kanagaratnam



www.ncver.edu.au/publications/2865.html

This study is an exploration of the work-based social support structures associated with the transition from school to work for young people and how these could, potentially, contribute to better mental health and wellbeing outcomes. Research and policy concerning young adults and mental health tends to focus on ‘at risk’ individuals; this project, however, examines more broadly the important role of the workplace as a potential site of social support. It also draws on and contributes to broader debates about the apprenticeship model in Australia and notions of vocational development. The findings have been generated from a literature review and eight case studies involving both small and large organisations across some of Australia’s leading firms and group training organisations, specifically those with apprentice completion rates sitting at around 90%, well above the industry average. The report identifies the forms of social support successfully provided to young carpentry apprentices.

Key messages

- Informal and peer-based mentoring practices play a significant role in supporting the mental health and wellbeing of apprentices and are often superior to those provided under a formal mentoring arrangement. The paradox is that these practices are hard to ‘formally’ nurture; however, employers can create environments in which they can succeed.
- The essential ingredient is a quality approach to vocational development, which both large and small organisations can foster by:
 - valuing the time required for both on- and off-the-job training
 - ensuring supervisors and peers recognise that skills development takes time and requires active nurturing on the job
 - placing high value on sharing skills and teamwork
 - respecting and placing importance on time for innovation
 - encouraging apprentices to tap into wider support networks
 - ensuring access to both formal and informal mentoring.
- Creating informal support structures works best when the arrangements are integral, not incidental, to the business model of the organisation. In other words, social sustainability is seen as inseparable from the strategies necessary for economic success.
- Formal mentoring plays an important role, and works well when mentors are formally separate from the employer and the workplace. It should be a complement to, and not replace, effective apprenticeship support arrangements.

A related good practice guide titled *Providing social support for apprentices: good practice guide* is also available from the NCVET Portal.

Costs and benefits of education and training for the economy, business and individuals



Tabatha Griffin

Understanding the costs and benefits of vocational education and training provides a basis for making decisions about investing in training. This review paper aims to summarise the recent research investigating the costs and benefits of VET, considering the topic from the perspectives of individuals, businesses and government.

This review paints a complicated picture; there are numerous ways to measure the costs and benefits of training, resulting in varied estimates of the return on investment. However, some overarching conclusions can be made at each of these levels based on recurrent findings in the research.

Key messages

- At the economic level, research on the return on investment in VET falls into two broad categories:

- determining the return on the investment for spending that has occurred
- investigating the potential return should spending/funding be altered.

Both of these approaches have demonstrated the value of VET to the economy through increases in employability and, to a lesser degree, increases in productivity. Education and training have also been shown to bring other, non-financial, benefits to society such as improved health and reduced national crime and drug use.

- For individual businesses, analyses of the return on investment in training result in highly variable estimates. This may be because the methods used appear to be more suited to industries where increases in productivity are easier to define and measure (such as in manufacturing, where some very high returns were reported, compared with service-based industries). It is particularly difficult to untangle the financial and non-financial benefits of training to business, as many improvements, such as reduced staff turnover, absenteeism, and positive changes to workplace culture, may also result in economic pay-offs for the business.
- For the individual student, higher-level VET qualifications, such as advanced diplomas and diplomas, are consistently demonstrated to provide a good return on investment. We can also be reasonably confident that students will experience a return on their investment at the certificate III and IV levels, as demonstrated in a majority of the studies reviewed. The individual returns from VET are mostly generated through increased participation in the workforce. Lower-level qualifications (certificates I and II) consistently resulted in low financial returns, although these qualifications may result in other benefits, such as further study or improved self-esteem and wellbeing.

This paper concludes with some practical guidelines on how to plan (or interpret) an analysis of the costs and benefits of training. This research includes a support document, *Evaluation framework measuring return on investment (ROI) in TVET*, which outlines an evaluative framework prepared as part of a broader program of work being undertaken cooperatively with UNESCO. Also of potential interest is the report *Data on total investment in VET: what needs to be collected* by Gerald Burke released by NCVET.

Cross-occupational skill transferability: challenges and opportunities in a changing economy



[www.ncver.edu.au/
publications/2862.html](http://www.ncver.edu.au/publications/2862.html)

Darryn Snell, Victor Gekara and Krystle Gatt

Industries, and the occupations encompassed by them, are susceptible to many influences, such as fluctuations in the Australian dollar, trade agreements and the emergence of new technologies and ways of working. A recent example of these changes is the decline of the auto manufacturing industry in Australia; closures in this industry have resulted in increasing redundancies leading to many people seeking work. In order to better understand where individuals in these situations can find work, this research looks at the transferability of skills between occupations at the same skill level. In order to do this, the research identifies growing and declining occupations across Australia, assesses how the VET system develops transferable skills and explores how workers facing retrenchment understand their transferable skills.

Key messages

- The transferability of a retrenched, or soon-to-be retrenched, worker's skills depends on their ability to identify specific skills as transferable. Many individuals focus on their technical skills when applying for jobs and do not consider other skills they may have developed, such as communication and knowledge of workplace health and safety. Transition programs and job support agencies should help these workers to better understand their transferable skills.
- Improvements could be made to the Australian VET system to encourage more transferability across occupations. The research points to employability skills being made more applicable to all workplace contexts. Currently, employability skills are embedded into training packages to ensure the development of these soft skills; however, they are often developed in an occupation-specific way, thus limiting their transferability. Another suggestion for training packages is to establish a common language to describe competencies, skills and knowledge to make the content of training packages easier to understand.
- The research findings argue the need to reconceptualise how occupations are classified in Australia, such that the transfer of skills is better acknowledged and encouraged. It is important to know how other occupations draw upon the skills inherent in a particular occupation. An occupational cluster framework would enable the mapping of skills across occupations within a 'family' cluster and encourage more movement within this cluster. This is a similar concept to vocational streams, whereby occupations are grouped according to their shared knowledge, skills and practices, rather than on specific workplace tasks and roles, the aim being to promote a more adaptable workforce (Wheelahan, Buchanan & Yu 2015).

For further research in the area of structural adjustment, see Victor Callan and Kaye Bowman's publication, *Industry restructuring and job loss: helping older workers get back into employment*, and John Stanwick et al.'s *The end of car manufacturing in Australia: what is the role of training?*. Both reports were published by NCVET in 2015.

Defining ‘STEM’ skills: review and synthesis of the literature

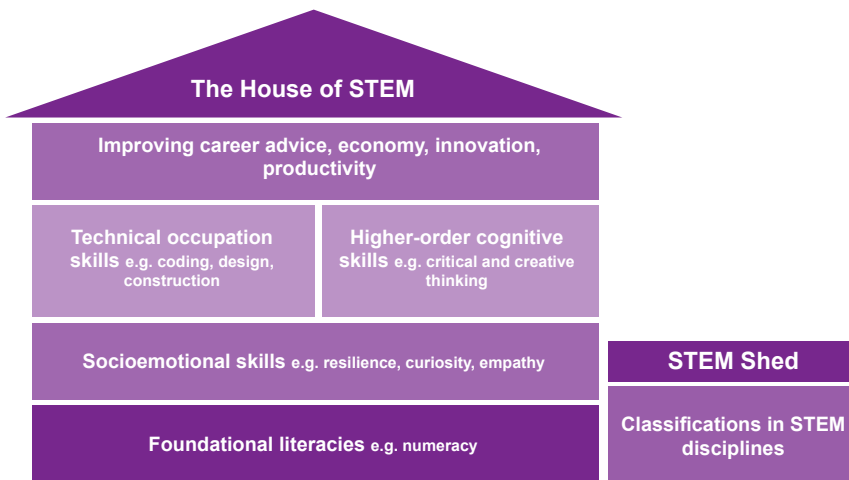
Gitta Siekmann & Patrick Korbel



www.ncver.edu.au/publications/2888.html

STEM (science, technology, engineering and mathematics) skills have been portrayed as vital skills for tackling the fundamental changes in how we will work in the future. STEM is currently a topic for significant discussion but there is a lack of consensus about its definition. In fact, there is much debate over whether STEM is a viable construct.

This review explores the concept of STEM and is proposing a succinct approach to defining STEM skills. It provides an overview of the current STEM debate and a review of the literature on the various aspects and roles for STEM concepts, as well as descriptions of the knowledge and skills associated with STEM competency. This synthesis aims to clarify definitions relating to STEM competency and to identify its place in vocational education and training and in the twenty-first-century skills framework.



In this analogy, STEM is the ‘roof’ covering the building, which is based on a foundation of skills needed for everyday life, such as literacy and numeracy. To succeed at all levels of education and employment, a sense of agency and self-efficacy is supported by socioemotional skills, such as curiosity and resilience. Further rooms are separately occupied by advanced cognitive skills, such as critical and creative thinking and technical, occupation or discipline related skills. The ‘Stem Shed’ represents the tools that can be used to help categorise and measure skills and outcomes via fields of education, occupation or industry.

Evaluation framework measuring return on investment (ROI) in TVET



[www.ncver.edu.au/
publications/2873.html](http://www.ncver.edu.au/publications/2873.html)

Jane Schueler

This issues paper provides further information in support of the research report, *Costs and benefits of education and training for the economy, business and individuals*. It focuses on the key findings and issues about measuring return on investment (ROI) from training featured in existing TAFE-delivered vocational education and training (TVET) studies and literature. It considers the factors and elements involved in the measurement of ROI from a ‘triple bottom line’ perspective: that is, the economic, social and community benefits in the TVET sector across multiple stakeholders. It aims to inform and support progress towards establishing an international framework to better measure the ROI in TVET.

To better understand how to measure ROI in a vocational context requires an overarching view. This paper highlights the elements of ROI and outlines a guide to an evaluative framework that focuses on methods and processes to measure ROI. This includes setting up the scope and purpose of the framework, developing guiding principles, establishing an ROI model, identifying costs, benefits and factors that impact on ROI and presenting an approach to data collection. It aims to provide a better understanding of the ROI process and points out factors and key questions to consider for ROI implementation.

Key messages

- ROI is context specific to the stakeholder and relative to the environment. The outcomes are embedded in different national structures, nature of the training and definition of TVET systems (OECD 2008). Each study or statistical dataset have their own contextual underpinnings.
- ROI measurement is often economic in nature (Independent Economics 2013) with recent studies endeavouring to incorporate social impact (IIP 2012); for example, Social Return on Investment Model (SROI).
- ROI is measured in terms of evaluative or forecasting measurement tools.
- The two main training influences are through improved employability and increased productivity (Independent Economics 2013).
- Costs and total investment are generally underestimated. Indirect costs such as foregone opportunities are more difficult to measure.
- The direct costs of training are generally known and expressed in monetary terms, but the benefits may be subjective and difficult to quantify for monetary conversion (Barker 2001).
- Benefits may arise at different points in time (OECD 2008). There are tangible and intangible returns.

Firms' motivation for training apprentices: an Australian–German comparison

Harald Pfeifer



[www.ncver.edu.au/
publications/2875.html](http://www.ncver.edu.au/publications/2875.html)

Apprenticeships are a well-established pathway to employment across many countries, with a particularly long and enduring history in Germany and Australia. Apprenticeships are characterised by a tripartite relationship between employer, apprentice and training organisation. The available international literature suggests that the institutional framework for training in a country is an important determinant of a firm's motivation to provide training, and it influences their willingness to bear (at least part) of the training costs.

This study investigates how firms in Germany and Australia compare when dealing with the institutional arrangements for apprenticeship training in their countries, with particular attention given to factors which may impact on their training motivation.

Key messages

- Employers of trades' apprentices in both Germany and Australia appear to bear substantial costs for training their apprentices.
- Institutional frameworks in Germany foster an investment model, a model which emphasises the benefits of employing apprentices after training, while in Australia some firms adopt more of a production (that is, substitution for 'regular' workers) model of apprenticeship training, although there is a relatively strong investment motivation for trade firms in Australia.
- For firms focused on the short-term costs and benefits of training, the withdrawal of some national government incentive payments in Australia has led to a weaker commitment to training, most evident in non-trade trainee places being offered.
- By contrast, firms training in trade occupations appear to be more investment-oriented and are more inclined to continue training, or employ an apprentice after training, even with the withdrawal of incentives.

This paper does not directly address the relationship between firms' motivation for training, the quality of the training provided and resultant completions. The author points to further needed inquiry into the existence and/or withdrawal of incentive payments on training quality and subsequent labour market outcomes for apprentices.

The Foundation Skills Literature Review Project

Building the research capacity of the VET sector is of key interest to the National Centre for Vocational Education Research (NCVER). The Foundation Skills Literature Review Project, funded by NCVER, provided scholarships to practitioners to develop their research skills. Skills were developed by undertaking literature reviews focused on key topics relating to foundation skills. Here, 'foundation skills' refers to adult language, literacy (including digital literacy) and numeracy skills, as well as employability skills, such as problem-solving, collaboration and self-management.

The four main topic areas were:

- perspectives on adult language, literacy and numeracy
- policy contexts and measures of impact
- context and sites – pedagogy and the learners
- workforce development.

The literature reviews will form a key information source for the Foundation Skills Pod, a new resource hosted on VOCEDplus <<http://www.voced.edu.au/pod-foundation-skills>>. The Foundation Skills Literature Review Project is a partnership between NCVER, the University of Technology Sydney and the Australian Council for Adult Literacy.

The following four literature reviews are summarised on the next two pages:

- *The Australian literacy and numeracy workforce: a literature review*
- *Exploring perspectives on adult language, literacy and numeracy*
- *Foundation skills policy contexts and measures of impact*
- *The salience of diversity in foundation skills contexts, pedagogies and research.*

The Australian literacy and numeracy workforce: a literature review

Foundation Skills Literature Review Project

Joanne Medlin

In this review the focus is on workforce development. The continuing development of the adult language, literacy and numeracy, and employability skills workforce is critical. The National Foundation Skills Strategy for Adults includes a specific priority focus on workforce development, with the aims of this priority focus being threefold:

- to build the skills of specialist language, literacy and numeracy practitioners
- to develop the workforce to enable the effective teaching of employability skills
- to support vocational trainers to better integrate foundation skills with vocational training.

In undertaking a review of literature from the last 10 years, Medlin focuses on the literacy and numeracy workforce. She highlights the tensions for practice, professional development and the identity of the literacy and numeracy workforce that have arisen from the different perspectives on the contribution of adult literacy and numeracy to economic productivity, social cohesion and the development of the individual.



[www.ncver.edu.au/
publications/2904.html](http://www.ncver.edu.au/publications/2904.html)

Exploring perspectives on adult language, literacy and numeracy

Foundation Skills Literature Review Project

Daniella Mayer

In this review the focus is on the perspectives of adult language, literacy and numeracy. Language, literacy and numeracy are political. Different theoretical lenses and different perspectives lead to different understandings of what language, literacy and numeracy are and who is considered literate or numerate. Here Mayer has focused particularly on the human capital and social practices perspectives, which at times do not sit comfortably in relation to each other.

Human capital refers to the knowledge, skills and competencies people have that help facilitate their personal, social and economic wellbeing. In this context, language, literacy and numeracy are considered as discrete 'skills' that can be taught, with progress measured using instruments such as the Survey of Adult Skills, a component of the Organisation for Economic Co-operation and Development (OECD) Programme for the International Assessment of Adult Competencies (PIAAC). A social practices perspective is reflected in the in situ studies of adults' language, literacy and numeracy practices in the community and workplace, that is, investigations that look at how people actually use language, literacy and numeracy, with whom and why.



[www.ncver.edu.au/
publications/2906.html](http://www.ncver.edu.au/publications/2906.html)

Foundation skills policy contexts and measures of impact

Foundation Skills Literature Review Project

Jane Newton

This review looks at policy contexts and their measures of impact, with a particular focus on foundation skills policy in Australia, implemented as the National Foundation Skills Strategy for Adults, 2012–22. It highlights that adult education and learning policies, both here and in other countries such as the United States and the United Kingdom, have been increasingly influenced by international point-in-time assessments; namely, the Organisation for Economic Co-operation and Development's (OECD) suite of adult literacy surveys. The use of these types of assessments fits with the push for a more human capital approach to foundation skills policy development in Australia in recent years; that is, a focus on the skills people have and the skills they need to develop to progress through or change jobs, undertake education and training, and more fully participate in their community.

In this review Newton draws attention to the lack of research into foundation skills policy implementation and its impact. With the National Foundation Skills Strategy for Adults having been in place since late 2012, she suggests that an examination of its impact in addressing the needs of adults with low levels of foundation skills, and also in raising the skills of the Australian workforce, is warranted.



[www.ncver.edu.au/
publications/2905.html](http://www.ncver.edu.au/publications/2905.html)

The salience of diversity in foundation skills contexts, pedagogies and research

Foundation Skills Literature Review Project

Lynda Cameron

This review focuses on 'contexts and sites – pedagogy and the learners'. In reviewing both national and international research, as well as grey literature, the author has delved into the different contexts in which adult language, literacy and numeracy are being delivered, who the learners are and the pedagogies in use, to elucidate what works best for whom and why.

Through this review Cameron highlights the complexity of teaching foundation skills: the diversity of learners and their learning needs; the varied contexts or places in which teaching or training takes place; and the ongoing technological changes, all of which impact on what works and for whom and why.

She draws attention to the benefits of longitudinal research and the need for further research into the impact of non-formal learning environments on the development of foundation skills as ways to expand our knowledge of good teaching and learning practices.



[www.ncver.edu.au/
publications/2908.html](http://www.ncver.edu.au/publications/2908.html)

Measuring STEM in vocational education and training

Patrick Korbel



[www.ncver.edu.au/
publications/2888.html](http://www.ncver.edu.au/publications/2888.html)

The concept of ‘STEM’ (science, technology, engineering and mathematics) has influenced many education and workforce strategies and policies with the intention of improving innovation, productivity and international competitiveness. Generally, the focus has been on how the school and university sectors can help equip the workforce with the STEM-related skills and knowledge considered necessary for the changing economy (see Siekmann and Korbel 2016).

This paper explores ways to measure how the vocational education and training (VET) sector is contributing to the development of STEM-related skills. Better measurement of STEM in VET can help to identify supply and demand for education and training, assess (and improve) outcomes and efficiency, direct funding and resources, and properly inform students’ choices.

For further information, see the accompanying paper *What is STEM? The need for unpacking its definitions and applications* and support documents *Defining ‘STEM’ skills: review and synthesis of the literature* and *Identifying STEM occupations: national and international approaches*, available at <<http://www.ncver.edu.au/publications/2889.html>>.

Key messages

- STEM is a complex and multi-faceted concept encompassing a range of competencies; foundational, socio-emotional, advanced cognitive and technical skills. Nevertheless, it is important to find a way to measure the extent of VET’s contribution to the development of STEM skills and knowledge to properly represent VET and establish its place alongside school and university.
- Existing data can be used to measure STEM in VET by counting the number of enrolments in VET programs by field of education, intended occupation and relevant industry. These approaches are useful when comparing VET to other education sectors, analysing employment and labour force data and assessing industry skills needs, respectively.
- Other approaches to measuring STEM can be more comprehensive but rely on detailed data about the competencies required in various occupations. These are not easily collected or quantified; however, possible ways to achieve this include data linkage or conducting surveys.

Providing social support for apprentices: good practice guide

NCVER



[www.ncver.edu.au/
publications/2866.html](http://www.ncver.edu.au/publications/2866.html)

Formal mentoring is an important aspect of apprenticeships; however, it is also informal mentoring – practices that are difficult to formally nurture – that plays a significant and effective role in supporting the overall wellbeing of an apprentice. This good practice guide is designed to help employers think about and provide work-based social support structures that may contribute to the health and wellbeing of young apprentices as they transition to the world of work. This guide is based on the report *Beyond mentoring: social structures of support for young Australian carpentry apprentices* by John Buchanan, Catherine Raffaele, Nick Glozier and Aran Kanagaratnam from the University of Sydney.

Key messages

- Lead by example - social support flows from a comprehensive approach to apprenticeship development. Formal mentoring arrangements are not the complete, or even the most important, form of social support provided to apprentices. Indeed, not all employers, especially small business, have the capacity or need to formally mentor their apprentices.
- Enhance social support available through a positive culture of workforce development. Mentoring should complement and not substitute an ‘expansive’ vocational development approach.
- Be aware of and encourage your apprentices to tap into the wider social support networks. It may not be appropriate for employers to play the dual role of disciplinarian and carer. There are a wide range of individuals or organisations involved in the professional and personal development of an apprentice.
- Extend the role and purpose of induction practices by tapping into other personal development opportunities. Apprentices appreciate assistance with, or a greater awareness of, developing life skills. This covers matters such as healthy living, cooking, communication, punctuality, personal appearance and financial matters, including the importance of savings.

What is STEM? The need for unpacking its definitions and applications

Gitta Siekmann



[www.ncver.edu.au/
publications/2889.html](http://www.ncver.edu.au/publications/2889.html)

There is a strong belief by most governments, enterprises and higher education providers that competence in the academic fields of science, technology, engineering and mathematics (STEM) is not developing as quickly as required in spite of the importance for innovation, productivity, prosperity and international standing. This belief is often amplified by the media. The generality of the umbrella term 'STEM' as a synonym for a diverse group of skills and academic fields poses various problems in terms of workforce planning and targeted interventions. This summary brings together findings from the National Centre for Vocational Education Research's detailed exploration of STEM skills, which investigated educational and occupational concepts and their associated definitions.

For further information, see the accompanying paper *Measuring STEM in vocational education and training* and support documents *Defining 'STEM' skills: review and synthesis of the literature* and *Identifying STEM occupations: national and international approaches*, available at <http://www.ncver.edu.au/publications/2888.html>.

Key messages

- The acronym 'STEM' has been used simplistically to bundle up all education and occupations in the scientific and technical domains.
- Scientific and technical education and skill formation are not limited to schools and universities but are also intrinsic in the vocational education and training (VET) sector.
- Competency in science, technology, engineering and maths are only one asset set among other equally valuable contributions of non-technical disciplines in a holistic skills framework for education and successful employment.
- While STEM is recognised as a key enabler for national skills, its various (and occasionally conflicting) meanings and excessive use render it increasingly meaningless.

When one door closes: VET's role in helping displaced workers find jobs

Bridget Wibrow and Michelle Circelli



[www.ncver.edu.au/
publications/2861.html](http://www.ncver.edu.au/publications/2861.html)

This *At a glance* brings together findings from research commissioned by the National Centre for Vocational Education Research (NCVER) that investigates the concept of skills transferability between declining and growing occupations. Key points highlighted at the national research forum 'When one door closes: VET's role in re-skilling displaced workers', hosted by NCVER in November 2015, are also addressed.

All the work presented in this *At a glance* highlight the critical role vocational education and training (VET) can play in helping retrenched workers find new jobs. In particular, the research on skills transferability, undertaken by Dr Darryn Snell, Dr Victor Gekara and Dr Krystle Gatt, demonstrates the potential benefit cross-occupational skills transfer can have in mediating the impact of job loss. Here, cross-occupational skills transfer refers to situations where workers can use the skills from their current job to find work in a completely different job without the need for further significant upskilling or re-skilling. (*Cross-occupational skills transferability: challenges and opportunities in a changing economy* by Snell, Gekara and Gatt 2016).

Key messages

- Manufacturing, information media and telecommunications, wholesale and retail trade have all had notable job losses in recent years.
- A large proportion of jobs in Australia are likely to be highly susceptible to computerisation and automation in the near future.
- Greater effort is required to help workers identify and understand their transferable skills in order to find alternative employment; this is a role that support workers can play.
- Improved knowledge of local labour markets can help to more accurately identify potential job opportunities, or areas for retraining displaced workers.
- Within the VET sector, an occupational cluster framework approach could be applied to training packages, which would enable units of competency to be more readily shared across occupations. In turn, it would allow for greater mobility between jobs.

The research forum on VET's role in re-skilling displaced workers was held at the Melbourne Convention and Exhibition Centre (MCEC) on 18 November 2016 and discussed the role vocational education and training plays now and into the future in assisting occupational transferability and how policy in this area can help workers transition.

To access the program, presentations and list of speakers, go to <<https://www.ncver.edu.au/past-events/when-one-door-closes-vets-role-in-re-skilling-displaced-workers>>.

Work-based learning and work-integrated learning: fostering engagement with employers

Georgina Atkinson



[www.ncver.edu.au/
publications/2879.html](http://www.ncver.edu.au/publications/2879.html)

Work-based learning and the inclusion of the world of work into tertiary students' learning lie at the heart of the Australian vocational education and training (VET) system. Traditionally this has been through apprenticeships and traineeships, which have a strong focus on 'on-the-job' training, but also through 'work-oriented' institutional training. However, an increased emphasis on work-integrated learning in university education is emerging.

Work-integrated learning, with its emphasis on intentionally integrating students' experiences in a work setting into their educational programs, has been evolving and growing in prominence. This was evident with the introduction of the National Work Integrated Learning Strategy in 2015, a partnership between universities and industry aimed at expanding work-integrated learning and strengthening engagement with employers. Despite the strong emphasis of work-based learning in post-secondary education, both VET providers and universities face challenges when it comes to engaging with industry and employers in these educational provisions.

This paper summarises the key features of work-based learning and work-integrated learning and discusses how engagement with industry and employers can be fostered and what the two sectors can learn from each other. It draws on the vast literature on work-based learning and work-integrated learning and provides an extensive bibliography and resource list.

Key messages

- Work-based learning is learning that occurs in a work environment, through participation in work practice and process, and is integral to vocational education and training.
- Work-integrated learning at university is learning that comprises a range of programs and activities in which the theory of the learning is intentionally integrated with the practice of work through specifically designed curriculum, pedagogic practices and student engagement.
- The two concepts in the two education sectors have similarities and differences, but irrespective of the sector, integrating the world of work into education and training is becoming increasingly popular.
- Both work-based and work-integrated learning require the involvement of employers and industry, and both sectors face challenges engaging with employers.
- The keys to successful engagement in either approach include clear information, ongoing communication, flexibility with approaches, committed and skilled teachers who support students, engaged students, the involvement of intermediary organisations to organise and facilitate activities, and the commitment of business and education leaders to drive work-based learning and work-integrated learning in their communities and companies.



Participation and outcomes



Can VET help create a more inclusive society?

Hielke Buddelmeyer and Cain Polidano



[www.ncver.edu.au/
publications/2817.html](http://www.ncver.edu.au/publications/2817.html)

This publication provides a summary of a program of research undertaken for NCVET by the Melbourne Institute of Applied Economic and Social Research between 2011 and 2014. Comprising six projects, the body of work focuses on the impact of education and training on social inclusion and on the labour market outcomes of disadvantaged learners. With the economy becoming increasingly skills-based and with the growing importance of having recognised qualifications to secure a job, there is a greater risk of becoming socially excluded through lack of qualifications. This gives vocational education and training (VET) a particularly important role, because it is highly accessible and adaptable, including for those who, due to their life circumstances, may be regarded as disadvantaged.

In this publication, ‘disadvantaged’ is used to encapsulate those from low socioeconomic (SES) backgrounds, individuals with a disability, those from non-English speaking backgrounds and Indigenous Australians. While there can be quite sizeable disparities between disadvantaged and non-disadvantaged students, in terms of their educational and labour market outcomes, and the extent of their social inclusion, in none of the research does it become apparent that this gap can be closed. At best, it can be narrowed. Even when a large portion of the gaps can be ‘explained’, meaning that we have identified the specific factors and the extent to which they contribute to the gap, it is often not realistic to expect policy to influence those factors. However, the following insights with direct relevance to policy can be drawn from the work presented here.

Key messages

- Social inclusion is about being able to fully participate in social and economic life. Education and training has a key role in enabling this.
- For students from disadvantaged backgrounds, progression in educational qualification levels may require more detours or stages than for the average student. But progression is important.
- In terms of social inclusion, there is a clear split in Australia’s society along educational lines: those without Year 12 or, at most, certificate II qualifications are much less socially included than those who have completed Year 12 or at least a certificate III qualification.
- Policy and program efforts therefore should be focused on school completion and articulation to at least certificate III level.

A video presentation by authors Hielke Buddelmeyer and Cain Polidano, which summarises the six research projects undertaken by the Melbourne Institute of Applied Economic and Social Research, is available from the NCVET Portal at <http://www.ncver.edu.au/publications/2817.html>.

The impact of disadvantage on VET completion and employment gaps

Duncan McVicar and Domenico Tabasso



[www.ncver.edu.au/
publications/2818.html](http://www.ncver.edu.au/publications/2818.html)

Educational attainment tends to be lower and labour market outcomes poorer among disadvantaged individuals. Here ‘disadvantage’ refers to those who have any form of disability, Indigenous Australians, those who live in low socioeconomic status (SES) areas and those with limited English language skills. The VET sector provides an entry point into post-compulsory education for disadvantaged individuals, and in doing so gives them the opportunity to develop skills and knowledge of immediate usability in the labour market.

But do disadvantaged students gain the same benefit from participating in vocational education and training as their non-disadvantaged peers? More specifically, how do their qualification completion rates and post-VET labour market experiences compare? Previous research, including recent work undertaken by the National Centre for Vocational Education Research (NCVER; Griffin 2014), suggests that individuals from some disadvantaged backgrounds tend to have poorer outcomes in both respects.

Taking advantage of the National VET Provider Collection and the Student Outcomes Survey, this work builds on previous research by investigating the impact of belonging to one or more of these disadvantaged groups on VET completion and on subsequent employment outcomes. The authors find that sizeable gaps in both completion and employment rates (post-VET completion) exist between the disadvantaged individuals and their non-disadvantaged peers.

Key messages

- Learners from disadvantaged backgrounds who enrol in VET are less likely to complete by comparison with their non-disadvantaged peers. The completion gap is as much as ten percentage points for Indigenous students and those experiencing multiple disadvantage, and as low as two percentage points for those with limited English language skills.
- Most of these completion gaps can be explained by differences in individual characteristics beyond the disadvantage (for example, age, gender) and course characteristics (for example, field of education, course duration).
- For some disadvantaged learners, completion gaps do not necessarily directly accord with employment gaps; for example, individuals with limited English skills have the greatest difficulties in finding a job, with the gap for non-disadvantaged peers estimated to be around 36 percentage points.
- Employment status before starting the VET course, not actually completing the course, is a key factor in determining employment outcomes post-VET. Therefore, policies or measures aimed at closing the completion gap may not, in themselves, be effective in closing employment gaps.

Increasing survey engagement through gamification and the use of mobile devices



[www.ncver.edu.au/
publications/2860.html](http://www.ncver.edu.au/publications/2860.html)

Maree Ackehurst and Rose-Anne Polvere

This paper provides an overview of literature that considers the use of gamification to make surveys more appealing to respondents. Ensuring higher quality data and increased participation through full engagement of survey respondents has become a priority, especially in light of the reputation that online surveys are ‘dull’. The authors discuss trends in the gamification of web surveys and options for designing surveys for mobile devices, also discussing challenges faced by survey designers.

Key messages

- Gamification can tap into a deeply entrenched human culture involving games and game playing, increasing the engagement of survey respondents.
- Designers will need to allow more time and resources for the design, implementation and testing of gamified surveys.
- Participants respond using any device at hand, therefore providing a more flexible survey platform is vital.
- Mobile devices provide a widely available and inexpensive means of engagement with respondents.
- Increased respondent satisfaction to surveys optimised for mobile platforms has the potential to deliver data of equal, if not higher, validity than standard surveys.
- Overall, literature on the use of gamification and other similar techniques for increasing engagement in web surveys, though not extensive yet, is encouraging.

Shedding light: private ‘for profit’ training providers and young early school leavers

George Myconos, Kira Clarke and Kitty Te Riele



[www.ncver.edu.au/
publications/2885.html](http://www.ncver.edu.au/publications/2885.html)

This research aims to shed light on the role of private providers in delivering training to a particular cohort of learners, young people who have left school early. The authors surveyed 130 private, for-profit registered training organisations (RTOs) to find out their perspectives on teaching and learning practices, engaging with early school leavers, and the educational and wellbeing support services provided to these young learners.

Key messages

- Young early school leaver learners face a range of barriers to participating in education and completing their qualifications. The extent and persistence of these barriers is not always evident until after enrolment. Given the often small size of private RTOs, there remain challenges as to how they can help address barriers to participation in and completion of VET.
- The size of private RTOs is important, with private RTOs claiming their small scale appeals to early school leavers who may have struggled in larger institutional settings. However, the size of many private RTOs can also cause problems as they may be too small to provide adequate infrastructure and support services to the learners.
- The strengths identified by the surveyed private RTOs include:
 - mentoring and pathways support staff
 - language
 - literacy and numeracy programs and support
 - strong employer/industry connections to facilitate workplace-based training.
- The private RTOs in the study were eager to show a commitment to early school leavers and a willingness to support these learners to complete their qualifications. However, unsurprisingly, this is limited by the commercial realities of running a business in the ever-changing VET landscape and funding regimes.

The practices of private RTOs have come under intense scrutiny in recent times. With the introduction of the total VET activity (TVA) data collection, it will be useful to glean more information over the coming years and hopefully help shed more light on private RTOs and the training they provide to all learners.

Uptake and utility of VET qualifications

Patrick Korbel and Josie Misko



[www.ncver.edu.au/
publications/2894.html](http://www.ncver.edu.au/publications/2894.html)

Training packages and accredited courses are the core training products of the nationally accredited VET system in Australia. Developed in consultation with industry, they define the units of competency, the qualifications and the guidelines against which competency performance can be assessed.

Review and reform of national training products has been actively pursued by training ministers through the Council of Australian Governments (COAG) Industry and Skills Council.

At the request of the National Training Product Reform Working Group, NCVET recently convened a symposium on training products reform. This symposium (held in September 2016) gathered a range of expert voices from across the sector to reflect on and provide suggestions for how the system could be improved. This research report complements the symposium discussions.

The research findings build on the picture of the Australian VET sector provided by the recent NCVET reports, *Making sense of total VET activity: an initial market analysis* (Anlezark & Foley 2016) and *VET provider market structures: history, growth and change* (Korbel & Misko 2016). Together, these three reports provide analysis of the national VET system, the diversity and growth of training providers, and the uptake and use of qualifications.

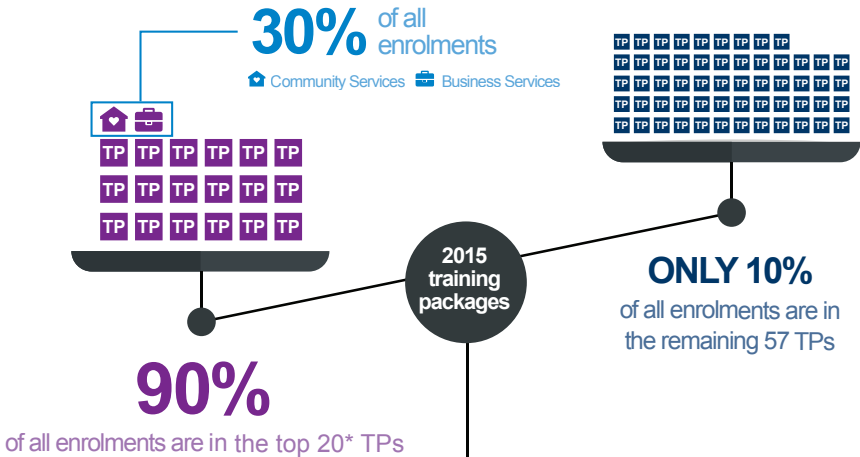
Key messages

- Analysis of Total VET students and courses 2015 shows 20 training packages supported 90% of the enrolments and the remaining 57 training packages had 10% of all enrolments. Two training packages accounted for around 30% of enrolments.
- Analysis also shows that enrolments in training package qualifications are heavily concentrated in relatively few qualifications. In 2015, 200 qualifications (12%) accounted for 85% of the enrolments, while the remaining group of 1444 qualifications (88%) had some 15% of enrolments. Some 14 qualifications accounted for 25% of all enrolments.
- There were 283 qualifications that recorded no enrolments over a two-year period (2014–15), with these spread across 49 training packages.
- The results show that enrolments in training packages and their related qualifications exhibit very wide extremes in their uptake (based on training provider submissions to the National VET Provider Collection). This dispersion is a reflection of student choice, training provider offerings and also the complexity of present arrangements in establishing and managing training package qualifications, which imposes significant administrative burden across the VET sector.
- Other nations have implemented policy regarding more rigorously reviewing and rationalising their equivalent training products and qualifications. Such policies help to reinforce qualifications that are valued and contemporary, as well as limiting their number. Policies are also directed at improving overall design, such that related occupations have meaningful commonality and utility in qualifications, the aim being to provide students greater flexibility in preparing for an uncertain labour market.

Uptake and utility of VET qualifications: infographic

Nationally recognised vocational education and training (VET) in Australia predominantly consists of enrolments in training package qualifications or skill sets. Total VET activity data has been used to examine the pattern of enrolments in training package qualifications to explore the uptake and utility of these qualifications.

A LARGE CONCENTRATION OF ENROLMENTS IN FEW TRAINING PACKAGES (TPs)



*Top 20 training packages are those with the most enrolments.

A CONCEPTUAL MODEL TO STREAMLINE QUALIFICATIONS



So if there was only one qualification for each occupation†...

1631 qualifications



could become

500 qualifications

AN EXISTING EXAMPLE

- 1** OCCUPATION: PERSONAL CARE ASSISTANT
- 1** QUALIFICATION: CERTIFICATE III IN INDIVIDUAL SUPPORT
- 3** SPECIALISATIONS:
 - DISABILITY SUPPORT
 - AGED CARE SUPPORT
 - HOME OR COMMUNITY SUPPORT

SOURCE: <<https://www.education.gov.au/broad-qualifications-lead-more-one-job-outcome>>.

† In use qualifications identified in the report with an assigned ANZSCO occupation.

VET program completion rates: an evaluation of the current method

NCVER



[www.ncver.edu.au/
publications/2898.html](http://www.ncver.edu.au/publications/2898.html)

The premise to this work is a simple question: ‘how reliable is the method used by NCVER to estimate projected rates of VET program completion?’ In other words, how well do early projections align with actual completion rates some years later?

Completion rates are simple to calculate with a cohort of students who start together in a very short program with a defined end date. The context in vocational education and training (VET) is, however, far more complex. Program lengths vary and may span several years, students commence at different times and many study part-time. Waiting for all students to complete or ‘drop out’ of their training before calculating an actual completion rate gives a reliable answer, but is somewhat impractical.

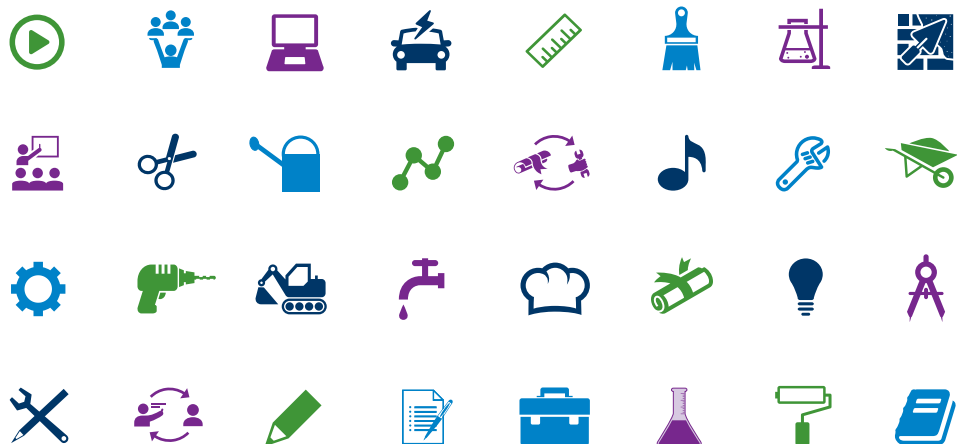
This paper summarises the key findings from a technical review of the validity of the method long used by NCVER in estimating projected completion rates for government-funded VET programs. This analysis required the interrogation of large longitudinal data sets with tens of millions of enrolments over multiple years. Whilst the work beneath it is complex, the outcomes are revealing because of ever-high interest in completion rates as measures of the efficiency and effectiveness of the VET sector.

Key messages

- The method long used by NCVER for estimating VET program completion rates using data from the National VET Provider Collection is shown to be reliable and aligns well with actual rates of completion for historical estimates. One of the advantages of the methodology is that it can be readily applied to subsets of the data based on student demographics or attributes of the training.
- Given that it takes a number of years for actual rates of completion to stabilise, the method is well suited for inclusion as part of any method of assessing completion rates, where the projected completion rate method is used to estimate rates for the most recent years and actual rates used for prior years.
- The technical review has also shown that the current predictive method can be improved by defining a program’s commencing year as the year it first appears in the National VET Provider Collection rather than using the commencing flag variable.
- It is anticipated that the incorporation of unique student identifiers into any preferred methodology, and its extension to total VET activity, can be phased in from the collection of 2017 training activity.



Teaching and learning



Graduate programs for VET students: is there a need?

Bridget Wibrow and Laura Jackson



[www.ncver.edu.au/
publications/2846.html](http://www.ncver.edu.au/publications/2846.html)

This *At a glance* seeks to investigate the extent and feasibility of graduate programs for vocational education and training (VET) students, excluding apprentices and trainees. Graduate programs are a type of employment targeted at recent graduates and are common in the higher education sector. Based on desktop research and discussions with key informants, this paper explores the following key questions:

- What are the elements of good and bad practice in employment programs for recent graduates?
- What are the benefits of graduate programs to employers?
- What value do employers and graduates realise from these programs?
- Is there a role for internships, cadetships and graduate programs for VET graduates?
- Are other initiatives, such as work-integrated learning, more suited to vocational education and training?

Key messages

- Graduate programs have the potential to improve the number of VET graduates employed in their intended occupation after training, but they are not widely available for VET students.
- These programs are usually employer-driven, so the benefits of these programs, such as lower wage costs, up-to-date knowledge and employee enthusiasm, need to be promoted.
- An alternative option is to incorporate more work-integrated learning into VET courses to improve the workplace experience of VET students. Employers could also potentially use this approach as a recruitment tool.



The place and role of VET



Apprenticeships and vocations: assessing the impact of research on policy and practice



[www.ncver.edu.au/
publications/2864.html](http://www.ncver.edu.au/publications/2864.html)

Jo Hargreaves

This report assesses the impact of NCVER's research against two themes: the role of apprenticeships in a modern economy (focusing on work relating to completions) and the nature of the vocations and competencies required by industry. The evaluation spans work published from 2005 to 2015 and examines the impact of 32 publications, complemented by input from a number of stakeholders who were asked to report on their use of NCVER's research outputs. The evaluation, based on a combination of quantitative metrics and qualitative methodology, shows how NCVER's publications are influencing policy and practice in the VET sector.

Key messages

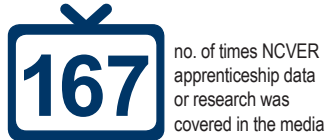
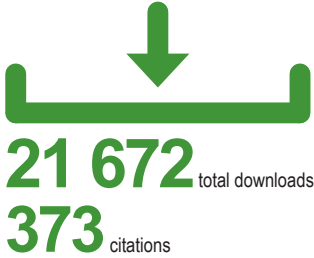
- The analysis identified:
 - 42 553 downloads of the reports from NCVER's website/portal
 - 2952 full record visits on VOCEDplus
 - 632 citations across various sources, including policy and legislation
 - 217 references across an assortment of media outlets.
- While metrics alone do not directly signify impact, they do suggest NCVER has a sizeable knowledge footprint, with the publications in this study gaining widespread attention within Australia and internationally.
- In terms of policy:
 - Evidence was found of the research directly influencing six discrete policy documents or legislation and informing numerous submissions across 30 national or state/territory reviews. These submissions often led to an appearance by stakeholders or NCVER at parliamentary Senate House of Representative hearings.
 - Stakeholders also reported a research impact on policies designed to address apprentice completion and commencement rates, the way in which pre-apprenticeship programs are structured, industry training strategies and mentoring support for apprentices.
- With respect to practice: stakeholders suggested the research has informed better recruitment and pastoral care practices for apprentices. The vocations research has influenced several professional development programs for VET practitioners.

While the interplay between research output and policy and practice is never straightforward and there are many factors influencing policy decisions, connections do occur. This report in particular has highlighted the remarkable variety in which NCVER publications are used and valued, based on the views of responding stakeholders.

Assessing the impact of research: infographic

NCVER seeks to maximise the value and impact of its work to ensure maximum benefits arise from publicly-funded research endeavours.

Knowledge footprint - Apprenticeships (focus on completions)



International footprint



The H-index is a measure of academic impact that has generated widespread interest. The advantage of the H-index is that it combines an assessment of both quantity and quality.

Reports that resonate the most - Apprentices and trainees



Government

Individual-based completion rates for apprentices.



Industry

Completion and attrition rates for apprentices and trainees.



Training providers

Understanding the non-completion of apprentices.



Media

The impact of wages on the probability of completions.

Examples of influencing policy or practice

There is stakeholder reported evidence of the research being used to:

- ✓ **influence initiatives** to improve completion rates
- ✓ **modify incentives** for remote Indigenous communities to assist with commencement, progression and completion
- ✓ **underpin mentoring** and support policies and programs
- ✓ **affect** pre-apprenticeship and school based apprenticeship arrangements
- ✓ **inform practices** associated with employer recruitment, management and pastoral care of apprentices.

How we measure impact

Building capacity: assessing the extent to which research has improved the abilities of researchers and stakeholders to engage with the research

Informing policy: judging if and how research has been useful in informing or guiding policy

Informing practice: establishing how the research has informed or guided practice.

The development of Australia's national training system: a dynamic tension between consistency and flexibility



[www.ncver.edu.au/
publications/2849.html](http://www.ncver.edu.au/publications/2849.html)

Kaye Bowman and Suzy McKenna

This paper reflects on the history of vocational education and training (VET) in Australia. A key focus is the development of the national training system, which has emerged over the last two decades. The authors also explore the dynamic tension, built into the system, to achieve both national consistency and sufficient flexibility to ensure that training meets specific local, industry and learner needs.

Key messages

- Since 1992 the aim of the national VET system has been to respond to industry, and to individual and community needs, all within a nationally agreed system to achieve portability of VET skills across the nation and therefore labour mobility. The end goals have been to realise measurable improvements in the national work skills pool and in employment among individual VET graduates.
- The national training system in Australia is underpinned by:
 - national frameworks for VET products aimed at achieving consistency in training outcomes but with flexibility in the way providers deliver and individuals realise their learning goals; and consistent nationally agreed VET provider standards for entry into the nationally recognised training market, but with flexibility to encourage providers to pursue higher standards
 - a national training market, initially using contestable funding approaches and then client demand-driven models with flexibility built in to allow jurisdictions to tailor their approaches.
- Overall, the implementation of national VET reform initiatives has followed a pattern of continuous improvements against the objectives of the national training system – responsiveness, equity, quality, efficiency and public value, financial sustainability and transparency – and then increasing harmonisation of practices across jurisdictions.
- The system is learning from its experience in adopting market principles and in implementing student entitlements.
- A set of clearly articulated principles for market design would assist further reform efforts.

Jurisdictional approaches to student training entitlements: commonalities and differences

Kaye Bowman and Suzy McKenna



[www.ncver.edu.au/
publications/2847.html](http://www.ncver.edu.au/publications/2847.html)

The past two decades have seen some evolution towards a more nationally consistent vocational education and training (VET) system. One of the challenges is to find the right balance between national consistency and appropriate flexibility, to accommodate the regional and local industry requirements and learner preferences that best serve the needs of states and territories. This report maps the implementation by jurisdictions of the most recent training market reforms, agreed to in the 2012–16 National Partnership Agreement on Skills Reform – a student training entitlement. The authors also undertake an analysis of the commonalities and differences in each jurisdiction’s approach. This report will be useful as a composite description and the analysis valuable to the review of the student training entitlement and other aspects of the 2012–16 National Partnership Agreement on Skills Reform, planned for 2015–16.

Key messages

- A set of clearly articulated principles on training entitlements would be useful in any future national partnership agreement. These principles would need to embrace the dynamic of consistency and flexibility that exists across the national training system.
- National coherence should be enhanced wherever possible, in particular by better alignment across all jurisdictions, of student eligibility criteria and the logic underpinning the allocation of subsidies. This is necessary to avoid unreasonable differential treatment of students across Australia.
- A national public-value framework with indicative performance measures and risk management approaches would help to guide an improved design of the publicly funded training market.
- Information and transparency are crucial underpinnings of a demand-driven system.
- Governments need sound regional and national labour market analyses to inform funding decisions.
- To make an informed choice, students and others paying for training must be able to compare training options. More needs to be done to help them to understand their entitlements, know how to judge quality and have a good idea of the outcomes they can expect from their training.
- Flexibility in the public funding of training and in policy implementation by Australian states and territories should focus on ensuring that the right mix and quality of skills are produced to meet industry needs, nationally, regionally and locally, as well as to assist graduates to obtain jobs and/or move to further learning.
- The priorities of public subsidies offered via ‘entitlements’ are likely to be further refined in light of the improved availability of VET information from initiatives like ‘total VET activity’ (for more information see <http://www.ncver.edu.au/totalvetactivity.html>).

Making sense of total VET activity: an initial market analysis

Alison Anlezark and Paul Foley



[www.ncver.edu.au/
publications/2859.html](http://www.ncver.edu.au/publications/2859.html)

Following the successful first national publication of total vocational education and training (VET) activity and presentation of various informative data products, NCVER has continued to undertake further analysis of the submitted data. This paper is the first in a suite of NCVER authored papers that seek to better explain and explore the data in depth.

This paper examines and compares the differences between past VET activity data (pre-2014) reported as Government-funded students and courses and the new expanded data reported as *Total VET students and courses*. It focuses on the information not previously collected, namely data submissions from training providers new to the National VET Provider Collection. In particular, it includes preliminary analysis and reasoned comparisons between the VET activity reported by TAFE providers and private training providers. The conclusions show the extent of similarity in training output across providers, but also highlight areas of notable diversity of the national training market between TAFE and private training providers.

Total VET students and courses only reports on 2014 VET activity and represents a 'start up' and transition year, with some providers being exempt in the first year and some data not available; as a result, the paper has important caveats that should not be overlooked. Future collections and reports will expand on this preliminary analysis.

Further related papers on topics such as the training provider market structure and use of different national training qualifications are forthcoming.

Student entitlement models in Australia's national training system: expert views

Kaye Bowman and Suzy McKenna



www.ncver.edu.au/publications/2848.html

This occasional paper provides the views of 17 'thought leaders' in the Australian vocational education and training (VET) sector. Their insight and opinions were sought to inform a larger research project focused on the student entitlement reforms that were introduced into the national VET system from 2012. A particular emphasis has been on the implications of the reforms and the challenges faced in its implementation in the context of achieving a balance between national consistency and jurisdictional flexibility.

The interviewees considered key elements of the national training system, namely: standards for VET products (training packages and materials); standards for VET providers; and a flexible training market. The interviewees commented on the consistency and flexibility sought in each of these key elements, highlighting where tensions exist, particularly in student training entitlements.

Key messages

- The views of experts highlight differing observations and opinions, yet also some unifying themes.
- Both consistency and flexibility are required in the national training system, with both balanced effectively to achieve meaningful outcomes at the national and jurisdictional levels.
- The distinct requirements and approaches of each of the jurisdictions have resulted in eight distinct training entitlement schemes being established. This has contributed to perceptions of fragmentation rather than these various approaches being received as 'flexibility' in the national VET system.
- Balancing local and national skills priorities is difficult and a perennial source of tension within the national training system. The entitlement system may not currently address whether and how a student could undertake courses in which there is a national but no local skill shortage.
- The eligibility criteria for the student training entitlement could have a greater level of consistency across the various training entitlement schemes. This would assist in meeting equity goals and provide increased functionality in the national training system.
- Prices, subsidies and fees have always been different across jurisdictions and even within jurisdictions, for good local reasons. Under any entitlement system, however, the subsidy level combined with the student fee needs to provide sufficient resources to allow for measurable quality in training.
- High-quality training experiences and outcomes is paramount to all aspects of entitlement schemes. National standards for registered training organisations (RTOs) and training products must be applied and continuously improved to be fit for purpose in a more marketised training environment.
- Adequate information for consumers about quality in VET and what to look for when choosing a suitable course or provider remains an important requirement in the national VET system.

Trends in VET: policy and participation

Georgina Atkinson and John Stanwick



[www.ncver.edu.au/
publications/2882.html](http://www.ncver.edu.au/publications/2882.html)

The vocational education and training (VET) sector has undergone considerable change over the last two decades, whereby its landscape of policy, funding and institutions has evolved significantly. While the landscape may have changed, the central mission of VET and its key actors – students, employers, providers – remain a constant. These actors are indeed as important now as they have ever been in their efforts to collaboratively develop and deliver a skilled national labour force, one suited to the jobs available in a diverse economy.

While the actors may be broadly constant, the past two decades have also seen major changes in the labour market. This is evident in its size and opportunities; in the growth of ‘services’; in the increase in part-time work; in greater demands for connectedness with global markets; and in technology-led productivity. These macro factors have all driven changes in VET policy, impacting on both learners and employers. These impacts have been especially felt by younger people entering the labour force following the global events of 2008.

While there is promise of greater information becoming available through total VET activity (TVA) reports in the future, this research takes a deliberately retrospective view, tracking VET participation over the past two decades in the context of the introduced and evolving VET policy over this period. This research includes particular reference to the extension of the apprenticeship and traineeship system and the opening-up of the training market.

This narrative is usefully illustrated by three specific policy case studies: incentive payments for employers of apprentices and trainees, accelerated apprenticeships and student entitlement models. In addition, we look at the high-level trends in government-funded VET participation and the labour market, with data drawn from NCVET collections (National VET Provider, Apprentice and Trainee and VET Finance), along with labour force data from the Australian Bureau of Statistics.

The paper contributes to the discussion and understanding of the development of VET policy – past, present and future – including how providers and consumers adapt to policy changes and how these changes are reflected in VET participation trends.

A summary infographic based on data from this paper has also been produced and is available at <https://www.ncver.edu.au/data/data/infographics/trends-in-vet-infographic.html>.

VET provider market structures: history, growth and change

Patrick Korbel and Josie Misko



www.ncver.edu.au/publications/2871.html

The paper tracks the development of the Australian vocational education and training (VET) provider market over the last two decades in the context of significant policy changes and generally increased competition. It provides an insight into how the sector has arrived at its current position, painting a present-day picture of great diversity. More importantly, it prompts further, more fundamental, questions about the current structure of the provider market and whether it is optimally placed to deliver the skills and knowledge that students and the Australian economy require.

The now wider scope of the National VET Provider Collection has enabled reports on total VET activity (TVA). TVA data have been instrumental in this initial analysis of provider and student numbers, which builds on the paper *Making sense of total VET activity: an initial market analysis* (NCVER 2016).

Key messages

- The VET provider market has been relatively stable over the last 15 years, with the number of providers remaining relatively stable during this time, although fewer providers entered and exited the system over the last five years than in the ten preceding years. VET market reforms and changing funding regimes over this period appear not to have driven major changes in provider numbers, despite the underlying turnover of providers.
- In terms of student numbers, the VET sector displays great diversity within and between different types of training organisations. While there are private providers with as many students as the largest TAFE (technical and further education) institutes, there are also many private providers with very small numbers of students. The top 100 providers represent around 50% of the total student population.
- The sector is characterised by a very large proportion of relatively small providers, with almost 2000 providers (around 40% of the total) with 100 or far fewer students. No evidence is provided, nor should any inferences be drawn, about provider quality. However, the challenges of ensuring that students are given sufficient information and regulating such diversity with so many small to very small providers should be recognised.
- The VET sector also has a larger number of providers relative to the higher education sector, noting that the sectors have many differences, including their purpose, funding and regulation, and that VET students are far more likely to be part-time than those in higher education. There are almost three times as many VET students than higher education students in Australia, but at least 35 times as many VET providers.
- Australia also has a larger number of VET providers than comparable markets overseas, based on the number of people of working age per provider. However, there are inherent difficulties in making such trans-national comparisons, particularly in the context of differing institutional arrangements.
- These observations indicate the need to further examine provider output and quality within and across different provider types and, in the light of this, consider whether or not the current provider market structure, as it has evolved, best serves Australia's future skills and training needs.

VET provider market structures: infographic

Increasing competition in the Australian VET sector over the last two decades means it is timely to understand how this has changed the structure of the VET market and review some common perceptions of the market structure.

Perceptions



TAFE institutes are large.



Private providers are small.



The number of providers entering the VET market keeps increasing.



New providers dominate VET FEE-HELP (VFH).

Reality (what the data show)

	TAFE institutes	Private providers
Number of providers with up to 1000 students	1	2102
Number of providers with 1000 to 10 000 students	19	431
Number of providers with 10 000+ students	37	24

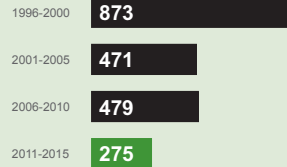
Source: National VET Provider Collection, 2014, NCVER, Adelaide.

While the majority of private providers are small...
...there are **a number of large** private providers too.



Fewer new providers entered the market between 2011-2015 than in previous years.

Five year summaries: average number of initial provider registrations per year



Source: Based on data request from the Department of Education and Training, Department of Education and Training, 2016, 'All RTOs grouped by initial registration year(s)', data requested January 2016.

Top 20 = 76.1% of all 2014 VET FEE-HELP providers in 2014 of all 2014 VET FEE-HELP activity.



In the top 20, **only one VFH** provider registered after the introduction of the scheme.

Please note: Top 20 providers in 2014 are determined by the total amount of loans.

Source: Based on 2014 VET FEE-HELP Statistical Report and data request from the Department of Education and Training, Department of Education and Training, 2015, '2014 VET FEE-HELP statistical report - provider tables', viewed March 2016, <<https://docs.education.gov.au/node/38381>>. Department of Education and Training, 2016, 'All RTOs grouped by initial registration year(s)', data requested January 2016.



Other research





24th National Vocational Education and Training Research Conference ‘No Frills’: refereed papers

Edited by Laura Jackson

The 24th National Vocational Education and Training Research Conference, colloquially known as ‘No Frills’, was held in July 2015.

The conference highlighted research across three major themes:

- youth: engaging, inspiring and supporting students to realise their potential
- pathways: transitioning through education and training into the workforce
- skills: working with industry and employers to improve education and training.

The presentations provided delegates with diverse insights from government, academic and employer perspectives on the key issues confronting the VET sector. A select few speakers at the conference were also offered the opportunity to have their papers peer-reviewed, and these five refereed papers have been compiled to make up this book of conference proceedings.

The following papers examine:

- the diversity of VET providers and the needs of students
- initiatives designed to improve the capabilities of VET practitioners
- how skills contribute to innovation, and the implications of this in terms of return on investment
- the impact of VET students transitioning directly into second-year university and how these students can best be supported
- the learning preferences of VET students (specifically enrolled nurses), how they differ by comparison with university students and the consequent implications.

It is hoped these papers will provide an insight into the array of topics presented at the No Frills conferences and generate interest in attending future conferences.

Improving VET teachers' skills and their approach to professional learning

24th National Vocational Education and Training Research Conference 'No Frills': refereed paper

Anne Dening

This paper outlines a workforce development approach applied from early 2010 to late 2012 at TAFE SA Regional Institute, and discusses the strategies and developmental activities in place during this period that may have contributed to improving professional capabilities among a large group of VET practitioners at the institute. It forms the background to a doctoral study, which builds on a range of studies about VET practitioners from the previous decade, including Mitchell and Ward (2010) and Wheelahan (2010). Quantitative data generated from two surveys were complemented by qualitative data gained from institute staff, particularly from professional conversations and group discussions designed to reveal staff stories and experiences. This paper outlines the professional learning strategies which were implemented and were effective in improving the skills and currency of VET practitioners over that period. These strategies included a mix of deliberate interventions by the organisation, by faculties and individuals.

Learning preferences of Enrolled Nursing students: Educational preparation and training for workplace readiness

24th National Vocational Education and Training Research Conference 'No Frills': refereed paper

Kalpana Raghunathan, Sonia Allen and Elisabeth Jacob

A qualitative research study using focus groups was undertaken to identify specific learner preferences for teaching modalities among Enrolled Nursing students in a Diploma of Nursing program. A thematic analysis of the data identified the following five main themes:

- a variety of teaching and assessment methods
- educator-directed or guided learning
- practical application and simulated learning
- face-to-face learning; and closer integration of theory to clinical practicum.

The main focus of these learners was preparation for workplace settings. The findings have implications for education strategies in the diploma program, in terms of planning the program structure and its delivery; teaching and learning methods; educator development; development of practical and clinical skills; experiential learning; and the promotion of skills for independent and lifelong learning, the latter being essential preparation for professional nursing practice.

Profiling the institutional diversity of VET providers in Australia, across four broad dimensions

24th National Vocational Education and Training Research Conference 'No Frills': refereed paper

Peter Bentley, Leo Goedegebuure and Ruth Schubert

This paper contains the first results of a research project whose aim is to portray the diversity of providers in the Australian VET sector in a novel and transparent way. Adapting an approach used to profile the diversity of Australian universities, the research has produced results that appear promising, in that they highlight the significant diversity across an initial 25 providers sampled from the 100 largest VET providers in Australia. The top 100 providers of publicly-funded VET cover 75% of providers, from a total of almost 5000 providers. Although the project is ongoing and the empirical phase still needs to be completed, there is little doubt that the results generated through this approach have the capacity to provide rich input into federal, state and institutional policy and strategy processes.

Skills needed for innovation: a review

24th National Vocational Education and Training Research Conference 'No Frills': refereed paper

Michael Walsh

A review of the literature covering the terms 'skill' and 'innovation' shows they have been defined imprecisely, resulting in a range of inconsistent and contested meanings. In addition, there has been little explicit empirical research or theoretical writing on how skills contribute to innovation. While there are researchers working and writing in both areas, there appears to be limited research and literature linking the two, and little communication between them. This paper argues that there is a need for greater clarity and consistency in the definition of the key concepts of 'skill' and 'innovation', together with an integrated approach to investigating how skills contribute to successful innovation in organisations. It also outlines the implications of these observations for vocational education and training.

Understanding the needs of VET students articulating to second-year university

24th National Vocational Education and Training Research Conference 'No Frills': refereed paper

Mark Symmons, Paul Kremer and Alvin Rendell

Generally negotiated by course, an increasing number of pathways are being opened to enable VET students to transition directly into second-year university with blanket credit for first-year content. Such arrangements exist for disciplines such as nursing, teaching, business, and applied science. It could be argued that these 'advanced standing' VET students, having completed a bachelor course at a VET institute, should have an advantage over their university peers: they have completed more post-secondary education, they will have amassed significant discipline-relevant practical experience from substantial field placements, and they are likely to be more committed to the course. Yet anecdotal reports from a number of university academics who deal with these students indicate that they often struggle. These sentiments are supported by an analysis of student performance data that indicates that the advanced standing students average lower marks. There is a lack of programs aimed at assisting and supporting second-year students, whether they have progressed from first year or entered second year directly. This paper foreshadows a larger project which aims to develop and trial a second-year transition course.

Data on total investment in VET: what should be collected

Gerald Burke



[www.ncver.edu.au/
publications/2868.html](http://www.ncver.edu.au/publications/2868.html)

The financing of vocational education and training (VET) entails investment primarily from three sources: governments, industry and individuals. Currently, the annual publication of national VET finance information covers government funding for training (although not every aspect), as well as revenues for fee-for-service and student fees and charges, as recorded by the various government departments responsible for training. It also details the operating expenditures and training costs of these departments.

While comprehensive, this collection does not cover the full terrain of national VET resource inputs and expenditures. A more complete picture of all sources of investment in VET would be useful for better measuring and understanding the full spectrum of national investment in VET – by governments, industry and individuals. This could more effectively inform national policy, in terms of efficiency, effectiveness and equity, with the aim of ensuring that the VET system develops skills for individuals, industry and the economy.

A more complete picture of financing would also complement the new collection of all student activity in the VET system, known as ‘total VET activity’ (TVA).

The purpose of this report is to explore from first principles a framework for a more comprehensive record of VET investment in Australia, both direct and indirect support, if indeed the latter could be meaningfully defined. The report focuses in particular on what is presently ‘missing’ and might be collected above and beyond that currently collected in the National VET Financial Data Collection, maintained by the National Centre for Vocational Education Research (NCVER). To do so, it considers, for each type of investment: its materiality, the availability of data, its potential importance for policy or accountability, its likely quality and the cost of collection. The in-principle findings are that:

Key messages

- In general there is a good case for extending the regular collection of information on investment in vocational education and training. While NCVER’s current financial collection can be used for accountability and efficiency, it is not easily linked to equity and the other objectives of the system.
- There are some items of investment that may be collected in the shorter term. These include student assistance grants, information on employer incentives for apprenticeships, the cost of non-repayment of VET FEE-HELP loans, and possibly the funding of VET in Schools.
- More difficult to collect, at least in the shorter term, and constituting a large component of all sources of investment in VET, are household, international and employer spending on private registered training organisations (RTOs), and broader expenditure on training by employers.
- Most of the extended information on investment in VET can be collected through government departments. In all probability, the only feasible approach to any understanding of the broader expenditure on training by employers would be a periodic survey.

Funding information

Research published by NCVER is funded via one of the three following program streams. For more information, visit <http://www.ncver.edu.au/aboutresearch.html>.

National Vocational Education and Training Research Program reports are produced by NCVER on behalf of the Australian Government and state and territory governments. Funding is provided through the Australian Government Department of Education and Training. The NVETR Program is based on national research priorities approved by ministers with responsibility for vocational education and training.

The authors/project teams are funded to undertake this research via a grant under the NVETR Program. The research grants are awarded to organisations through a competitive process, in which NCVER does not participate. To ensure the quality and relevance of the research, projects are selected using an independent and transparent process, and research reports are peer-reviewed.

Longitudinal Surveys of Australian Youth Program work is produced by NCVER on behalf of the Australian Government and state and territory governments, with funding provided through the Australian Government Department of Education and Training. The Longitudinal Surveys of Australian Youth is a research program that tracks young people as they move from school to post-school destinations.

NCVER's in-house research and evaluation program undertakes projects which are strategic to the vocational education and training sector. These projects are developed and conducted by NCVER's research staff and are funded by NCVER. In addition, NCVER staff conducted research on behalf of the Senior Skills Officials Network (SSON), with funding provided through the National Vocational Education and Training Research (NVETR) Program.

2016 research

Research report

Apprenticeships and vocations: assessing the impact of research on policy and practice

Jon Hodgson
National Centre for Vocational Education Research

© 2016 NCVER
NCVER TABLE TALKS

Research report

Assessing the impact of research

21 672
373
16
47
2204
167

© 2016 NCVER
NCVER TABLE TALKS

Research report

The development of Australia's national training system: a dynamic tension between consistency and flexibility

Kate Stewart and Eddy McKenna
VET Research Consulting

© 2016 NCVER
NCVER TABLE TALKS

Research report

Jurisdictional approaches to student training entitlements: commonalities and differences

Kate Stewart and Eddy McKenna
VET Research Consulting

© 2016 NCVER
NCVER TABLE TALKS

Research report

Making sense of total VET activity: an initial market analysis

Jason Anson
Paul Day
National Centre for Vocational Education Research

© 2016 NCVER
Australia Government
Department of Education and Training

Research report

Student entitlement models in Australia's national training system: expert views

Kate Stewart and Eddy McKenna
VET Research Consulting

© 2016 NCVER
NCVER TABLE TALKS

Research report

Trends in VET: policy and participation

Georgina Atkinson
Kate Stewart
National Centre for Vocational Education Research (NCVER)

© 2016 NCVER
NCVER TABLE TALKS

Research report

VET provider market structures: history, growth and change

Patrick Anson
Joan Miles
VET Research

© 2016 NCVER
NCVER TABLE TALKS

Research report

VET PROVIDER MARKET STRUCTURES - PERCEPTIONS VS REALITY

Perceptions Reality (what the data show)

© 2016 NCVER
NCVER TABLE TALKS

Research report

Can VET help create a more inclusive society?

Hilke Subergmeier and Cain Phillips
WILSON COLLEGE INSTITUTE OF APPLIED ECONOMIC AND SOCIAL RESEARCH

© 2016 NCVER
NCVER TABLE TALKS

Research report

The impact of disadvantage on VET completion and employment gaps

Georgina Atkinson
Georgina Atkinson
National Centre of Applied Economic and Social Research

© 2016 NCVER
NCVER TABLE TALKS

Research report

Increasing survey engagement through gamification and the use of mobile devices

Nancy Achter and Rose Anne Polvere
National Centre for Vocational Education Research

© 2016 NCVER
NCVER TABLE TALKS

Research report

Shedding light: private 'for profit' training providers and young early school leavers

George Reynolds
Brendan O'Connell
Kara Clarke
National Centre for Vocational Education Research

© 2016 NCVER
NCVER TABLE TALKS

Research report

Uptake and utility of VET qualifications

Patrick Anson
National Centre for Vocational Education Research

© 2016 NCVER
NCVER TABLE TALKS

Research report

UPTAKE & UTILITY OF VET QUALIFICATIONS

90% of employers in the top 100 VET
30% of employers
ONLY 50% of employers in the top 100 VET

© 2016 NCVER
NCVER TABLE TALKS

Research report

VET program completion rates: an evaluation of the current method

National Centre for Vocational Education Research

© 2016 NCVER
NCVER TABLE TALKS

OCASIONAL PAPER
NCVER

Beyond mentoring: social support structures for young Australian carpentry apprentices

John Buchanan, Catherine Rafferty, Lisa Cooper and Anne Kumpfermann
University of Sydney

2015/01/20 Table 10/15

OCASIONAL PAPER
NCVER

Costs and benefits of education and training for the economy, business and individuals

Tabbara Gattis
National Centre for Vocational Education Research

2015/01/20 Table 10/15

OCASIONAL PAPER
NCVER

Cross-occupational skill transferability: challenges and opportunities in a changing economy

Dr Sharon Small
Dr Nicole Gattis
Dr Andrew Cole
NCVER

2015/01/20 Table 10/15

OCASIONAL PAPER
NCVER

Evaluation framework measuring Return on Investment (ROI) in TVET

Jane Skelton
UNIVERSITY OF SYDNEY

2015/01/20 Table 10/15

OCASIONAL PAPER
NCVER

Firms' motivation for training apprentices: an Australian-German comparison

Harald Pfeifer
Fondation Centre for Vocational Education and Training (FCVT)

2015/01/20 Table 10/15

OCASIONAL PAPER
NCVER

GOOD PRACTICE GUIDE

A GUIDE TO PROVIDING SOCIAL SUPPORT FOR APPRENTICES

ABOUT THIS GUIDE
The main purpose of this guide is to provide some ideas for employers of apprentices to provide a supportive and safe working environment for their apprentices. It is not intended to be a checklist or a blueprint for action. It is a guide to help you think about the things you can do to support your apprentices.

2015/01/20 Table 10/15

OCASIONAL PAPER
NCVER

The salience of diversity in foundation skills contexts, pedagogies and research

Lynette Coleman
Foundation Skills Literature Review Project
Scholarship recipient

2015/01/20 Table 10/15

OCASIONAL PAPER
NCVER

Foundation skills policy contexts and measures of impact

Jane Skelton
Education Skills Literature Review Project
Scholarship recipient

2015/01/20 Table 10/15

OCASIONAL PAPER
NCVER

24th NATIONAL VOCATIONAL EDUCATION AND TRAINING RESEARCH CONFERENCE

NO FRILLS
6-8 July 2015
Sydney, New South Wales

Youth • Pathways • Skills

Refereed papers

Edited by
Lisa Jackson
NCVER

2015/01/20 Table 10/15

OCASIONAL PAPER
NCVER

Data on total investment in VET: what should be collected

Geoffrey Butler
Monash University

2015/01/20 Table 10/15

OCASIONAL PAPER
NCVER

When one door closes: VET's role in helping displaced workers find jobs

Bridget Wilton and Michele Cicchi
NATIONAL CENTRE FOR VOCATIONAL EDUCATION RESEARCH

2015/01/20 Table 10/15

SUPPORT DOCUMENT
NCVER

Defining 'STEM' skills: review and synthesis of the literature

Support Document 1
Gita Skelton & Patrick Kothof
NCVER

2015/01/20 Table 10/15

NCVER

Measuring STEM in vocational education and training

Patrick Kothof
NATIONAL CENTRE FOR VOCATIONAL EDUCATION RESEARCH

2015/01/20 Table 10/15

NCVER

What is STEM? The need for unpacking its definitions and applications

Gita Skelton
NATIONAL CENTRE FOR VOCATIONAL EDUCATION RESEARCH

2015/01/20 Table 10/15

NCVER

Work-based learning and work-integrated learning: fostering engagement with employers

Geoffrey Butler
NATIONAL CENTRE FOR VOCATIONAL EDUCATION RESEARCH

2015/01/20 Table 10/15

NCVER

GRADUATE PROGRAMS FOR VET STUDENTS: IS THERE A NEED?

Bridget Wilton and Laura Jenkins
NATIONAL CENTRE FOR VOCATIONAL EDUCATION RESEARCH

2015/01/20 Table 10/15

2016 webinars

Webinar listing

<<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 2016, recordings of which are available on the NCVER Portal.

- **An introduction to VOCSTATS**
Presented by Marc Ruediger and Martin Smolka, NCVER on 1 December 2016
- **Defining STEM - how an acronym became a shopping list**
Presented by Gitta Siekmann and Patrick Korbel, NCVER on 29 November 2016
- **How can private RTOs support young learners who have left school early?**
Presented by George Myconos, Brotherhood of St Laurence on 27 October 2016
- **Get ready for AVETMISS Release 8.0**
Presented by Katherine McGregor and Airlie Waddicor, NCVER on 21 September 2016
- **Vulnerable workers and occupational mobility**
Presented by Darryn Snell and Victor Gekara, RMIT University on 11 August 2016
- **What's the secret of organisations with apprentice completion rates around 90%?**
Presented by John Buchanan, University of Sydney on 4 August 2016
- **TVA data: a more comprehensive picture**
Presented by Mette Creaser and Toni Cavallaro, NCVER on 28 July 2016
- **Introducing the VOCEDplus Pod Network**
Presented by Maree Ackehurst and Rose-Anne Polvere, NCVER on 7 April 2016
- **Rolling the dice: tips for developing research funding proposals**
Presented by Jo Hargreaves and Laura Jackson, NCVER on 21 March 2016



National Centre for Vocational Education Research Ltd

Level 11, 33 King William Street, Adelaide SA 5000

PO Box 8288 Station Arcade, Adelaide SA 5000, Australia

Phone +61 8 8230 8400 **Email** ncver@ncver.edu.au

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

Follow us:

<<https://twitter.com/ncver>>

<<https://www.linkedin.com/company/ncver>>