

Research messages 2014





Research messages 2014

National Centre for Vocational Education Research

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Highlights for 2014

This publication summarises research published by the National Centre for Vocational Education Research (NCVER) in 2014 in the context of changing economic, industrial, social and education conditions, organised under the following broad categories:

- *Productivity*: to sustain and build Australia's human capital
- *Participation*: to support and build Australia's workforce diversity
- *Learning and teaching*: to support development of capabilities in teaching and assessment
- *Place and role of VET (including institutions)*: to enhance productivity and drive new value-added products and services in Australia's vocational education and training (VET) system.

Productivity: to sustain and build Australia's human capital

Several papers published during 2014 covered various issues relating to the ongoing development of Australia's workforce and ranged from the theoretical – education's actual contribution to economic growth in Australia – to studies on the demand for skills in various industries and the incentives required to encourage people to move from areas of high unemployment.

In *The contribution of education to economic growth in Australia, 1997–2009*

Tom Karmel estimates the impact of increasing education levels on economic growth and finds that raised education levels contributed to improved productivity in the order of 0.14% per annum between these years. Karmel also found that this change in education levels led to an increase (a little over 3% between 2001 and 2009) in the average hours worked in the 15 to 64-year-old population, an effect almost entirely due to increases in the number of women with degrees and postgraduate qualifications.

Productivity is enhanced by workers who possess the skills and knowledge required to undertake the occupations for which they have been trained, and the role of Australia's VET system is to provide students with the skills needed for work in various occupations and trades. *Qualification utilisation: occupational outcomes – overview* by Bridget Wibrow investigates whether graduates of VET qualifications end up in the intended occupation of their qualification or whether they end up employed elsewhere. Wibrow finds *inter alia* that the trades tend to have stronger matches between the intended occupation of the training and the jobs graduates get, and that highly regulated industries such as the electrotechnology, communications and energy utilities industries display a stronger match between intended and destination occupations than those that relate to more generalist skills. However, she finds that many VET graduates who do not end up employed in their intended occupation still find their training to be relevant to their current job, with some also ending up employed at a higher skill level than their intended occupation.

Optimising labour markets in Australia's regional areas is key to the country's ongoing productivity, with a number of papers examining this topic during 2014 and two specifically examining the labour market in regional areas.

By moving labour from a region with high unemployment to a region where there are unfilled vacancies, inter-regional migration plays an important role in regional labour markets, in particular contributing to a region's prosperity and the amelioration of unemployment. In *Incentives for relocating to regional Australia: estimates using a choice experiment*, Aaron Nicholas and Chandra Shah investigate the willingness of a sample of individuals from two states with pockets of relatively high unemployment to move for work to two regional centres with relatively high demand for labour. This research aimed to understand how individual and job characteristics are related to people's willingness to move. The authors found that some groups are more willing to move than others, specifically those who are actively looking for work (both employed and unemployed). The researchers also found that some workers require monetary incentives, while others do not.

The second paper focusing on the labour market in regional Australia is *Economic vulnerability in Australia 2002–12: an employment perspective* by Michelle Circelli and John Stanwick. To identify economic vulnerability in regional Australia, the researchers developed five indicators of vulnerability, a useful approach since the indicators possess the potential to provide information on where assistance – which generally involves some level of training – would be most beneficial and on the nature of that assistance. Training efforts, argue the authors, need to be tailored to the circumstances of the region and, where an industry is in decline, may involve the retraining of workers and/or training and other assistance for the unemployed.

The topic of labour mobility is broadly investigated in *An exploration of labour mobility in mining and construction: who moves and why* by Georgina Atkinson and Jo Hargreaves. Labour mobility is one of the core elements of a well-functioning labour market, and the Australian economy often experiences both labour and skills shortages. This study emphasises that labour mobility itself is linked to those cycles, in that in a slow labour market a person may move for stable employment, while in a buoyant economy employers use incentives to influence mobility. The research found that the majority of labour mobility decisions are driven by the personal priorities of the individual, including family commitments.

The research paper, *Readiness to meet demand for skills: a study of five growth industries* by Francesca Beddie et al. addresses a further labour market issue: the capacity of the education and training system to respond to the demand for skills in industries where potential market opportunities have been identified. The five industries were: food and agribusiness; mining equipment, technology and services; medical technologies and pharmaceuticals; oil and gas; and advanced manufacturing. The research found a widening gap between the skills developed in the education system and those required by employers in the growth industries, although the research indicated that the capacity of enterprises to meet demand is also affected by the changing nature of global chains. The authors emphasised the need for a substantial

cultural shift in thinking about the way skills are developed and deployed, arguing that a more flexible and responsive workforce is crucial to meet the challenges posed by emerging industries.

Participation: to support and build Australia's workforce diversity

In 2014, 14 papers addressed topics under the general umbrella of participation. We take participation to encompass transitions and pathways – into further education and the labour market – enrolments in the tertiary education system and the forces that affect and influence enrolment, for example, the role socioeconomic status (SES) plays in young people's take-up of tertiary education.

The Longitudinal Surveys of Australian Youth (LSAY) provide a rich source of data on young people's transitions, specifically from school to further study and/or work. This year two papers utilised the dataset to investigate young people's aspirations. Australian and international research on young people and their transitions has shown that educational aspirations are strong predictors of educational outcomes, including Year 12 and tertiary education. Sinan Gemici et al. in their paper, *The factors affecting the educational and occupational aspirations of young Australians*, investigate the influences that drive young people to complete Year 12, their plans for university study and their aspirations at age 15 years for the kind of job they expect to have at age 30 years. Their research found that the factors that most influenced their aspirations for Year 12 completion were their academic performance, their parents' aspirations for them and their English-speaking background. The research highlighted the significance of parental influence in driving students' aspirations, with the findings revealing that students whose parents want them to attend university are four times more likely to complete Year 12 and 11 times more likely to plan to attend university.

Jacqueline Homel and Chris Ryan in their paper, *Educational outcomes: the impact of aspirations and the role of student background characteristics*, examine this topic from a different angle by investigating the relationship between student background characteristics, educational aspirations and educational outcomes. Their research confirmed that educational aspirations do affect educational outcomes substantially, with individuals who plan to complete Year 12 and/or go to university more likely to than those who don't hold such aspirations.

Still on students at school is Sinan Gemici and Tham Lu's paper, *Do schools influence student engagement in the high school years?* The authors test another link from the youth literature: the degree of engagement that young people have with school and their longer-term education and labour-market outcomes. Their research found that at age 15 years students' engagement with school is driven by individual background characteristics, the most important being the aspiration to complete Year 12, strong academic performance, having a high self-concept of ability, being foreign-born and coming from a high socioeconomic status background. However, once the research had

controlled for these individual factors, the authors found that school attributes have very little impact on the engagement levels of 15-years-olds and speculate that school factors may only affect student engagement levels at younger ages.

The issue of the role that socioeconomic status plays in the various elements comprising the ‘participation’ umbrella was a topic addressed by a number of researchers during the past year. Patrick Lim and Tom Karmel in their theoretical paper, *Measuring VET participation by socioeconomic status: an examination of the robustness of ABS SEIFA measures over time*, undertook an investigation of whether differences in the way geographic boundaries are defined or differences in the calculation of SEIFA¹ values impact on the measurement of vocational education participation rates over time. The relationship between social and economic disadvantage and participation in tertiary education is well recognised and has received considerable attention over the years, both in Australia and internationally. NCVET reports VET participation rates at least annually, so the question of how well the SEIFA indexes perform in this context is an important one. The research finds that the changes in geographical boundaries don’t impact on participation rates over time and that the SEIFA measures perform quite well for statistical local areas (SLAs) but not for post office areas (POAs).

In a similar vein, David Johnston et al. in *Are neighbourhood characteristics important in predicting the post-school destinations of young Australians?* look at the difference in training and education outcomes in areas of social advantage by comparison with those achieved by youth from socially disadvantaged areas. They found that the socioeconomic status of a neighbourhood is an important factor explaining student outcomes, but other factors are also relevant, for example, residential turnover and the composition of households. Their paper also confirms the significance of students’ aspirations in the post-school destinations of young people.

In *Intergenerational mobility: new evidence from the Longitudinal Surveys of Australian Youth* Gerry Redmond and his colleagues consider the role socioeconomic status plays in young people’s participation rates in tertiary education, albeit in a less direct manner. In their examination of the extent of intergenerational mobility in Australia since the 1970s they found that in terms of absolute educational gains there have been some improvements, with, in 2009, the vast majority of students from all socioeconomic backgrounds completing Year 12. Redmond et al. point out however that in relative terms there is little evidence of intergenerational mobility gains: children from high socioeconomic status backgrounds in the 2000s are just as likely to have higher tertiary rank scores as in the 1970s.

The VET system offers an entry point to the education sector for people who have experienced disadvantage in their lives. In *Disadvantaged learners and VET to higher education transitions*, Tabatha Griffin, by means of a synthesis of published material, looks at the access and participation of disadvantaged learners in higher-

1 SEIFA being area-based socioeconomic indexes for areas, developed by the Australian Bureau of Statistics.

level VET qualifications and higher education, and their transitions from lower-level VET qualifications to higher-level VET and higher education. She found that, overall, disadvantaged learners tend to be over-represented in lower-level qualifications and under-represented in higher-level VET and higher education. Griffin also identified a number of barriers experienced by disadvantaged students in their transitions from vocational education and training to higher education.

Financial stress is an aspect of disadvantage and its influence on a student's study outcomes is examined by Sian Halliday-Wynes and Nhi Nguyen in the paper, *Does financial stress impact on young people in tertiary study?* The authors found that tertiary students often experience financial stress, with around one-quarter of the respondents in this study reporting moderate to high levels of financial stress. However, financial difficulties generally didn't affect students' study outcomes, with other issues such as lack of interest in their study and personal matters playing a role.

An aim of VET in Schools programs is to provide young people with skills in a range of vocational occupations as they complete their senior secondary certificates and thus offer pathways into higher education, higher-level VET, apprenticeships and traineeships or skilled work. Kira Clarke in *Entry to vocations: building the foundations for successful transitions* argues that to fulfil these aims VET in Schools must change its focus and identifies a number of strategies for achieving this aim, the most challenging being the development of a new model of vocational education in schools: as foundational preparation for access to mid-level qualifications and entry to employment-based learning such as apprenticeships and not as a pathway to full-time sustainable employment.

A further study focuses on the VET in Schools programs: Cain Polidano et al. examine the experiences of secondary school students in Victoria who completed 'scored' VET subjects – subjects that count towards the Victorian Certificate of Education. Their paper, *Does scored VET in Schools help or hinder access to higher education in Victoria?*, examines whether taking these subjects affects students' access to university. The authors found that an apparent penalty exists for students who intend to go to university and who had completed a scored VET subject, with the average university scores for these students estimated to be six points lower; this represents around a 5% reduction in university entry score by comparison with the score achieved had a general subject been chosen. Furthermore, the reduction in university entry scores negatively impacts on the chances of receiving a university offer – from 79% to 67%, on average.

Two papers published during 2014 looked at apprentices. In *Understanding the non-completion of apprentices* Alice Bednarz reviews all the existing literature on this subject, investigating it from a number of perspectives, including apprentices' accounts for their non-completion and the role employers and training providers play in apprentice non-completion. Bednarz found that employment-related issues were cited as the most common reason for non-completion and included difficulties with employers and colleagues, redundancy and dislike of the work. Tom Karmel, David Roberts and Patrick Lim in *The impact of increasing university participation on the pool of apprentices* analyse the impact of increasing university participation on the intake and

quality of apprentices. Karmel and Roberts found that, over the 11-year period covered by the research, participation in both university and apprenticeships grew. That said, an increase in the probability of university entry was shown to impact unambiguously on the quality of apprentices, with young men less likely to undertake an apprenticeship if they are academically inclined. The growth in apprenticeship numbers arose largely from less academically inclined young men and those from low SES backgrounds, while the increase in university participation was attributable to academically lower-performing young men from higher SES backgrounds.

A further paper to look at transition from school to university is Joanna Sikora's *Gendered pathways into the post-secondary study of science*, which investigates, via the career preferences of adolescents, gender differences in the take-up of life and physical science subjects at school. Sikora finds that on the whole females are less likely than males to study a science qualification after leaving school. More specifically, when looking at the physical sciences, the gap between male and female participation widens at the tertiary level compared with secondary school, with males five times more likely than females to study a physical science qualification. In the life sciences however females are more likely than males to study a life science qualification at the tertiary level, although this gap is similar to that of secondary school.

The final paper on the topic of participation is Rong Zhu's *The labour force participation of Australian mature-aged men: the role of spousal participation*. In the context of Australia's ageing population a policy focus in Australia has been on keeping mature-aged people in employment longer. Rong Zhu's research investigates the inter-relatedness of the decisions made by mature-aged couples vis-a-vis their participation in the labour force. The research found that the wife's decision to work directly influences the husband's but that the reverse does not apply.

Learning and teaching: to support development of capabilities in teaching and assessment

A report by Stephen Billett and colleagues entitled *Refining models and approaches in continuing education and training* is the second in a series that explores how the tertiary education system should be structured to most effectively support the employability of Australian workers across their working lives. This second report confirmed earlier findings from the project, which suggested that continuing education and training experiences should: be situated in workplace experiences; entail direct support from experienced mentors; provide high-quality individualised support for learning; and motivate and engage the learners.

The learning and teaching theme also encompasses a focus on assessment in the VET sector, with the quality and rigour of assessments having been key concerns for VET policy-makers, industry, employers and teachers and trainers over recent years. Recognising that the quality of assessments has implications for the credibility of VET qualifications and the competence of the graduates who hold the qualifications, Josie Misko et al. in *Quality assessments: practice and perspectives* looked at the assessment

approaches being used by private and public providers. In their study of three industries – aged care, electrotechnology (electrical) and business – in three Australian states, the authors identified a number of challenges relating to where practitioners expended effort in ensuring assessments of high quality. The authors found that, while regulatory frameworks drive quality assessments in the electrical and aged care qualifications, they are less critical for general business qualifications. They also found that practitioners understood the requirements for gathering sufficient evidence of practical skills and underpinning knowledge for establishing competency, but in practice this is more difficult.

Competency-based training is a cornerstone of the Australian VET system, which means that understanding and using competency standards correctly is fundamental to the quality and integrity of the system. Steven Hodge's study *Interpreting competencies in Australian vocational education and training: practices and issues* addresses the question of how practitioners (designers, trainers, teachers and assessors) interpret competencies, and from there teach and assess according to their interpretation. Hodge's research indicates that practitioners experienced difficulties with competency interpretation and that these difficulties were largely attributable to limitations in their initial training, although much of the difficulty associated with interpretation was due to the unclear language and jargon used in competencies.

Sonia White's study, *Transitioning from vocational education and training to university: strengthening information literacy through collaboration* looks at the information literacy experiences from both sides of the transition – university and vocational education and training. The inherent differences in the two sectors mean that transitioning students have to adjust to two different learning cultures, expectations and models of assessment. The research, which focused on the information literacy needs of students from both sectors, indicated that both groups of students reported difficulties in understanding the required assessment task but identified a difference in what was expected of them in locating and using different sources of information. The research also indicated the potential of a collaborative framework between VET providers and universities for facilitating the smooth transition from the VET sector to university.

Place and role of VET (including institutions): to enhance productivity and drive new value-added products and services in Australia's VET system

The VET sector, by virtue of its relationship with industry and the labour market, is affected by the interplay of regulatory, funding and economic factors, which are constantly changing and evolving. This means that the sector and its various institutions must strive to keep pace. In *A differentiated model for tertiary education: past ideas, contemporary policy and future possibilities*, Francesca Beddie presents a number of suggestions for the future directions of tertiary education. To accomplish this, the author revisits the earlier Martin Report (1964–65), from which the 'binary' system of

the later 1960s to the late 1980s emerged, proposing that it might be timely to take a fresh look at the binary system and the lessons it might offer contemporary policy-makers.

Between 2009 and 2011, as part of the National Agreement for Skills and Workforce Development, the state of Victoria implemented the Victorian Training Guarantee, the key feature of the guarantee being an entitlement to a publicly funded VET place; the guarantee also gives students the freedom to undertake the course of their choice with the public or private provider also of their choice. In *Early impacts of the Victorian Training Guarantee on VET enrolments and graduate outcomes* Felix Leung et al. estimate the short-run effects of the Victorian Training Guarantee on VET student enrolments, their course choices and their outcomes. Their research found that in the period under question the guarantee was estimated to have led to a significant (35%) increase in enrolments since its inception, with much of the growth occurring in private providers. The effect of the training guarantee on groups such as those from a non-English speaking background, Indigenous students and students with a disability is not clear.

National Vocational Education and Training Research Conference 'No Frills'

NCVER again published the peer-reviewed conference papers from NCVER's 'No Frills' conference held in 2013. The papers comprising *22nd National Vocational Education and Training Research Conference 'No Frills': refereed papers* (edited by Laura O'Connor) span a broad range of topics, from the value of VET qualifications for those seeking or wanting to keep a job, the partnerships that exist between vocational education and training and higher education and support systems or programs which engage marginalised groups in the workforce, to the impact of low socioeconomic status and language, literacy and numeracy issues on student engagement and an overview of online education and its value. The collection provides insight into the array of topics presented at the conference and is a reflection of the broad range of research topics published by NCVER throughout the year.

Dr C Fowler
Managing Director, NCVER

National Vocational Education and Training Research Program

The NVETR Program is coordinated and managed by NCVET on behalf of the Australian Government and state and territory governments. Funding is provided through the Department of Education and Training. The Program is based on national research priorities and aims to improve policy and practice in the VET sector.

Research grants are awarded to organisations through a competitive process, in which NCVET 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. From 2012 some of the NVETR program funding was made available for research and policy advice to Senior Officials. They were responsible for determining suitable and relevant research projects aligned to the immediate priority needs in support of the national VET reform agenda.



22nd National Vocational Education and Training Research Conference 'No Frills': refereed papers

Edited by Laura O'Connor

The full report can be found on the NCVET Portal <www.ncver.edu.au/publications/2728.html>.

The 22nd National Vocational Education and Training Research Conference, colloquially known as 'No Frills', was held in July 2013 in Mooloolaba in Queensland.

The conference provided researchers and practitioners from a range of disciplines in the vocational education and training (VET) sector with the opportunity to come together to share information about the key issues confronting the sector. A small number of speakers at the conference were also offered the opportunity to have their papers peer-reviewed, and these nine refereed papers constitute this book of conference proceedings.

The papers span a broad range of topics, including the value of VET qualifications for those seeking or wanting to keep a job; the partnerships that exist between VET and higher education; support systems or programs which engage marginalised groups in the workforce; the impact of low socioeconomic status and language, literacy and numeracy issues on student engagement; and an overview of online education and its value.

It is hoped that these papers will provide an insight into the array of topics presented at the National Vocational Education and Training Research Conferences and generate interest in readers in attending future conferences.

A differentiated model for tertiary education: past ideas, contemporary policy and future possibilities

Francesca Beddie

The full report can be found on the NCVET Portal <www.ncver.edu.au/publications/2748.html>.

Australia's education system has undergone many changes over the past 50 years – and it will continue to do so as governments change. The first major reform over this period was the introduction of a binary policy of higher education, which was subsequently replaced by a unified system with the Dawkins reforms. Today, potential changes to the system include the deregulation of student fees and the widening of government-supported university places to cover provision by private providers. The latter would open up the delivery of tertiary education – taken here to mean diploma and above – to traditional vocational education and training (VET) providers to an increased extent.

To enrich the current discussion on changes to tertiary education policy, the author has used history as a policy tool for uncovering trends, explaining institutional cultures and preventing the re-application of ideas already tested. While this particular report is contextualised through a rereading of the Martin Report (the report of the Committee on the Future of Tertiary Education in Australia, published in 1964–65), a companion piece *What next for tertiary education? Some preliminary sketches* (Beddie 2014) makes a number of somewhat radical suggestions for future directions to tertiary education, with the aim of stimulating discussion in this area.

In the key messages that follow a set of issues for tertiary education are highlighted, issues that have continued to be problematic despite the various changes to the education system over the past 50 years.

Key messages

- Combining general education and technical education effectively and efficiently remains a challenge for the tertiary education system.
- Although many different types of educational institutions currently offer tertiary education, including dual-sector, mixed-sector, TAFE (technical and further education) institutes, universities and private providers, the goal of parity remains elusive. Vocational education and training continues to be accorded a lower status, although this is partly attributable to the status of individual occupations.
- There needs to be recognition that, while institutions differ between those with a comprehensive research base and those whose primary focus is teaching, research should not be elevated above teaching. Both deserve similar status.
- Although educational institutions are subject to government regulation, they need the capacity to find their own niche in the market and have some autonomy in order to achieve diversity and excellence.
- Incompatibilities in curriculum, the lack of enforceable policies on credit transfer, and suspicion over the standards of TAFE colleges and other non-traditional tertiary education providers remain as persistent barriers to the easy transfer from one sector to another.

An exploration of labour mobility in mining and construction: who moves and why

The full report can be found on the NCVER Portal <www.ncver.edu.au/publications/2703.html>.

Georgina Atkinson and Jo Hargreaves

Labour mobility is one of the core elements of a well-functioning labour market and is a relatively common phenomenon in Australia. The Australian economy, during its various cycles, often experiences both labour and skills shortages. This study reinforces that labour mobility itself is linked to those cycles, in that in a slow labour market a person may move for stable employment, while in a buoyant economy employers use incentives to influence mobility. With the Australian mining industry now experiencing a downturn after a very strong peak, it is imperative that more is understood about what encourages or impedes mobility.

This research synthesises existing literature on labour mobility in order to better understand who moves and why. A qualitative analysis completes the study by capturing the views of labour hire and recruitment firms as well as employers and others with a direct interest in recruitment and workforce planning in both the mining and construction industries.

Key messages

- Around 10% of workers change their job each year. Of those who change jobs, only 5% move considerable distances (for example, interstate). Around 2% of workers commute long distances.
- The majority of labour mobility decisions are driven by the personal priorities of the individual, including family commitments.
- When the labour market is buoyant, competition for workers is high and poaching is common. This can lead to cycling through the same group of workers and an increase in the temporary movement of workers, especially those who have the desired skills and experience.
- Sudden fluctuations in growth require a rapid response to labour recruitment by industry. If this is coupled with a strong preference from employers to hire individuals with specific levels of experience, then contradictions arise.
- In relation to fly-in/fly-out (FIFO) workers, individuals are often attracted by high salaries and new opportunities, but may struggle to find employment due to strict entry requirements (including experience levels and regulatory and licensing requirements).
- Solutions to filling skill and labour shortages may be best addressed through a combination of a broader search radius, a more flexible approach to relevant experience, engagement with apprenticeship programs and collaborative programs/activities with education providers to produce work-ready graduates.

Are neighbourhood characteristics important in predicting the post-school destinations of young Australians?

The full report can be found on the NCVER Portal <www.ncver.edu.au/publications/2676.html>.

David W Johnston, Wang-Sheng Lee, Chandra Shah, Michael A Shields and Jean Spinks

While much research has been conducted on the influence of individual and family characteristics on social exclusion, very little has examined the role of community and neighbourhood factors. This project is considering the differences in education and training outcomes in areas of social advantage by comparison with areas of social disadvantage, taking the contribution of these neighbourhood factors into account. This report contains the results of the quantitative aspect of the study, using data on individuals and their families from the Longitudinal Surveys of Australian Youth (LSAY) and the 2006 census. A second part to the project is a qualitative study exploring the influence of access to high-quality education and training and other community infrastructure on education and training outcomes. The results of this study, in which regions in Victoria and South Australia are compared, will be available early 2015. This work is one of three projects undertaken by the Centre for the Economics of Education and Training (CEET) at Monash University, as part of its three-year (2011–13) research partnership with the National Centre for Vocational Education Research (NCVER) exploring the geographical dimensions of social inclusion and vocational education and training (VET) in Australia.

Key messages

- The socioeconomic status of a neighbourhood is an important characteristic in explaining variations in student outcomes, but residential turnover, the composition of households and the multicultural nature of the neighbourhood also play a role.
- The characteristics of schools make an important difference, but in reality data for many of these (for example, school leadership and teacher quality) are either not readily available or the characteristics are not easily measurable. The effects of a neighbourhood are sometimes difficult to separate from the impacts of schooling because of the correlation between the two.

The authors argue for caution when inferring the significance of the relationship between neighbourhood characteristics and student outcomes if the model estimating such a relationship does not contain the appropriate controls for school effects.

Prior aspirations are important in predicting the final post-school destinations of young people. The results suggest that mentoring efforts that help to shape the aspirations of young people at an early age could have a high payoff, in terms of their post-school outcomes.

Disadvantaged learners and VET to higher education transitions

Tabatha Griffin

The full report can be found on the NCVET Portal <www.ncver.edu.au/publications/2718.html>.

The vocational education and training (VET) system can provide an entry point to the education sector for people who have experienced disadvantage in their lives. Participation in VET can provide personal benefits as well as lead to further study and/or employment.

How disadvantaged learners participate in vocational education and training is an important consideration. Further study and employment outcomes are more likely to stem from completing a higher-level VET qualification, but disadvantaged learners tend to enrol in lower-level qualifications. Hence, whether or not disadvantaged learners are transitioning from lower-level VET qualifications to higher-level vocational education and training and into higher education is of interest. Based on a review of the literature, this paper synthesises what is currently known about these transitions for disadvantaged learners.

Key messages

Disadvantaged learners tend to be overrepresented in lower-level VET qualifications and underrepresented in higher-level VET and higher education. There is little in the literature that provides student perspectives on transitions from lower-level to higher-level vocational education and training and from VET into higher education. The literature shows that transition from VET to higher education is a viable pathway for some disadvantaged learners, although it is not used as widely as it could be. There are a number of factors that act as barriers:

- Transition from vocational education and training to higher education is more likely to occur from higher-level VET qualifications. However, disadvantaged learners re-engaging with the education sector are more likely to enrol in lower-level qualifications.
- Transition from VET to higher education can be complicated, even for students who are not disadvantaged. This is despite the array of formal arrangements, such as credit transfer, and supports that are in place.
- Support services can make a difference, but there is a tension between providing individually tailored support and system-wide support. Limited resources are an issue, and priority should be given to supports most likely to lead to positive outcomes.

Does scored VET in Schools help or hinder access to higher education in Victoria?

Cain Polidano, Domenico Tabasso and Rong Zhang

The full report can be found on the NCVET Portal <www.ncver.edu.au/publications/2770.html>.

The systematic introduction of vocational subjects to the secondary school curriculum in the 1990s – VET in Schools – was aimed at helping to retain less academically inclined students at school and to provide students with a broad range of post-secondary options and pathways. The early 2000s saw a broadening of the VET in Schools programs with the scoring of vocational subjects. This meant that particular vocational subjects could count towards both nationally recognised training and a university entrance score. The anticipated benefit of scored VET subjects was an improved status for vocational education and training (VET) in the secondary school curriculum and a further benefit was that it offered viable options to those students who were not entirely certain of which pathway to take – university or vocational training.

This study, which focuses on the experiences of Victorian secondary school students who completed ‘scored’ VET subjects – counting towards the Victorian Certificate of Education (VCE) – looks at whether taking these subjects affects their entry to university in terms of university entry score, receiving a university offer or receiving an offer in a preferred course. Victoria is the focus for two reasons: since the early 1990s, VET subjects have been highly integrated into the Victorian secondary school curriculum; and, secondly, Victoria was the first state to allow scores from some VET subjects to count fully towards a national vocational qualification, the Victorian Certificate of Education and a university entry score. In this study, those who take scored VET subjects represent fewer than 10% of all Year 12 completers in 2011.

Key messages

- For Victorian students who intend to go to university and who complete a scored VET subject this research indicates that there is a sizeable penalty. The average university entry scores for these students are estimated to be six points lower than they would have been had a general subject been chosen, representing around a 5% reduction in university entry scores, on average.
- This reduction in university entry scores negatively impacts upon the chances of receiving a university offer, from 79% to 67%, on average.
- The largest negative impacts on average university entry scores are found with engineering and technology; community, outdoor and recreation; and hospitality subjects.
- The authors suggest that the down-scaling of scored VET subjects may partly explain this impact and they offer an alternative scaling methodology for consideration.

This is an important study as it is the first to attempt to examine any impacts on university access of taking a scored VET subject (in Victoria). In doing so however it highlights an apparent adverse outcome of a pathway originally intended to offer students the best opportunities to pursue the post-school studies most suited to their ability and motivation.

Early impacts of the Victorian Training Guarantee on VET enrolments and graduate outcomes

The full report can be found on the NCVET Portal <www.ncver.edu.au/publications/2724.html>.

Felix Leung, Duncan McVicar, Cain Polidano and Rong Zhang

In early 2008, in response to changing labour market demands and concerns over skill development and use in the Australian population, the Council of Australian Governments (COAG) initiated the National Agreement for Skills and Workforce Development. A component of the agreement focused on reforming the training market to be more demand-driven and responsive to the labour market. Victoria was the first state to introduce reforms, with the first round, referred to as the Victorian Training Guarantee (VTG), implemented between July 2009 and January 2011. The Victorian Training Guarantee differs from the national reforms in three main ways: places available are uncapped and based on student demand, although there is an upskilling requirement for those aged 20 years and over; there is full contestability between public and private providers for places; and there is greater flexibility for providers in the setting of course fees.

The Victorian system has come under scrutiny from opposing governments, other jurisdictions, providers, industry, and the public. What is apparent is that there has been a significant increase in vocational education and training (VET) enrolments since the reforms were first implemented. This research finds that, between 2008 (pre-reform) and 2011 (post-reform), the Victorian Training Guarantee was estimated to have led to a 35-percentage-point growth in enrolments, with much of this growth in private providers. This increase is far greater than that which has occurred in other states/territories over the same period. What is not as clear however is the impact of the training guarantee on the outcomes for learners of different ages and those from a non-English speaking background, Indigenous students and students with a disability. This is one focus of this research, which uses data from the NCVET Student Outcomes Survey and the National VET Provider Collection. The research examines only the first round of reforms, implemented between July 2009 and January 2011. Subsequent reforms introduced in Victoria in 2012 are not part of this analysis.

Key messages

- For 15 to 19-year-olds, the Victorian Training Guarantee is estimated to improve the likelihood of being in full-time employment six months after training; this group was also satisfied with their course. The outcomes were not as positive for those aged 20 to 24 years, however, possibly suggesting that the upskilling requirements of the training guarantee are limiting the potential benefits for those looking to change their occupation.
- The increases in enrolments for students from a non-English speaking background or who have a disability were not as great as for those who were not in these equity groups. The Victorian Training Guarantee was estimated to have no effect on Indigenous students' enrolments.

Economic vulnerability in Australia, 2002–12: an employment perspective

Michelle Circelli and John Stanwick

The full report can be found on the NCVER Portal <www.ncver.edu.au/publications/2707.html>.

This paper focuses on one aspect of disadvantage in regions, namely, economic vulnerability, using a series of simple indicators of labour market change over a ten-year period, 2002–12. This time period is sufficient to capture change in the labour market. For the purposes of this paper, regions refer to the Australian Bureau of Statistics (ABS) statistical regions.

We are ultimately interested in indicators of vulnerability, as they provide information on where and what type of assistance might be provided. Of relevance to the vocational education and training (VET) sector, this assistance will generally involve some level of training and retraining. As such, the paper also highlights initiatives that have been put in place to assist industries and individuals in the most economically vulnerable regions, noting that there is a dearth of robust information on their impact.

Five indicators were used to determine the economic vulnerability of regions: the change in the average hours worked per region; the change in the total hours worked in each region; the extent of population change in a region; a simple index of structural or industry shift within a region across two time periods; and an index of turbulence within a region; that is, the extent to which people move from employment to unemployment, and from unemployment to employment. To further inform the discussion, the three most dominant industries in a region in 2012 were derived, based on the total number of hours worked in the various industries for any given region. In addition, the change in average hours worked between 2002 and 2012 was calculated for the dominant industries in each region.

Key messages

- The manufacturing, health care and social assistance, and retail industries tend to dominate in the more economically vulnerable regions. On the other hand, mining and construction feature strongly in the least economically vulnerable regions, even though the cyclical nature of these industries can be seen as a challenge.
- Some vulnerable regions do not have clearly dominant industries but instead a broader mix of industries.
- The impacts of structural economic changes are broad and sustained and tend to affect all employment in the region.
- Training efforts need to be tailored to the needs of the region and, where an industry is in decline, may involve the retraining of workers and/or training and other assistance for the unemployed. These efforts can also assist in increasing labour mobility in these regions.
- The various assistance packages available in many of the more vulnerable regions were focused on improving employment in the region. However, there is very little evaluative data available on these packages by which to assess their success or otherwise, so their impact is not clear.

Entry to vocations: building the foundations for successful transitions

Kira Clarke

The full report can be found on the NCVET Portal <www.ncver.edu.au/publications/2769.html>.

The viability of VET in Schools as an effective pathway to work and further education for Australian students is critical to the lives of young people and deserving of detailed policy scrutiny. There is great variability in how it is delivered across schools and how it is incorporated into the senior secondary certificates across the various Australian jurisdictions as well as inconsistency in the level of workplace learning involved. Providing students with an alternative pathway to higher education is vital, but what can be done to strengthen the outcomes of VET in Schools programs for students?

The culmination of nearly three years of investigation into this issue, this report highlights important themes and structural changes for strengthening VET in Schools. The author tests these changes through consultations with stakeholders, who include representatives from departments of education and training, boards of study, industry, schools and vocational education and training (VET) providers.

This report is part of a wider three-year program of research, *Vocations: the link between post-compulsory education and the labour market*, which is investigating the educational and occupational paths that people take and examining how their study relates to their work.

Key messages

The report identifies the following strategies as a way of strengthening VET in Schools:

- Define the purpose of vocational education and training in secondary education as foundational preparation for access to mid-level qualifications and entry to employment-based learning such as apprenticeships.
- Better align the school vocational curriculum with labour market opportunities so that vocational qualifications reflect the skills and knowledge needed to enter and move through an industry. One example might be to redevelop or reconceptualise all certificates I and II as industry/occupation exploration or 'career start' qualifications primarily for use by school students.
- Develop thematic packages of curriculum, whereby vocational and school subjects are connected, to create a stronger articulation pathway. The study of English and maths should also be compulsory.
- Make explicit connections between vocational education and training undertaken at school and post-school VET study to strengthen the pathways to post-school vocational courses.
- Use units of competency within certificates I and II for the exploration of occupations and industries in the junior and middle years of schooling.

Gendered pathways into the post-secondary study of science

Joanna Sikora

The full report can be found on the NCVET Portal <www.ncver.edu.au/publications/2714.html>.

This paper investigates gender segregation in science engagement by looking, via career preferences, at the gendered pathways of Australian youth into post-secondary science study. In particular, the author is interested in exploring gender differences relating to the take-up of the life and physical sciences. To investigate these issues, the author analyses data from the 2006 cohort of the Longitudinal Surveys of Australian Youth (LSAY).

This research was funded through the National Centre for Vocational Education Research (NCVER) fellowship program, which encourages researchers to use NCVER datasets to improve our understanding of education. An earlier paper investigated whether single-sex schooling affected gendered patterns in the uptake of science courses in Year 11 and science-related career plans.

Key messages

- On the whole, females are less likely to study a science qualification after leaving school than males.
- When looking at the physical sciences, the gap between male and female participation widens at the tertiary level compared with secondary school, with males five times more likely than females to study a physical science qualification.
- Regarding the life sciences, females are more likely than males to study a life science qualification at the tertiary level, but this gap is similar to that seen at secondary school.
- These differences remain after controlling for a number of factors, such as academic performance in science, having a parent employed in science, and the economic and cultural status of the family, suggesting that gender segregation in science is driven more broadly by a culture that links particular occupations to a specific gender.

While this research looks more broadly than the vocational education and training (VET) sector, the divide between gender and the physical and life sciences is also present in the VET sector.

Incentives for relocating to regional Australia: estimates using a choice experiment

Aaron Nicholas and Chandra Shah

The full report can be found on the NCVET Portal <www.ncver.edu.au/publications/2727.html>.

Inter-regional migration plays an important role in regional labour markets; for instance, by moving labour from a region with high unemployment to a region where there are unfilled vacancies.

The study uses a discrete choice experiment to investigate the willingness to move for work of a sample of individuals from New South Wales and South Australia, states which have had pockets of relatively high unemployment, to Karratha (Western Australia) and Emerald (Queensland), two regional centres with relatively high demand for labour in 2012. The aim is to understand how individual and job characteristics are related to the willingness to move.

The study is unique, in that it estimates the monetary value of the incentives required for individuals to accept job offers in a region different from that in which they currently live.

This paper reports on one of three topics that comprise a three-year program of work: Geographical dimensions of social inclusion and VET in Australia.

Key messages

- Some groups are more prepared to move than others. In particular, individuals who are looking for work (both employed and unemployed) indicate a strong willingness to relocate for work.
- Individuals are more willing to move for jobs that: are ongoing or longer-term rather than fixed-term; provide training; or involve a fly-in/fly-out contract rather than permanent relocation.
- Some groups require wage incentives to accept a job in a regional location but others require no such incentives.
 - The size of the incentive depends on individual characteristics as well as on the job conditions being offered; for example, the preference for fly-in/fly-out and training provision in the job contract reduces the size of any wage incentive that needs to be offered.

This study suggests that policies promoting geographical labour mobility are more likely to succeed if job offers include upskilling and reskilling opportunities and contracts that are not short-term. Addressing the demand-side factors, such as matching job seekers' skills and experience to employer requirements, can also improve labour mobility.

Intergenerational mobility: new evidence from the Longitudinal Surveys of Australian Youth

Gerry Redmond, Melissa Wong, Bruce Bradbury and
Ilan Katz

*The full report can be
found on the NCVER Portal
<[www.ncver.edu.au/
publications/2712.html](http://www.ncver.edu.au/publications/2712.html)>.*

A measure of the efficacy of educational systems in Australia and internationally is that young people's educational and employment achievements should result from their efforts and abilities rather than from their family background.

This report examines the extent of changes in intergenerational mobility in Australia since the 1970s using data from the Youth in Transition (YIT) study and the Longitudinal Surveys of Australian Youth (LSAY). The report investigates the ranking of children's educational achievement in literacy and numeracy tests at age 14–15 years and their tertiary entrance rank (TER) at age 18–19 years in the context of their parents' socioeconomic status (SES). The analysis takes into account, in broad terms, developments in educational, social and economic policies over that time and previous studies (which indicate mixed results on the extent of intergenerational mobility in Australia).

Key messages

- In terms of absolute educational outcomes alone, the research suggests there have been some improvements to intergenerational mobility; for example, by 2009 the vast majority of students from all socioeconomic backgrounds are completing Year 12 compared with those in the 1970s.
- In relative terms, there is little evidence of an increase in intergenerational mobility. Children of high socioeconomic status parents are as likely to have higher tertiary entrance rank scores and better test results in the 2000s as in the 1970s. In other words there is little evidence of a change in intergenerational mobility in Australia since the 1970s.
- School socioeconomic status has grown in importance and over time is gradually replacing the effects of parental socioeconomic status and school sector (government, independent, Catholic).

While steps have been taken to account for limitations in the data, the authors note that the results should be treated with caution. Nevertheless, the findings contribute to our understanding of how family background affects educational outcomes and how this has changed over three decades.

Interpreting competencies in Australian vocational education and training: practices and issues

Steven Hodge

The full report can be found on the NCVER Portal <www.ncver.edu.au/publications/2696.html>.

How vocational education and training (VET) practitioners understand and use competency standards is of fundamental importance to the quality and integrity of the Australian VET system, given that these standards are its very basis. This small study seeks to address this question by gaining insights from 30 VET practitioners about their use of competencies, by comparison with the way they are expected to use them, as expressed in the mandated entry-level qualification for practitioners – the Certificate IV in Training and Assessment.

This research was funded with a grant that provides an opportunity for early-career researchers, from disciplines such as economics and the social sciences, to undertake a modest research project in a topic relevant to NCVER's remit.

Key messages

- The interpretation of units of competency appears to be a highly sophisticated skill, yet the practitioners in this study did not appear to learn this critical skill adequately in their initial training. Many indicated that it took up to a year after completing their studies before they became confident in interpreting competencies when developing curriculum.
- Most experience with interpreting competencies was gained through practice, professional development and informal learning such as participation in assessment validation, rather than through initial training in the Certificate IV in Training and Assessment.
- The difficulty with interpreting competencies is largely due to the unclear language and 'jargon' associated with them. Recent initiatives to simplify the language of competencies and 'streamline' their structure may make the work of interpretation more straightforward for VET practitioners; however, this is not the entire solution.
- To ensure that VET practitioners are well equipped to undertake competency interpretation work sooner, the author suggests a number of initiatives to help build expertise, such as more intensive training initially, combined with participation in follow-up activities such as assessment validation.

The labour force participation of Australian mature-aged men: the role of spousal participation

Rong Zhu

The full report can be found on the NCVER Portal <www.ncver.edu.au/publications/2702.html>.

An important policy concern for many Organisation for Economic Co-operation and Development (OECD) countries, including Australia, has been the potential impact on society of an ageing population. Labour force participation and retirement decisions are of particular interest and in Australia one policy focus has been on keeping mature-aged people in employment longer, the rationale being that this may mitigate the impacts on areas such as pension and health systems.

While the participation rate for mature-aged men and women in the labour force has increased significantly over the last decade, there are several factors which influence the decision to work or not. Using data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey, the research addresses the interdependence of the labour force participation decisions of mature-aged couples from 2001 to 2011.

This research was funded with a grant that provides an opportunity for early-career researchers from disciplines such as economics and the social sciences to undertake a modest research project in a topic relevant to NCVER's remit.

Key messages

- The wife's choice to participate in the labour force influences directly the husband's decision to participate. Interestingly, the reverse does not hold true.
- The increased participation of married women in the labour force resulted in a four-percentage-point increase in the participation of mature-aged married men between 2001 and 2011.
- This relationship exists even when the persistence of labour force participation of mature-aged married men is taken into account.

The paper identifies that strategies and policies to increase workforce participation need to be based on joint modelling of the labour force decisions of couples. If there is a desire to increase the workforce participation of mature-aged men, policy should also consider increasing the participation of women.

Measuring VET participation by socioeconomic status: an examination of the robustness of ABS SEIFA measures over time

The full report can be found on the NCVET Portal <www.ncver.edu.au/publications/2721.html>.

Patrick Lim and Tom Karmel

At every five-yearly census, the Australian Bureau of Statistics (ABS) recalculates both the SEIFA (Socio-economic Indexes for Areas) indexes and also recalibrates the borders and sizes of the geographic areas from which these SEIFA measurements are derived. Further, over time, the composition of geographic areas may change, due to urban renewal or other factors.

The National Centre for Vocational Education Research (NCVER) reports vocational education and training (VET) participation rates at least annually, and the question that arises is how well do the SEIFA indexes perform over the interim years, that is, between the releases of new census data. Of particular interest is the reporting of participation rates for the census years. In reporting the 2011 year, NCVER uses the 2006 census data, as the ABS does not release new SEIFA values until 18 months after each census. The focus of this paper is on VET participation rates; however, the methodology would be equally applicable to higher education or school participation.

The approach used in this paper is that the 2006 and 2011 National VET Provider Collections have had the 2006 and 2011 SEIFA measures applied to each of them, along with the Australian populations at each time. Using these data, it was possible to determine VET participation rates (by age) as a proportion of the Australian population, using both the 2006 and 2011 census data. The SEIFA index used in this paper was the Index of Relative Socio-economic Disadvantage (IRSD).

Key messages

- The estimates of VET participation made for 2011 based on 2006 quintiles are reasonably accurate when the quintiles are based on statistical local areas (SLAs).
- The results based on postal areas (POAs) are not as accurate.
- The new Statistical Area 2 geographic boundaries will be more stable and accurate over time.
- The SEIFA quintiles (deciles) using area-based calculations are not to be taken as a robust benchmark in the sense of 20% of the population. That is, 20% of the population does not fall into the lowest quintile (for example). SEIFA quintiles are derived by ensuring that 20% of all geographic regions are in the quintile and thus the underlying distribution of the population does not evenly fall across the five quintiles.
- Any over- or under-representation of any socioeconomic status (SES) group cannot be judged accurately by whether the share of a particular quintile is over or under 20%.

Qualification utilisation: occupational outcomes – overview

Bridget Wibrow

The full report can be found on the NCVET Portal <www.ncver.edu.au/publications/2708.html>.

Australia's vocational education and training (VET) system is focused on providing students with the skills needed for work in various occupations and trades. The system is closely connected to industry, with VET training packages developed by industry skills councils. Because of this, it might be expected that the training will lead to jobs in specific areas. This overview looks at whether graduates of VET qualifications end up in the intended occupation of their qualification or whether they end up employed elsewhere. And if they are employed elsewhere, is their training still useful to their current job. It updates and builds upon work previously published by the National Centre for Vocational Education Research (NCVER; Karmel, Mlotkowski & Awodeyi 2008).

Data from the Student Outcomes Survey are used to correlate the intended occupation of training with the destination occupation of graduates. Furthermore, other factors are added to the analysis to determine their influence on the relationship between intended and destination occupations. These are qualification level, labour force status before training, age, the completion of a module only, and industry area. An accompanying support document contains the data tables.

Key messages

- Trades tend to have stronger matches between the intended occupation of the training and the jobs graduates get.
- On a similar note, highly regulated industries, such as the electrotechnology, communications and energy utilities industries, indicate a stronger match between intended and destination occupations than those that relate to a more generalist set of skills, for example, innovation and business.
- Certificates III and IV result in a higher overall match between intended and destination occupations than certificates I and II and diplomas and higher. Diploma and above graduates are also much more likely to be employed at a lower skill level than that of their intended occupation by comparison with graduates of other qualification levels.
- There is little difference in the overall match for existing workers, younger new entrants and older new entrants. However, there is some variation between occupation groups and industry areas. For example, older new entrants have a much higher match for the community services area than do the other categories.
- In most instances, completing a qualification results in a stronger match between intended and destination occupations. The exception is for the managers occupation group, where module completers have a higher match than graduates.
- Many VET graduates who do not end up employed in their intended occupation still find their training to be relevant to their current job and some also end up employed at a higher skill level than their intended occupation.

Quality assessments: practice and perspectives

Josie Misko, Sian Halliday-Wynes, John Stanwick and Sinan Gemici

The full report can be found on the NCVER Portal <www.ncver.edu.au/publications/2709.html>.

The quality and rigour of assessments in vocational education and training (VET) have been key concerns for VET policy-makers, industry stakeholders, employers, and teachers and trainers in recent years. The issue of quality in assessments has implications for the credibility of VET qualifications and the competence of the graduates who hold these qualifications. In this study the authors investigate this issue by looking at certificate III qualifications in aged care, electro-technology (electrical) and business. The authors also explore the knowledge and the practical application of assessment of practitioners. They identify some clear tensions relating to where practitioners put their efforts in ensuring quality assessments.

Key messages

- Regulatory frameworks drive quality assessments in electrical and aged care qualifications. They are less critical for general business qualifications.
- Practitioners understand the requirements for gathering sufficient evidence of practical skills and underpinning knowledge to establish competency against established performance criteria in training packages. Applying this in practice presents more of a challenge.
- Practitioners also express low confidence in making fair, reliable, consistent and valid judgments about performance, particularly about 'non-competent performance'.
- Practitioners are more concerned with implementing processes for ensuring the relevance, clarity and user-friendliness of their assessment instruments than they are with moderating the results of assessments. The general view is that the use of rigorous up-front validation approaches minimises the need for moderation. Also challenging is ensuring that their assessment tools keep pace with changing legislative frameworks and standards.
- External assessments conducted by regulatory authorities (or their equivalents) in electrical qualifications or external assessors in aged care or business qualifications standardise skill assessments. This helps to ensure comparability and consistency of performance to industry standards.
- Employers' time constraints and inadequate experience or expertise in specific units (especially those dealing with theoretical components) work against their increased involvement in assessment validation or in conducting assessments.
- The streamlining of recognition of prior learning processes is limited because providers want to guard against non-compliance judgments from regulators and auditors.
- Other than accelerating the progress of existing workers with considerable experience, there is little support for condensing the length of entry-level courses.

Refining models and approaches in continuing education and training

Stephen Billett, Sarojni Choy, Darryl Dymock,
Ray Smith, Ann Kelly, Mark Tyler, Amanda Henderson,
Jason Lewis and Fred Beven

*The full report can be
found on the NCVET Portal
<[www.ncver.edu.au/
publications/2700.html](http://www.ncver.edu.au/publications/2700.html)>.*

This is the second report from a three-year program of research exploring how best the tertiary education and training system might be structured to maintain the employability of Australian workers across their working lives. Following on from the first report, this phase of the research investigates training preferences and practices in four industries: mining; services and hospitality; financial services; and health and community services (mainly aged care).

This second phase of research confirmed the findings of the first phase, which suggested that continuing education and training experiences should: be situated in workplace experiences; entail direct support from experienced others; provide high-quality individualised support for learning; and motivate and engage the learners.

Key messages

- Workers and managers differed in their views on the purposes of training. Workers emphasised personal reasons for engaging in continuing education and training, such as securing ongoing employability, advancing in their workplaces and responding to workplace innovations. Managers emphasised organisation-specific factors and meeting enterprise goals as reasons for training.
- When the aim of continuing education and training is for workers to remain current and employable, advance their careers or bring about workplace change/innovation, then workplace and practice-based models are the most valued and frequently used by workers. They are also preferred by managers.
- When the purpose of continuing education and training is to secure employment or change occupations/careers, then educational institution-based models are more favoured.
- Different continuing education and training purposes require distinct educational experiences and processes – neither fully institution-based nor workplace-based provision will address all purposes.
- Additional considerations that need to be taken into account when devising an effective continuing education and training system include the specific requirements of different industry sectors and geographic regions and the need for credible accreditation and certification.

Transitioning from vocational education and training to university: strengthening information literacy through collaboration

The full report can be found on the NCVET Portal <www.ncver.edu.au/publications/2701.html>.

Sonia White

Students transitioning from vocational education and training (VET) to university can face numerous challenges, many of which have been documented in the literature. The inherent differences between the sectors – including the competency-based focus of vocational education and training compared with the curricula focus of higher education – means that transitioning students have to adjust to different learning cultures, expectations and means of assessment.

This small study focuses on information literacy skill needs and investigates how these differ between students studying early childhood-related courses in TAFE (technical and further education) institutes and those studying at university. Based on a survey and follow-up interviews with students studying at one TAFE institute and one university, the research explored the information literacy skills use and challenges faced by these students.

Key messages

- Participating TAFE and university students reported difficulties in the same aspects of information literacy; namely, understanding the assessment task, assimilating information and preparing the assessment, and adhering to the writing and referencing style.
- TAFE and university students reported a difference in the expectations relating to their capabilities in locating and using different sources of information. The different sources of information used by the two sets of students illustrate the more practical focus of vocational education and training and the academic focus of higher education.
- Both the TAFE students considering enrolling in university and the university students who had made the transition from TAFE indicated that a collaborative effort between VET providers and universities would help students to make the transition successfully. Early support – even before commencing university study – in a number of different forms was suggested as a way to enable students to develop the required information literacy skills.

The report concludes with a framework proposing the various supports that could be implemented at different times to help students transitioning from vocational education and training to university to gain the information literacy skills required.

Understanding the non-completion of apprentices

Alice Bednarz

The full report can be found on the NCVET Portal <www.ncver.edu.au/publications/2706.html>.

Approximately half of all apprenticeship contracts in the trades are not completed. In this context, this review draws together existing research on why apprentices do not complete their training. The issue of non-completion is considered from multiple angles, including apprentices' self-reported reasons for non-completion, the impact of employer characteristics, and apprentices' and employers' satisfaction with the training provider. The report is based on findings from surveys undertaken by the National Centre for Vocational Education Research (NCVER) and other national surveys, industry studies and research papers.

Key messages

- Employment-related reasons are the most commonly cited reasons for not completing an apprenticeship. These include experiencing interpersonal difficulties with employers or colleagues, being made redundant, not liking the work and changing career. By contrast, issues with the off-the-job training are the least frequently cited reasons for not completing an apprenticeship.
- There is a large difference in completers' and non-completers' satisfaction with their employment experience overall. The majority of completers (80%) are satisfied with the employment experience overall, compared with just 42% of non-completers. This provides further evidence that the employment experience, rather than the off-the-job-training experience, carries greater weight in whether an apprentice stays or goes.
- There is conflicting evidence on the importance of wages. Most studies find that low wages are not the most common reason for non-completion, but they are nonetheless one of the top few factors. An increase in wages alone is unlikely to solve the problem of low completion rates, since multiple factors are often to blame.
- Apprentices generally leave their apprenticeship contract early on: 60% of those who leave do so within the first year.
- The influence of the employer cannot be overstated. Employers with the highest completion rates are generally larger, experienced employers with well-organised systems for managing and recruiting apprentices. Employers with lower completion rates tend to be smaller and have less experience.

These findings suggest a number of ideas for future policy developments, such as encouraging more rigorous recruitment practices; providing greater support for smaller, less-experienced employers; providing greater mentoring support for apprentices, particularly in the early stages of their apprenticeship; and considering alternative apprenticeship models, specifically those that reduce the pressure on employers.

Longitudinal Surveys of Australian Youth Program

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



Does financial stress impact on young people in tertiary study?

Sian Halliday-Wynes and Nhi Nguyen

The full report can be found on the NCVET Portal <www.lsay.edu.au/publications/2732.html>.

The focus of this paper is a consideration of the role that financial stress plays in a student's study outcomes, in particular, whether individual circumstances influence this relationship; for example, the extent to which the combination of work and study or living status (living independently compared with living with parents) contributes to financial stress. Financial stress has other obvious effects on overall wellbeing, but we are interested in its effects on education outcomes.

This paper explores the financial wellbeing of tertiary students participating in the Longitudinal Surveys of Australian Youth (LSAY). The finance topic in LSAY includes questions on government payments, income, credit card activity, shortage of money and saving, and how respondents are generally managing financially. We are also interested in the effect that financial stress has had on a student's learning, which while not specifically explored in LSAY is a theme investigated in an additional survey of a small number of financially stressed LSAY participants.

Key messages

- Tertiary education remains a key feature for improving productivity and the employability of young Australians.
- Being a tertiary student can be associated with experiencing financial stress.
- The LSAY data indicate that around a quarter of LSAY participants reported moderate to high levels of financial stress at age 20 years; however, financial stress is not the main factor affecting the study outcomes of tertiary graduates.
- The small-scale study indicates that, although some of the students reported that working while studying had an effect on their studies, there was no strong link between the student's financial position and their study outcomes.
- In terms of completions, the majority of students who had considered withdrawing from study did not attribute this to financial stress. Instead, they cited a variety of reasons such as a lack of interest, work pressures and other personal matters.

Do schools influence student engagement in the high school years?

Sinan Gemicı and Tham Lu

The full report can be found on the NCVER Portal <www.lsay.edu.au/publications/2745.html>.

The link between young people’s engagement with school and their longer-term education and labour market outcomes is well established. The key policy question is the extent to which student engagement can be influenced by the manner in which schools are organised and run. This report uses data from the Longitudinal Surveys of Australian Youth (LSAY) to examine a wide range of school characteristics and their impact on students’ emotional and cognitive engagement with school at age 15 years.

Key messages

- At age 15 years, students’ emotional and cognitive engagement with school is overwhelmingly driven by individual background characteristics.
- Important individual predictors of higher engagement levels include having the intention to complete Year 12, performing strong academically, having a high self-concept of ability, being foreign-born, coming from a high socioeconomic status background, speaking a language other than English at home, working only relatively few hours outside school, and coming from a traditional nuclear family. A distinct gender gap exists, with male students showing significantly lower cognitive engagement levels than their female peers.
- Once individual background factors are controlled for, school attributes have very little impact on the engagement levels of 15-year-olds. By school attributes we mean school sector and demographics, resourcing, competition and academic orientation, school leadership and teacher quality, and the overall school climate. These school characteristics account for 4.3% of students’ emotional engagement and 7.5% of their cognitive engagement.
- Some school characteristics that positively influence student engagement include non-metropolitan school location, a perception of high teacher quality, and the high average academic achievement of the student body. Yet, while these characteristics are statistically significant, their effect is small and not necessarily practically meaningful.
- Schools matter even less for 15-year-olds who are at risk of early school leaving. For these at-risk students, school characteristics account for 1.4% and 4.4% of emotional and cognitive engagement, respectively.
- Overall, the results from this study paint a sobering picture about the ability of school attributes to raise the engagement levels of 15-year-olds. It seems that by this age ‘the die has been cast’.
- It is premature to conclude, however, that school characteristics have no bearing on student engagement in general. It is very possible that the impact of school factors on students’ engagement levels occurs at a younger age.

Educational outcomes: the impact of aspirations and the role of student background characteristics

Jacqueline Homel and Chris Ryan

The full report can be found on the NCVET Portal <www.lsay.edu.au/publications/2669.html>.

Current educational reforms and targets, such as increasing higher-level qualifications amongst the working-age population, are reliant on improving the educational outcomes of people from disadvantaged backgrounds. This paper follows on from previous research, which has shown that educational aspirations are strong predictors of educational outcomes, including Year 12 and tertiary participation. The focus of the paper is to understand the relationships between student background characteristics, educational aspirations and educational outcomes.

The researchers set out to determine whether student background factors, such as socioeconomic status (SES) and Indigenous status, only affect educational outcomes via their indirect effect on educational aspirations. They also examine whether aspirations have the same effect on educational outcomes for young people from disadvantaged backgrounds as those who are not from disadvantaged backgrounds. The analysis is based on data from the Longitudinal Surveys of Australian Youth (LSAY), which collects information on aspirations at age 15 years via questions on intentions to complete Year 12 and post-school study plans.

Key messages

- Educational aspirations have a substantial effect on educational outcomes.
 - Individuals who plan to complete Year 12 are 20–25% more likely to do so, compared with those who do not intend to complete Year 12.
 - Individuals who intend to go on to university are 15–20% more likely to do so, compared with those who do not have post-school university plans.
- Interactions between educational aspirations and student background characteristics do not seem particularly important, suggesting that aspirations have a similar impact on educational outcomes, regardless of socioeconomic status and Indigenous status.
- There were some significant interactions between aspirations and academic performance. For example, those who considered their academic performance to be average or below average, relative to their peers, were less likely to achieve their aspirations compared with those who considered their performance to be above average.

The authors conclude that interventions to lift the aspirations of young people should have a similar impact for all young people, including those most at risk of poor educational outcomes.

The factors affecting the educational and occupational aspirations of young Australians

Sinan Gemici, Alice Bednarz, Tom Karmel and Patrick Lim

The full report can be found on the NCVER Portal <www.lsay.edu.au/publications/2711.html>.

Given the strong link between young people's goals and their longer-term education and labour market outcomes, this report sets out to determine which factors drive the educational and occupational aspirations of young people. The authors shed light on important influences that drive young people's aspirations to complete Year 12, their plans to commence university study in the first year after leaving school, and their occupational aspirations at age 15 years in relation to the kind of job they expect to have at age 30 years. Identifying the factors with the potential to be influenced by policy is among the study's key objectives.

Key messages

- The most influential factors for students' aspirations for completing Year 12 include their academic performance and immigration background and whether their parents expect them to go to university.
- Students whose parents want them to attend university are four times more likely to complete Year 12 and 11 times more likely to plan to attend university compared with those whose parents expect them to choose a non-university pathway.
- The higher education plans of peers also have a strong influence: students whose friends plan to attend university are nearly four times more likely to plan to attend university.
- Two of the strongest predictors of occupational aspirations are parental influences and academic performance. Students whose parents want them to attend university have expected occupational status scores that are approximately 12 points higher, on a 0 to 100 scale, than those students whose parents have no university expectations for them.
- The job aspirations of 15-year-olds are somewhat unrealistic. By age 25 years, the age until which data are available for analysis, a significant portion of young people fall short of what they set out to achieve in terms of occupation. However, this does not mean that they cannot achieve their desired occupations at a later stage in life.

Overall, this report illustrates just how important parents and peers are to young people's aspirations. Developing policies and interventions that successfully leverage the influence of parents may yield a substantial pay-off with respect to raising aspirations.

The impact of increasing university participation on the pool of apprentices

Tom Karmel, David Roberts and Patrick Lim

The full report can be found on the NCVET Portal <www.lsay.edu.au/publications/2720.html>.

In recent years, Australian governments have placed considerable emphasis on the importance of both university participation and undertaking an apprenticeship. This paper looks at whether there is a relationship between the two and, in particular, whether the expansion of university participation (for example, the uncapping of university undergraduate places following the Bradley Review [Bradley et al. 2008]) is likely to have an impact on the pool of those undertaking a trade apprenticeship. The authors consider certain aspects of an apprentice's background: reading and mathematics achievement at age 15 years and socioeconomic status. The potential impact of an expansion in university participation on the pool of apprentices is examined by comparing two cohorts from the Longitudinal Surveys of Australian Youth (LSAY): the Y95 cohort who were in Year 9 in 1995 and the Y06 cohort who were aged 15 years in 2006.

Key messages

- The likelihood of undertaking an apprenticeship is affected by the propensity to go to university.
- Young men are less likely to undertake an apprenticeship if they are academically inclined.
- Apprenticeships are more likely to be undertaken by young men from a lower socioeconomic status background.
- LSAY shows that participation in both university and apprenticeships grew between 1995 and 2006.
- Young men who were less academically inclined and from low socioeconomic status backgrounds contributed to this growth in apprenticeships.
- The growth in university participation has come from academically lower-performing young men with a higher socioeconomic status background.

The authors note that any educational expansion (whether through apprenticeships or attendance at university) will also have an impact on that part of the population who previously were neither undertaking an apprenticeship nor going to university. They also observe that those who are in the best position to take advantage of opportunities in both apprenticeships and university places do so, irrespective of whether position is measured by mathematics and reading achievement or socioeconomic status.

NCVER Core Research Program

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.



The contribution of education to economic growth in Australia, 1997–2009

Tom Karmel

The full report can be found on the NCVER Portal <www.ncver.edu.au/publications/2666.html>.

This paper uses a growth accounting framework to estimate the impact of increasing education levels on economic growth, based on data from the Survey of Education and Training (SET), conducted by the Australian Bureau of Statistics (ABS). This survey is particularly apt because it allows a fine classification of education levels. The paper incorporates a novel extension by estimating the impact of increasing education levels on labour supply, exploiting the fact that, particularly for women, those with higher levels of education tend to work more than those with lower levels. Not only do those with higher levels of education tend to have a greater chance of being employed, but they also tend to work longer hours.

Key messages

- Increasing education levels are contributing to improved productivity: of the order of 0.14% per annum between 1997 and 2009 (less than for the period 1968–69 to 1989–90). They will do so as long as the wage premiums associated with qualifications are maintained, noting that over the period in question the ratios of the hourly wage rates between education levels have been fairly stable.
- Increasing education levels have had a sizeable impact on the hours worked by the workforce. In fact between 2001 and 2009 this impact (of over 3% on hours worked) was larger than the improvement in labour quality. This effect was almost entirely due to increases in the number of women with degrees and postgraduate qualifications.

The research in this paper measures the effect of increasing education levels on the quality of labour and hence the level of output. As acknowledged in the paper, it does not consider any effects that changing education levels might have on technology – so called ‘endogenous growth’ mechanisms.

Readiness to meet demand for skills: a study of five growth industries

Francesca Beddie, Mette Creaser, Jo Hargreaves and
Adrian Ong

*The full report can be
found on the NCVER Portal
<[www.ncver.edu.au/
publications/2759.html](http://www.ncver.edu.au/publications/2759.html)>.*

The Australian Government is reviewing its industry investment and competitiveness agenda. As part of that process the Department of Industry asked the National Centre for Vocational Education Research (NCVER) to investigate the readiness of the education and training sector to meet demand from five industries where potential market opportunities have been identified: food and agribusiness; mining equipment, technology and services; medical technologies and pharmaceuticals; oil and gas; and advanced manufacturing.

The aim of this study was to identify issues pertinent to ensuring that the education and training system can respond to emerging skills demand in these industry areas. Some of those issues apply more broadly across the economy, and most need to be addressed in conjunction with other areas of industry policy.

Key messages

- The gap between the knowledge generated in the education system and the skills demanded by employers and individuals is widening. Differences within and between the industries notwithstanding, a common theme across all is the need for a significant cultural shift in thinking about the way skills are generated and deployed.
- The constraints on the readiness of enterprises to meet demand stem both from within the education system and the changing nature of global value chains. Overcoming these limitations requires:
 - better outcomes from both school and post-school education in developing generic and foundation skills. These need now to include Asia literacy
 - a priority focus on science, technology, engineering and mathematics (STEM), including the development of workplace skills in STEM undergraduate or research degrees and opportunities for continuing professional development in STEM disciplines
 - businesses to better understand their skill needs during different phases of their involvement in global value chains and to encourage workplace learning opportunities
 - funding policies for education and training that support continuing professional development.
- The role of employers is crucial. They must encourage and support a more nimble workforce, that is, one willing to learn new skills and adapt to change. This will require partnerships with schools, vocational education and training (VET) institutions, universities and research organisations.
- Knowledge hubs or clusters create opportunities to foster the creation of skill-intensive jobs, which can lead to innovation and productivity. These demand resources and continuous learning.
- The diversity within each of the five industries, in terms of the stages of their business development and their economic activity, creates challenges in gathering statistical data.
- Particular issues emerged for each industry:
 - In agriculture and manufacturing, older, lower-skilled workers require retraining to find acceptable jobs in their changing industries or elsewhere.
 - In oil, gas and mining, recruiting and maintaining workers in remote and hazardous locations are ongoing challenges.
 - In biotechnology, universities and companies must work closely to understand the business environment to thereby ensure a supply of appropriately skilled graduates.

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