21st National Vocational Education and Training Research Conference 'No Frills': refereed papers

EDITED BY

TABATHA GRIFFIN

NCVER

Australian Government

Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education

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About the research

*21st National Vocational Education and Training Research Conference
'No Frills': refereed papers*

Edited by Tabatha Griffin, National Centre for Vocational Education Research

The 21st National Vocational Education and Training Research Conference, colloquially known as 'No Frills', was held in July 2012. To celebrate this special anniversary, speakers were offered the opportunity to have their papers peer-reviewed, and these 14 refereed papers have been compiled.

The papers span a broad range of topics, including: Indigenous students and their intentions; educational pathways; skills recognition; leadership in VET providers; workplace mentoring; and the experiences of apprentices.

The papers provide an insight into the array of topics presented, and I hope they generate interest in attending a future National Vocational Education and Training Research Conference.

Tom Karmel
Managing Director, NCVER

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Introduction

The 21st Annual National Vocational Education and Training Research Conference, known as 'No Frills', was held from 11–13 July 2012. Co-hosted by the National Centre for Vocational Education Research (NCVER) and TAFE SA, with support from the Department of Further Education, Employment, Science and Technology (DFEEST) and the South Australian Training and Skills Commission, the conference aimed to help delegates 'celebrate, collaborate and connect' at this special anniversary.

Since the first National Vocational Education and Training Research Conference 21 years ago, NCVER has used it to build capacity for vocational education and training (VET) research by giving researchers, practitioners and others the opportunity to present, discuss and share information about key issues facing the sector. In addition to providing professional development opportunities for new and existing researchers, the conference aligns with the company's strategic goals of disseminating research to the wider community and broadening its research effort.

Three keynote speakers looked at the challenges currently facing the VET sector. In his opening presentation, industry leader Adrian Smith described the need to reform the training system in South Australia in response to changing economic and social needs. He questioned whether the current competency-based model of learning was meeting the needs of students or industry and outlined a strategy for a more responsive, demand-driven system.

Robyn Archer, AO, built on this premise by showing how the VET sector – with its master–apprentice model and focus on hands-on training and contact hours – was a natural home for creative arts training. Her challenge to the sector was to work in partnership with universities to give students greater prestige and articulation possibilities.

David Finegold widened the debate to encompass an international perspective by looking at the evolving training systems of China and India. Making up 35% of the global workforce, these two countries have both experienced a dramatic increase in the demand for onshore education and training, and this provides opportunities for Australian providers and companies.

The 2012 program offered a number of practical workshops and showcased a wide variety of presentations relating to research and practitioner experience in the VET sector. Topics ranged widely from VET in Schools, student transitions, occupational choices, continuing and adult education, workplace learning, skills sets, and labour mobility. Other issues discussed focused on Indigenous students and educators, social inclusion, 'at risk' youth, literacy and numeracy, mentoring, sustainability, teacher retention, and the tertiary sector. In all, 61 parallel sessions were presented, and this rich and varied program provided a fitting tribute to the 21st celebration of the conference.

For the first time in the history of the Annual National Vocational Education and Training Research Conference, the 14 refereed papers presented have been compiled for publication. These papers represent a good cross-section of topical issues, from students' aspirations through to skills at work, and are well focused on the efficacy of our VET system.

In recent years understanding the educational experiences of young people has been a strong focus of interest for researchers. Using data from the Longitudinal Surveys of Australian Youth (LSAY), Nicholas Biddle compares the intentions of Indigenous and non-Indigenous students for tertiary education and training. Young Indigenous students tend to have significantly lower aspirations, have a slight preference for vocational education and training and are more likely to pursue VET pathways, although these differences evaporate when Programme for International Student Assessment (PISA) test scores and self-assessments of ability are taken into account. Biddle concludes that the target for policy in 'closing the gap' should therefore be educational engagement and attainment by age 15 years rather than other perceived barriers such as geography or socioeconomic background.

Influences on apprentices' initial decisions to enter and commit to an indenture and contributing factors towards continuation of apprenticeship were examined by Selena Chan through interviews

with first year apprentices in New Zealand. The experiences of potential, continuing and unsuccessful apprentices were compared. Discontinued apprentices were less likely to have family connections with their trade, and more likely to have obtained an apprenticeship without prior contact with the workplace. Familiarity and support are seen as helping apprentices to acquire a vocational identity.

Given national policy interest in increasing attainment of tertiary qualifications, the successful navigation of pathways into and through the tertiary education system has also attracted much interest. Focusing on the pathways of students admitted to the University of Tasmania from 2004 to 2011 on the basis of previous vocational education and training, Anne Langworthy and Susan Johns used both quantitative and qualitative data to examine the student experience, effective pathways and lessons learnt nationally. They strongly suggest collaboration in delivering the desired outcome of greater and more successful tertiary education participation in Tasmania.

Using semi-structured interviews with people who have gained a vocational education diploma or advanced diploma through recognition of prior learning (RPL) and who have gone on to degree studies Alicia Toohey and Mark Doran report on the academic performance of these RPL candidates at university, the challenges they face, the coping strategies they deploy, and whether the recognition of prior learning process itself played a role in preparing them for high-level study.

Four papers foreshadow a program of research investigating both the educational and occupational paths that people take and how their study relates to their work.

The intensity and depth of vocational programs in schools is questioned by Kira Clarke on the basis of longitudinal student data and a broad range of stakeholder interviews in Queensland and Victoria. It is concluded that often school students are participating in minimal vocational education and training in addition to a mostly academic senior secondary program. In turn, the capacity of VET in Schools to deliver stronger labour market and further education outcomes is weakened.

Based on data collected from interviews with students and graduates, Mary Leahy examines how students use educational pathways to build their confidence, capacity and opportunities. The study identifies a gap between intentions and the outcomes students are able to achieve, with few students completing their chosen course. Implications for the way pathways are conceptualised are considered.

Relating data from the Australian Bureau of Statistics Survey of Education and Training to interview data, Nick Fredman finds that student choices are complex and intertwine social, educational and labour market factors, even if the latter may be overarching. He argues that a broad focus on what people want and need from education and work could be a better basis for broadening and deepening participation in tertiary education.

Using Optimal Matching Analysis (OMA) Serena Yu investigates labour market mobility and identifies significant occupational segmentation in the Australian labour market. Where mobility exists, it is among higher education graduates moving into professional and managerial roles. For low-skill workers, 'mobility' is characterised by high turnover with little upward progression. The results of this study have implications for both social and economic policy, as the job transitions observed during the course of this study suggest limited occupational choice for a wide range of labour market entrants of varied education and training levels.

The effectiveness of teaching in the VET sector remains highly topical, as does the related issue of professional leadership. The perceptions of leaders of private registered training organisations (RTOs) about the challenges they face and how they meet them are examined by Roger Harris and Michele Simons. The leaders exemplified the complex and contextual nature of the work that leading in vocational education and training entails. Their leadership was shaped by the operating conditions in which their organisations were located, including the state of the business and its position vis-à-vis competition with other providers.

The continuing professional development (CPD) undertaken by experienced practitioners in Australia and Wales was examined by Richard Lander-Clarke, and it was found that while these practitioners are well qualified they report problems in accessing CPD.

A number of papers describe innovative approaches to workplace learning. In a report on findings from a workforce development research project funded by the Co-operative Research Centre for Rail Innovation, Anne Morrison, Lisa Davies, Katie Maher and Ros Cameron interviewed stakeholders and identified some practical strategies for maximising the opportunities for skills recognition in this safety-critical industry. These include the use of risk-based training needs analyses, challenge tests to supplement competency interviews, and making greater use of skills recognition to identify employability and/or abstract skills.

Drawing on case study research within the Australian rail industry and relevant literature, Anne Morrison, Janene Piip and Tom Short review the transition of workplace mentoring from its origins in the apprenticeship model to the latest trends using smart technology. The review considers the design and implementation of mentoring programs, including mentor and mentee selection, matching and training, ethical issues, standards, and the evaluation of mentoring programs. It is concluded that formal mentoring initiatives can offer considerable benefits to all parties, but only with organisational commitment and the necessary resources to support success.

The 2008 and 2011 Gen Green surveys of Australian Worldskills competitors identify technical and further education as the main source of learning about sustainability skills. Through more detailed interviews with a cross-section of these competitors, Mike Brown and Fabian Sack find that changes supporting sustainability are being implemented in both work roles and courses of study.

Finally, using French philosopher Michel Foucault's theoretical approach to policy analysis, Don Zoellner reflects on possible factors supporting NCVER's longevity in a sector characterised by constant administrative change. While the concept of 'independence' is questioned, it is concluded that NCVER's core functions of statistics and research can be viewed as supporting coherent dialogue and collaboration amongst stakeholders and governments.

Keynotes and other papers presented at the 'No Frills' 2012 conference can be found at the VOCEDplus website <www.voced.edu.au/content/ngv52728>.

Indigenous education intentions: evidence from the 2006 LSAY

Nicholas Biddle, Australian National University

Abstract

The aim of Indigenous policy is, or at least should be, to improve the level of wellbeing of the Indigenous population and, borrowing from the capabilities literature, to ensure all Indigenous Australians have the ability to live the type of life that they value. It is fitting, therefore, that three of the six 'Closing the Gap' targets that the Council of Australian Governments (COAG) has identified to improve the accountability of governments are related to education participation and attainment. Meeting the Closing the Gap targets will require much more than providing physical infrastructure and additional resources though. Meeting the targets will instead require a detailed understanding of what type of education Indigenous youth and their families see as being relevant for their lives. It is of note, therefore, that the targets do not mention VET, a form of education that Indigenous Australians have identified a preference for, both in their words and in their actions. Using data from the Longitudinal Surveys of Australian Youth (LSAY), this paper analyses the intentions of Indigenous students towards VET and other forms of education. Comparisons will be made with non-Indigenous students. The final part of the paper will draw out a number of policy implications that build on rather than attempt to radically change Indigenous preferences and agency.

Introduction

There are large gaps between Indigenous and non-Indigenous Australians in education outcomes. According to the 2006 Census, 47.8% of Indigenous 3—5 year-olds (who had not started school) were attending preschool, compared with 57.5% of non-Indigenous children. Across the Indigenous life course, this gap only widens. By the ages of 20 to 24, 36.0% of Indigenous Australians (who were not still at school) had completed Year 12, compared with 74.5% of non-Indigenous Australians. For all education types, 34.5% of Indigenous 15 to 24 year-olds were undertaking education compared with 55.3% of the same non-Indigenous age group.

Financial and geographic disparities alone do not explain the education gap. In all regions, including Australia's largest capital cities, Indigenous Australians have lower levels of education than their non-Indigenous counterparts (Biddle 2010). Biddle (2007) showed that the gap between the two populations in terms of participation also remained once family income, employment and education were controlled for. Access is not the only issue driving the disparity in education between the two populations. It seems that many Indigenous youth do not see that the benefits of attending would outweigh the costs.

The policy response to low education participation by Indigenous Australians will be determined by the reasons that Indigenous Australians make alternative education decisions, and the constraints that they face in making these decisions. The policy response must also take into account the preferences of Indigenous Australians for particular types of education. According to the 2006 Census, once again, amongst 15 to 24 year-old Indigenous Australians who were participating in any form of tertiary education, 63.8% were attending technical or further educational institutions (including TAFE

Colleges) as opposed to university or other tertiary institutions. This is basically double the rate of attendance at what we might label vocational education and training for the non-Indigenous population (31.9%).

Not only do Indigenous Australians participate in VET at relatively high rates, they also appear to obtain considerable intrinsic and extrinsic benefit from it. Using data from the Student Outcomes Survey, NCVER (2010) showed that a higher percentage of Indigenous VET graduates reported that they were satisfied with the overall quality of training compared with non-Indigenous Australians (92.1% compared with 89.0%). Furthermore, a slightly higher percentage reported that their training fully or partly achieved their main reason for doing the training (87.0% compared with 86.4%).

Given these relatively high participation rates, it is encouraging that VET features heavily in the 2011−2018 Indigenous Economic Development Strategy (IEDS). Most of the specific strategies in the IEDS though relate to the supply of VET as opposed to the demand. This is perhaps not surprising as the provision of infrastructure and staff are the types of policy levers that governments have greatest control over. However, there is little point in providing education services (VET or otherwise) if there is little understanding of the actual preferences of potential students and how these preferences are shaped.

Using data from the Longitudinal Survey of Australian Youth, this paper analyses the intentions of Indigenous students towards VET. Comparisons will be made with non-Indigenous students and, for both populations, with other education options. Data from the LSAY 2006 cohort is analysed in detail. Wave 1 of the survey includes information on 14 170 respondents who were aged about 15 years at the time of the survey. Of these, 1080 were Indigenous, with 42.3% of the Indigenous sample attending a school in a major city, 46.7% attending a school in provincial Australia, and the remainder attending a school in remote Australia. Unfortunately, there is no geographic information on the child's place of usual residence — only where their school is located.

The human capital model and the importance of understanding intentions

In order to understand the Indigenous education decision, a useful starting point is the well-known human capital model (HCM). At the heart of the model is the assumption that when deciding whether or not to undertake a certain type of education, potential students are rational (in the economic sense) utility maximisers who, above all, see education as an investment. An investment in education will improve one's performance in the workplace and an individual will invest until the returns to an additional unit of education (measured by increases in discounted future income) just equal the cost. That is, until marginal returns equal marginal cost. The model is also useful for understanding the choice between different types of education. Individuals will choose that level of education for which the net benefits are highest.

A major limitation of the basic HCM is that it assumes that a person's utility can be adequately measured by their income. If discounted future additional income is higher than the cost of education, then people will invest in education. It is likely, though, that a student's current social situation is also important in influencing their behaviour. Specifically, children who have positive attitudes to school when they are in the middle secondary years are more inclined to further school participation. They are more likely to intend on completing Year 12 and consequently are also more likely to actually do so (Khoo & Ainley 2005; Marks 1998). Students who don't like school are more likely to leave without

completing their secondary education (Wehlage & Rutter 1986), and children who are happy in the later years of secondary school are more likely to complete university (Dockery 2010).

The HCM and its extensions suggest a number of potential reasons for why Indigenous Australians might participate in education at lower rates than non-Indigenous Australians. They may not see the income or other benefits as being as high. The costs of education may be higher either because: their poor start to formal education has left them with relatively low levels of cognitive and non-cognitive ability (as valued in formal education); the financial costs are relatively high due to low family income or greater transport costs from living in relatively remote areas; or the social costs of attending education are higher.

Similar reasons could also be used to explain relatively high rates of VET participation (amongst those pursuing any form of tertiary education). Specifically, Indigenous Australians may have greater access to VET as opposed to university education either geographically or because of their lower (on average) tertiary admissions ranks.

The intentions that a person has about their future education outcomes are important for two reasons. First, they provide an indication of early disengagement from school. More importantly though, a student's intentions may be self-fulfilling. Cheng and Starks (2002, p.306) summarised the available literature on expectations formation by noting that 'children's educational expectations have strong effects on school performance and educational attainment'. Those who do not intend to complete high school are unlikely to put in much effort at school. Instead they are likely to focus on paid work experience or, while they are at school, on non-academic activities.

There may not be anything inherently wrong with this alternative focus. If intentions are formed rationally and with complete information, then focusing on work experience or even social/sporting activities while at school makes economic sense for those who are unlikely to complete Year 12. However, issues are likely to arise if intentions are formed under incomplete or misleading information. Given that Cheng and Starks also showed that 'children's educational expectations vary by racial group' (2002, p.306) and are strongly influenced by the characteristics of one's peers, parents and teachers, there is a strong possibility that this is indeed the case.

Findings and discussion

Student intentions are given in figure 1 (for Indigenous students) and figure 2 (non-Indigenous students). The figures are based on the following two questions:

- Do you plan to complete Year 12?

- In the year immediately after you leave school what do you plan to do?

Figure 1   Hierarchy of student intentions – Indigenous students, 2006
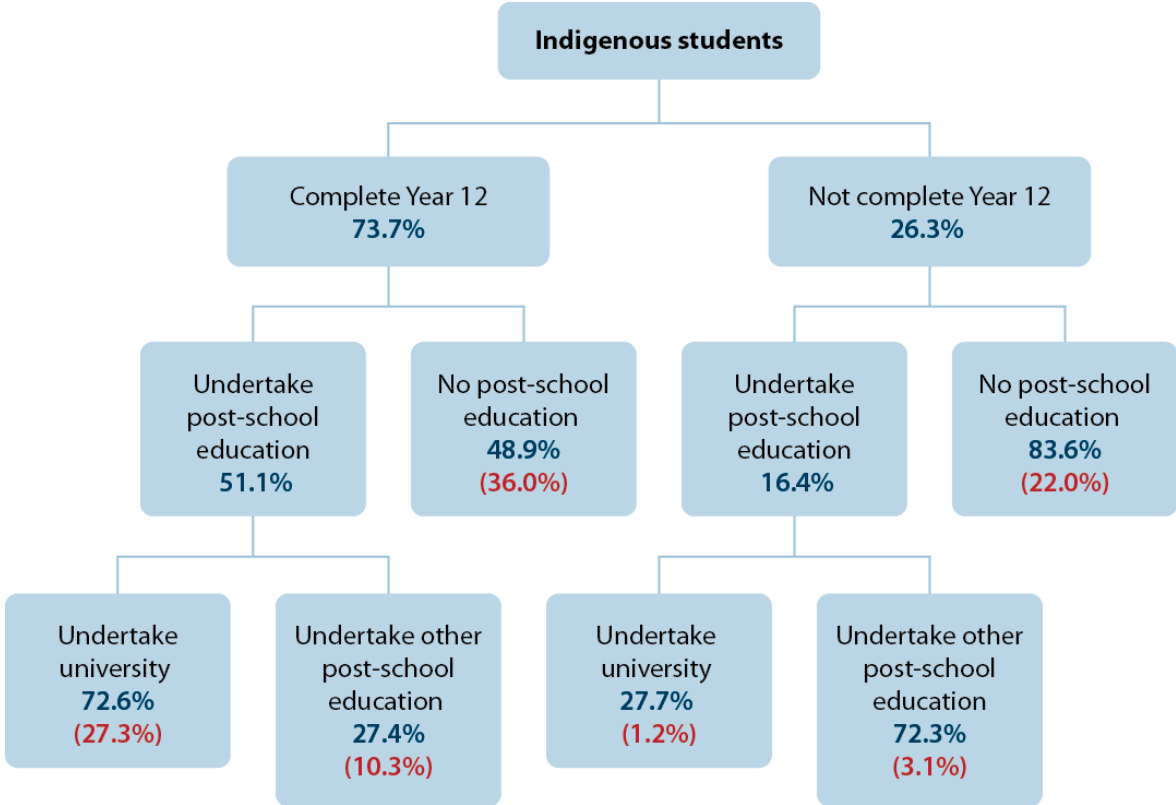
Note: Bracketed figures are for the entire sample.
Source: Customised calculations based on the 2006 LSAY.

Figure 2   Hierarchy of student intentions – non-Indigenous students, 2006
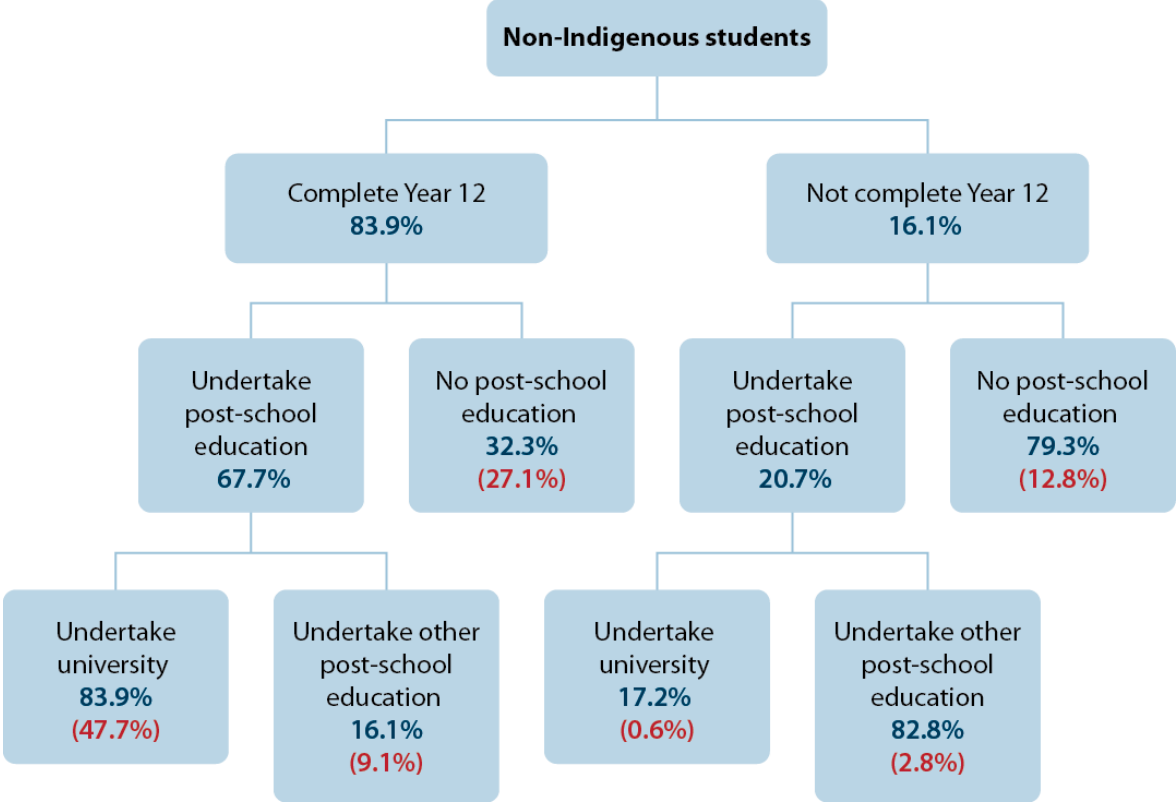
Note: Bracketed figures are for the entire sample.
Source: Customised calculations based on the 2006 LSAY.

That nearly three-in-four Indigenous youths (73.7%) intend to complete Year 12 is a sign of the commitment of the population to education, despite the varied constraints that they face. However, this figure is significantly and substantially lower than the 83.9% of non-Indigenous 15 year-olds who intend to complete Year 12.

Indigenous students were also less likely to intend to undertake post-school education than their non-Indigenous counterparts. In total, 41.9% of Indigenous students intended to undertake post-school education as their main activity in the year immediately after school compared with 60.1% of non-Indigenous students. Although percentages were lower for those who did and did not intend to complete Year 12, the difference was slightly higher amongst the former.

Indigenous students who intended to complete Year 12 and undertake some form of post-school education were more likely to intend to undertake other post-school education (as opposed to university) than their non-Indigenous counterparts. Interestingly, the reverse was true amongst those who did not intend to complete Year 12. Perhaps indicating a relative lack of information on what is required to gain entry into university immediately after school.

There are two potential reasons why a population subgroup may have lower intentions on average. First, their actual objective probability of completion may be lower due to their average academic ability, access to secondary schools, financial and other support from their parents and other observable characteristics. That is, they are making a rational prediction based on what they know about themselves. Alternatively, they may have more pessimistic intentions even after controlling for these factors. The policy response to such low intentions will vary depending on which of these two explanations dominates. If it is because of observable characteristics, then it is these characteristics that should ideally be targeted. However, if there are still differences once other characteristics have been controlled for, then the formation of intentions is in and of itself a legitimate target for government policy.

In order to test for this, multivariate regression techniques are utilised. These techniques (specifically maximum likelihood estimation of the probit model) allow for an estimate of the difference in the predicted probability of a particular outcome occurring while holding a range of other observable characteristics constant. Four outcomes are considered, namely the probability of intending to:

- complete Year 12 (Year 12)

- undertake post-school education for those who intend to complete Year 12 (post-school/Year 12)

- undertake post-school education for those who do not intend to complete Year 12 (post-school/no Year 12)

- undertake university for those who intend to complete Year 12 and intend to undertake some form of post-school education (university/Year 12 and post-school).

For each of these outcomes, two models are estimated. In addition to Indigenous status, the first of these (Model 1) controls for a student's age, sex, whether or not they or their parents were born overseas, where they live in the geographic hierarchy, whether or not they speak a language other than English at home, the number of years of education for their parents and whether or not their parents were a manager or professional (either in their current occupation or in the last job they had for those not currently employed).

The second model also controls for these demographic, geographic and socioeconomic characteristics. In addition though, it also controls for: a student's self-assessment of their own ability; an index of

student happiness at school; an index of their scores on a standardised test of maths, English and science; and the average value on this index for other students in their school (who participated in the survey).

The results are presented as marginal effects. That is, the difference in the predicted probability of the given outcome occurring between an Indigenous and non-Indigenous student while holding all other variables constant at their 'base case' characteristics.[1]

Figure 3   Predicted marginal effect of being Indigenous on educational intentions
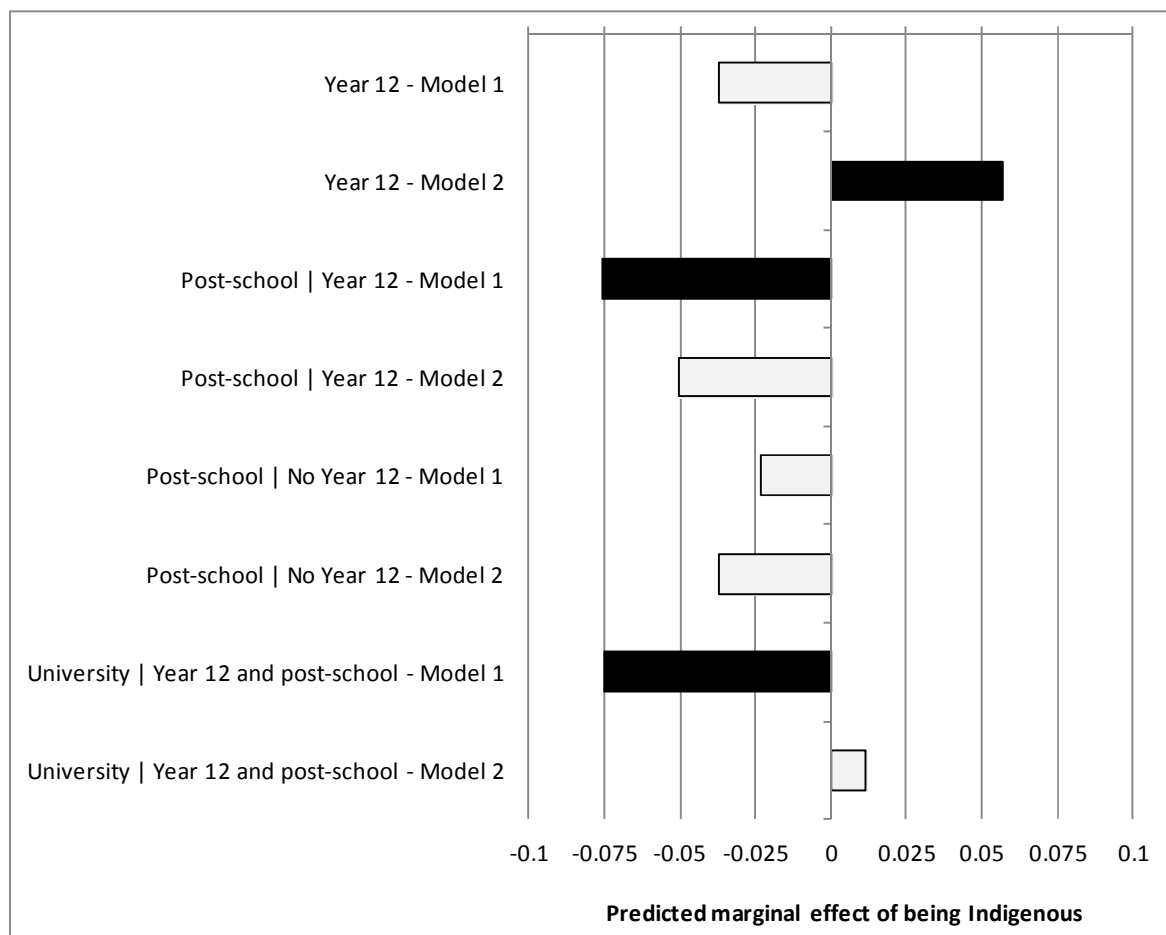
Note: Bars in grey are those for which the coefficient on Indigenous status is not statistically significant at the 5% level of significance.
Source: Customised calculations based on the 2006 LSAY.

Reading down figure 3, the first marginal effect shows a slightly lower predicted probability for Indigenous Australians in terms of intending to complete Year 12 after controlling for demography, geography and socioeconomic background. However, this difference was not statistically significant at the 5% level of significance meaning that one cannot be too confident that the difference is not due to the randomness of the sample. In essence, what the first bar in figure 3 shows is that most of the difference in high school intentions between Indigenous and non-Indigenous Australians shown in figures 1 and 2 was due to other observable characteristics. Furthermore, looking at the results for Model 2, Indigenous Australians are actually more likely to intend to complete Year 12 once their

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[1] Coefficients and standard errors for the models is now available online at <www.ncver.edu.au/publications/2560.html>, viewed February 2013.

assessment of their own progress at school as well as the test scores of themselves and their schoolmates are taken into account.

There is nothing about being Indigenous that leads to low intentions on high school completion (in this sample at least). Rather, Indigenous Australians are more likely to live in remote or regional areas and less likely to have a parent with relatively high levels of education and/or who is a manager or professional. Any policy that targets high school intentions should therefore focus on geography and socioeconomic background, rather than Indigenous status.

Things are a little bit different when looking at post-school intentions. For those who do intend to complete Year 12, Indigenous Australians are significantly less likely to intend to undertake post-school education after controlling for demography, geography and socioeconomic status (that is, in Model 1). While this difference becomes substantially smaller (and is no longer statistically significant) when the much greater range of variables is taken into account, the extra variables in Model 2 are a little bit more difficult to observe without undertaking extensive surveys and testing like in LSAY. One could make a case, therefore, that Indigenous students could benefit from specific support in seeing post-school study as being a viable option for them.

The final two marginal effects in figure 3 show that Indigenous students who do intend to complete Year 12 and undertake post-school education are significantly less likely to intend to undertake university as opposed to VET or other forms of tertiary education when the reduced set of controls only are included in the model. When test scores and other variables are taken into account, however, there was no significant difference between an Indigenous and otherwise identical non-Indigenous student. At the age of 15 at least, it does not appear that Indigenous students have a relative preference for university, VET or other forms of education. Rather, it would appear that their intentions are driven by their school history up until that date (as captured by their test scores).

Conclusions

Indigenous Australians have relatively low intentions in terms of completing Year 12 and undertaking post-school study. As intentions can be self-fulfilling, there is a strong possibility that many Indigenous Australians who could otherwise complete Year 12 or undertake post-school study are not ending up doing so because, by the age of 15, they do not see it as being suitable for them.

Looking at descriptive results only, there is therefore some justification for targeted policy that aims to broaden the intentions and expectations of Indigenous students. There are, however, a number of other characteristics that impact on intentions, including geography and socioeconomic background. When these characteristics are controlled for there is no difference between Indigenous and non-Indigenous students. Indeed, when a range of school factors are controlled for, Indigenous Australians are significantly more likely to intend to complete Year 12.

In terms of a policy response to low intentions, it is these observable factors rather than Indigenous status that should be the focus of policy. That does not mean that Indigenous students should be encouraged to leave remote areas as there are clearly other intrinsic benefits of living close to one's homeland. Nor does it mean that convergence of Indigenous and non-Indigenous socioeconomic outcomes is necessary (this is a desirable, but a long-term policy aim). Rather, the results suggest that all students in remote areas and from low socioeconomic backgrounds could potentially be given additional support in terms of seeing formal education as being achievable and worthwhile.

Indigenous Australians appear to exhibit a slight preference towards VET and other tertiary education as opposed to university at the age of 15 (at least in regard to intentions). This difference holds once geography and socioeconomic background are controlled for. However, this preference appears to reflect their assessment of their own ability and their test scores. Once these characteristics are controlled for, there are no differences in terms of the type of tertiary education that one intends to undertake.

The results presented in this paper are an example of Indigenous status not being the most appropriate avenue of policy intervention. That is not to say that Indigenous status is not important. It is quite possible that the experience of Indigenous children growing up is what is driving their low test scores and low assessments of their own ability at the age of 15. However, by the age of 15, it is the test scores, rather than Indigenous status, that governments should focus on.

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What do VET students and graduates think about 'skills for sustainability'?

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Abstract

This paper provides insight into the attitudes and perceptions of young people who are studying, or who are recent graduates of VET programs to identify and discuss issues and trends emerging from research into the development of 'skills for sustainability'. Located in the wake of the implementation of the Green Skills Agreement (Council of Australian Governments 2010), this paper brings together findings from recent research undertaken separately by these two researchers. The study by Sack (2012) was conducted under the auspices of the Dusseldorp Skills Forum and involves review and analysis of the 2008 and 2011 Gen Green surveys of Australian WorldSkills competitors. These two surveys have been analysed separately and more recently together, to provide a longitudinal snapshot of the issues and trends as depicted by young people in VET. The 2011 survey shows that some important environmental, social and economic skills are largely absent from courses and workplaces, suggesting scope for a broader revision of public policy around skills for sustainability in the future. Following a key finding from these two surveys that recognises technical and further education (TAFE) as the main source of learning about sustainability skills, this paper includes a slice drawn through the data in a recent study by Brown (2012) involving semi-structured interviews with 19 TAFE students located in three different TAFE institutes and one recent VET graduate. While far from universal, these TAFE students reported changes being implemented into both their work roles and their courses of study.

Introduction

The research by Goldney et al. (2007) provides an overview of 'sustainability and VET in Australia', and confirmed that society was becoming more aware of environmental concerns and that education for sustainability has an ongoing and vital role to play. VET provides a means for promoting sustainability within workplaces amongst employees and employers. The final key message from this initial research explains:

> If they are taught sustainability skills throughout their education, learners can develop the ability
> to promote these concepts in the workplace, devise and encourage sustainable work practices,
> and develop strategies for negotiating and justifying desirable changes with colleagues and
> managers (p.7).

These researchers recognise the ongoing value of education to underpin further longer term change.

The Climate Commission, which was established to provide all Australians with an independent and a reliable source of information on climate change, is proclaiming that 'this decade is critical' (Climate Commission 2011). Such imperatives drive the call to transition to a low carbon economy. They argue

that the longer we wait the more difficult and costly this becomes. A high priority amongst the strategies is the setting of targets for lowering carbon and pollution emissions and for increasing the use of alternative and renewable energy sources. The setting of future-orientated targets has implications for young people: they are the immediate future generation that will inherit the legacies of past and present industrialisation. Therefore, young people have to be part of the conversations if they are to be properly equipped to achieve these targets.

In an effort to consolidate the current understanding of VET student and graduate perceptions about skills for sustainability, this paper brings together the results of three different research studies on how young Australians, who are either currently studying within a VET program or have recently graduated from a VET program, are perceiving the development of green skills following in the wake of the Green Skills Agreement. DEEWR (2011) in *Australian jobs* explains:

> Green skills, or skills for sustainability, are the professional and vocational skills, as well as the generic skills (such as sustainable approaches, innovation and problem solving) required for new green jobs and the greening of existing jobs across all industry sectors as a response to climate change and sustainability imperatives (p.31).

Consequently, this paper also reports on the perceptions of some VET students and graduates on skill formation and work in a green economy. A recent United Nations Environment Programme (UNEP) (2011) report defines a green economy as 'as an economy that results in improved human well-being and reduced inequalities over the long term, while not exposing future generations to significant environmental risks and ecological scarcities' (p.2). For his part, Sack has analysed initial longitudinal survey data from the Dusseldorp Skills Forum Gen Green surveys of 2008 and 2011, while Brown has conducted interviews with 20 VET students and graduates about green skills, focusing on their perceptions of current and future jobs along with their current experiences of training. While conducted independently, the findings of these research studies are seen as complementary and provide insight into a VET student and graduate voice on green skills.

Methodology

The two Gen Green surveys were conducted under the auspices of the Dusseldorp Skills Forum in 2008 and again in 2011 to capture indicative data on young skilled people's experiences of skills and sustainability. Both times the respondents to these questionnaires were national competitors in the WorldSkills Australia national competition. The 2008 survey had 101 respondents (Dusseldorp Skills Forum 2008) and the 2011 survey had 97 young people respond (Dusseldorp Skills Forum 2011). Most of the respondents were under 25 years of age and tended to work in the computing and business, the manufacturing and engineering, and/or the building and construction industries. A slight bias in male respondents occurred. The most recent survey differed slightly from the first survey, which focused on information and the experience of participants around green skills and environmental sustainability. The second survey broadened out to collect information and experiences around skills for sustainability. Sack was a consultant on the second of these and has subsequently conducted a comparative analysis (Sack 2012).

In a separate study, Brown conducted focus group and individual interviews on the development of green skills across four stakeholder groups in a number of Victorian TAFE institutes. Brown's study involved 80 participants in total, with 20 participants within each of the four categories of employer and community stakeholders, TAFE managers, TAFE teachers and TAFE students. This larger study looked at the participants' perceptions and experiences in developing green skills. However this paper

reports on one of the four strands of this data; namely that derived from the focus group interviews with 19 current TAFE students and one TAFE graduate drawn from across three Victorian TAFE institutes. The current TAFE students interviewed were a mixture of second or third year trade apprentices and full-time students completing certificate IV, diploma or advanced diploma qualifications.

The two Gen Green surveys and the semi-structured interviews conducted by Brown are considered complementary as they focus on the perceptions and experiences of VET students and graduates.

Findings and discussion

The 2008 and 2011 Gen Green surveys

In 2008 the Dusseldorp Skills Forum partnered with WorldSkills Australia to investigate and capture apprentices' and trainees' experiences of green skills. This partnership resulted in the two Gen Green surveys. The findings have been published as Dusseldorp Skills Forum (2008; 2011) and Sack (2012). The results have been summarised below to provide an overview. The first survey was focused on environmental sustainability, while the second was broadened and drew on aspects for standard disclosure in international organisation sustainability reporting (Global Reporting Initiative 2006). This includes economic, environmental, and social aspects which start to provide a snapshot of changes over the time between the two surveys. In both Gen Green surveys, the responding apprentices and trainees identified TAFE as their main source of information and learning about skills for sustainability. In 2008, 39% of the 101 respondents identified TAFE as the main source of information, while 38% identified their workplaces and 36% reported that they were not learning about or developing green skills at all. In the 2011 survey, 77% of the 97 respondents identified TAFE as their main source of information and learning about sustainability. They also identified the media as an important source for learning about sustainability. In the later survey, those saying that they were not learning about sustainability had decreased to only 19% and those who had not heard about sustainability fell to just 7%.

Respondents to the 2011 survey reported that green skills were still only available in 60% of courses; 26% said that green skills were not offered at all in their courses. One of the biggest differences between the results in the first and second surveys was that initially about 18% reported green skills as being part of their day-to-day courses, while in the later survey this had jumped to be around 47%. This suggests that these skills are being integrated into existing courses rather than kept separate as optional electives or stand-alone subjects.

The 2011 survey explored the barriers to skills for sustainability and 50% of respondents identified cost as being the biggest barrier. This was down on the first survey where 67% had done so. Materials were seen as a barrier by 32%, suggesting that respondents are aware of the demands of sustainability but are hampered from achieving these goals by the availability of appropriate materials. Lack of knowledge and availability of new products and materials was considered a barrier by 10%, while 22% reported lack of interest by employers as a barrier to the take-up and development of skills for sustainability.

This survey explored differences in the extent to which economic, social and green skills were encountered on jobs and in courses, finding that the economic skills were 'always present' almost twice as often as green skills in both work and training. Jobs were seen as providing more economic, social and green skills than courses of study; for instance, green skills were absent from 40% of

courses but only 12% of workplaces. However, green and social skills were seen to be better integrated into courses of study than into jobs, where take-up varies from client to client and site to site. Economic skills were considered by 82% to always be present on the job and by 76% to be integrated into VET courses. For social skills 69% said that they were always present on the job and 64% said that they were part of the courses. When it came to green skills, 46% said that they were part of the day-to-day work on the job and 44% saw them as always present in courses of study. The green skills that were most frequently used in workplaces were waste minimisation, recycling and reusing materials (with 62% stating 'yes always') and avoiding hazardous and toxic materials (with 60% stating 'yes always'). Water efficiency was seen by 46% of respondents and 32% saw skills associated with energy efficiency in the workplace. The least used green skill was associated with minimising emissions from transport which was reported by 24% of respondents.

This 2011 survey went on to explore the respondents' motivation to learn about skills for sustainability and found that there is a high level of confusion about market and educational incentives to develop and practise these skills. The apprentices and trainees clearly recognise a strong moral imperative despite the lack of incentives. While there appears to be a high level of personal interest and work-related relevance for developing skills for sustainability, this is confounded by a lack of guidance. An interpretation for this lack of guidance may be that this reflects the uncertainty and confusion that surrounds commitment to developing these skills amongst the broader community. The 2011 survey report concludes that:

> Apprentices' and trainees' interests in sustainability related skills are motivated by normative forces, reflecting a broad social trend amongst young people and students to engage more with sustainability. Apprentices and trainees appear to be fairly unsure of the practical benefits of applying sustainable skills (Dusseldorp Skills Forum 2011, p.32).

The interviews

This section of the paper complements the findings of the survey responses reported above by using the analysis of focus group interviews with 19 TAFE students and an individual interview with a young VET graduate. The interview questions focused on how jobs might be changing now and into the future to accommodate the development of green skills and how VET courses are addressing this area of skill development.

The first focus group consisted of three young men studying full-time and undertaking a program which led to a qualification in conservation and land management in a regional TAFE institute. Significantly, their course of study included and integrated the full requirements for the Diploma of Sustainability. These students were very well informed and able to articulate strong arguments for the need for communities and people to live more sustainably. In response to a question about the need for work and jobs to change and become more sustainable, all three agreed that changes needed to occur. One said that 'some industries might have to incur quite a hefty change of jobs in the coming years and other industries may be less affected'. Another thought that some industries in particular would need to change. He cited oil, coal and heavy industries as needing change. Another added water to this list and made reference to the Draft of the Murray Darling Basin Plan. Another explained the complexities of this debate, stating that a balance needed to be implemented between the social, economic and environmental implications using a triple bottom line approach.

Building on this, one of the students suggested that 'every business in some way or shape or form is going to have to have a look at how they operate'. All three of the students were aware that in some ways they were being trained to work in an emerging field and for jobs that were undergoing and

dependent on change. This created uncertainty and risk for these students. One explained that he had taken two years off work to undertake this course as a full-time mature-age student. He was hoping that this investment on his part would set him up to be well placed to gain employment in some of these emerging jobs. He believes that having the ability to adapt and manage change will be a key skill to develop for these jobs in the future. Another spoke of the need to understand more than one area and that he expected that some of the emerging jobs would require a more multidisciplinary or multiskilled understanding in two or even three different areas. He cited the work of managing and researching freshwater fauna and habitats: 'you have to have a pretty good idea of the plant side of things, the water quality, as well as the fish and animals within it, just to cover it as a whole'.

Another emerging job the first focus group identified involves educating people to be more sustainable and assisting people and businesses to explore options and alternatives. One interviewee explained that this education process was one of the biggest challenges. They believed that system orientation and awareness was important in pursuing options. This reiterated the need for a broad base of multifaceted skills and knowledge in order to be able to consider issues and problems holistically.

The second focus group who participated from this regional TAFE institute consisted of four students from the electronics area. These students were also seeing the impact and effects of changes to their work and jobs due to increased awareness of sustainability and the development of green skills. One of the participants explains how his employer pursues a double agenda of efficiency (waste and materials reduction) and lower costs as part of developing more sustainable work practices. The students reported that sustainability and green skills were being incorporated into their course through appropriate core and elective modules. They also explained that they had had some involvement in an institute project to build and maintain a portable alternative energy trailer. The trailer is used to demonstrate to community groups the use of solar and wind power to run common household audio visual and communication equipment off the grid.

Another focus group was conducted at a new Green Skills Centre at a Melbourne metropolitan TAFE institute with four students undertaking a Certificate IV in Renewable Energy on a full-time basis. These students reported a high level of interest in sustainability and were studying to set up career changes in this emerging field. These participants felt that they were taking risks, as no direct workplace outcome or career path currently existed in this type of work. As one participant explained, 'I think the industry is still defining where it is, its direction, what its areas of expertise are going to be and basically how that is going to be defined'. These participants believe that currently there are possible opportunities for them to work for themselves as consultants who sift and sort the plethora of information and specifications that are available for products, materials and services associated with renewable energy. Likewise they stated that they thought that opportunities were starting to open up to work as dedicated sustainability officers in medium- and/or large-sized companies — also providing this sorting, planning and advising role. Sustainable building design was put forward as an option where work opportunities might also open up for them in the future.

These TAFE students described their course as being very broad and consequently the need for them to make their own job. One participant noted: 'I can see that one day this course will lead to a defined job but that job is not out there yet. There are a lot of different industries that need to take up sustainability in general but there is no defined career path'. These students acknowledged that due to building regulations and licensing they are less likely to be installing renewable energy. They explained that it is interesting that the electricians and plumbers are allowed to do this installation work but few have the knowledge that they have developed in their program, so while well trained

and knowledgeable in this area they are not allowed to do this installation work. Accordingly they saw their own career possibilities being associated with the planning and design aspects of this work.

A focus group of four apprentices representing cabinetmaking, carpentry, boat building and bricklaying at a different metropolitan TAFE institute reported variation in their degree of exposure to the use of green skills at work and in their courses. Initially the cabinetmaking apprentice spoke of not seeing any changes to accommodate green skills or the environment, although as the interview progressed and others shared ideas and examples, he became much more aware of changes in his own job. He gave the example of the use of Medium Density Fibreboard (MDF) as a building material and how he had to take special precautions when working with it. This is a material, he explained, where the dust can cause cancer when inhaled. MDF, he explained, has been banned in some parts of the United States of America but not here in Australia.

The boat builder was a mature-age apprentice and he reported an array of changes and considerations in his work that were related to the development of green skills. Amongst these were increasing precautions around the use of solvents, particularly in the construction and repair of fibreglass boats. As a consequence, changes were occurring to the moulding techniques and in the reduction of emissions. He went further than his own job and started describing the increased use of insulation in house construction and the number of houses now with solar panels. He thought that these tendencies would continue to increase in the future. The other apprentices present at the interview agreed.

Interestingly, the bricklayer said that he had never been to see where the bricks were made but had read a little about it in the booklets at TAFE. This suggested that some work on product life cycles could be incorporated into the course. The boat builder said that there were whole units in his course about working in marine environments and taking precautions not to put any chemicals or waste into the water or marine environments. The carpenter spoke about a unit that his group had had to do on the computer. They were required to go online and answer a long list of questions. The program then added up all these lifestyle choices and provided an estimate of how much energy and resources were needed to sustain these behaviours. A final comment was made that there was a large emphasis on health and safety more than green skills in both their TAFE courses and at work on the job.

A focus group of four apprentices, where two were doing plumbing, one signwriting and the other painting and decorating, was convened at another metropolitan TAFE campus. One of the plumbing apprentices described the use of new materials such as black polyethylene pipe which was much easier to cut, lay and melt together for joining than traditional copper piping. The other plumbing apprentice was mostly involved in roof plumbing. She had not heard much about sustainability or green skills in her job or in her TAFE course, while the other said that teachers had mentioned the introduction of new products considered to be more environmentally friendly. He went on to say that his main focus is usually on how to use and install such a product and much less about why it was being introduced.

The painter and signwriter interviewees both spoke about attempts to reduce the use of oil-based paints along with the use of turps to thin it down and for cleaning up. The painter explained that they were not allowed to use oil-based paints or chemicals on most building sites. Instead he described how they were seeing a change to water-based paints. This allowed for a much easier clean up. The painter described how they are now using recycling washing systems. The signwriting apprentice spoke of doing much less work on wood. She thought that this was being phased out and most of their work was now being done on panels that could be recycled.

The VET graduate interviewee completed her apprenticeship as a fitter and turner and has extended this base to become a plant operator at a large energy company in the Latrobe Valley. As an operator she works shift work and spends about 15% of her time at work participating in ongoing structured training. She reported that Occupational Health and Safety (OH&S) is a major concern at her workplace with much effort being put into moving beyond compliance. She noted that reducing and reporting spills, along with reducing energy consumption are often emphasised. She explained that her work colleagues are asked to contribute their ideas for improving the work through a reward system but interestingly she said that she has never heard the term 'sustainability', or the goal of 'improving and developing green skills', ever explicitly mentioned.

Conclusions

This paper provides insight into what VET students and recent graduates think about skills for sustainability and green skills in particular. Development of these skills in places of training and take-up of these skills in workplaces seems to have increased between the 2008 and the 2011 surveys. Skills for sustainability were reported as being incorporated into and across a majority of VET courses, as specialist electives or core units, indicating that the learning of these skills appear to be being integrated into and across existing TAFE programs in line with the objectives of the national Green Skills Agreement. However there may be room for additional adoption of green skills, as under half of the respondents to the 2011 Gen Green survey reported that green skills were becoming part of their day-to-day courses. Brown, too, found that knowledge about skills for sustainability and the green economy varied between students, even in related fields of study (see also recent research by Halliday-Wynes & Stanwick 2011). Some students had completed units of work that looked at their carbon footprint but others were unaware of material production requirements and product life cycles.

The Gen Green surveys found a consistently high level of interest in skills for sustainability and all students interviewed by Brown seem quite optimistic about the future, and about further developments in this area of skill formation. Some suggested that most existing jobs needed to change to incorporate the development of green skills, some greatly. Some of those interviewed were studying for career changes and thought that they were training for emerging jobs and jobs that were not yet identified. Despite this, they remained committed to training in this area. These results support the Gen Green findings that there is a broad commitment to skills for sustainability amongst apprentices and trainees, but a lack of guidance on how, and no clear incentives on where, to employ these skills. These young people, through their positive, value-laden commitment to developing these skills, are training for jobs that they think *should* exist.

The research covered in this paper indicates that young skilled people are experiencing a failure of markets to account for unsustainable externalities (like human-caused pollution), a failure that Stern (2007) and many others have flagged. Such a failure suggests the need for intervention and market adjustment. For the VET sector this could well require deviating from the current system of skill formation which is guided and driven by existing labour market demand and where the content of the training packages are devoid of student input. Instead VET program developers should draw on the motivations of future labour market participants, many of whom will also be future employers, for its direction about which skills for sustainability should be included into VET programs.

This paper goes some of the way towards suggesting that young people entering the VET system call for sustainability imperatives to be even more systemically considered within all VET programs as a way of correcting a currently unsustainable economy. The Gen Green findings indicate that students are increasingly drawing on a wide variety of sources beyond the VET system, including workplaces, to

inform their views on skills for sustainability. These findings are reinforced by Brown's interviews, which indicate some students see their employers as implementing efficiency to save on costs and otherwise change work practices to make them more sustainable. Some students interviewed likened the implementation of skills for sustainability to the take-up of OH&S where, while one person might have direct and overall responsibility, successful implementation needs to be part of everyone's job role. Harnessing this future-directed pool of knowledge, for instance, through a more learner-centred approach to the process of skill formation, provides an opportunity to rapidly introduce new approaches, products and materials to large cohorts of apprentices, trainees and students through TAFE institutes, introducing more sustainable work practices into the labour market.

Acknowledgments

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First year apprentices' experiences of workplace learning: matching vocational choice to reality

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Abstract

This paper reports on the findings from a project studying first year apprentices, based in 10 trades, supported by seven New Zealand industry training organisations (ITOs). The project sought to identify influences on apprentices' initial decisions to enter and commit to an indenture and contributing factors towards continuation of apprenticeship. To identify these factors, apprentices' perceptions of entry trajectory and initial workplace learning experiences were collected and analysed. The experiences of potential, continuing and unsuccessful apprentices were compared.

Introduction

The project reported in this paper was conducted through 2010 and 2011. As there has been little research on apprentice-based training in New Zealand, this project was a national project funded by Ako Aotearoa, the New Zealand centre of excellence in tertiary education. It was a collaborative project between a researcher based at a polytechnic and seven industry training organisations. The project focused on the apprentices' career choice decisions, their initial workplace learning experiences and collected indications of their future plans through indenture. To obtain a range of perspectives, participants included potential apprentices in the form of students studying in pre-trade programmes, first-year apprentices and apprentices who had decided to terminate their indenture.

Role of ITOs

In New Zealand, there is evidence of formalised apprenticeship arrangements since the 1890s (Murray 2001). In 1992, the *Industry Training Act* rationalised the apprenticeship system. In part, this Act replaced previous legislation governing vocational training and apprenticeships. ITOs are set up by various industries, with representatives of employers, employees and firms with stakeholder interests, and from education and training providers, industry associations, trade unions and government departments.

Currently, there are 32 ITOs. The three core roles of ITOs are to:

1   provide information about industry skill demand thereby increasing the real power of students, employers and industry, and to inform providers

2   define national skill standards and qualifications required by industry to ensure the value and relevance of investment in education and training

3   broker training to meet the needs of employees in industry by linking individual workplace learning to national industry skill needs (Industry Training Federation, 2011).

The ITOs participating in this project included industries from four sectors with a history of apprentice training as represented by the following:

- primary sector: Agriculture ITO

- infrastructure sector: Building and Construction ITO (BCITO)

- manufacturing sector: NZ Marine ITO (formerly the Boating ITO) supporting the boatbuilding industry; Competenz covering engineering and food and beverage manufacturing; and Joinery ITO (JITO)

- services sector: Hairdressing ITO (HITO); Hospitality Standards Institute (HSI) supporting catering and food and beverage services.

As such, the apprentices participating in this project included dairy farm trainees and apprentices in carpentry, boat building, fitting/turning/toolmaking, metal fabrication, joinery, glazing, hairdressing, cookery and front-of-house service.

Relevant literature

Vocational choice

For the purposes of this paper, vocational imagination is defined as 'imagining oneself in a career pathway, with some specificity about what that might involve in terms of education qualifications and occupational possibilities' (Higgins, Nairn & Sligo 2010, p.14). Occupational choice may be based on individuals' self-perceived affinities to aspects of each trade, perhaps derived from prior leisure (Hong, Milgram & Whiston 1993) and/or school or part-time work engagement with the occupation (Smith & Green 2001; Taylor & Watt-Malcolm 2007). Career choices may also be evaluative and strategic or based on meeting unclear aspirations or opportunistic/unplanned situations (Bimrose, Barnes & Hughes 2008). Ascertaining decision choice is therefore an important starting point towards understanding apprentices' perspectives of work.

The nature of workplace learning

As an environment for learning, workplaces have many inherent challenges. These include:

- challenges for both the learner and the workplace (Billett 2001; Moses 2010)

- workplace learning as often reliant on a covert curriculum (Billett 2006)

- workplace learning as based on maxims (Farrar & Trorey 2008), the acquisition of tacit knowledge (Gamble 2001) and processes of vocational identity formation (Billett 2006; Chan 2008).

The effectiveness of workplace learning and vocational identity formation within a sociocultural framework (Billett 2006) is reliant on personal agency on the part of the individual and contributions of support from the communities of practice (Penuel & Wertsch 1995) within which apprenticeships are enacted (Chan 2008).

Belonging to a workplace

Hence, learning a trade may be viewed as a form of acculturation into an existing practice community, bringing together social influences and individual agency, in turn leading to the formation of vocational identity (Hodkinson, Biesta & James 2008). In learning a trade, young peoples' perspectives on work and learning over the course of an apprenticeship, may be influenced by their

initial experiences and induction. In the longer term, workplace practices may contribute to individuals' construction of identities and their roles in society (Stokes & Wyn 2007). For first-year apprentices, the need to establish either a sense of 'belonging' to a workplace (Chan 2008) or an affinity to a trade's culture of practice (Gherardi 2010) may be prerequisites to establishing vocational identity as trade workers (Chan 2008).

Research method

The project aims were to find out the factors influencing young people to enter a trade and, in particular, factors influencing apprentices' selective decisions to indenture and continue in a specific trade. The project used a qualitative case study research approach underpinned by constructivist-interpretative research paradigms. This research approach matches the overall intent of this project, which was not to just assemble information on apprentices but to understand, in greater depth, the perspectives and experiences of apprentices.

Data collection was accomplished through focus groups with pre-trade students and apprentices, semi-structured interviews with first-year and discontinued apprentices, and document collection. Documents relating to information provided to apprentices and employers before and after the formal indenture were analysed for commonalities and variations. During interviews, apprentices were asked about their perceptions on the documents availed to them before and during the induction stage of their indenture. Ethical clearance was obtained through the researcher's institute before data gathering began.

Data obtained from focus groups, structured interviews and collected documents were analysed separately to obtain answers to the research questions. The various data sources were then collated into narratives. Analysis of the narrative data focused on comparisons of cases. The cases formed the basis from which comparisons using within-case analysis and the congruence method (George & Bennett 2005) were made to identify factors supporting or inhibiting the entry and continuance of apprentices.

Participants

In total, 251 people took part in the project. These included:

- 116 pre-trade students participating in focus group meetings

- 86 first-year apprentices participating in focus group meetings

- 56 of the above apprentices were also interviewed either face-to-face or through telephone interviews

- 10 months after the initial interviews were carried out in mid-2010, four from the above group had discontinued and were re-interviewed through telephone interviews

- 34 apprentices who had discontinued their apprenticeship at the beginning of 2010 were also interviewed by telephone.

Participants of focus groups were selected by individual ITOs, based on a sampling of available block courses held at polytechnics (through both the North and South Islands) over the six-month period the researcher was available for data collection. Apprentices participating in focus groups were then invited to participate in interviews with between six to 12 apprentices representing each occupational group. Discontinued apprentices were randomly selected from lists provided by

individual ITOs and between four and six discontinued apprentices representing each ITO agreed to participate in interviews.

Findings

To illustrate the themes discussed in the next section, two narratives, a table and commentary, summarising factors supporting and hindering apprenticeship progress are provided.

Narratives

These narratives were collated from the information provided via interviews and survey questionnaires and formed the basis of cases for comparison. Each of the narratives provided is a summary of individual apprentices' experiences.

The first narrative provided indications of the strength of 'vocational imagination' (Higgins, Nairn & Sligo 2010) found in the majority of the participating apprentices. Here, Lily expresses the determination displayed by apprentices in sought-after trades exampled by boatbuilding, cookery, building and hairdressing to obtain a position; in particular, to obtain an apprenticeship in the 'right workplace' for her to meet her 'vocational imagination' of becoming a highly qualified hairdresser.

Case study: Lily (apprentice hairdresser) — persistence with obtaining an apprenticeship

Lily completed National Certificate in Educational Attainment (NCEA) level 1 and left school at the beginning of Year 12. In common with many other hairdressing apprentices, Lily worked in several salons before finally obtaining an apprenticeship.

"I have always wanted to do hairdressing. I think I have very much to offer to the industry. I think I am very much a people person, I am very much into hair and I enjoy talking to people all day … there was never a plan B."

"If you are looking for an apprenticeship, you really gotta put yourself out there and if you are not getting anywhere, you gotta ask. Don't just expect it to be handed to you. You really gotta work for it."

Lily works in a small salon, well-recognised for quality work. She is progressing well in her training and happy with the workplace opportunities provided.

"I have training usually at least once a week; generally [with] my boss, who will take me through training and show me what I need to do."

Despite the Christchurch February 2011 earthquake damaging the premises of her salon, Lily is still engaged in her apprenticeship as the salon has managed to shift to alternative premises.

In this second narrative, the need for the apprentice to realise his 'vocational imagination' leads to eventual disengagement with the workplace but ongoing commitment to the trade in order to become an engineer.

Case study: Nathan (apprentice engineer) — discontinued; an example of mismatch between what an apprentice perceives needs to be learnt and the learning offered at the workplace

Nathan completed University Entrance (the equivalent of NCEA level 3) several years ago. He worked in a series of engineering-related occupations and studied for some years at university before obtaining an apprenticeship.

"I have been doing the apprenticeship for a year and it got to a point where I thought to myself, if this doesn't change, then I am going to leave."

"The actual crux of the thing, with the company I was with, had me involved in just labouring tasks. Not related to engineering whatsoever, so like a 'bun boy'. And that is understandable as an apprentice, you get a bit of that. For a year or so it's alright and then it's time to learn a bit more."

He perceived that he had little support. Therefore, Nathan decided to terminate his apprenticeship. Currently, Nathan is working for an agency that places workers into engineering-related jobs.

Entry decisions

Table 1 compares the different entry pathways into apprenticeship for first year apprentices and discontinued apprentices.

Table 1   Contributions to decision-making about entering apprenticeship

Decision mechanism to enter into apprenticeship	First-year apprentices N=56	Discontinued apprentices N=34
Advice from careers advisor or ITO representative	12.5%	3%
Responded to advertisement in media	16.6%	24%
Had family and friends in the trade	12.5%	6%
Had strong family connection to the trade	10.7%	3%
Was working part-time in the trade	12.5%	6%
Completed pre-trade training program	12.5%	15%
Work experience in the trade while at school	14.2%	15%

From the above table, discontinued apprentices were less likely to have family connections with the trade, perhaps leading to the need for workplaces to provide greater support to assist the establishment of apprentices' sense of belonging to the workplace. Discontinued apprentices were more likely to have obtained an apprenticeship without prior contact with a workplace with 24% embarking on an apprenticeship through responding to a job advertisement.

Support factors

During the first year of apprenticeship, support from the workplace was deemed to be an important aspect. Apprentices also expressed the need for external support in the form of ITO visits from

'regional managers' or support from modern apprenticeship coordinators[2] (MACs). Support was required by apprentices to settle into the workplace routine, understand how to meet work production requirements and complete 'bookwork' (the theory aspects of apprentice learning, often through completion of paper-based correspondence courses).

One important support aspect was for ITOs or MACs to be prompt intermediaries when required to resolve apprentice/workplace differences. Some apprentices required external intervention to improve affordances to training/workplace learning opportunities, Over a third of the discontinued apprentices decided to find alternative employment when intervention did not resolve apprentices' lack of progress in accessing more advanced work tasks (see below).

Reasons for discontinuation

Personal and lifestyle factors (23.5%) and dissatisfaction with workplaces (26.5%) were identified as reasons for discontinuation of an apprenticeship. The main reason for discontinuation was dissatisfaction with training and perception that expectations for training opportunities were not being met by employers (35.3%). Of note is that 75% of the discontinued apprentices persisted with involvement in their chosen trade. These apprentices either moved on to another workplace, embarked on full-time training programmes or were working in a related trade but still looking for a position in their trade of choice. The strength of connection to specific work by these apprentices signals the need for many to follow their 'vocational imagination'. However, the realities of the workplace, with their focus on production rather than the training, meant apprentices sought indenture in workplaces that were perceived to provide opportunities for learning the 'right stuff'.

Discussion

Tempering vocational imagination

The participating pre-trade students and apprentices portrayed a strong sense of 'vocational imagination' (Higgins et al. 2010) as exampled in the narratives and commentaries above. However, for some apprentices who decided to discontinue, there was a mismatch between what they envisaged would be learnt in the workplace and what occurred in reality. Specifically, apprentices were sensitive to access to training. If the training provided did not lead apprentices towards attaining their vocational goals, they were more likely to disengage and explore alternatives.

Need for workplace support

Concurrently with apprentices' recognition of the need to maintain good workplace relationships with co-workers, peers and supervisors, there is the need for workplaces to be more conversant with novice workers' learning needs. Novices often need more time to become acquainted with specialised workplace practices and expectations. Additionally, as reported by Vaughan, Neil & Cameron (2011), workplace trainers are not supported as a group of professional practitioners. Therefore, provision of training opportunities for workplace trainers may improve deployment of workplace learning opportunities for workplace learners. Consequently, importance needs to be placed on helping workplace trainers become not only effective assessors but better trainers.

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[2] Modern apprenticeship coordinators are available to apprentices who are under 21 years of age at commencement of indenture. MACs are funded by government but are often aligned to ITOs or training providers. They offer support in the form of ongoing mentoring through at least four visits to the apprentice a year. MACs also assist apprentices to set up and monitor a learning plan to work towards eventual completion of national certificates.

Setting goals and objectives aligned with vocational imagination

It is important for goals and objectives of indenture to be couched in terms of becoming a trade worker and not solely based on completion of competency standards. An example of applying the precepts of 'learning as becoming' is to use the 'old' pre-competency era designation of apprentices as junior/first-year, intermediate/second-year and senior/third-year and beyond. This establishes attainable goals, often observable through the workplace tasks apprentices are assigned. Progress forward may be measured by apprentices moving through skill acquisition, as recognised by their ability to undertake more complex tasks and transition into becoming independent workers, rather than mere completion of competency standards. A structured process for validation of workplace-based skill attainment and application, supplemented by methods to quantify underpinning knowledge, is a step beyond current reliance on competency-based approaches; a proviso is that implementation of the recommendation in this section will, as noted in the section above, require capable/knowledgeable workplace trainers.

Assisting the formation of vocational identity

There is a need to help apprentices acquire a vocational identity compatible with their vocational imagination, or to help adjust vocational imagination to account for realities of work. The literature provides several recommendations. Firstly, to assist potential apprentices with clarifying occupational goals by having them answer the question 'who do I want to be?' rather than focus on the question 'what do I want to do?' (Higgins et al. 2010). Secondly, to take advantage of opportunities availed through workplace attachment/experiences while still at school by ensuring students are provided with structures to reflect on workplace experiences; in particular, structured guided sessions to better understand the advantages and disadvantages of entry into work, workplace learning possibilities and post-school options (Billett & Ovens 2007). Thirdly, to match perceived strengths to envisaged occupational goals (Vaughan, Roberts & Gardiner 2006) through managed activities provided at school, career fairs or through ITO information and websites.

Conclusion

The themes presented and discussed in this paper offer a 'snapshot' view on how some apprentices in New Zealand choose to enter into a trade occupation, and their perspectives of initial induction into work and workplace learning. Recognising the situated sociocultural context, the project here is therefore an effort to assist potential apprentices to affirm career choice, leading to positive engagement with the task of attaining skills, knowledge and dispositions. In doing so, apprentices not only learn a trade, but also transform into skilled trade workers, with clear occupational identities.

Acknowledgments

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Conceptualising a role for VET within the senior secondary certificates

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Abstract

This paper presents interim findings from two current studies of Australian vocational education and training in schools (VET in Schools). The first examines how schools are implementing vocational programs and how students are using vocational pathways. The other investigates the factors shaping effective links between VET in Schools and occupational and post-school VET outcomes. This paper draws on interviews with VET in Schools students, teachers and stakeholders in Queensland and Victoria.

Australian schools are approaching the provision of vocational programs in a variety of different ways. The needs of students, the training and skills agendas of state and federal governments, and the needs of local and regional labour markets shape the breadth, depth and type of VET in Schools provision that schools develop. While in some states the burden of vocational provision sits firmly within the government sector, in other states there appears a greater distribution of VET in Schools participation and provision across the government, independent and Catholic sectors, with the agendas and objectives of each sector also influencing the position of vocational learning within the senior secondary curriculum.

Current senior secondary certificate structures across Australian states and territories appear to promote a 'hedging bets' approach where VET in Schools students are precluded from engaging in intense or deep vocational programs and more often are participating in minimal VET in addition to a mostly academic senior secondary program. The capacity of VET in Schools to deliver stronger labour market and further education outcomes is weakened by this lack of intensity and depth of current VET in Schools provision.

Interviews with teachers indicate that school culture and teacher perceptions are strong determinants of the quality and strength of VET in Schools pathways. This paper draws on longitudinal student data and a broad range of stakeholder interviews to highlight the factors impacting the efficacy of VET in Schools.

Introduction

Educational reforms of the last decade have involved a re-shaping of the senior secondary landscape and the emergence of a new space for vocational knowledge within senior secondary certificates. In 2010 more than 230 000 Australian senior secondary students participated in VET in Schools (National Centre for Vocational Education Research 2011), accounting for more than a third of all VET undertaken by 15—19 year-olds. The vision for VET in Schools laid out by the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) in 2000 called for an approach to VET in Schools in which:

> Vocational education in schools assists all young people to secure their own futures by enhancing their transition to a broad range of post-school options and pathways. It engages students in work related learning built on strategic partnerships between schools, business, industry and the wider community.
>
> (MCEETYA 2000, p.11)

To what extent are current approaches to VET in Schools realising this vision? Recent and current NCVER research has highlighted the positive impact of VET in Schools on student retention, engagement and aspiration (Nguyen 2010; Anlezark, Karmel & Ong 2006). VET in Schools enrolments have grown rapidly, trebling between the mid-1990s and 2004 (Lamb & Vickers 2006; Service Skills Australia 2010) and VET in Schools has played an increasingly visible role in shaping the senior secondary landscape (Te Riele & Crump 2002). Growth has been particularly significant in Victoria (22%), New South Wales (4.4%) and Queensland (94%) (National Centre for Vocational Education Research 2011).

Despite both recent policy changes, that have expanded the role of VET in Schools in supporting school completion and post-school transitions, and rapidly growing participation in VET in Schools, outcomes from VET in Schools programs remain problematic, particularly for low achievers and socio-economically disadvantaged learners (Dalton & Smith 2004; Crump & Stanley 2005; Polesel 2008; Phillips KPA 2006; Stanwick 2005). Doubt remains about the extent to which VET in Schools is securing and enhancing transition to a broad range of post-school options. One in four (24.9%) Victorian VET in Schools students and almost half of Queensland VET in Schools students (42.9%) enter the labour market without any further education and training (Rothman et al. 2011; Queensland Department of Education and Training 2011).

In this context, there is a pressing need to re-evaluate how VET in Schools can lead to positive education and occupational outcomes and not deliver students into low-skilled, casualised and unsustainable employment. This paper draws on two current studies of VET in Schools to highlight current barriers to effective VET in Schools provision.

Methodology

This paper presents interim findings from two current studies of VET in Schools. The first is an on-going Australian Research Council Discovery Project examining the motivations, experiences and pathways of a cohort of VET in Schools students over a three-year period. Students from nine case study schools across Queensland, New South Wales and Victoria (see table 1) were recruited from Year 11 VET in Schools cohorts and are being tracked for three years. Students participated in an initial face-to-face interview and a phone interview in the following year. These interviews have been revealing and have provided an insight into VET in Schools students' expectations and aspirations. A final contact will be made with these students in 2012 which will provide more information about the post-school outcomes for VET in Schools students. To complement the student data gathered, all teachers at each of the case study schools were also surveyed. These teacher surveys gathered data regarding the perceptions and expectations of VET in Schools within a diverse range of settings.

Table 1   Year 11 students for survey and interview in Stage 1, by state, school type and gender

School type	New South Wales		Victoria		Queensland		Total
	Female	Male	Female	Male	Female	Male	
Metro co-ed	20	20	20	20	10	10	100
Metro girls only	10				10		20
Provincial city co-ed			10	10	10	10	40
Total	**30**	**20**	**30**	**30**	**30**	**20**	**160**

Note: Only data from Victorian and Queensland students are used and/or quoted within this paper.

The second study is a strand within an NCVER-funded consortium project, examining the system, region and school-level factors impacting the efficacy of current approaches to entry-level VET, specifically VET in Schools. The key research question being addressed is: *What are the main variables shaping the relationship between VET, employment and occupations at the entry-level?*

The first stage of this research involved four case studies within New South Wales, Queensland, Victoria and South Australia. Each case study sought to examine in detail the practices and approaches to delivering effective VET in Schools programs. Interviews were conducted with a broad range of VET in Schools stakeholders (see table 2). Four models of VET in Schools were identified through an environmental scan and included a technical education centre in regional Victoria, a partnership between a government secondary college and a TAFE institute in far-north Queensland, a Catholic senior secondary college in outer-western Sydney and a government vocational college in north-eastern Adelaide. Year 2 of this research (to be conducted in 2012) will include extensive industry and employer consultations and interviews. For this reason, an industry perspective is not included within the scope of this paper.

Table 2   Case study interviews and survey respondents by organisation and jurisdiction

Organisations	Case study jurisdictions				
	New South Wales	Victoria	Queensland	South Australia	**Total**
Education Department	1		1	4	**6**
Training department	1	1		1	**3**
Board of Studies			1	1	**2**
Catholic Education Office	1		2	2	**5**
Independent sector				1	**1**
Training & Skills Commission				1	**1**
TAFE – central	1			1	**2**
TAFE – institute level	6	3	3	9	**21**
Private RTO	1	4	1	1	**7**
Group training company	1	1	2	1	**5**
ACE provider	1		1	4	**6**
School	6	9		12	**27**
Other			1		
Total	19	18	12	38	**86**

Note: Only data from Victorian and Queensland stakeholders are used and/or quoted within this paper.

While across these two studies research has been conducted within four Australian states, this paper will focus on data drawn from Victoria and Queensland. These two states are currently the only two Australian jurisdictions where there are large-scale surveys of school completers conducted annually.

Findings and discussion

An investigation of the efficacy of VET in Schools requires an understanding of the complex policy and operational contexts in which VET in Schools exists and the impact of those contexts on the relationship between VET in Schools and the labour market. These policy and operational contexts exist across the system, regional and school levels. Three key themes, each with implications at the policy and operational level, have emerged from the research:

- The location and recognition of VET in Schools within the senior secondary certificates has an impact on the use of VET in Schools within schools and by students.

- Current approaches to VET in Schools are weakened by a lack of appropriate career guidance to inform good vocational pathway decisions.

- Industry, employers and VET providers remain sceptical of the quality and effectiveness of VET in Schools provision.

VET in Schools and senior secondary certificates

Following a scan and examination of the architectures of the senior secondary certificates of Australian states, the first finding to emerge from this research is that the location and recognition of VET in Schools shapes the role VET in Schools can and does play for students in each jurisdiction. There is evidence of considerable variation in the delivery of VET in Schools both between and within systems (Lamb & Vickers 2006). Differences include the amount and type of VET in Schools that can contribute towards completion of the senior secondary certificate, the role of schools as registered training organisations (RTOs) and the contribution of VET in Schools towards the Australian Tertiary Admissions Rank (ATAR). Despite these system-level variations, the expanding role of VET in Schools in senior secondary education has generated common pedagogical tensions (Singh, Cui & Harreveld 2009) and 'curricular complexity' (Te Riele & Crump 2002) across different states and territories. The approaches to VET in Schools in Victoria and Queensland are illustrative of these challenges.

VET in Schools participation in Victoria is growing, experiencing slightly less than a 5% increase from 2009 to 2010. Victoria stands out from other jurisdictions as having the highest participation in VET in Schools at Certificate III level (24.8%) (National Centre for Vocational Education Research 2011). Victoria also has the largest sectoral spread of VET in Schools students with one in five VET in Schools students in the Catholic sector and almost one in ten VET in Schools students participating in the independent sector (National Centre for Vocational Education Research 2011). A large number of Victorian secondary schools are also RTOs. There are three broad categories of VET in Schools study that Victorian students undertake: Victorian Certificate of Education (VCE) VET subjects developed and endorsed by the Victorian Curriculum and Assessment Authority (VCAA); stand-alone VET in Schools, which includes any qualification outside those developed by the VCAA and which, at a Year 12 level, may be awarded block credit towards the VCE or nominal hours towards the Victorian Certificate of Applied Learning; and school-based apprenticeships or traineeships.

While VET in Schools participation in Queensland has grown rapidly since 2006, it has experienced a slight downturn in the last two years, particularly in school-based apprenticeship and traineeship participation (National Centre for Vocational Education Research 2011). The vast majority of Queensland's VET in Schools students are in the government sector (79%). Queensland students have access to 13 Queensland Study Authority (QSA) VET subjects that have embedded VET and contribute to completion of the Queensland Certificate of Education (QCE). Students completing their QCE can complete a large proportion of the required credits through VET in Schools subjects. Students also

have access to stand-alone VET in Schools subjects registered by the QSA; however, these subjects do not contribute towards the completion of the QCE. A large number of Queensland secondary schools are RTOs for the provision of certificates I and II; however, there are limits to schools having scope for provision at higher levels.

Stakeholders consulted as part of the two research studies identified a key tension within the ways VET in Schools is regulated and accommodated within the senior secondary certificates. VET in Schools is alternatively 'endorsed', 'supported' and/or 'registered' by the relevant studies authorities to contribute to school completion and calculation of the tertiary entrance rank. Several school-level interviewees cited a potential hierarchy of VET in Schools emerging whereby there exists a tier of premium VET in Schools (subjects that 'count') and second class VET in Schools (subjects that 'do not count'). This hierarchy can influence schools in determining what VET in Schools provision they will offer. This perceived hierarchy of VET subjects was described as raising questions and concerns about the comparative strength and efficacy of the links between different types of VET in Schools provision and occupations. An example of this includes what one provider-level respondent described as the 'undermining of the vocational rigour of VET qualifications' that have been 'adapted' to be congruent with the curriculum and assessment framework of the senior secondary certificate.

While teachers and system stakeholders placed significant emphasis on the problematic relationships between VET in Schools and senior secondary certificates when surveyed, less than one in five (16%) students in the longitudinal tracking study indicated that the contribution of VET in Schools to their school completion was a motivating factor in them choosing VET subjects. In contrast, almost every second student surveyed (47%) indicated that wanting a 'job in the area' was the key motivating factor.

VET in Schools and career guidance

The second key finding from this research is that there is a perceived weakening of VET in Schools outcomes attributed to a lack of appropriate career guidance to inform good vocational pathway decisions. Porter (2006) and Winch and Clarke (2003) found that 'the adequacy of career guidance and dissemination' influenced young people's decisions about their post-school destinations. Unfortunately, not all careers advice about subject choice or post-school course entry requirements is accurate or sufficient (Sweet et al. 2010). Smith and Green (2005) have identified a perceived lack of effective career advice for young people related to both occupations and post-school training pathways. Anlezark et al. (2006) suggest that 'students self-select into school VET programs because they see these programs as providing a better match with their (self) perceived academic ability' (p.7).

With increasing numbers of students participating in VET in Schools, more needs to be done to ensure students have access to accurate and timely advice to inform their decision-making. From the junior years of secondary school, students are inundated with information and materials that support and inform traditional academic pathways towards university entry. Students aspiring to technical and vocational occupations need access to equally relevant, comprehensive and clear information that makes explicit the links between vocational learning at school and post-school VET options.

In Victoria, a perspective expressed by a number of school-level respondents was that because entry to post-school higher-level VET (for example, diploma level) was through the Victorian Tertiary Admissions Centre (VTAC) and was based on the completion of the VCE, 'VET in Schools is not at all relevant' to students aspiring to post-school higher-level VET. The inference being made by these respondents is that a generalist VCE is sufficient preparation for a vocational tertiary qualification. Contrastingly, exposure to and participation in VET in Schools subjects was described by school-level

respondents as being crucial for students aspiring to apprenticeships or traineeships post-school. This view suggests that the school pathways to higher-level VET and intermediate-level VET (for example, apprenticeships and traineeships) are viewed differently and a hierarchy of VET in Schools exists that assumes that those pursuing higher-level VET post-school do not require exposure to VET during their senior secondary studies.

In Queensland, a common theme emerging from the interviews was that VET in Schools was inaccurately positioned within careers advice as an employment preparation pathway. The employment pathway aspect of VET in Schools was more strongly articulated by stakeholders in this state than in any other of the case study jurisdictions. The most common VET in Schools role envisaged by interviewees in Queensland included 'work ready skills and knowledge that underpins industry workplace requirements', 'facilitat[ing] a smoother transition for all young people into employment' and 'provid[ing] non-OP (university entrance) eligible students with a viable interacting transition to work'.

VET in Schools stakeholders across both states referred to the persistent 'deficit view' of the role of VET in Schools. This deficit view was perceived as contributing to an 'underestimation of the importance of a pathways approach' to VET in Schools, which in turn led to misinformation and poor counselling of students into vocational pathways. As one system interviewee described: 'engagement is one side of things, but it's not the be all and end all for engagement'. Evidently, more needs to be done at both school and system levels to support vocational pathways and strengthen the efficacy of VET in Schools programs. The role of schools in supporting young people to construct meaningful vocational and occupational pathways needs to be clearly articulated as a system-level policy objective and entrenched as a performance requirement for schools.

Interviews with VET in Schools students revealed that while some VET in Schools choices are informed by future occupational and further education opportunities, some students indicated that these factors played a minor role in their subject selection. Students revealed limited understanding of the role VET in Schools might play in their future employment and training options, which was reinforced by being 'assigned' to VET in Schools classes based on teacher perception of their abilities, or perceived lack thereof, or on the basis of vacancies in a particular option. With two in every five Australian senior secondary students enrolled in a VET subject (Service Skills Australia 2010), this disconnection between student expectation and the efficacy of VET in Schools pathways is problematic. Interviews with teachers indicate that teacher perceptions and broader school culture are strong determinants of the strength of VET in Schools pathways. Expertise in and understanding of VET options, including the role of structured workplace learning, can provide a school culture that is supportive of quality VET in Schools programs. Conversely, a lack of awareness of the requirements of quality VET in Schools provision among school staff and leaders can reinforce negative deficit views of the purpose and role of VET in Schools.

Creating partnerships between schools and VET in Schools stakeholders

The third finding from this research is that the continued scepticism of the quality and effectiveness of VET in Schools provision amongst industry, employers and VET providers is seen as negatively impacting the post-school VET pathways of school completers. The scepticism of VET in Schools amongst TAFE and industry has been well documented (Polesel et al. 2004; Service Skills Australia 2010). This scepticism and lack of understanding was also evident in consultations with the Queensland and Victorian system and TAFE/RTO stakeholders. Interviews commonly identified sentiments like 'industry's lack of understanding and confidence in VET in Schools, 'training

credentials not viewed positively', 'a perception from industry and some VET training institutions that VET in Schools is not real VET' and 'a lack of career development support due to an over-emphasis by career practitioners on higher education pathways' as factors limiting the efficacy of VET in Schools as an employment pathway.

Unfounded or not, the lack of trust in VET in Schools has a significant impact on the efficacy of VET in Schools as an occupational pathway. For many schools, engaging with employers and industry in a coordinated way is new territory. State/territory education and training departments have a role to play in supporting schools to build communities of trust with industry and employers. A vital step in addressing industry scepticism is a more coordinated and systematic approach to workplace learning within VET in Schools programs. A quality approach to workplace learning needs ensure that it is structured learning that supports and is integrated with the VET in Schools curriculum. To support workplace learning, a more coordinated and systematic approach to developing and sustaining partnerships with industry and training stakeholders is needed.

Similarly, continuing cynicism regarding the validity and rigour of VET in Schools within the TAFE sector signals the need for a more coordinated approach to strengthening articulation between foundational qualifications completed through VET in Schools and higher-level VET programs at TAFE. System-level VET in Schools stakeholders can and should support schools in forging localised communities of trust with employers and TAFE providers.

Conclusions

Considering the growing number of young people relying on VET in Schools programs as a core part of their transition pathway from school, there is a need to rethink the systemic and school-level approaches to VET in Schools to ensure that VET in Schools leads to a substantial destination and does not deliver students into low-skilled, casualised and unsustainable employment. A consistent pathways approach is needed to bolster the capacity of vocational programs within schools to provide effective transition for young people. Evidence from the post-school tracking surveys conducted in Victoria and Queensland indicate that, as an entry to vocations, VET in Schools is falling short in providing a link to higher-level skills training (Rothman et al. 2011; Queensland Department of Education and Training 2011).

Within the structure and promotion of the senior secondary certificates, consideration needs to be given to the ways in which effective VET in Schools provision is constrained by the limitations of the senior secondary certificates. VET in Schools stakeholders consulted as part of this research have indicated that there needs to be clearer articulation of the foundational role of VET in Schools within school completion. In other words, VET in Schools should not be viewed as an educational end-point but as the basis for post-school education and training. Respondents in this research have also called for a renewed focus on VET in Schools as a pathway to further education and training that is supported by more effective career guidance mechanisms. While a more coherent approach to this further education role for VET in Schools and a corresponding approach to the provision of effective vocational career guidance should support better pathway choices, strengthening links with industry and employers is an integral part of strengthening the efficacy of VET in Schools. Collaboration and partnership with the broader VET sector, particularly with TAFE, is also crucial to enhancing the effectiveness of VET in Schools.

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Skills recognition in Australian rail: emerging opportunities in a safety-critical industry

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Abstract

Skills recognition processes, including recognition of prior learning (RPL) and recognition of current competencies (RCC), are currently underutilised in the Australian rail industry. This is not necessarily due to lack of interest; many rail organisations see merit in recognising the skills, knowledge and experience of current and prospective employees. However, the rail industry is highly regulated and is accountable to local and national safety bodies across jurisdictions. The training and qualifications appropriate to safety-critical roles are closely aligned with these regulatory requirements; rail operators must ensure that rail safety workers are competent as defined under these regulations. Consequently, many rail organisations consider skills recognition to be 'too risky' in an operational culture of risk mitigation. There are, however, various sectors of the industry where greater awareness and use of skills recognition could offer benefits to rail organisations and their employees. This paper reports on findings from a workforce development research project we are undertaking, funded by the Cooperative Research Centre for Rail Innovation. Our goal is to develop a skills recognition framework for the rail industry, enabling a more unified and effective approach to skills recognition. We have adopted an exploratory research approach using qualitative data collected in interviews with human resource managers, learning and development managers, employees, trainers and assessors from stakeholder organisations across Australia. We have identified some practical strategies for maximising the opportunities for skills recognition in this safety-critical industry, including the use of risk-based training needs analyses, challenge tests to supplement competency interviews and making greater use of skills recognition to identify employability and/or abstract skills. RTOs can work closely with rail to develop customised skills recognition and training at operational and management levels. There is also an allied need for increased information for users of skills recognition. We are hence currently developing a skills recognition website tailored to the Australian rail industry, with supporting documentation to ensure that users are better informed about how to use skills recognition with confidence in a safety-critical industry. This will enable greater support for assessors and recipients and closer partnerships with VET providers to promote the business case for skills recognition and ensure that it is integrated into rail's workforce development culture.

Introduction

Skills recognition can be defined as an assessment process which 'formally acknowledges skills, abilities and knowledge obtained through previous study, work experience and/or life experiences' (Wodonga Institute of TAFE n.d., p.3). Skills recognition includes recognition of prior learning, recognition of current competencies and credit transfer. In recent years the Australian Government has recognised skills recognition as a major contributor to workforce development; a suite of Council

of Australian Governments-funded RPL projects (2006—09) has been implemented to improve uptake of RPL. Strategies introduced include coordinated promotion of RPL to both industries and candidates, streamlining of processes, improving access to and funding for RPL services, and building capacity within the Australian VET sector (Leary 2009). Skills recognition is now embedded within the Australian Qualifications Framework and registered training organisations are expected to offer RPL to potential trainees as the default option (Australian Quality Training Framework 2007, p.33). The National Quality Council (2009) has also investigated international frameworks for workplace skills recognition to advise the Government on broader skills recognition policies for Australia.

Despite these initiatives, some sectors of the Australian rail industry remain reluctant to embrace skills recognition. Given that rail is currently experiencing a number of workforce risks including widespread labour shortfalls (Australasian Rail Association 2008; Mahendran & Dockery 2008), greater use of skills recognition in the industry might seem timely. However, there are a number of actual and perceived barriers to greater adoption of skills recognition in the industry, and in this paper we focus on safety concerns and possible ways in which these can be mitigated.

In the rail industry, safety-critical work refers to work which, 'if not carried out appropriately, may lead to a serious incident affecting the public or the rail network' (National Transport Commission 2011, p.5). The training and qualifications appropriate to such roles are closely aligned with regulatory requirements; rail operators must ensure that rail safety workers are competent under these regulations. Consequently, many rail organisations consider skills recognition processes that assess a candidate as competent in a certain role without requiring them to complete formal training to be 'too risky'. A new Rail Safety National Law — which should be fully adopted in all states and territories by the end of 2012 — clearly specifies the obligations of rail transport operators in relation to the assessment of rail safety worker competence and the records that must be kept of such competence (*Rail Safety National Law [South Australia] Bill 2012*). Although the law does not preclude the assessment of competence by skills recognition, some operators may still consider skills recognition 'risky' when compared with conventional training and assessment practices.

Paradoxically, at the same time, industry drivers indicate a need for greater industry acceptance of skills recognition processes which do not require employees to undergo time consuming and costly training processes when they already have the skills and knowledge required. Nevertheless our research suggests that greater awareness and use of skills recognition could offer benefits to some sectors of the rail industry and their employees while still satisfying regulatory requirements. Therefore the primary aim of this study is to design a national skills recognition framework for the industry as a means of increasing the use of skills recognition within the industry.

Limitations: This project is not due for completion until December 2012. The full analysis has not been completed at the time of writing this paper, and consequently, we focus on some specific initial findings.

Findings and discussion

This qualitative study used an exploratory interpretive approach. Purposeful sampling enabled a total of 59 semi-structured interviews to be conducted with 74 people from private and public rail companies, small, medium and large organisations, passenger and freight services, rail contractors and RTOs. Participant roles included human resource managers, learning and development managers, employees (with roles in driving, signalling, customer service, infrastructure, recruitment and management), RTO representatives, and trainers and assessors from a total of 19 organisations from

across Australia. The semi-structured interview questions focused on identifying if and how participants currently used skills recognition processes, and what they thought could be improved. Interviews were audio-recorded, transcribed and analysed with NVivo 9 software. Table 1 summarises the sample from the rail industry. Representatives from seven RTOs and other industry-related organisations were also interviewed.

Table 1   Summary of rail organisation sample

Code	No. of interviews	Scope	Type	Employees (Oct 2011)	Enterprise RTO
A	1	State	Public	+7 000	Yes
B	16	State	Public	+15 000	Yes
C	6	Multi-national	Contractor	+21 000	No
D	5	National	Private	9 000	No
F	4	National	Quasi-public	1 000	No
H	5	State	Public	+1 400	Yes
I	3	National	Private	+300	No
L	8	State	Quasi-public	3 700	No
N	1	State	Public	+3 000	Yes
Q	1	State	Public	+1 400	No
R	1	Multi-national	Private	77 000	Not currently

Safety concerns

The issue of safety was raised in almost every interview, with some participants viewing it as a driver and others an inhibitor to greater use of skills recognition in the rail industry. One respondent took a very holistic view of safety both inside and outside the workplace, testifying to the pervasive safety culture fostered in their workplace:

> … safety is number one isn't it? … it's a culture thing now, before you used to just ignore it, but now because work has taught us that safety is number one, you seem to take that practice home with you … You know, it's a cultural change.   (Rail Workforce Development Officer)

In some jurisdictions, changes to rail safety regulations have driven a recent push to have rail workers' skills and experience formally recognised:

> recently, we've had a change to the Rail Safety Act … so we've actually needed to go through a process of capturing all of the competencies of our rail safety workers, so that's included capturing a lot of that information in terms of previous tertiary qualifications or trade qualifications, all of that, and capturing them within our system. (Strategic Projects Manager, rail)

The introduction of the Rail Safety National Law later in 2012 is likely to have an impact on the recognition and recording of the skills of rail safety workers. As a consequence of these requirements,

> it's become even more critical for us to undergo an RPL process, to identify not only existing competencies but to identify gaps.   (Competency Manager, rail)

Divided perceptions

There is a clear tension between safety as a driver or as an inhibitor to greater use of skills recognition, as exemplified by the following:

> So, you imagine [a] train controller, it's a high-risk industry, high-risk environment, and we've got to make sure that they consistently are safe … The risks of skills recognition, if you get it wrong, you can kill someone. And that's very, very real. (RTO manager)

RTOs expressed concerns about the ramifications for training providers should safety be breached:

> … if we're going to be lined up in a Coroner's Court, we need to prove that we have done everything as we were supposed to. (RPL practitioner)

By contrast, some rail industry interviewees lamented the fact that skills recognition was underutilised in rail and that safety and compliance considerations inhibit greater uptake:

> I think there's quite a bit of potential [for skills recognition] in the rail industry although people tend not to take it up because they're nervous about safety … station assistants are a good example. Their work isn't particularly safety-critical but there are some aspects of it that are. And it's more of a customer service position and I think you could recognise a lot … I think everyone gets a bit overzealous in safety, like safety-critical industry, and they'll use that as an excuse to not be able to do anything. (Learning & Development Manager, rail)

And as one learning manager in the rail industry summarised: 'We've got so many people out there who I believe should have a formal recognition of their skills. I see the possibilities as endless really within our organisation'.

The research interviews suggest that some rail organisations and RTOs still perceive skills recognition as less rigorous than conventional assessment pathways. This is despite the requirement that RPL assessment processes be 'of a comparable standard to those used to deliver and assess the qualification' (Australian Qualifications Framework 2007, p.92) and the assertion that recognition 'carries no more risk than any other form of assessment or other services that the RTO may offer, provided it is carried out effectively' (NSW Department of Education and Training 2008, p.8).

Issues for assessors/RTOs

Skills recognition processes could play a greater role in addressing skills currency issues in rail. Some operators routinely retrain rail safety workers without the option of skills recognition. As one trainer in rail infrastructure observed:

> We are reassessing our people every two years on everything, and they don't actually lose that skill base, that skill base is still there, so we don't … we could probably use prior learning and RCC.

The competence of workplace assessors was seen as a variable in the skills recognition process and some interviewees expressed a lack of confidence in RPL practices. These processes require experienced assessors able to make informed professional judgments (Smith 2004, p.7). Interviewees identified several characteristics of good assessors:

> You've got to be able to listen. Not try and interpret and put your slant on it all the time. You've got to be technically qualified. You've got to be a good educator, not trainer … You've got to be a

soft shoulder. You've got to be a hard taskmaster at times. You've got to be a negotiator. You've got to be an interpreter … you've got to be also a career counsellor.

<div align="right">(Trainer and assessor, rail industry RTO)</div>

RTO–industry partnerships

There are mixed views about skills recognition in other high-risk or safety-critical industries. For example, in the high-risk extractive industry where some organisations take a guarded view of skills recognition, one RTO has developed a successful partnership to provide customised skills recognition and training at operational and management levels (Box Hill Institute, n.d.). Likewise in the aviation industry, an RTO has developed a skills recognition program for maintenance engineers in partnership with stakeholders (Kangan Batman TAFE n.d.). These examples suggest that close partnerships with RTOs can strengthen opportunities for skills recognition in safety-critical and high-risk industries.

Challenge tests

Some rail operators and RTOs use challenge tests as a risk mitigation strategy. A practical demonstration of competencies through challenge testing may be required if the assessment process does not otherwise address particular safety-critical aspects of the role. RTOs in some other industries use mandatory challenge tests in certain safety-critical roles; for example, challenge tests are a requirement for RPL and RCC of marine safety workers under the Australian Maritime Safety Authority (n.d.). Within rail, challenge tests focused on safe work practice and safe work rules have been used with train drivers moving between states and between rail operators and mining companies. Some rail operators require skills recognition processes to include both professional conversations or 'competency interviews' and practical demonstrations of the candidate's skills. Inclusion of practical assessment was considered by some RTOs as essential for skills recognition in safety-critical tasks. As one rail industry skills expert suggested:

I don't know how I'd feel if someone did an RPL for brain surgery and they didn't actually do a practical.

Risk-based training needs analysis

One operator was attempting to improve competence assessment through the use of risk-based training needs analysis (RBTNA). Tasks in higher-risk roles were prioritised and assessed more frequently. While not used to assess prior learning for the attainment of qualifications, risk-based analysis was used to assess whether employers had the required skills to be deemed competent in safety critical roles. As one interviewee explained:

We've gone the path of doing quite in-depth risk RBTNAs and then risk rating, developing that, the non-technical skills, into assessment centres for recruitment, so we ensure that they're coming in at the right calibre. The information with the RBTNA goes into the initial training, and the risk rating will inform how we'll all manage the delivery and assessment strategies around that.

<div align="right">(Competence assurance, rail)</div>

RBTNA focuses on both technical and non-technical or 'abstract' skills, which encompass what are often referred to as called 'invisible', 'soft' and 'tacit' skills and knowledge. As non-technical skills, they can be difficult to measure, but are nevertheless essential to safe work practice. In the VET system, specific abstract skills are incorporated under 'employability skills' (communication, teamwork, problem solving, initiative and enterprise, planning and organising, self-management, learning, and technology). Other abstract skills, including situational awareness and the capacity to

make informed decisions in high-risk settings, are particularly relevant to rail, yet are not always identified adequately in typical competency-based assessment. One rail learning and development manager expressed the view that employability skills are not taken seriously:

> It was something that was seen as more of an annoyance almost than something that was valuable to the competencies.

Yet another training and development manager reflected that current competency-based assessment tools were not well-placed to capture the abstract or qualitative skills that are vital to safety in rail:

> … but where there's a loophole with units of competence is that this qualitative area is not controlled like the unit of competence is with PCs [performance criteria] and the evidence.

As one learning and development manager in rail commented:

> They're starting to look at the impact of those soft skills on accidents and errors made by drivers. My understanding is the majority of safety incidents within the rail industry for drivers have been attributed to issues that could be dealt with through better soft skill training, not lack of technical knowledge.

A stronger focus on recognising abstract skills could therefore be advantageous for the safety-critical sectors of the rail industry.

The Skills Recognition Framework

Based on our research, we are currently developing a website for applicants, employers, human resources managers, learning and development managers and workplace assessors in the rail industry. The materials will include information, templates, and links to the Australian Qualifications Framework (AQF) and to relevant national and local websites. This website will be trialled later in 2012, and subsequent feedback will also inform a handbook for employers and trainers in the rail industry.

Conclusions

While there are particular risks involved, skills recognition can have a place in the assessment of safety-critical rail work. Approaches have been identified both in the literature and in industry which support effective skills recognition process in rail. Given the diversity of the Australian rail industry, and the range of stakeholders, occupations and sectors, a skills recognition framework needs to be flexible, practical and adaptable to individual organisational needs. We have identified some practical strategies for maximising the opportunities for skills recognition including the use of risk-based training needs analyses, challenge testing to support competency interviews, and utilising skills recognition to identify those employability and/or abstract skills that are particularly relevant to safety. RTOs can work closely with rail to develop customised skills recognition and training at operational and management levels. Users also need to be further informed about the areas in which skills recognition can be used with confidence in roles or aspects of jobs that are not safety critical; hence there is the need to increase the information available to users of skills recognition. We are currently developing a website tailored to the Australian rail industry, with supporting documentation, to ensure that users are better informed about skills recognition in a safety-critical industry. Workforce development imperatives, along with the imminent Rail Safety National Law, may present new opportunities for greater industry engagement with skills recognition. We are watching this space.

Acknowledgments

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Pathways, student motivations and human capital theory

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Abstract

Current policy emphasises broadening and deepening participation in tertiary education and, as a result, more flexible pathways between levels of tertiary study are seen as key. Changes such as demand-driven allocation of places are said to be 'student-centred' without much explanation of what lies behind student motivation. In fact, education policy and much research into the reasons students undertake tertiary study have in recent times been based on human capital theory: students calculate costs in order to maximise direct individual gain.

This paper critiques such assumptions using findings from the NCVER-funded project 'Vocations: post-compulsory education and the labour market'. The focus here is on the reasons for study evident from the Australian Bureau of Statistics (ABS) Survey of Education and Training and from interviews conducted for the vocations project. Using the survey, multiple reasons for study, the sector studied in and whether the field had changed between qualifications are related descriptively. While VET study is associated with skills development in existing careers and higher education is associated with new careers and general interest and education, these differences are not absolute and are considerably less for second qualifications. Relating these findings to interview data suggests that student choices intertwine social, educational and labour market factors, even if the latter may be overarching. It is argued that a broad focus on what people want and need from education and work could be a better basis for broadening and deepening participation in tertiary education.

Introduction

Why do people study at a tertiary level? In particular, why do many make the considerable effort needed to gain multiple qualifications? The latter is an increasing trend, with the proportion of working age people holding more than one tertiary-level qualification increasing from 18% in 2001 to 23% in 2009 (Fredman 2012). In the document guiding Australian Government policies in higher education and which makes reference to connections with the VET sector (Department of Education, Employment and Workplace Relations 2009), targets for increasing participation are set for reasons of both economic productivity and social inclusion. More flexible pathways between levels of tertiary study are seen here as a central means of broadening participation. This document and the reforms that have flowed from it, such as 'demand-driven' allocation of places in higher education and, to some extent, in VET, claims to be 'putting students clearly at the centre of its reforms' (p.5). However, the actual motivations of students are remarkably silent, or as discussed below are simply assumed, here and in much of the policy debate.

This paper examines the motivations of students in undertaking tertiary education, with a particular emphasis on motivations related to undertaking multiple qualifications. The paper derives from work for the NCVER-supported project entitled 'Vocations: post-compulsory education and the labour market'. This project has a broad remit of analysing pathways in both education and the labour market and connections between these (Wheelahan, Moodie & Buchanan forthcoming). The present

paper focuses on an area only briefly covered in the project; that is, the reasons that people undertake tertiary study.

Many recent studies relating to student motivations have argued that the assumptions behind policy and much related research derive from a theory within economics known as human capital theory (HCT) (Allais 2011; Baptiste 2001; Down 2009; Fevre, Rees & Gorard 1999; Loomis and Rodriguez 2009; Schwab 1996). This theory understands education as a form of investment made in expectation of returns, closely analogous to the investments in money capital businesses make in order to later gain greater monetary returns. Interpretation of the theory influential from the 1950s to the 1970s emphasised the role of public investment in educational institutions in creating skills and knowledge that would aid national growth and productivity (Marginson 1989, pp.12—16).

However, Marginson (1989, pp.16—24) argues that in the context of the shift in economic policy in developed, particularly Anglophone, countries from Keynesian to neo-liberalism from the late 1970s, a version of HCT more focused on individuals became dominant; for example, justifying the introduction of fees for higher education in Australia in the late 1980s. This version of HCT is more explicitly based on the assumptions of classical liberal economics that all social behaviour is based on rational egoists maximising their individual rewards through interactions in free markets, and sees education as investments by individuals in order to later gain greater, particularly financial, rewards (Becker 1993; Blaug 1970; Friedman 1962). From the early 1990s, policy related to vocational education and training began to turn towards a 'training market', competitive tendering and funding of private providers (Knight & Mlotkowski 2009, pp.36—7), and this development appears related to a general turn in educational discussion and policy toward markets and conceptions of individual investment.

Recent policy discussion appears to take HCT as an unquestioned assumption. For example, in the Productivity Commission (2011) report on VET teaching, the purpose of VET is summarised as follows: 'The VET sector plays a key role in building Australia's human capital. Its workforce, aided by infrastructure and equipment, provides students with new or improved competencies that can make them more valued, productive and innovative workers' (p.3). According to Knight and Mlotkowski (2009), the human capital model, where 'education and training are seen as an investment in an individual's productive capacity, and are motivated by an expectation of a return on that investment … has become the dominant way of thinking about the links between education and training and the labour market' (p.22).

The critique developed here should not be taken as a denial that studies based on HCT assumptions and that examine quantitatively, for example, how the wage benefit of the completion of training affects completion rates (Karmel & Mlotkowski 2011) show real and important patterns. Whether HCT fully explains why people engage in education and all the interrelationships between education and work can, however, be questioned. A recent research example of HCT-based assumptions about student motivations is the attempt by Lee and Polidano (2011) to use the Student Outcomes Survey to define a singular 'score' for institutions that would aid student choice. Lee and Polidano recognise that there are both 'investment' and 'consumption' reasons for study, citing Duncan (1976). After noting that labour market reasons are overwhelmingly given as the 'main reason' for study in the Student Outcomes Survey, they argue that 'consumption' reasons can be discounted. However, Duncan (1976) notes that the association between education and labour market outcomes is tighter when 'non-pecuniary' aspects of work, such as control over work and work satisfaction, are taken into account — which points to a problem of HCT in that important explanatory factors can be assumed away.

A further issue is that HCT assumes rational egoist motivations for education are constant across time and space. By contrast, Fevre and colleagues (1999) point out that the value that people place on education and training varies in extent and form due to social and cultural factors and that the value is often strongest when associated with collective identities; for example, the stronger value of vocational educational in Germany in particular where there is strong craft identity compared with the United Kingdom.

This paper explores whether and to what extent student motivations can be seen as investment decisions and whether other motivations can be seen as marginal. Motivations for undertaking multiple qualifications is a particular although not exclusive focus, due to the current policy importance of educational pathways. A mixed method approach is used, which is relevant in examining different dimensions of complex social phenomena and drawing out explanatory mechanisms (Downward & Mearman 2007).

The quantitative part of the study uses the Australian Bureau of Statistics Survey of Education and Training as this instrument records the level, field and reasons of study (importantly allowing for multiple responses to the latter) for each past qualification and current enrolment. The data were restricted to respondents who have undertaken or who are currently undertaking at least one tertiary qualification, and only the first and any second qualification are considered. Respondents were defined as having undergone one of six possible sectoral pathways; that is, combinations of a first and a possible second qualification in either VET or higher education. Results as can be seen in the following section are split by this 'pathway' variable. As this paper is to a considerable extent exploratory, the findings presented here are descriptive cross-tabulations and charts indicating overall patterns of multiple reasons for study for different sub-groups and across multiple factors, rather than an attempt to create a predictive model. While field of education is acknowledged to be a factor in the discussion below, for reasons of space and to minimise errors, results are not split by field, but instead are split by whether or not fields had changed between first and second qualifications (for those with a second qualification).[3]

The qualitative part of the study consists of an analysis of interviews with 31 students and seven graduates for the vocations project. These were students in or graduates of one of the four fields (and related occupational areas) that are being used as contrasting case studies in the vocations project: electrical engineering, nursing and care work, agriculture and accounting. The interviewees were asked about educational and work background, their reasons for study, the relationship of study to work and future work and study plans. Responses related to reasons for study were analysed in terms of themes that emerged. It was found that there was often overlap in discussion of reasons for and outcomes of study, particularly in relation to plans for further study.

Findings and discussion

The findings from the Survey of Education and Training, produced in the manner discussed in the previous section, are shown in tables 1 and 2 and figures 1 and 2. Table 1 summarises the most notable results for the stated reasons for a first qualification (that is, leaving out responses for a

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[3] The results are weighted by the appropriate variable given in the ABS file that ensures the sample represents the population in terms of sex, age, state or territory of usual residence, section of state or territory and labour force status. In the calculation of the variance of estimates the complex sampling design is taken into account by using the replicate weights provided in the ABS file, using the jack knife technique. For background and explanation of sampling and weightings see Australian Bureau of Statistics (2010). All analyses were implemented with the SAS software package.

further four reasons with low response rates, in the range 2—7%, which covered starting a business, developing a business, community work and self-confidence). Given the policy prominence on VET to higher education pathways, it is noteworthy that the highest proportion of those nominating a study prerequisite as a reason was among those having undertaken the VET to higher education pathway. However, this was only 13.0%, suggesting that there is a low level of pre-meditation in regard to pathways generally. Overall, labour market-related reasons were dominant, and there were unsurprising differences between those whose first qualification was in higher education and those whose first qualification was in VET. By far the most common reason respondents gave for undertaking their first qualification was to get a job, with 57.4% of respondents nominating this as a reason. The proportion was markedly lower for VET graduates, possibly because a higher proportion was already in an occupation associated with the relevant study. Higher proportions of students who started in VET, as opposed to higher education, nominated the job requirement and extra skills reasons, and the highest extra skills response occurs in the VET to VET, same field category, all suggesting the skills deepening role of VET. Notably, however, following the reason of getting a job, the next most common reasons overall for undertaking a first qualification were for personal interest or enjoyment (given by 26.7% of respondents) and to improve general education skills (24.2%). While these non-vocational reasons are less common for VET graduates, they were still given by about a fifth of graduates in the smallest category, those who had completed only a VET qualification. Non-occupational reasons have importance for substantial proportions of students.

Table 1 Percentage citing selected reason for undertaking their first qualification (multiple choices), by pathway and whether field had changed or not between qualifications

	VET only	VET to VET	VET to HE	HE only	HE to VET	HE to HE	Total*
To get into another course of study	**4.1**	**6.6**	**13.0**	**4.8**	**6.3**	**8.7**	**5.9**
Same field	NA	7.8	14.0	NA	2.0	9.6	9.6
Changed field	NA	5.3	12.0	NA	8.1	7.8	6.8
To get a job	**54.1**	**45.8**	**53.1**	**74.6**	**69.5**	**66.4**	**57.4**
Same field	NA	43.2	55.6	NA	70.1	67.6	54.1
Changed field	NA	48.2	50.3	NA	69.2	65.0	55.9
Was a requirement of job	**20.2**	**22.4**	**15.1**	**7.3**	**7.1**	**7.0**	**16.1**
Same field	NA	22.5	14.1	NA	5.5	6.6	15.2
Changed field	NA	22.3	16.3	NA	7.8	7.6	15.3
Wanted extra skills for job	**20.3**	**19.5**	**13.2**	**9.3**	**9.1**	**7.9**	**15.8**
Same field	NA	21.9	13.5	NA	11.2	7.4	15.1
Changed field	NA	17.2	12.9	NA	8.2	8.5	13.3
To try for a different career	**9.1**	**9.0**	**8.7**	**9.1**	**6.4**	**5.4**	**8.6**
Same field	NA	8.1	8.1	NA	2.8	4.2	6.6
Changed field	NA	9.9	9.4	NA	7.8	6.6	9.0
To improve general educational skills	**18.6**	**21.9**	**23.7**	**32.1**	**33.6**	**34.4**	**24.2**
Same field	NA	23.6	20.1	NA	39.1	33.4	26.6
Changed field	NA	20.3	27.6	NA	31.3	35.4	26.6
For personal interest/enjoyment	**21.8**	**23.1**	**24.4**	**37.7**	**31.8**	**33.7**	**26.7**
Same field	NA	21.9	24.5	NA	25.4	30.1	25.6
Changed field	NA	24.3	24.2	NA	34.4	37.5	29.2

Note: HE = higher education; NA = not applicable; * includes those in a pathway category 'not determined' not otherwise shown.
Source: Australian Bureau of Statistics 2009.

Table 2 summarises the most notable results for the stated reasons for a second qualification. There are a number of differences with the results for first qualifications shown in table 1. The most common reason for undertaking a second qualification was to get extra skills for a job (32.6%). There is a more even spread of reasons and less difference between graduates who started in VET or higher education. Higher proportions of graduates who completed a second qualification did so to improve their general educational skills or for personal interest or enjoyment than those who completed a first qualification. These latter two aspects can be seen in figures 1 and 2, which show the most notable reasons for first and second qualification by sector (and which also give an indication of the reliability the figures via confidence interval bars). Notably the difference in proportions giving the education skills reason between VET and higher education graduates was 13.2% for a first qualification and 8.8% for a second qualification. The difference in proportions giving the interest reason between VET and higher education graduates was 12.9% for a first qualification and 9.5% for a second qualification.

Table 2   Percentage citing each reason for undertaking their second qualification (multiple choices), by pathway and whether field had changed or not between qualifications

	VET to VET	VET to HE	HE to VET	HE to HE	Total
To get into another course of study	**6.9**	**7.7**	**5.3**	**6.1**	**6.6**
Same field	7.8	5.2	3.4	6.6	6.6
Changed field	6.2	10.4	6.0	5.5	6.5
To get a job	**23.5**	**34.4**	**22.5**	**38.6**	**29.0**
Same field	23.8	29.8	26.4	33.7	27.4
Changed field	23.1	39.5	21.0	43.6	30.4
Was a requirement of job	**22.3**	**9.5**	**21.3**	**14.1**	**17.7**
Same field	21.6	10.3	19.8	15.9	18.0
Changed field	22.9	8.7	21.9	12.2	17.5
Wanted extra skills for job	**34.4**	**30.3**	**31.0**	**30.8**	**32.6**
Same field	38.0	36.0	37.7	34.4	36.9
Changed field	30.9	24.1	28.3	27.1	28.7
To try for a different career	**16.2**	**21.4**	**18.4**	**14.9**	**16.7**
Same field	12.2	11.2	14.8	9.5	11.3
Changed field	20.0	32.7	19.9	20.5	21.6
To improve general educational skills	**26.3**	**34.9**	**22.7**	**34.6**	**29.7**
Same field	27.2	33.2	30.5	37.9	31.8
Changed field	25.5	36.7	19.5	31.1	27.7
For personal interest/enjoyment	**24.0**	**36.5**	**26.3**	**31.8**	**28.7**
Same field	20.7	32.5	21.4	31.0	26.7
Changed field	27.3	40.9	28.3	32.7	30.5

Note: HE = higher education.
Source: Australian Bureau of Statistics 2009.

Figure 1 Reasons for undertaking a first qualification by sector, with 95% confidence intervals
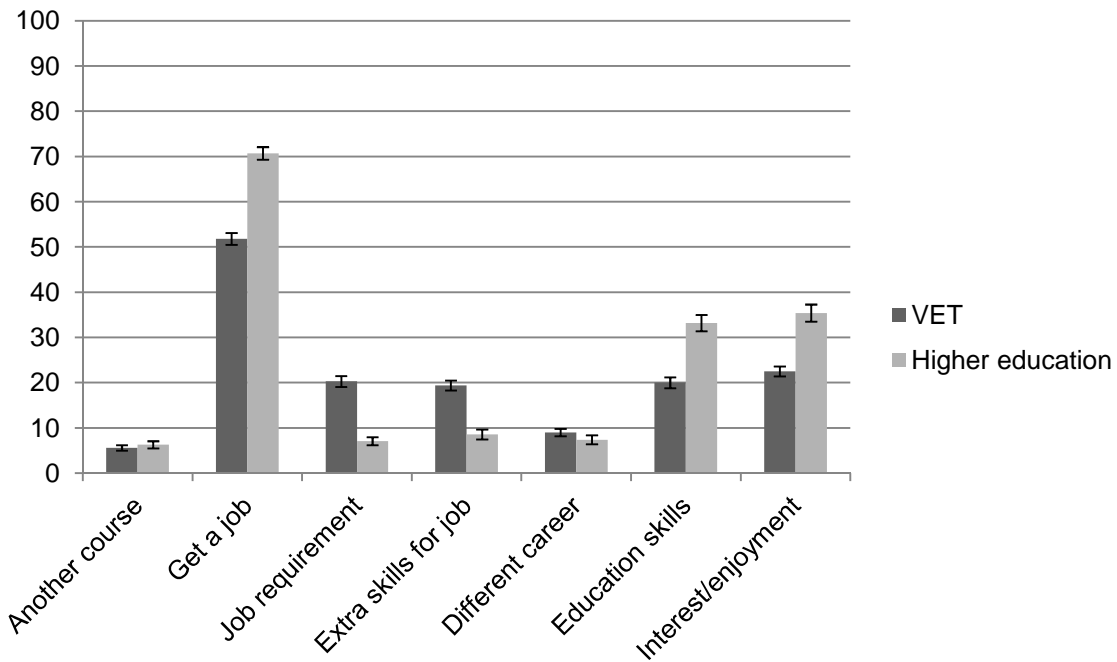
Source: Australian Bureau of Statistics 2009.

Figure 2 Reasons for undertaking a second qualification by sector, with 95% confidence intervals
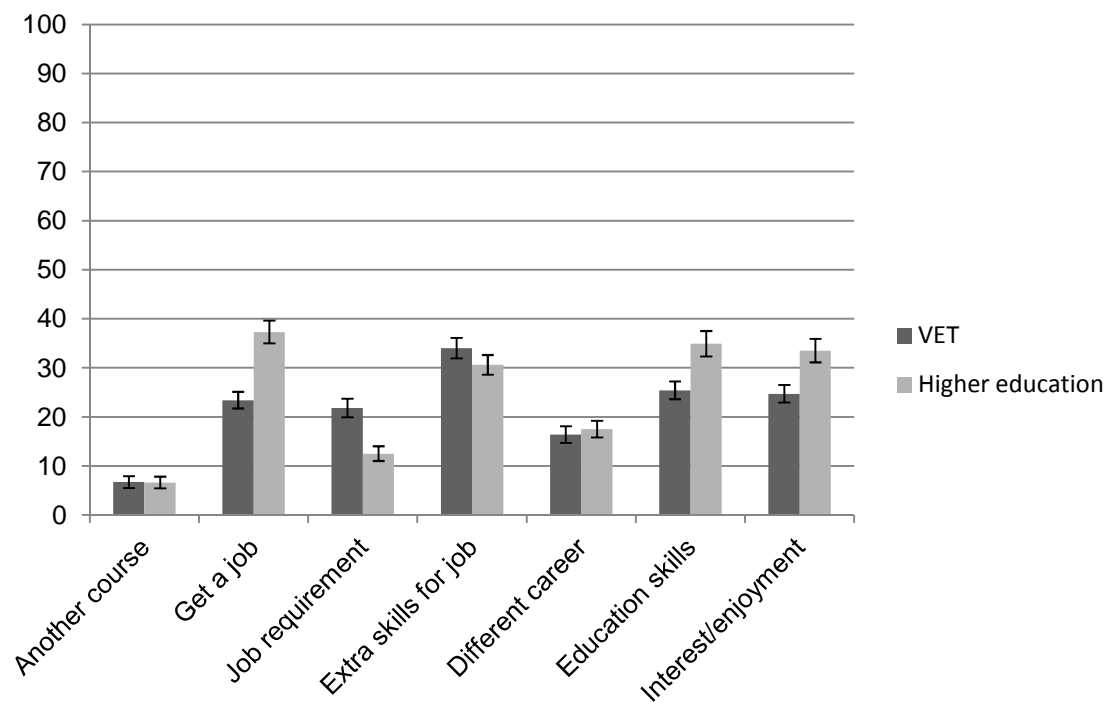
Source: Australian Bureau of Statistics 2009.

Harris and colleagues (2005) surveyed South Australian tertiary students commencing in 2003 who had either commenced in VET with previous experience in higher education or commenced in higher education with previous experience in VET. They found that: VET commencers were more likely than higher education commencers to study due to employer requirements, to improve skills or for career

prospects; re-training for a different career was somewhat associated with moving into higher education study; and educational and interest reasons were more widely expressed by those moving into higher education but were prevalent among both groups. Our results as well as those of Harris and colleagues (2005) suggest that motivations for further study are somewhat different among those entering higher education and VET but not absolutely so, and less so for further study in tertiary education.

In our interviews with 31 students and seven graduates we also found a strong focus on work and labour market reasons for study. We found in the interviews, as in the survey results, that a range of other reasons were also prevalent. From the interviews it was clear that other such reasons were in strong interrelationship with rather than separate from labour market reasons. Those who had undertaken more than one qualification were more likely to express broader and more extensive motivations for study. Thematic analysis of such broader responses revealed five related but distinct themes: general interest; systematising knowledge; creative production; identity with a field of practice; and life transformative. The following sections present examples that illustrate each theme.

General interest over pecuniary investment

Several students choose studies that would lead to rewarding work over what appeared to be more lucrative alternatives. One graduate of two VET agricultural programs, although intending to take over the family farm in due course, had after school studied and worked in information technology as a means of useful income and experience. However, he soon went to work for his parents as he found multifaceted farm work more rewarding. One overseas student had left a good job in information technology because she thought nursing, and learning English in Australia, would be more interesting.

Systematising knowledge

A number of students and graduates saw their education particularly in terms of validating and systematising existing knowledge and skills that they could then better use in work. One older agricultural worker undertaking a diploma was clear: 'money's not my motivator', nor was moving into management, and he was happy in his skilled technical officer position, which he worked up to after many years of labouring. His motivation was the satisfaction of formalising his skills and experience. One graduate of two VET agricultural programs considered he had all the practical skills before he began and did not gain much of these, but rather gained a broad view of management, and of how to systematically think about and implement current best practices in an area, which he viewed as resistant to change. His interest was sparked in further study in specific areas such as carbon farming and biological pest management. One small farm owner found the diploma of agriculture very helpful in developing her farm. She plans to do the advanced diploma and then the degree and is particularly interested in more systematically looking at practices at her farm in sustainable pest and weed management, as she saw sustainability a crucial issue for the sector.

Creative production

The key motivation for some students and graduates was the possibility of work life being creative. One agricultural science degree student was wholly motivated by fascination with entomology: 'it's all about the bugs'. The program was the easiest way to pursue this while living near family and friends and would lead smoothly to her plans to produce new knowledge about 'the bugs' via a research degree and an academic career. One electronics degree student had secure and well-paid work as an electrician but wanted more creative work: 'I wanted to design things, not repair/install

them'. The other had moved straight from VET in electronics to a degree: 'I want to design and develop new things'.

Identity with a field of practice

For some, education was part of a growing identity with a vocational area. All the students in nursing and care work mentioned a desire to help people, often developed through positive experiences of care workers, as a motivation for initial study and some indicated initial involvement had encouraged them to think about further study and work. One woman had thought a traineeship in aged care would be 'just a job, a way of earning money' but the experience of helping people had 'opened [her] eyes' and she now intended to study further and become a registered nurse. One engineering apprentice had first gained an engineering degree but had always wanted to be an electrician. In his mid-20s, he set up his own firm and then employed himself as an apprentice, under the supervision of qualified tradie. His experiences gave him strong opinions about the Australian apprenticeship system, which he thought should be reformed in the direction of the British system, with study undertaken before work placements. One (male) nursing bachelor student was motivated to do further study in terms of changing his profession: 'I want to do midwifery. There is a prejudice against men in nursing. There is an even stronger prejudice about men in midwifery. I want to break it'. Cooley (2008) similarly found, in a study of Irish nurses undertaking post-registration study, that while motivations for study included fairly straightforward desires to 'keep up', this was bound with a motivation to receive more respect at work. This research found that the participants' experience of further nursing study was followed by a heightened interest in improving clinical practice and by feelings of more self-confidence and even of 'power' in their position within the social relations at work. While accounting students among our participants were on the whole the most utilitarian, one accounting degree student was motivated by both possibilities of advancement and of broadening work from a previously limited area: 'I didn't want to get stuck in just one area as I'm interested in all of accounting'.

Life transformative

A general change in life course was a key motivation for some. One higher education nursing student was unhappy in her previous job and personal life, but the experience of study meant she 'started being in charge and making changes' and was motivated to undertake postgraduate study and progress through the profession. One older woman had a successful job in sales but dissatisfaction with that and a stressful home life meant she wanted to work in the community, 'to save my soul, my sanity' and took up a traineeship in personal care attending. We also heard from a graduate inspired to help others transform their lives with the help of study. She had studied a diploma and advanced diploma in agriculture and related her study to her community activities. She became involved in a project with a TAFE institute to encourage isolated women to study. This participant emphasised that study was very important for women in her region: the skills and experience of women were not recognised, men in families were often encouraged to study before women, and study resulted both in formal qualifications and a 'boost in self-confidence' for those involved, these being particularly helpful for those having undergone relationship breakdowns.

The findings here reflect a number of past studies of varied levels of post-school education. Connelly and Halliday (2001) also found, among new entrants to Scottish further education, social and educational factors entwined with employability factors, with differentiation between community and higher education colleges but not absolute ones. They conclude that the 'idea that [further education] is principally about vocational instruction or a step on the way to a higher education may be outdated. It is clear that students want learning to connect to life as they live it locally and *vice*

versa' (p.191). In similar findings, on the motivations for participating in a vocational program for unemployed adults in Ireland, Egan (2008) found a qualification leading to a job rated the highest although motivations related to educational levels, personal ambition and further study were nearly as highly rated. The quantitative and qualitative phases of a study of part-time, mature-aged students in England found a similar range of motivations (Feinstein et al. 2007; Swain & Hammond 2011). The results here and that of past research suggest an intertwining of labour market and educational, personal interest and social factors, particularly for qualifications taken after an initial qualification, even if labour market reasons may be dominant and overarching.

Conclusions

This paper has challenged the view that student motivation, particularly in regard to those undertaking multiple qualifications, can be explained in terms of utilitarian investment decisions, with perhaps some separate and marginal 'consumption' motivations. Survey responses indicate that substantial proportions of all students put forward non-labour market reasons and this is more evident among reasons given for second qualifications. Interviews with students and graduates showed that varied reasons were interrelated rather than separate — many sought interest, systematising of knowledge, creative production, identity with a field of practice and/or a general transformation of life from their study and its interactions with their work.

A number of commentators have called for a broader conception of education and training than that provided by frameworks such as HCT. Fevre and colleagues (1999) caution that a policy turn towards HCT may lead to 'instrumental credentialism' on the part of students rather than a more positive and engaged 'vocational transformative' orientation. Baptiste (2001) argues that any implicit or explicit acceptance of HCT, and of students as fully explainable as value-maximising 'lone wolves', has a range of negative consequences such as assuming education and training alone are able to solve problems of unemployment and exclusions, without regard to problems in the labour market and other social structures. Allais (2011) also sees negative implications, including the assumption that ever more complex modes of quality assurance can make up for a retreat by the state from properly building and sustaining educational institutions, and a pedagogical stance of treating education as a simple reflection of everyday experience rather than as the imparting of broader concepts and deeper knowledge.

Current policy aims to encourage people to train and educate themselves and in particular undertake the pathways that are seen as critical to broadening and deepening participation in tertiary education. It is suggested here that policy and curriculum reflecting a broad view of what people want and need out of education and work is needed.

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Chameleon leaders? The influence of context on leadership in Australian private providers

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Abstract

The current environment of increasing contestability, moves towards a more interconnected tertiary sector and rapid expansion in provider numbers presents leaders of private registered training organisations (RTOs) with opportunities and challenges. This paper analyses leaders' perceptions of the challenges they face and how they adapt to meet them, in order to show how organisational context impacts on their leadership. In-depth interviews were held in situ with 34 personnel in 16 private RTOs (five commercial, six enterprise and five industry) across New South Wales, Victoria and South Australia. The organisations were selected to obtain a broad coverage of different types, particularly in terms of geographical location and types of industry they serve. The leaders exemplified the complex and contextual nature of the work that being a leader in VET entails. Their leadership was shaped by the operating conditions in which their organisations were located, including the state of the business and its position vis-à-vis the competition with other providers. The decisions they made and the way their work unfolded could only be understood within their particular context.

Introduction

Leading private RTOs is a complex phenomenon. We argue in this paper that these leaders need to be chameleons. Chameleons are well-known for their ability to adapt in order to meld into their environments which, among other purposes, helps to protect them against predators. RTO leaders, too, in the current VET context are being continually challenged to change and adapt to their different and competitive environments in order to survive. Policy initiatives such as increasing contestability within the VET sector and moves towards a more interconnected tertiary sector (Bradley 2008; Australian Government 2009), and the rapid expansion in provider numbers, have focused the spotlight on the need for effective leadership within training providers.

Previous research on leaders has identified the tensions and role conflicts they face when expected to work at the interface between the strategic operations and the daily practice of delivering services (for example, Falk & Smith 2003; Mulcahy 2003; Rice 2004; Black 2009; Simons et al. 2009). These 'dual role' difficulties have been especially highlighted in the work of middle managers (Callan et al. 2007; Harris et al. 2008). Research also suggests that strong leadership helps to develop innovation, flexibility and agility within RTOs (Palmieri 2004) and is a key factor in the productivity performance of firms, including their ability to undertake innovation (Green 2009). Yet, despite the importance of leadership, there have been surprisingly few studies on VET leadership, particularly in comparison with the school sector. Furthermore, in what research has been undertaken there have been two pre-occupations: a concentration on *public* providers, and a focus on lists of capabilities and ways to develop them (for example, Callan 2001; Mitchell & Young 2002; Foley & Conole 2003; LH Martin Institute, Australian Council for Educational Research & John Mitchell and Associates 2009; Coates et al. 2010).

This paper therefore argues that a more nuanced understanding of the nature of leadership is required for VET systems to be able to realise policy outcomes desired by governments. The paper analyses leaders' perceptions of the challenges they face and how they adapt to meet them, in order to show how organisational context impacts on their leadership. This research is of significance, with leadership effectiveness considered critical for quality and innovation in tertiary education (Skills Australia 2010).

Research method

The research for this study was qualitative in nature. In-depth interviews were held in situ with 34 personnel at various leadership levels within 16 private RTOs. Five RTOs were commercial (independent, fee-for-service), six were enterprise (embedded, servicing their organisation) and five were industry (industry associations or group training companies, servicing an industry). They were based in New South Wales, Victoria and South Australia. They were selected to obtain a coverage of the three different types, their geographical location and types of industry they serve. Ultimately, we were dependent on which organisations were willing to participate. The transcribed interviews were analysed thematically. Later references to these interviews are indicated in parentheses by type of RTO and interview identity number.

We acknowledge the findings cannot be generalised to all private RTOs. The numbers of organisations and interviews are relatively small, and data were collected in selected sites. Moreover, the findings are based on reported views rather than direct observations of leadership practices.

Findings

The influence of context on the leadership enacted can be fruitfully illustrated through analysis of challenges the leaders face and how they adapt like chameleons in meeting these challenges, not only to survive in their respective environments but also remain competitive vis-à-vis other RTOs. The findings are presented thematically, and then by way of highlighting differences in their leadership across the three types of RTOs.

Shared challenges

Three shared challenges — though not necessarily viewed in the same light — were identified in this study. First, the issue of credibility was significant for all leaders; however, this concern was not just confined to concerns of senior leaders. For leaders 'at the coalface' in organisations or engaged with small businesses, credibility with workers and business owners whose staff were being offered training presented a continuous challenge. Leaders here were required to act as 'boundary riders', working to ensure that trainers and other staff were fully aware of the parameters within which they needed to operate, particularly concerning quality.

Secondly, compliance and VET regulation were perceived as common challenges. Commercial respondents indicated that compliance represented a significant barrier for their operations. They expressed cynicism and disbelief in the capacity of the audit regime to match their expectations for a realistic appraisal of the quality of their services (Commercial, #21, #22). One leader referred to 'the compliance maze of the VET framework' (Commercial, #20), while another highlighted the multiplicity

of rules in the regulatory framework (Commercial, #30). Likewise, respondents from enterprise RTOs did not consider that the rules of the VET regulatory regime aligned well with their situation:

> I think [that an] enterprise RTO in a public service context where we do not offer education to people who are buying education … represents a unique set of complexities, and I do not think the VET regulatory system understands it … and I think they try to apply the same rules to this situation and the fit is not good … I think from a leadership perspective it creates tension that there's no need to. (Enterprise, #28)

An industry respondent did not see compliance per se as an issue; rather, the challenge was where to best locate this function within their organisation as the process of the audit sometimes took them away from concentrating on other leadership functions such as business development. Another aspect was aligning organisational operations with 'AQTF language' (Industry, #14).

The third shared challenge was managing change — change was something to be managed as best as they could, requiring leaders to deal with staff resistance and help staff themselves to manage change:

> I guess most of my leadership is around change … you have to bring the people along with you … and that can be challenging because there can be a lot of entrenched ways of working … so the biggest challenge I think is to get the people to be with you on that journey. (Commercial, #20)

Enterprise leaders grappled with the challenge of handling change in the dynamic economic environment in general and the VET context in particular. This aspect was proclaimed to be 'the crux of the leadership challenge' in an educational setting:

> I think in any educational setting the critical challenge is generally change related. The systems are constantly reforming, reviewing and changing … people don't … like the process of change in general … and to talk to people to negotiate that change process … That is, to me, the crux of the leadership challenge, because that is the thing that creates the most angst with your people, and if your people are in angst, then they find it hard to be focused and to do the job that you want them to do. So that's the critical challenge. (Enterprise, #28)

Leaders also talked of their work as advocates for change in external environments — with VET regulators in arguing for changes to support their businesses or 'selling' changes to training requirements inside the enterprise or to businesses within the industry. Multiple levels of change and competing interests need to be juggled in the cases of enterprise and industry representatives:

> … I think to convince the workforce … to change their minds that this is not a joke, this is a serious thing you are about to participate in … (Enterprise, #8)

> We have an ability to talk to our members and employers on a regular basis … we hold meetings where we … present what we do … A lot of employers didn't understand how we deliver versus the way other RTOs deliver … you've got to change the mentality of the employers … (Industry, #17)

For the following leader in a commercial RTO, being able to bring about a specific change in the operating environment was crucial:

> … it was a big move … We had to do a lot of negotiating and step up to the plate so to speak, in terms of how they perceived us … I had to train staff to represent us … (Commercial, #19)

However, while across all RTOs there were these shared challenges, there were also *particular* challenges more attuned to the operations of different types of RTOs, and which provide insight into the demands and expectations their leaders needed to address in their particular environments.

Challenges for leaders in commercial RTOs

Staffing issues featured as a significant challenge for leaders in commercial RTOs. Finding the right staff with the passion for their roles was paramount, as was recruiting staff who had the right skill mix. These issues reflected the context in which commercial RTOs operated, where the needed skill mix appeared to be somewhat broader and not as tightly wedded to industry expertise as for the other RTOs:

> … we went from a situation where trainers were well trained as adult learners … they could write curriculum, they understood adult learning, and if they had a well-briefed plan, they could get up and train almost anything and do it extremely well. We then moved to a situation where the view was you had to be an expert in the industry to deliver the training stuff … I don't think that's been particularly successful at all, because what you find is a lot of people are experts and can't train … They might have industry knowledge, but the real skill in adult learning is the capacity of the teacher to impart the knowledge …   (Commercial, #30)

Once staff had been recruited, 'growing' staff was also an important leadership challenge, 'providing a space for people to grow, to reach their capacity' (Commercial, #19). Another aspect of staffing was access to administrative support, considered to be critical so that they did not become too tied to administrative tasks, especially managing quality assurance requirements.

Balancing quality with the commercial imperative to run a profitable business was another challenge. Such 'balancing acts' were not viewed as 'either/or' situations but rather the reality that getting both/all parts right was integral to their roles and achieving their objectives — juggling the 'big picture with the details':

> … the balance for us is the commercial imperative, and at the same time looking to deliver a quality product in terms of our training … and dealing with very complex regulatory arrangements.
>   (Commercial, #30)

> … on the one side, you've got to provide a vision of where you're going, you've got to tell the story about that vision … bringing people with you and how you do that; and on the other side … I'm also immersed in the detail, so I think … you get a tension with that, and how you juggle that can be taxing for someone involved in leadership.   (Commercial, #19)

Challenges for leaders in enterprise RTOs

Embedding RTO functions inside a parent enterprise presented unique challenges for these leaders. Communicating the value of the RTO to senior executives and 'ensuring senior management … recognise that we do provide a service, that we do add value to the company' (Enterprise, #6) was a critical function. This required leaders to manage the 'two-way press', which meant marrying sectoral imperatives and organisational imperatives:

> … as an enterprise-based RTO, we're subject to change from two directions, from the VET sector and the regulatory environment and … from the evidence-based, organisational side of it. The organisation is not focused on … the VET sector demands in a regulatory environment; they're focused on what they need as an organisation to deliver services and to respond to their situations …   (Enterprise, #28)

A second unique challenge was managing different expectations about how work was conducted and what training requirements (aligned to qualification outcomes in training packages) demanded of workers, supervisors and trainers. Training practices often challenged the 'hands on' culture of the workplace. This challenge related not only to the way things were done in terms of providing training,

but also to issues such as what was deemed as 'correct' work practices and who held the valued knowledge within the enterprise. In this latter case, experienced workers could see the presence of the RTO staff as a challenge to their perceived place in the workforce as an 'expert', which at times led to passive resistance to trainers' work. Sometimes this challenge was articulated as 'juggling very strong personalities' who had been within the industry for a long time, were passionate about their work, but needed 'steering in the right direction', and this could become 'quite confrontational' (Enterprise, #27).

Challenges for leaders in industry RTOs

Like their commercial counterparts, budgetary constraints and balancing commercial and quality imperatives loomed as significant challenges for industry leaders. The press to deliver value for money to the (usually small) businesses using their services meant that, in some cases, aspects of their business were not 'reaching their potential' (Industry, #24).

A related challenge arose in the management of people; at the heart of this challenge lay the issue of being able to engage staff who had both industry knowledge and credibility as well as the 'head set' for business development. This required the enabling of trainers to be able to effectively use products such as training packages in order to develop training solutions for employers that would result in business for the RTO. It also required, for example, delicate management to ensure that apprentices complete on time in order for the RTO to be able to receive payments (Industry, #14).

In the case where the industry RTO was also operating as a group training organisation, the quality of the apprentices and trainees they could offer their businesses was a concern. Competition amongst industries for workers required leaders to pay considerable attention to their recruitment strategies (Industry, #25). Industry leaders, like their enterprise counterparts, also shared the challenge of changing cultures within the RTO in order that they could then meet the shifting requirements of the particular industry they served:

> … it's really about having influence, it's being able to act on what's right for the organisation, and ultimately what's right … for the industry and ultimately the consumer in those industries …
>
> (Industry, #9)

Meeting the challenges

The critical factors that assisted RTO leaders to meet these challenges were clearly aligned with what they perceived as the objectives to which their leadership should be directed within their particular operational context.

For industry leaders, their leadership centred on engaging their industry with the VET system in a way that assisted businesses within that industry to thrive. This was articulated as 'talking on a regular basis', noting when 'their ears prick up' and explaining how 'they're retaining productivity while we're training them' (Industry, #17). One critical factor was their capability to get 'the right information to the right people' to facilitate engagement with the VET system (Industry, #14). This work included 'breaking down' any perceived barriers, building knowledge of products that VET had to offer businesses and building capacity of RTO staff to perform these activities effectively. A second critical factor was building the trust of industry in RTO activities to ensure that information about training was conveyed as accurately as possible across the organisation and its industry — likened to 'preventing Chinese whispers' (Industry, #33) and paving the groundwork to support what sometimes could be perceived as 'jumping through hoops'. The emphasis here was on high-quality information,

circulated often and well (Industry, #32). A third critical factor was the capacity of RTO leaders to be proactive as far as possible; ability to anticipate the impact of the changing and dynamic compliance environment was linked to ensuring their credibility and effectiveness within the industry.

For commercial leaders, critical factors were primarily aligned with business concerns — particularly capacity to maintain reputation, networks and hence market niche. Sound business models, and attracting and retaining quality staff (Commercial, #23), particularly staff with the capacity to innovate and to help grow the business (Commercial, #34) were crucial. Success was seen as dependent on the development of a model of leadership where educational and business leadership were 'two sides of the same coin' and where leadership was dispersed across the organisation (Commercial, #18).

Like industry leaders, enterprise leaders believed that success lay in ensuring that the enterprise saw value in the RTO and what it could offer in terms of facilitating growth and developing a competitive advantage for the business (Enterprise, #1). Successful RTO leadership was intimately bound up with productivity of the business. Effective communication both 'up and down' the organisation about the RTO was critical to success (Enterprise, #5). Being able to network and influence people in positions where they could have a direct bearing on the operation of the RTO required skills of persuasion and highly developed networks (Enterprise, #4). Another unique success factor was the ability to integrate the learning systems of the RTO into the work structures and processes in such a way that did not hamper productivity (Enterprise, #5). This required capacity to be able to identify key people working in a variety of roles where training was required and then to engage them successfully in the work of providing training to other workers. They needed credibility with the workers whom they were training, as well as capacity to be 'slightly removed' so they could ensure training was commensurate with requirements of the relevant training package and Australian Quality Training Framework (Enterprise, #1). It was also critical that leaders were flexible in their approaches. Leading in training meant also leading in working (Enterprise, #11).

Conclusions

Leaders, like chameleons, are a distinctive and highly specialised species. The leaders in this research illustrate their chameleon-like nature through the ways in which they share similar challenges while also displaying specialist practices which reflect their particular capacities to adapt to the various features of the environment in which they find themselves. In all cases, their enactment of leadership was shaped by the operating conditions of their organisation, including the state of the business and its position vis-à-vis competition with other providers. Leaders' notions of leadership, the decisions they made and the way their work unfolded could only be understood within their particular context.

Just as chameleons have the capacity to 'blend' into their environment, so too do the leaders in this study. The ways they exercised their leadership extended across a range of functions, which coalesced to provide the impetus for an RTO to move in a particular direction. Thus, in the case of the industry and enterprise RTOs, leadership was not directly driven by outcomes for individual learners — these tended to be a by-product of enhancing enterprise productivity. With commercial RTOs, outcomes for learners were more central to their concerns, though connections with their market niches also remained in sharp focus.

The work of the leaders showed that leadership in RTOs is multidirectional, with the nature and extent of their actions largely being shaped by their understanding of structures and cultures of the organisation. These actions mimicked the behaviour of chameleons who are able to change colour and,

in doing so, send 'social signals' to their colleagues which reflect their intentions. Commercial leadership often concentrated in a small team, such that 'upwards' leadership was far less evident, whereas leadership actions to enhance 'outward' engagement with stakeholders featured highly. Enterprise leaders worked 'up', sending signals to senior executives about the value of the RTO to their business. They worked 'across' to embed training within work structures of the organisation and to influence other middle managers to engage and support the training function. They also worked 'down' in the sense that, as part of the workforce, they were fully aware that their role as workers could influence other workers' perceptions of the value of training. Industry leaders functioned in a similar fashion except that their domain was an industry. Being 'one step removed', and operating across a range of businesses, required these leaders to send signals which reflected the importance of a broader perspective (interests of the industry) as well as a specialist focus (this business, at this time).

Expressed another way, leadership within these RTOs can be viewed as distributed in two senses — across people (not exercised by one person alone) and across functions (with both business and pedagogic dimensions). As chameleons blend into their environment, so too do leaders because their leadership is distributed. While some aspects of leadership are undoubtedly based on personal traits and capabilities, interview data suggest that leadership can be viewed as a practice situated within organisations that exists at a range of levels, and is supported by a culture focused on quality outcomes for defined markets, enterprises, industries and learners. Effective leaders, like chameleons, can be seen when needed, but also know how to survive in their contexts by giving the right messages as and when they are needed.

The implication springing from these understandings of leadership is significant. While not negating the importance of the individual capacities of those people who hold leadership positions, this research directs attention to the understanding of structures and cultures (i.e. context) as key enabling conditions to support the exercising of effective leadership. This research thus highlights the need for a revised notion of VET leadership which adopts the perspective of the organisation, its work and the actions of individuals from *across* the organisation. These need to be considered as key elements in leadership directed towards achieving VET goals for the organisation. This expansive and nuanced understanding of leadership has the potential to be more attuned to the contemporary VET sector as it positions itself within a more interconnected tertiary education system in Australia.

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Life after qualification: the CPD needs of UK and Australian VET teachers

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Abstract

This paper examines two cohorts of teachers at an Australian TAFE organisation and a Welsh Further Education College and explored what sort of continuing professional development (CPD) experienced practitioners undertook and what, if any, barriers there were to participation.

The paper concludes that while there are clearly qualification frameworks in place, experienced practitioners (defined here as having six or more years' experience) report problems in accessing them effectively.

The study showed that experienced practitioners are qualified to a high standard although incidence of Master's level qualifications was not as high as anticipated in either cohort.

Introduction

This study looked at how CPD was used by VET professionals in the United Kingdom and Australia using a small sample of teachers working in two similar settings. A convenience sampling technique was used with a link to an online questionnaire distributed to two cohorts of roughly equal size. It is not possible to generalise from this sample; however, it does provide a useful basis from which to undertake a more detailed investigation.

Participants in the study were asked what sort of CPD they undertook, whether or not it was self-selected and to what extent it was linked to accreditation. Participants were also asked how they saw CPD in relation to career development.

From an analysis of the responses this paper will argue that, while a sizeable number of teachers in the sample are well qualified, there does not appear to be as much evidence of accreditation at higher levels as might be expected amongst experienced practitioners.

For teachers who have already qualified, the ongoing requirements to maintain currency of knowledge as well as approaches to practice are of significant importance and also, for many, represent a significant challenge. Organisations such as the Institute for Learning in the United Kingdom and the Australian College of Educators in Australia offer a framework for continuing professional development. Many higher education institutions in both countries offer progression routes covering a range from undergraduate all the way up to professional doctorate or PhD.

While benchmark qualifications ensure minimum standards of entry into the profession, a number of studies (Barlow 2007; Simons et al. 2009; Williams 2010) in Australia and similar research in the United Kingdom (Orr 2009) have shown that there are often significant variations in the range of CPD activities undertaken post-qualification.

The three broad categories of CPD activity identified by Barlow (2007) were used as a starting point in examining how staff used CPD to support either their continuing professional practice as teachers, their wider understanding of change in the sector or the need to assimilate new working practices within the institutions where they were employed.

The paper will summarise the feedback from respondents and evaluate the extent to which consistent patterns of CPD requirements emerge as teachers develop in their careers and identify areas for further investigation.

Findings and discussion

The findings need to be viewed as preliminary and this should be seen as an initial investigation. The intention is to follow this up by conducting a more detailed study on a smaller subsection of the cohort.

Given the small size of the sample, as previously stated, no attempt has been made to make generalised statements about the wider teaching workforce. It should be briefly noted that the population from which the sample data were drawn consisted of two colleges with broadly similar numbers of teaching staff.

The population size of the UK college was approximately 539 teaching staff. The Australian college had a population of 474 teaching staff. The response rates were 15% and 5% respectively. Clearly the sample size and response rates are not large enough for any quantitative analysis; however, it is still possible to make some general observations about the findings which are useful in identifying areas for further research.

Both samples showed similarities to national trends in terms of age and gender, as suggested by workforce data.

The main focus of the questionnaire was on continuing professional development. The requirement to undertake CPD appears to be firmly embedded in both countries with 80% of both samples reporting that they were required to undertake some sort of CPD by their employer.

One particular area of interest was the changing nature of CPD throughout the career of a VET teacher. Respondents were asked how long they had been working in VET and how long they took to qualify, as well as what sort of ongoing CPD they were currently undertaking.

Overwhelmingly, in both samples, more than 80% of respondents indicated that they had been working in VET for six years or more, a fact that is reflected in an earlier question which asked about age. For UK respondents 37% identified themselves as over 50 whereas for Australia the figure was even higher at 64%.

From the preceding data it might therefore be reasonable to expect respondents in the sample to hold a consistently high level of qualifications, which to an extent was true. For the question which asked to identify the highest qualification held, respondents were given an open response rather than a tick list to allow for the huge possible range of qualifications.

For respondents with more than six years' work experience, 59% of the Australian sample and 50% of the UK sample reported that their highest qualification was at undergraduate level. For postgraduate level (including PhD) the Australian cohort recorded 29% and the UK sample 23%.

This particular finding goes to the heart of the purpose of the study which was, in part, to see to what extent VET professionals access a formal tier of qualifications rather than more ad hoc and perhaps uncertified CPD opportunities.

Allied to this previous point was a question which asked whether or not respondents were currently undertaking study leading to a qualification. In looking at the responses the analysis focused again on candidates with six or more years' experience and only on those undertaking postgraduate study, on the basis that all those in this category for both cohorts already held undergraduate qualifications. The data from this question, at 12% for the UK and 5% for Australia, show clearly that uptake of postgraduate qualifications amongst VET professionals is not high, given that an earlier question already identified that the numbers of VET staff holding postgraduate qualifications has some way to go to pass 50% in either cohort.

A supplementary question asked respondents how many hours of CPD a year they were required to undertake and here the responses varied somewhat. For the UK sample there appears to be an institutional requirement in place to undertake 30 hours of CPD per year as a minimum which would be in line with current guidelines from the Institute for Learning, a professional body of which many UK TAFE teachers are members. This response however was not universal, with some respondents suggesting that this requirement was an aspiration rather than an expectation while others appeared unsure.

For the Australian cohort of respondents the picture was a little more mixed to the extent that it was hard to summarise in any meaningful fashion. The most frequently repeated response was that there was a requirement to complete a minimum of 30 hours of CPD per year, although other responses suggested that this figure was higher, with one respondent suggesting a requirement of 80 hours per year. This response would need to be compared with official policy in this area.

An additional question asked if respondents were required by any subject associations or professional bodies to undertake CPD and for both cohorts the response was almost overwhelmingly 'no' or else no response was recorded. The one exception to this was within the UK cohort where two respondents indicated that they were required to undertake 30 hours of CPD, suggesting that they were members of the Institute for Learning, which has this as a requirement in order to maintain membership.

Looking at the two sets of responses for this question together, the impression is that CPD is required but is not seen as mandatory by many teaching staff in both the Australian and UK cohort, a view which is slightly contradicted by a later question which asked what the motivation was to undertake CPD where 37% (UK) and 58% (Australia) of respondents indicated that CPD was required by their employer.

A further question asked about barriers to undertaking CPD and this goes some way towards reconciling the differing responses discussed above. For this question respondents were asked to indicate, using a Likert scale, which of the following reasons acted as barriers to undertaking CPD — lack of time, no-one available to cover your work, cost, personal circumstances and lack of access to appropriate or relevant courses. As expected for both groups the first two categories were the ones most frequently selected with very few people citing personal circumstances as a barrier to undertaking CPD.

It is also perhaps pertinent to note that 17% (Australia) and 20% (UK) of respondents indicated that a lack of appropriate or relevant courses often presented a barrier. When this is compared with another question, which asked what motivated staff to undertake CPD, it becomes clear that, while some respondents rated a requirement by their employer as a motivating factor, the far higher rating was

personal interest (85% Australia, 90% UK) with career development ranking second in terms of responses. It should be noted that for the question on motivation respondents could select one or all of the categories rather than just a single category. Therefore,, the percentages are of the total possible in each category rather than the total for the question, hence the higher scores than for other questions.

This leads on to the final area that the questionnaire explored which was the sort of CPD activity that the two sample groups undertook. For this question the categories suggested by Barlow (2007) were used as a starting point with an additional option for free-text responses.

The questionnaire asked respondents what sort of CPD they had undertaken over the past 12 months and then followed this up by asking what sort of CPD had been offered by their organisation. Institutionally provided updates on policies and procedures ranked highest for the UK cohort with professional updating (self-directed) ranking second.

For the Australian cohort the responses in these two areas were reversed with professional updating ranking highest. One of the options was 'professional development relating to learning and teaching' and for this response there was a marked difference between the two samples, with the Australian cohort ranking this quite highly with 63% of the cohort selecting it as opposed to 28% for the UK cohort. This response was one of the few where there was a noticeable difference between the two cohorts suggesting perhaps that for the UK cohort, institutional CPD has more emphasis on areas not directly associated with learning and teaching.

Conclusions

Having briefly explored the data that formed the two samples there are a number of conclusions that can be drawn about the different approaches taken in the two countries. As this was intended to be a small-scale pilot study it is not going to be possible to make generalised statements about the two education sectors on the basis of such a small sample; however, a number of interesting features of continuing professional development emerge from this study.

Among the implications of this study is that there is clearly plenty of scope for even experienced teachers to gain additional qualifications given that the numbers reporting possession of higher degrees or PhDs was lower than expected.

Some reasons for not accessing CPD were examined which tend to suggest that the unit size and accessibility of qualifications is an aspect of provision that still needs addressing. A further consideration is the extent to which institutionally provided CPD does not always seem to link in to a credit-bearing framework.

Responses also suggested that professional development related to learning and teaching rates far more highly in Australia than in the UK and this is an area that needs to be explored in more detail. There are clearly very few perceived barriers to undertaking CPD in both organisations although what also emerges is that greater tailoring of opportunities to suit the needs of teaching staff is an issue for some of the respondents from both organisations.

As an initial comparative study the data generated has shown that both the UK and Australia have very similar cohorts of staff working in the TAFE sector. Where differences do occur they are not pronounced, which is encouraging for future research as it means that international comparative studies can be undertaken with a degree of confidence about the similarity of the samples.

The next stage in this research cycle would be to interview a smaller sub-sample from each organisation and investigate in more detail what sort of CPD is seen as a priority with a particular focus on how approaches to learning and teaching are developed.

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VET pathways in Tasmania: collaborating for successful participation

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Abstract

The imperative to increase pathways from vocational education and training (VET) to higher education is clear in Tasmania, where it is recognised that the development of effective education and training pathways is critical for workforce development and retention in skill areas of identified need. In Tasmania, like other rural and regional areas in Australia, students are more likely to have lower socioeconomic status than those living in mainland metropolitan areas and less likely to move to higher education directly from school: also more likely to articulate to university from vocational education and training. However, the level of post-compulsory participation in the state is low, with approximately 40% of the age cohort completing Year 12 and fewer students completing either higher-level VET qualifications or entering university. The barriers to participation and pathways are significant.

This paper reports on the outcomes of a study of the pathways of students admitted to the University of Tasmania (UTAS) on the basis of previous VET, over a period of 7.5 years, from 2004 to semester one 2011. The study used a mixed-methods approach combining statistics collected from admission and enrolment data from UTAS and completion data from the VET sector (Tasmanian TAFE and subsequently the Tasmanian Polytechnic and Tasmanian Skills Institute) from 2003–2010, with qualitative data from a sample of current UTAS and current Tasmanian Polytechnic/Tasmanian Skills Institute students. Sources of qualitative data were focus group and individual interviews with a sample of current UTAS students (Human Research Ethics Committee [Tasmania] Network, approval no. H11280) and open-ended questionnaires completed by a sample of current Tasmanian Polytechnic/Tasmanian Skills Institute students.

Examination of the student experience, effective pathways and lessons learnt nationally gives educators in Tasmania some strong guidance for collaboration in delivering the desired outcome of greater and more successful participation in Tasmania.

Introduction

Education is a key determinant of socioeconomic status and a significant contributor to regional development. Those with lower standards of education fall behind in a range of key areas including income, employment, health and democratic participation. This is highlighted for those living in regional Australia who are more likely to have lower socioeconomic status than those living in metropolitan areas (Cram 2010).

This is particularly the case in Tasmania, which consistently ranks at or near the bottom on a range of socioeconomic indicators; for example, a higher proportion of Tasmanian census collection districts are included in the most disadvantaged 5% of all census collection districts than the other Australian

states on the ABS Socio-Economic Indexes for Areas (SEIFA) Index of Relative Disadvantage (Australian Bureau of Statistics 2006). Here, low educational attainment becomes a central component in a cycle of disadvantage.

By lagging behind the other states in terms of educational retention, participation and attainment, Tasmanians also lag behind in the benefits afforded by tertiary education. According to the 2006 Census approximately 54% of the Tasmanian population had only completed Year 10 or below. Despite significant improvements since 1998, in 2008 Tasmania still remained around seven percentage points behind the national average in terms of Year 7/8 to Year 12 retention (Australian average: 62%, Tasmania: 55%). Low levels of participation in the higher-level VET qualifications — under 60% of the age cohort completing Year 12, and only 40% of those eligible entering university — are indications that the barriers faced are significant.

The Tasmanian Articulation and Credit Transfer Committee (TASACT) was established in 2007 as a partnership between the then Institute of TAFE Tasmania, the Tasmanian Education Department, the Tasmanian Qualifications Authority, Skills Tasmania and the University of Tasmania in order to provide high-level institutional and sectoral leadership. It was recognised that pathways between the educational sectors were critical for workforce development in skill areas of identified need and indeed for the regional development of the state.

The 'Double Advantage' Program at UTAS includes a number of courses which offer varying levels of credit transfer from VET to some degree programs. However, little was known about the success of the program, the pathways or longitudinal outcomes of VET students articulating to university.

It was in this context that TASACT supported a research study into the articulation and performance at UTAS of VET articulants, some of the outcomes of which are reported in this paper.

The study examines the pathways and success of students admitted to the University of Tasmania on the basis of previous VET, over a period of 7.5 years, from 2004 to semester one 2011. The study used a mixed-methods approach, combining statistics collected from admission and enrolment data from UTAS and completion data from the VET sector (Tasmanian TAFE and subsequently the Tasmanian Polytechnic and Tasmanian Skills Institute) from 2003–2010, with qualitative data from a sample of current UTAS and current Tasmanian Polytechnic/Tasmanian Skills Institute students. Sources of qualitative data were focus group and individual interviews with a sample of current UTAS students (HREC, approval no. H11280) and open-ended questionnaires completed by a sample of current Tasmanian Polytechnic/Tasmanian Skills Institute students.

Statistics were collected from admission and enrolment data for 19 584 students from UTAS for the period 2004 to semester one 2011. The sample comprised a total of 1902 students who were admitted to UTAS on the basis of previous VET diploma and advanced diploma, and a statistically representative random sample of students from other groups — mature-age/other (4381), previous higher education (5146), Tasmanian Year 12 (7434), interstate Year 12 (721). These data were analysed with the aid of SPSS software. Completion data were also collected from the public VET sector for the period 2003 to 2010.

Sources of qualitative data were focus group and individual interviews with a sample of 24 current UTAS students, who were admitted on the basis of previous VET diploma or advanced diploma, to gain an insight into their personal experiences of VET pathways and open-ended questionnaires completed by a sample of current Tasmanian Polytechnic/Tasmanian Skills Institute students to gain an insight into

their future intentions regarding higher education and factors that would make this pathway work successfully.

The study was limited by the need to use available statistical information and enrolment data, rather than data collected specifically for the purposes of the research. Data on the individual students' socioeconomic status for the entire study period or previous VET field of study were not available in retained administrative records. The final study report (Langworthy, Johns & Humphries 2011) is published on the UTAS website.

Findings and discussion

Student characteristics, participation and performance

Overall, the numbers of students enrolling at UTAS with a reported VET background have increased steadily from 2004; although the overall percentage remains around 11% of all enrolling students. The number of students articulating with a diploma or advanced diploma and identified for the purposes of this study has also increased. These students are not an homogenous group; some had completed their study many years ago while others had more recent experience; some were following a direct pathway from VET to higher education while others were pursuing a career change through higher education.

In general these students were:

- older than all other student population groups (mean age of 34 compared with previous higher education [32], mature-age/other [27], Tasmanian Year 12 [20], interstate Year 12 [20])

- more likely to be female

- more likely to enrol in education, management and commerce, society and culture, and health (table 1)

- less likely to enrol in agriculture, environmental and related studies, and architecture and building (table 1)

- more likely to be granted credit in management and commerce, information technology and education (table 1)   Langworthy, Johns & Humphries 2011, p.18.

Gender, age and study area characteristics of students admitted to UTAS on the basis of previous VET study are similar to those of regional higher education students in general, where there are fewer students enrolling in areas of regional need, natural and physical sciences, engineering and related technologies, agriculture environmental and related studies, for example (Richardson & Friedman 2011).

Table 1:   Number of VET student enrolments by study area and credit granted

Enrolment study area	Credit granted		
	No	Yes	Total
Education	237 (*59%*)	68 (*41%*)	405 (*100%*)
Management and commerce	126 (*34%*)	240 (*66%*)	366 (*100%*)
Society and culture	266 (*79%*)	71 (*21%*)	337 (*100%*)
Health	257 (*99%*)	3 (*1%*)	260 (*100%*)
Creative arts	110 (*71%*)	45 (*29%*)	155 (*100%*)
Engineering and related technologies	106 (*76%*)	33 (*24%*)	139 (*100%*)
Natural and physical sciences	90 (*98%*)	2 (*2%*)	92 (*100%*)
Information technology	42 (*48%*)	46 (*52%*)	88 (*100%*)
Agriculture, environmental and related studies	28 (*88%*)	4 (*12%*)	32 (*100%*)
Architecture and building	25 (*89%*)	3 (*11%*)	28 (*100%*)
Total	**1287**	**615**	**1902**

Source: King & colleagues, as cited in Friedman 2012.

One-third of all students admitted to UTAS on the basis of previous VET were granted credit upon commencement of their degree. While no data were available regarding students who may have applied for credit but were refused, qualitative data suggested there were a number of reasons why credit had not been sought, including lack of awareness or the complexity of the credit transfer process; completion of VET in an unrelated area (wool classing to nursing, for example); and the time spent away from study since completing VET. Other research also links low rates of credit transfer to lack of formal articulation arrangements (Cram 2011) or change of field of study (Fredman 2012). Some students said they decided not to apply for credit even when they were advised they were entitled, for fear of missing foundational information and concepts if they did not complete the whole course. This suggests that confidence in credit transfer needs to be increased, requiring greater collaboration between VET and higher education to map curriculum and identify equivalence (Cram 2011).

The higher levels of articulation and credit transfer in management and commerce, and education are consistent with the findings of other research, which suggests that the pathways are strongest where there is strong industry alignment or regulatory drivers (for example, Fredman 2012). The increased accreditation required for employment in the early childhood area for example explains the level of articulation in education but the apparently strong pathway from enrolled nurse to registered nurse is not reflected in the UTAS data. This perhaps can be partially explained by university course quotas. In common with experience Australia-wide where there appears to be misalignment between the VET and higher education programs in engineering (King and colleagues as cited in Fredman, 2012), there is little articulation at UTAS despite apparently strong industry demand.

Where there were formal articulation arrangements (for example, community services/social work, management and commerce, education) current UTAS and current VET students who participated in focus groups and surveys indicated a fairly high level of awareness of credit transfer. Students in areas where there were no formal articulation arrangements or less well established pathways (for example, VET courses in commercial cookery, and electrotechnology) had little awareness of further education and training options.

Figure 1 shows that completion rates for students admitted to UTAS on the basis of previous VET are similar to those across all other student populations.

Figure 1: Overall completion rates for VET versus all other student populations
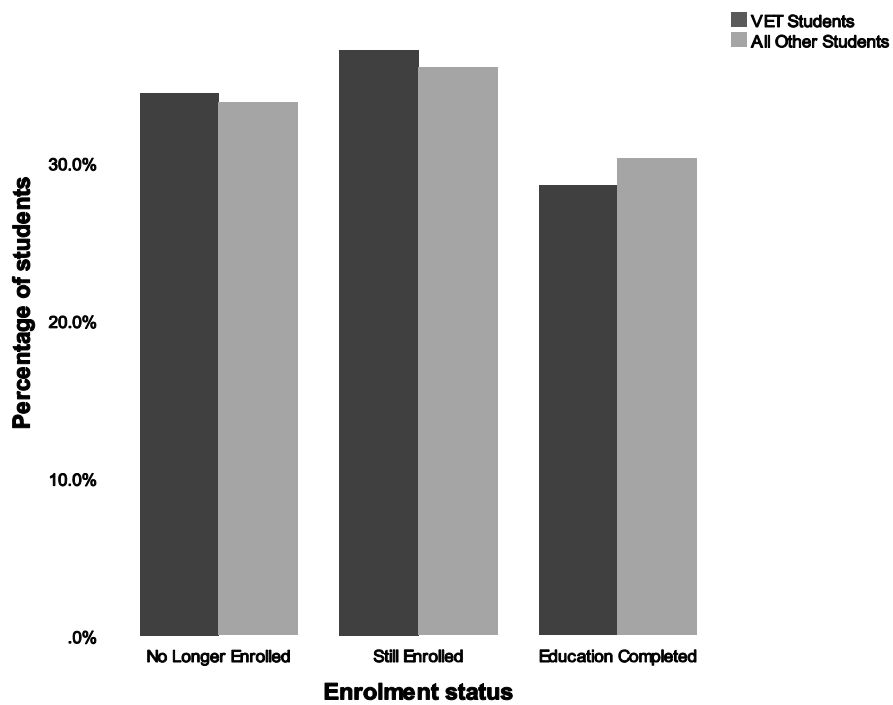
Source: Langworthy, Johns & Humphries 2011, p.27.

Figure 2 shows that students admitted to UTAS on the basis of previous VET performed as well if not better than the student population on average. On completion of their degree, there was little to no difference in grade point average (GPA) between these students, Tasmanian Year 12 and mature-age/other students. On average, the GPA of the VET-admitted students was between 0.3 and 0.5 higher than previous higher education students, and between 0.2 and 0.6 higher than interstate Year 12 students, which represents statistically significant differences at the 95% level as the confidence intervals do not overlap. This supports findings from earlier UTAS research (Abbott-Chapman 2006) and other research (PhillipsKPA 2006) on the academic performance of VET students.

Figure 2: GPA on course completion by student population
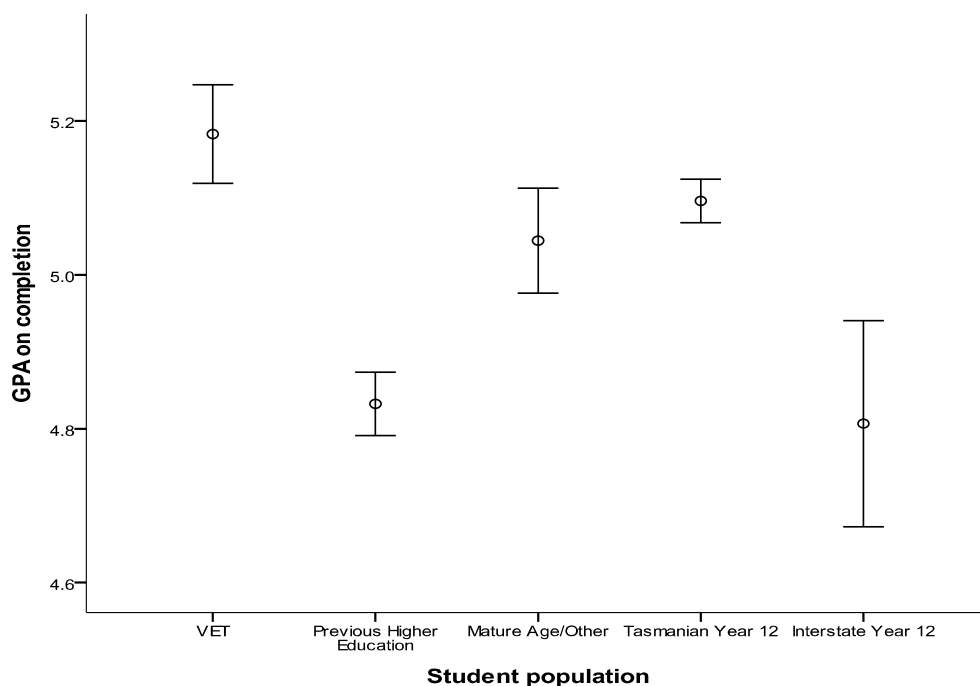
Source: Langworthy, Johns & Humphries 2011, p.33.

The student perspective

Most of the students interviewed who had been admitted to UTAS on the basis of previous VET, had made a deliberate choice to enter VET from school. They were motivated by career and vocational aspiration and had gained confidence from their VET experience and, in many cases, from their VET teachers, that enabled them to make the transition to university. Their personal motivation and performance at university was strongly linked to their satisfaction with their university experience; they had high expectations of themselves, and had the capacity and desire to do well:

> I think because of what I've done in the past I should be doing well.
>
> (Female Bachelor of Nursing student)

Several students who did not have a family background of further education were keenly aware that they were role models for future generations:

> … so I would be the first one … hey that's another reason to graduate isn't it?
>
> (Female Bachelor of Business student)

Satisfaction was linked to different factors for different students, including effective transition strategies and supports; the ability to maintain work/life/study balance; having a supportive family or workplace; the culture and practices of the particular school in which they were enrolled; adequacy and timeliness of information, instruction and feedback received, and length of time they had been at university. Most acknowledged that things became easier the longer they spent at university:

> I enrolled in UPP [University Preparation Program — an enabling program] and did six months. It was excellent, particularly the maths course, and I got distinctions, and it prepared me well for University study … I am nearly finished my Nursing degree now, and have been getting good marks. University was not as hard as I thought.   (Male Bachelor of Nursing student)

Surviving the first few months and getting over the 'fear factor' was most important:

> … they probably mentioned UniStart [orientation program] and UPP [enabling program] but I didn't take it in [at the time] because I was full of anxiety and fear.
>
> (Male Bachelor of Social Work student)

A common theme that emerged from current UTAS and current VET students was the need for earlier provision of a bridging program to assist in the transition from VET to higher education. The program would need to start before entry to higher education, while students were still at their VET institutions. Several students suggested that the program should be co-delivered by VET and UTAS staff utilising the facilities of both institutions.

Interview and online survey data report that the granting of credit was only one of a number of factors that influenced the decision to continue with higher education. For some students, receiving credit was seen as a bonus. Similarly, very few of the current VET students enrolled at the Tasmanian Polytechnic/Tasmanian Skills Institute identified the availability of credit transfer as a factor that would encourage them to continue to higher education.

Aside from the issue of credit transfer, a number of students reported that previous VET study offered a range of benefits in the transition to university, even if VET was in an unrelated area or if it was undertaken some years ago. Benefits were identified as increased confidence in their ability to undertake post-compulsory study, skills to cope with and adapt to university study, specific study skills (for example, public speaking, advanced writing skills), and a more general sense of giving students a head start at university. These benefits were particularly important for more than half the students interviewed, who had no family history of higher education:

> I wouldn't have gone to university without it … because I'd been out of schooling for a long time … I didn't have anybody as a mentor … which was what I was provided with through TAFE … [TAFE] gave me confidence, and also learning time management and what was going to be required.
>
> (Female Bachelor of Arts student)

Some of the current VET students enrolled at the Tasmanian Polytechnic/Tasmanian Skills Institute not intending to study at university expressed negative views about university; costs were an issue for some and for others time, perceptions of university teaching and lack of connection with industry were strong disincentives.

However, most current VET students agreed that participation in VET had changed their attitudes to further study in a positive way, although only around one-third thought they would continue with higher-level VET and/or university study. They noted that '[study is] not as scary as I first thought' (female Certificate III Education Support student) and '[VET] made it clearer how the pathway to university studies was laid out' (male Diploma of Enrolled Nursing student).

Conclusions

The study has demonstrated to TASACT that, even after five years, the partnership still has a long way to go fulfil its brief to maximise credit transfer and articulation arrangements between the sectors. Use of direct pathways is limited and, while pathways to identified priority areas exist, they are more effective for some priority areas than others.

There is some evidence from students who had completed a community services VET course that they were encouraged to follow a pathway to higher education by their VET teacher. Even where well-defined pathways from VET to university existed, students needed to be encouraged and supported to

follow these pathways, indicating the need for an enhanced role for VET and university staff, along with family and friends.

There is also evidence that VET does provide benefits to the student in subsequent higher education studies — in confidence, skill and sometimes motivation and guidance. The students in the study performed as well if not better than the other student comparison groups and demonstrated similar completion rates. They also gave us some strong clues to bridging the gap between the sectors for future students.

Long-term pathway effectiveness is compromised when pathways are not embedded at a systemic level, and are dependent on the cooperation of individuals or groups who may change. The variation in levels of participation and credit transfer indicate that embedding the cooperation at a systematic level is still an aspiration.

The study reveals promising signs that the VET pathways can increase participation and therefore social inclusion. However, this will require continued collaboration between the sectors and with industry to increase participation in existing pathways, create new pathways and create student transition strategies. Although the journey has begun, there is still some distance to go.

Acknowledgment

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'Way beyond my realm': using educational pathways to build confidence and capacity

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Abstract

Based on data collected from interviews with students and graduates for the NCVER project 'Vocations: the link between post-compulsory education and the labour market', this paper examines how students use educational pathways to build their confidence, capacity and opportunities.

Most of the 31 students interviewed said they wanted to study higher-level qualifications linked to their desired career. Students with poor experience of secondary school education and students who have been out of the education system for many years reported that studying at a lower level allows them to 'warm up' before tackling diplomas and degrees. Interviews for the vocations project reveal powerful stories of transformation and students' strong aspirations. However, there appears to be a gap between intentions and the outcomes students are able to achieve. Although most students say they want to complete their program, very few do (National Centre for Vocational Education Research 2011). Implications for the way pathways are conceptualised are considered.

Introduction

Pathways are increasingly important in Australian education policy and practice. They are a central component of government education and employment policies at the state and national levels. It is assumed that the availability of effective pathways from vocational education and training to higher education will result in a more highly educated Australian population. The value placed on pathways is also reflected at the level of educational institutions. Most tertiary institutions routinely describe the potential employment destinations for each of their courses. Many also map the pathways leading into or progressing from each course, specifying any credit transfer arrangements.

Although considerable progress has been made, concerns about the effectiveness of pathways remain. The educational and occupational outcomes of VET in Schools and lower-level VET qualifications are poor (Polesel 2008). Pathways between VET and higher education are weak (Wheelahan 2010; Wheelahan, Moodie & Buchanan forthcoming). The links between educational and occupational progression are limited (Moodie forthcoming).

Evidence that the promise of pathways is not being realised prompted the establishment of a major NCVER-funded project: 'Vocations: the link between post-compulsory education and the labour market'. This three-year project is investigating the nature of pathways with the aim of improving flows within education, the connections between education and employment, and skills development in work. The project has three strands. The first strand, 'Entry to vocations', examines occupational and further study outcomes for entry-level VET (VET in Schools and certificates I and II). The second strand, 'The role of educational institutions in fostering vocations' considers occupational outcomes and educational pathways within tertiary education. The third strand, 'The nature of vocations today'

focuses on vocational pathways. Each of the three strands examines the same four fields of study: the finance industry, primary industry, health and electrical trades/engineering.

For the first stage of strand 2 of the vocations project, data were collected using a mixed-methods design. This involved the quantitative analysis of student flows between and within sectors and broad fields of education and the qualitative analysis of 72 interviews. The research team interviewed 31 students, seven graduates, 13 non-teaching staff, 17 teachers and four international experts. The Australian interviews involved staff, students and graduates from six institutions: one dual-sector university, two non-dual-sector universities and three TAFE institutes, one of which offers higher education programs (Wheelahan et al. forthcoming).

In this paper I draw on data from the first stage of strand 2 to examine how students use educational pathways to build their confidence, capacity and opportunities. Powerful stories of transformation and students' strong aspirations were revealed in the interviews with students, graduates and staff. However, analysis of the quantitative data suggests a gap between intentions of students and the outcomes they are able to achieve. I consider the implications for the way pathways are conceptualised.

In the next section I touch on the policy context, questioning the assumptions underpinning the Australian Government's use of education to achieve economic and social goals. This is followed by a discussion of the term 'pathways'. Then I turn to the interview data, discussing the ways students use pathways to create opportunities and build their confidence and capacity. In the section following I consider the gap between ambition and reality before considering how the issues may be addressed by reconceptualising pathways.

Findings and discussion

The policy context

Pathways are important because they are considered to play a significant role in Australian economic and social policy. The Australian Government is seeking to improve productivity rates, innovation and social inclusion by building a more highly educated population. Its aim is threefold. First, to increase the proportion of the Australian population who hold VET or higher education qualifications; second, to increase the level of qualifications; and third, to increase the level of qualifications held by people from low socioeconomic status backgrounds. The Australian Government has a 10-year educational reform agenda designed to achieve targets in educational achievement and participation rates. Pathways are understood to provide Australians with opportunities to continually upgrade their knowledge and skills. This is why improving pathways through tertiary education is such a central part of the Australian Government's reform agenda (Australian Government 2009).

Government policy is based on a number of assumptions about the benefits from both increasing the proportion of the population with a tertiary qualification and raising the level of qualifications. It is assumed that a more-educated workforce will be more productive, their workplaces more innovative, and that higher levels of education will facilitate greater social inclusion (Wheelahan, Moodie & Buchanan forthcoming, p.9). However, a number of other factors need to be considered. These include the nature of the education, the structure of the labour market and the link between educational and occupational progression. Furthermore, education and employment systems do not exist in a vacuum. They are shaped by social, political and economic structures. For example,

increasing educational achievement may not significantly improve social inclusion in a society where inequalities are entrenched (for example, Wilkinson & Pickett 2009).

Part of the seductive promise of pathways is the idea that an individual may start in a low-level position but through access to education and training they will progress to a highly skilled job. However, analysis of the study and employment histories of more than 6000 individuals over nine years reveals little mobility from low-skilled to high-skilled occupations. Instead the Australian labour market is characterised by stasis and occupational segregation (Yu et al. forthcoming).

Although educational and employment pathways are weaker than we anticipated they can still make a difference to individuals. Before turning to the stories of the students, graduates and teachers interviewed for the vocations project, I will briefly consider what is meant by 'pathways'.

What is a pathway?

The term 'pathways' is used widely in the education sector but it may be used to mean a number of different things. Pathways may describe individuals' career path or history of jobs (occupational pathways), the string of courses an individual undertakes (educational pathways), or trajectories through education and employment. Educational pathways may be formally negotiated, individually negotiated or ad hoc. Some educational pathways include credit. Others simply indicate a progression with the source course providing the foundations for study at the next level (access pathways). Pathways (access or credit) may include a guaranteed place in the destination course. This is not common and guaranteed places are usually conditional on achievement of a particular grade point average (Wheelahan et al. forthcoming).

The students and graduates interviewed for the vocations project were familiar with the concept of pathways. In part, their level of awareness of pathways reflected the experience of these students, the majority of whom had studied in more than one course.[5] However awareness is also a result of the emphasis on pathways in course brochures and in the advice provided by teachers. The staff interviewees strongly supported pathways and in a number of cases their own trajectories illustrated the possibilities of progression to higher-level positions. Participants in the interviews described pathways as important because they provide opportunities for: early school leavers, the unemployed, women re-entering the workforce after having children, those seeking to change jobs, and school leavers who did not achieve the score they needed for their chosen program. Staff interviewees also identified two other benefits, pointing out that pathways provide a feeder into higher-level courses and can help address skills shortages.

The understanding of pathways that emerges from this project is influenced by the situation of interview participants. They were all contacted through the educational institutions where they studied or were employed or from where they had recently graduated. Interviews with employers and employees in the industry areas covered may well result in a greater emphasis on skills development. These types of vocational pathways are being examined in more detail in the third strand of the vocations project.

Second chance

Central to the general understanding revealed by interviewees is the idea that pathways provide a second chance to a number of different groups of students. They offer a second chance to those who

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[5] Because we were examining the operation of pathways we sought to speak to students who had studied more than one course.

left school before completing a senior secondary certificate. Early school leavers often had poor experiences of schools education. Starting with a lower-level TAFE qualification, where there is a high level of support from the teachers, can enable students to re-engage with education.

Pathways may also provide a second chance to those who wish to change careers. Two of the nursing students had initially trained and worked as motor mechanics. A life threatening illness inspired one student to change direction. The other had wanted to move into nursing for a long time but waited until his children were older when he could afford to reduce his income and prioritise study. Some women seeking to return to work after having children, retrain to improve their employability or open up new opportunities.

For other students, the second chance is in the form of a stepping stone to a desired destination. The four interviewees studying in engineering associate degrees had chosen their course because of the pathway into the higher education degree. They reported that they were unable to enter directly into the full degree because they did not achieve high enough marks in their senior school certificate or because they did not meet the maths prerequisite for entry into an engineering baccalaureate degree. Interestingly, however, the maths prerequisites specified on the institution's website are the same for the associate degree and the baccalaureate degree. It is not clear whether the students misunderstood the situation or whether the maths entry requirements for the associate degrees are less rigidly enforced. The engineering students interviewed had also the option of entering an advanced diploma of engineering, which is at the same Australian Qualifications Framework level but has less stringent entry requirements than the equivalent associate degree. However the students we interviewed indicated that the associate degree provided a much stronger pathway into the four-year degree.

Another young student interviewed for the project left school with the ambition of entering a specific health profession. She was unable to obtain a place in the relevant degree on the basis of her Year 12 results. At the time of the interview she had almost completed a Certificate III in Aged Care and was intending to study at progressively higher levels until she reached her goal.

Building confidence and capacity

Pathways are seen to be effective because they allow students to build the confidence and capacity to study at a higher level. A student in a diploma-level course had wanted to do the degree in the same area. However, she said that when she was 17 years of age this seemed 'way beyond my realm'. In part, it was an issue of the cost but it was also a question of support. Higher education study was not encouraged in the home in which she grew up. 'It was unheard of, you just went to work.' Now she sees herself on a pathway. After completing the diploma, she will do the advanced diploma and then the degree. She feels able to realise her ambition 'now that I know I can do it.' For this student it was a matter of increasing her confidence by starting with a certificate level course that was directly related to her work. This student's plan to study at progressively higher levels was not directly driven by a desire to develop her skills to achieve upward occupational mobility. Increasing her educational level is likely to expand her employment prospects but her decision to study is more complex than a simple investment in skills to achieve a return in the form of increased wages.

Another student interviewee completed a Certificate III in Aged Care and at the time of the interview was over half-way through an enrolled nurse traineeship. His ambition was to be a nurse but:

> I decided to warm up. I am not a quick learner. Over two years plus, I could build up; I hadn't done (tertiary) studies before. I hadn't written an essay. I got a credit for my first essay. I will build up to a diploma and then a bachelor.

For some the process of building confidence and capacity also develops their ambitions. A graduate was initially daunted by higher education but completing the degree was a major achievement that changed her sense of who she is and what she is capable of doing. She is now planning to do postgraduate studies and become a specialist nurse.

Many students described the critical role of teachers. They reported that particular teachers encouraged students to consider studying at the next level. In addition to providing inspiration, these teachers circulated information about the destination course and provided advice on the application process.

Reality check – the gap between ambition and reality

Some of the students and graduates (all women, mostly from the health area) spoke about education as a transformative experience. For one mother study was an essential part of a re-orientation of her life:

> … I hadn't always had a go. After doing this degree I know I can do anything … I started being in charge and making changes.

A teacher in agricultural science talked about her own pathway, reflecting on the potential impact of education on the status and self-worth of rural women. Individual stories of students transforming their lives are heart-warming but the overall picture is far less positive. Pathways may offer a second chance to people who left school early or become disengaged from education. They may also provide an opportunity for people who want to progress to a higher-level position or change careers. However, as one informant explained, pathways can also offer a long and expensive route for working class kids (Wheelahan et al. forthcoming, p.28).

Most of the 31 students interviewed said they wanted to study higher-level qualifications linked to their desired career. However, earlier research revealed that although most students say they want to complete their program, very few do (National Centre for Vocational Education Research 2011). In the vocations project we found the links within education and between education and employment to be weak. Students are more likely to undertake further qualifications in the same sector (either VET or higher education) rather than move between sectors. There are variations depending on the field of study. High levels of transfer from VET to higher education are found where there are strong occupational pathways (for example, nursing). They are also found in areas where the labour market outcomes and requirements for knowledge and skills are not strongly differentiated. In this type of area VET and higher education graduates compete for the same jobs (for example, sales and marketing) (Wheelahan et al. forthcoming, p.14). In most areas the links between education and employment are not strong (Moodie forthcoming). Furthermore, most VET graduates are employed in jobs that do not correspond with their qualification (Karmel, Mlotkowski & Awodeyi 2008).

As indicated earlier, the Australian labour market is characterised by stasis and occupational segregation. Most individuals do not change their careers several times over their working life. Nor is there much mobility from low-skilled to high-skilled occupations. People in low-skilled occupations are found to 'churn' between different low-skilled jobs and, for some, periods out of the labour market (Yu et al. forthcoming).

There are a number of impediments to the movement of students within education, from education into employment and within the labour market. One major problem is the fundamental difference between the knowledge-based curriculum of higher education and competency-based nature of VET qualifications. This remains an issue even when there are strong connections between the higher education and VET teaching staff working in the same broad discipline area. An additional problem is

that some of the stepping stones are missing. In many areas para-professional qualifications are becoming less relevant. In part, this corresponds to a hollowing out of the labour market. However, it is also because jobs that once required a diploma or advanced diploma are now filled by graduates of baccalaureate degrees. The introduction of uncapped funding in higher education is likely to accentuate this trend. Many students who once would have aimed at a higher-level VET qualification now have the option of entering straight into a three- or four-year undergraduate degree.

The risk is that pathways are seen as a panacea. Pathways may provide a second chance for a young person who did not achieve the results they needed for a particular course. However, they do not address the more fundamental problem of the strong link between academic achievement and socioeconomic status in Australia. As part of the vocations project we are examining the extent to which reconceptualising pathways may improve their effectiveness and capacity to expand opportunities for individuals.

Reconceptualising pathways

The way educational and occupational pathways are conceptualised must start with a realistic and inclusive idea of the person. They must take into account normal parts of the lifespan such as raising children and dealing with illness. They must also take into account major disruptions including redundancy and periods of unemployment.

We need pathways that allow individuals to develop skills within their chosen field of employment. There should also be pathways that enable individuals to re-skill or change career direction. However neither is sufficient. School students require good information on their future study and employment options. They need to understand the implications of Year 12 subject selection. Young people from disadvantaged backgrounds are less likely to have access to this knowledge. This increases the risk they will make decisions that limit future opportunities.

The capabilities approach takes into account the life-cycle and the effects of entrenched disadvantage. It also focuses on the economic, social and cultural resources individuals need to have meaningful access to real opportunities. The capabilities approach, developed by the economist and Nobel Laureate Amartya Sen (1993, 2009) and the philosopher Martha Nussbaum (2000, 2011), provides a way of thinking and well-being and opportunities. It focuses on what people need in order to flourish. The capabilities approach takes a holistic approach, understanding that individual well-being depends on more than just wealth and income but also on relationships, health, education and the physical and social environment. People should not be viewed instrumentally. For example, we are not just workers to be valued for what we can achieve in one part of our lives. This is not to diminish the significance of employment. Good quality jobs are important for mental and physical health and they can foster a sense of connectedness. However social citizenship, through membership of families, networks and communities, is also important. The capabilities approach also encourages attention to the whole lifespan rather than a narrow focus on a particular job or stage of life.

Wheelahan, Moodie and Buchanan (forthcoming) propose a rethinking of pathways that is underpinned by the capabilities approach. The starting point is the idea of vocational streams, which link related occupations that share common understandings and practices (for example, care work). This conceptual framework shifts attention to the development of a person's attributes, knowledge and skills starting with the individual rather than a specific set of job tasks and roles. It also requires identification of the economic and social resources that are needed to support the development of capability within vocational streams (Wheelahan et al. forthcoming).

Pathways have greater coherence when they are conceptualised on the basis of a broad field of practice such as care work. This emphasises the links between different occupations and gives both educational and occupational pathways a stronger rationale. Linking occupations in a vocational stream can also expand opportunities for individuals to move horizontally; for example, between aged care and child care, as well as vertically into higher-level positions. Conceptualising education within vocational streams loosens the ties between courses and occupations as they are understood now or, more realistically, as they were understood in the recent past. People are prepared for a career not a specific job, something that is particularly important in a changing labour market.

It was evident from our interviews with students and graduates that young people are often bewildered by the number of potential options for study and employment. For many it will be much easier to start by identifying a preferred vocational stream. The next step would be to select an area of specialisation, knowing that in the future it is possible to move horizontally or vertically into related or higher-level occupations. The process of identifying options within a vocational stream could take the sting out of a lower than expected score in the senior school certificate, shifting the focus away from 'missing out' (Wheelahan, Moodie & Buchanan forthcoming).

Conclusions

For the participants in the first stage of strand 2 of the vocations project, pathways are understood to provide a second chance and a means of building a student's confidence and capacities. Many of the stories told by students and graduates were powerful. However, although these stories revealed that pathways can provide opportunities, they do not address the underlying disadvantage that shapes the situations of many Australians. The route offered by pathways can be long and expensive. Conceptualising pathways within the idea of vocational streams has the potential to strengthen the links between education and employment within each broad area of practice. This is likely to expand the real opportunities available to people, particularly to members of our most disadvantaged communities.

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Workplace mentoring revisited: formal or just smart casual?

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Abstract

Informal mentoring occurs spontaneously in workplaces and has many reported benefits for the mentee, the mentor and the organisations in which they work. Driven by pressing workforce development needs and a desire to engage employees, many organisations are introducing formal mentoring initiatives in an effort to maximise these benefits. In an era when employees complain of training fatigue, mentoring offers a complementary form of development that is tailored to individual needs, allows for self-paced progression and requires less time away from work.

This paper draws on case study research within the Australian rail industry and relevant literature to inform the development of a national mentoring framework for rail. We review the transition of workplace mentoring from its origins in the apprenticeship model to the latest trends using smart technology. Historically, workplace mentoring has been characterised by four facets: a valued relationship between mentor and mentee, developmental learning, career and psychosocial support, and a shared desire for the mentee to grow. While mentoring is viewed positively in human resource development (HRD) circles, the research has revealed some hidden issues that can influence the success of formal initiatives.

The review considers the design and implementation of mentoring programs, including mentor and mentee selection, matching and training, ethical issues, standards, and the evaluation of mentoring programs. Given that formal mentoring cannot replicate the informal processes, we also discuss the documented limitations of formal workplace initiatives. Formal mentoring initiatives can offer considerable benefits to all parties, but only with organisational commitment and the necessary resources to support success.

Introduction

Workplace mentoring can be defined as 'a process for the informal transmission of knowledge, social capital, and psychosocial support perceived by the recipient as relevant to work, career, or professional development' (Bozeman & Feeney 2007, p.731). Healthy mentoring relationships are based on 'encouragement, constructive comments, openness, mutual trust, respect and a willingness to learn and share' (Spencer 2004, p.5). During pre-industrial times, workplace mentoring played an important role in the transfer of crafts and trades from master to apprentice. However, during the Industrial Revolution, as training increasingly shifted to offsite institutions, there were fewer opportunities for workplace mentors to pass on their expertise. Today, with industries facing several challenges including globalisation, rapidly changing technology, increasing competition and the impending retirement of the 'baby boomer' generation, many organisations are refocusing on the retention of staff and the development and transfer of workforce skills and knowledge. Workplace mentoring may thus be more important now than ever.

Informal mentoring occurs spontaneously in workplaces and can have many positive outcomes. For the mentee (or protégé), benefits may include networking, exposure to new ideas, career development, and increased confidence and self-awareness. Mentors can benefit from opportunities to develop interpersonal skills and gain satisfaction from nurturing others. Mentoring may also yield benefits for organisations in terms of reinforcing company values, enhanced communications across levels or divisions (Bamford 2011), professional development of mentee and/or mentor (MacGregor 2000), exchange of knowledge and skills, opportunities to identify talent and increased organisational engagement (Ragins 1997; Allen, Day & Lentz 2005).

Although the early literature on workplace mentoring was almost overwhelmingly positive, there is a growing realisation that mentoring relationships can turn sour, with negative outcomes for the mentee, the mentor and/or the organisation (Eby et al. 2010). Given that mentors are typically hierarchically senior and thus in positions of trust, authority and influence in relation to the mentee, effective mentoring relies on healthy relationships that are developed in a professional and ethical manner. Where trust is breached, the consequences can be damaging. Nevertheless, five recent meta-analyses have confirmed that, overall, mentoring 'has positive, typically small-to-moderate effect sizes on objective (e.g. promotions and salary) and subjective (e.g. career and job satisfaction) outcomes' (Chandler, Kram & Yip 2011, p.523).

Many enterprises, keen to capitalise on the perceived benefits of informal mentoring, are introducing formal mentoring programs. Formal or facilitated mentoring refers to 'mentoring relationships that are established, recognised, and managed by organizations and are not spontaneous' (Bozeman & Feeney 2007, p.732). In this paper we look at the complexities of formal workplace mentoring and identify some considerations for organisations intending to embark on such initiatives. These considerations are contextualised to the Australian rail industry which is currently experiencing challenges in relation to attracting, developing retaining a skilled workforce (Australian Rail Authority 2008; Mahendran 2009). Formal mentoring is being utilised or considered by some organisations to complement their workforce development strategies and we report here on some themes emerging from the literature and from our initial research conducted in Australian rail organisations.

Findings and discussion

The research is part of a wider project on both mentoring and coaching in the Australian rail industry and is supported by the Cooperative Research Centre for Rail Innovation (Workforce Development Program). The paper draws from a review of the literature and semi-structured interviews with representatives from four research partner rail organisations. These organisations have either conducted mentoring programmes in the past, are currently doing so, or are thinking of doing so in the future. We interviewed rail industry human resources, and learning and development managers who are or would be responsible for formal mentoring initiatives and used a comparative analysis to develop our findings. However, this project is not due for completion until August 2013 and we report here on a small sample of perspectives of formal mentoring in organisations. During the next stage of the research, we plan to interview mentees and mentors to ascertain their perspectives.

This paper focuses on three facets of mentoring in workplaces: the need to distinguish formal mentoring from other HRD activities; the difference between formal and informal mentoring; and finally, the key elements that should be embedded in the design of a formal program.

Mentoring and other developmental interactions

We found that rail industry stakeholders need to have a shared understanding of what mentoring actually is, and how it differs from other developmental interactions in the workplace such as coaching, supervising, advising and buddying. Perhaps the most problematic tension is the distinction between mentoring and coaching (Clutterbuck 2008). D'Abate, Eddy and Tannenbaum (2003) suggest that:

> Traditional mentoring is more concerned with modeling, counseling, supporting, advocating, introducing, and sheltering as exhibited behaviors, and coaching is more concerned with goal setting, providing practical application, providing feedback, and teaching.   (p.376)

In rail organisations a level of confusion was apparent and a clear distinction between mentoring and coaching was not always evident. Moreover, in some cases mentoring was adjoined to other activities such as workplace buddying, on-the-job training or performance coaching.

Informal and formal mentoring

According to the literature, informal mentoring is generally advocated in preference to formal initiatives. In their study of formal mentoring, Eby and Lockwood (2005) reported,

> little evidence that formal mentors act as public sponsors for protégés or take active steps to enhance their promotability or visibility within the organization. We also found that the benefits for mentors appear to be somewhat limited. Further, there was little evidence that formal mentors played a key role in protégés' long-term career development. Formal mentors simply provided advice, coaching, and perhaps some career planning assistance. We also found little evidence of the deep, intense type of interpersonal relationship.   (pp.455—56)

This suggests that participants in formal, rail mentoring programs should not anticipate a replication of naturally-occurring mentoring relationships. As one of the interviewees commented: 'Informal mentoring is actually more powerful than a [formally] paired relationship'. Of course, given suitable conditions, a formal mentoring relationship can lead to very successful outcomes for all parties, but this cannot be guaranteed. Furthermore, we found that mentoring arrangements can occur along a continuum, with informal mentoring at one end and formal mentoring at the other. The actual degree of facilitation and structure varies along this continuum. Some of the notable differences between informal and formal mentoring are summarised in table 1 below:

Table 1   Informal and formal mentoring (adapted from Blake-Beard, O'Neill & McGowan 2007)

Informal   . . . . Mentoring continuum . . . .   Formal
Initiated without organisational support	Initiated by the organisation
Driving force usually similarity and attraction	Driving force usually organisational agenda
Mentor and mentee self-select	Mentor and mentee usually matched by third party
Initial emotions positive	Initial emotions often apprehension, awkwardness
Unstructured meetings as needed	Meeting schedule structured by program facilitator
May be no explicit goals	Explicit organisational goals
Can be long-term in duration	Usually short-term, with a pre-determined endpoint

According to Clutterbuck (2004):

> [O]ne of the goals of formal mentoring programs is to bring the organization to the point where the majority of the mentoring is carried out informally, without the need for substantial, structured support from HR and elsewhere (p.16).

However, none of our interviewees identified informal mentoring as a goal of formal initiatives. Indeed, one rail organisation viewed informal mentoring unfavourably and had introduced a formal program to circumvent naturally-occurring processes.

Conducting a workplace mentoring program

Any rail organisation intending to implement a formal mentoring program should consider the financial, logistic, practical and ethical perspectives of the initiative. Perhaps the primary pre-condition for a successful program is organisational commitment. As Zachary (2005, p.xxii) comments, 'if a mentoring program is not sufficiently embedded in a supportive organizational culture that values learning and development, it rarely flourishes'. Commitment is needed at executive level and throughout the organisation, as this interviewee noted:

> we need our CEO commitments so we will start from the top and that's been great so far with our pilot [programs]. We also need the support of our division sort of level managers as well — so our operations managers … sort of deal with these people on a day to day basis.

Sufficient resources are another vital ingredient for successful mentoring programs. Figure 1 indicates some of the key elements of the process, and each phase involves a significant investment in time and/or resources.

Figure 1 Key elements of a formal mentoring program (adapted from Boags 2011)
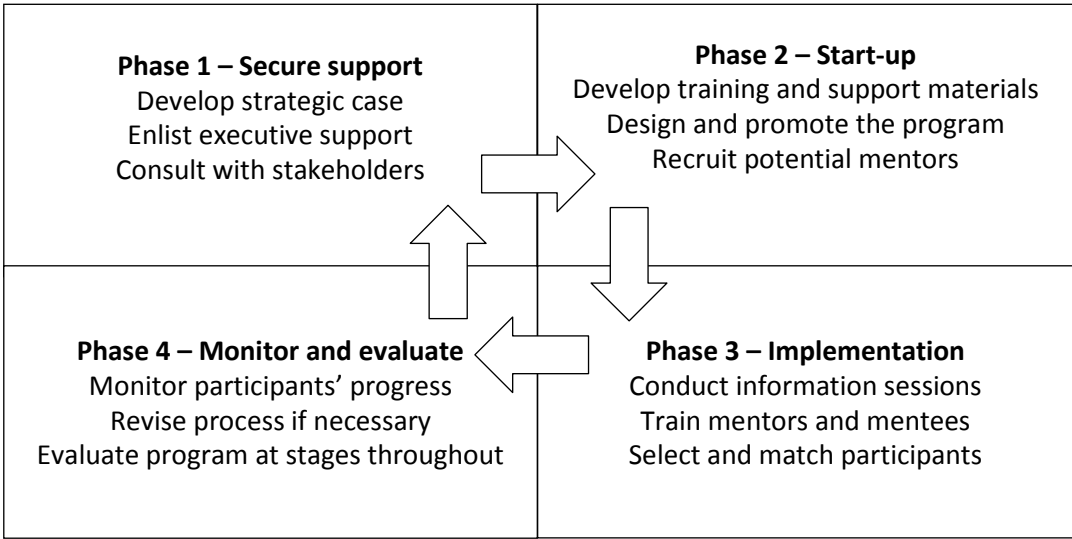
Interviewees were well aware of the need for support structures to sustain a program:

> There's a lot of work. It's not as easy as despatching people and saying 'Catch you later'. You need to have processes that you are evaluating all the time; getting the people together.

In the case of naturally-occurring informal mentoring, pairs self-select without deliberate organisational intervention. Formal mentoring, on the other hand, involves an explicit matching process, whether pairs select from a pool of interested parties, or whether the coordinator assigns pairs. Attracting sufficient mentors may require some effort, especially if the program is new and there is a level of uncertainty among potential participants:

> Initially in our model we planned to have 12 mentors for 12 mentees but in recruiting them we were only able to attract five for our first pilot group and four for our second pilot group.

Unsuccessful matches need to be managed ethically and confidentially by the program coordinator:

> if there are disputes between the mentor and the mentee and people need swaps or something occurs, you need somebody that people can go to that's independent of the management team.

The organisation will also need to invest time and resources to train both mentors and mentees so that they are clear about their respective roles and responsibilities:

> People can have the wrong expectations up front, so you need to make it very clear at the beginning about expectations and that's why … training and a coordinator are absolutely required.

A mentoring program is unlikely to succeed if there is a 'one-size-fits-all' approach (Allen, Finkelstein & Poteet 2009, p.xi). One interviewee commented that matching and training needs to be contextualised depending on the objectives of the initiative and the mentee profile (for example, professionally qualified staff, equity groups, school leavers, apprentices):

> So depending on what group you are mentoring there's probably going to be different issues and different objectives that you may need to identify about who's the best person to be the mentor.

Formative evaluation during the program enables adjustments to be made:

> Well the review really informed the changes that we've made into the second pilot group, and that was to change the structure slightly … The first group was having difficulty in finding time to meet with their mentors.

In terms of evaluating the outcomes of formal mentoring, one organisation appeared to be focusing on career development:

> We did some stats on people that were on the program to their advancement within an 18 month period and it was about 80% of them had stepped up in their careers.

Another organisation was planning to evaluate outcomes in terms of mentee welfare and attrition:

> It will be the attrition, yeah, and also through our employee private survey … to look at the welfare of the staff and the job satisfaction.

Emerging mentoring practices

Finally, as mentoring transitions through the 21st century, some workplaces are adopting innovative mentoring practices. Technology such as the email, Skype and smart phones, offers new opportunities for e-mentoring, helping to reduce geographic and interpersonal barriers that can be associated with meetings (Hunt 2005; Bamford 2011). E-mentoring offers rich potential for industries such as rail, where employees may work at different times or in different locations. Although our interviewees were not currently using e-mentoring, most expressed enthusiasm for the concept. One interviewee commented on technology in the context of so-called 'reverse mentoring' where senior employees learn from hierarchically junior staff (Chaudhuri & Ghosh 2012). Other emerging practices include group mentoring as a strategy for connecting 'experts and fellow workers in a collaborative, intentional learning process' (Emelo 2011, p.223), peer mentoring in which hierarchically equivalent staff mentor each other (Cureton, Green & Meakin 2010) and mentoring circles 'consisting of 3—5 peers and 1—2 mentors' (Fridkis-Hareli 2011, p.288). It remains to be seen whether such innovations stand the test of time.

Conclusions

Workplace mentoring programs need careful planning and communication at every stage, and particularly so at the more formal end of the mentoring continuum. The overall effort required, the investment in resources, and the risks to be mitigated should not be underestimated, with senior leaders in rail organisations having a key role to play in driving a mentoring culture. Moreover, successful programs need the commitment of all stakeholders, a shared understanding of roles and responsibilities and a meaningful evaluation process. The literature suggests that formal workplace mentoring programs are unlikely to replicate the outcomes of informal mentoring, but a semi-formal approach is emerging in organised workplace development contexts such as rail. This approach is adapting with the uptake of technology, as spontaneous social networking tools replace the need for face-to-face meetings. Therefore, the models developed should be contextualised to the local environments, and it appears that starting on a smaller scale and learning from a pilot program may assist the implementation of subsequent stages. Rail organisations use a broad range of HRD strategies to engage and retain employees, and formal mentoring is seen as one activity to achieve these goals. However, rail leaders need to ensure that mentoring does not get confused or caught up in a mixed array of parallel learning and development techniques, thus distorting the purpose of mentoring and its associated benefits.

Acknowledgments

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The odd couple: can skills recognition in VET cohabit with university learning?

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Abstract

The newly strengthened Australian Qualifications Framework explicitly validates both formal and informal learning in order to help realise two broad objectives: individuals working towards their personal learning goals, and the nation equipping itself with a suitably qualified labour market. Yet, there is little in the current literature about the experiences of people who obtain a vocational education qualification through recognition of prior learning and who, on the basis of this, gain entry to university. Intuitively, it may be tempting to think that someone on the 'RPL pathway' to higher education with little or no experience of formal study conventions will struggle with and eventually abandon their degree studies. This paper will present the findings of semi-structured interviews with people who have gained a vocational education diploma or advanced diploma through RPL and who have gone on to degree studies. The authors will discuss the results of their investigations reporting on the academic performance of these RPL candidates at university, the challenges they face, the coping strategies they deploy, and whether the RPL process itself played a role in preparing them for high-level study. The findings of this paper will have relevance for vocational education providers and universities as they strive to 'accommodate the diversity and purposes of Australia's education and training system' (Australian Qualifications Framework Council 2011, p.8).

Introduction

Traditional pathways from the vocational education and training sector to higher education have been via articulation arrangements linking diplomas and advanced diplomas to bachelor degrees. In their construction it is usually assumed that the high-level VET programs are delivered through formal learning modes ranging in duration from one to two years. However, from 2006 to 2009 as a result of the Council of Australian Governments' initiative to create a more highly skilled workforce, a great deal of attention and many resources were directed to the RPL system as it then functioned in VET in order to make it more robust, consistent and widely accepted across all states and territories.

Assessment philosophy and practices in vocational education, either in a classroom setting or RPL context, are based on the centrality of determining a learner or candidate's level of performance against the set of industry-informed workplace standards that describe any of the six qualifications along the certificate I to advanced diploma spectrum. RPL, therefore, is a process whereby knowledge and skills gained through formal, non-formal or informal learning are assessed against units of competency, usually from a national training package that make up a partial or complete VET sector qualification. Recognition is achieved when a candidate generates evidence that shows they execute work functions at the level of competence described by a specific qualification. An assessor qualified with a Certificate IV in Training and Education determines competence, and examples of evidence may include but are not limited to: references; résumés; position descriptions; statements of results

and attendance from previous learning; workplace observations; skills tests; competency conversations; and samples of work such as completed projects, research, correspondence, reports, and portfolios. As with any assessment, the rules of evidence based on the principles of validity, authenticity, currency and sufficiency apply.

In contrast to the VET sector approach to RPL is the higher education practice where, as Pitman and Vidovich (2011, p.2) point out, the term 'is regularly conflated with the notion of "advanced standing"'. The enterprise of conducting RPL in this sector, therefore, appears to be concerned more with mapping evidence of informal learning against learning outcomes in a course of study rather than with seeking primarily to confer people with the AQF qualification to which the course corresponds. These diverging approaches to RPL may point to further areas of investigation which will be mentioned briefly later in the paper.

COAG's three year investment in improved RPL practices in VET had positive outcomes as documented in the final report.

> States and Territories achieved the COAG RPL Program objectives of benefiting a reasonable
> number of RPL candidates, providing streamlined and simplified RPL processes, and building the
> Australian vocational education and training (VET) system's capacity to deliver quality RPL.
>
> (Department of Education, Employment and Workplace Relations 2009, p.x)

As further evidence of the program's success, data from NCVER's *Students and courses 2011* (NCVER 2012) presented in figure 1 indicate that the uptake of RPL in the VET sector has been steadily increasing since 2005. Figure 2 shows the breakdown of this RPL activity on a state and territory basis.

Figure 1   Rate of RPL activity in Australia, 2005—11
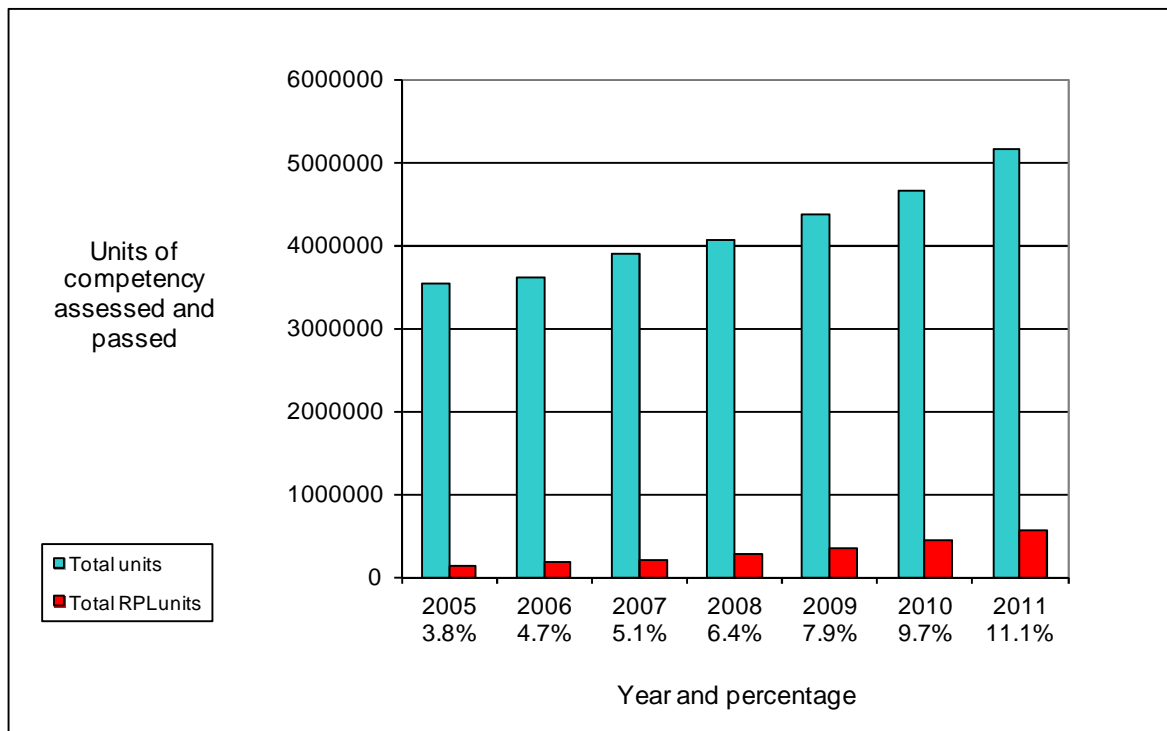
Figure 2   Rate of RPL activity by state and territory, 2011
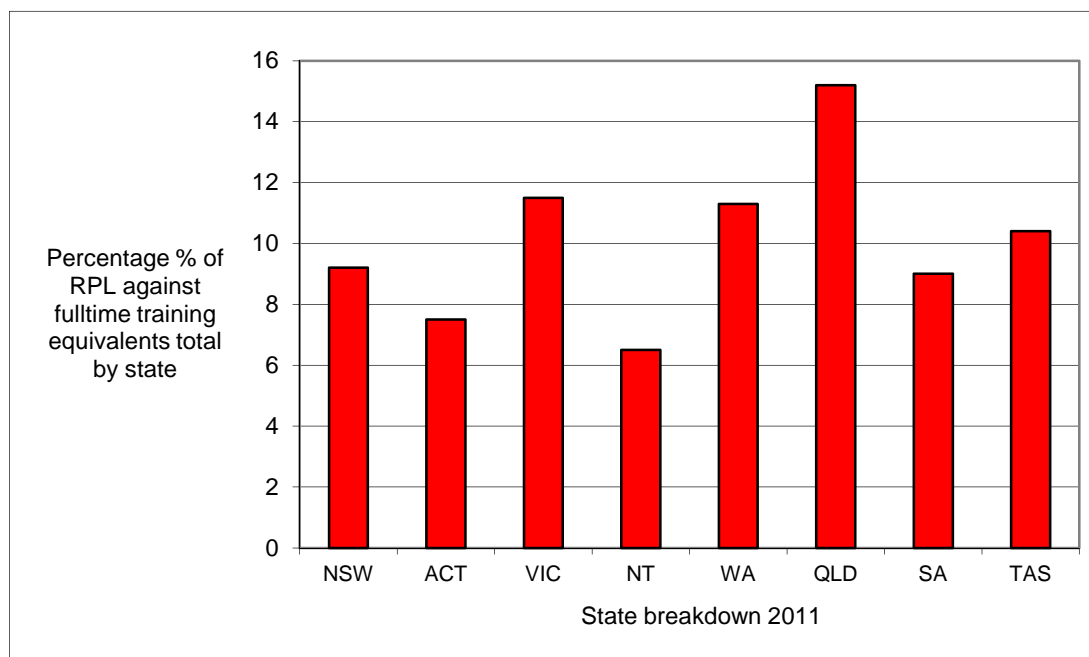
Given the real growth in the implementation of RPL services since 2006, it is unsurprising that there is now a noticeable trend among both policy-writers and individuals to regard RPL not only as a tool for obtaining a high-level VET qualification but also as an efficient way to gain entry into and credit towards higher education programs.

> There are many operational dimensions to strengthening pathways and facilitating student
> movement [across the sectors]. They include: clear arrangements for credit transfer; articulation
> between qualifications; well understood approaches to recognition of both prior and informal
> learning; …   (Noonan & Allen Consulting Group 2010, p.61)

Further evidence of the broader community's interest in RPL as a mechanism for gaining university entry can be found in a 2011 survey conducted by TAFE Queensland Marketing. It revealed that 19% of those who had completed an RPL process did so with the intention of using it as a means to further study. The majority of these respondents had obtained at least a certificate IV, which would indicate that they were intending to eventually go on to university (TAFE Queensland Marketing 2012).

In practice then, a new and distinct 'RPL pathway' to higher education is emerging. People are gaining admission to a formal study environment (along with academic credit of up to one year because of pre-existing articulation arrangements) on the basis of being a diplomat and, yet, they may never have participated in formal study beyond compulsory education or a certificate level qualification.

In order to discover people's experience of this new inter-sectoral pathway and to determine whether there are any early signs of the pathway's success or otherwise, the authors conducted semi-structured interviews with people who, in response to an email sent to TAFE Queensland's network of RPL coordinators and previous RPL candidates, volunteered to recount their experiences. No incentives to participate in the study were offered and only three criteria were needed to be met to be an eligible participant. The person had: gained a diploma/advanced diploma through RPL; used this qualification to be admitted to university; and had subsequently commenced higher education studies even if these were now completed or abandoned. Ten people agreed to be interviewed, six of whom were women and four men. All but one was above 30 years old and all had gained their qualification at two of Queensland's 13 institutes of TAFE.

Findings and discussion

Education, work and the motivation for qualifications

Most of the interviewees had completed Year 12 or equivalent, and only one had gained a tertiary qualification higher than a certificate IV through formal study before undertaking the RPL process to obtain a diploma. The majority had not undertaken any formal study for over ten years.

At the time of interview, all were working, most full-time, and represented four industry areas in the following numbers: community services (4); hospitality and event management (3); creative industries (2); nursing (1). All had at least five years' experience in a field aligned to their diploma or advanced diploma and four interviewees had more than 15 years' experience. In all cases, people had either been performing in high-level work roles, or carrying out supervisory responsibilities; 40% were self-employed small business operators. Because of interviewees' work and life commitments, the majority (70%) were studying part-time and only two were studying through distance mode.

The motivations among the group for having their skills recognised and credentialed in the VET sector were varied. These included: to obtain an industry or employer mandated qualification; to enhance business credibility and reputation; to change careers; to achieve a pay increase; to be a role model for one's children; to gain entry into university with academic credit. Those who were aware that a diploma could be a pathway to higher education stated that their reason for striving for an eventual degree qualification was in order to improve their earning potential.

However, most of the interviewees, before undertaking the RPL process, were unaware that they could use their diploma as a mechanism for university entry and academic credit. In fact, at the point of enquiry about the RPL process, more than half had no intention of ever undertaking university studies. It was only upon learning from the RPL assessor that there may be credits available and therefore a reduced time period for completing a bachelor degree that they even considered the option of university study.

Academic performance at university

With respect to the interviewees' academic experiences at university, almost all were undertaking degree programs related to their diplomas or advanced diplomas and had already successfully progressed through a substantial part of their studies. None had withdrawn from university and all reported that they had achieved satisfactory if not above-average results. One interviewee had entered directly into a Master's program and was now considering undertaking a doctorate, while another was concurrently studying two Master-level degrees after having completed her undergraduate studies.

Overall, people believed that they had adapted adequately to the demands of formal academic study at the higher education level. When asked about the contribution to university success of support services such as orientation week activities, academic writing workshops, library use sessions, university managed mentor schemes, all interviewees reported an awareness of these and reassurance in knowing that they could be accessed if required. Half reported using the services, three people made particular mention of attending academic writing sessions, and for a further two, support services customised to their specific academic and health needs were, in fact, critical to their ongoing university study.

Challenges

Three of the interviewees reported feeling very apprehensive prior to undertaking higher education studies, which was mostly due to their expectations of the time and pressure involved or, in the case of one interviewee, because he had had no personal experience of higher education studies at all. However, the majority indicated that they knew what to expect as they had observed the experiences of friends, relatives or peers who were undertaking or had completed university study. Two interviewees cited as a challenge the disconnect they believe existed between some subject matter content and current industry practice as they experience and inform it: some lecturers appeared to be using out-dated or irrelevant materials that were not consistent with contemporary workplace practices.

Coping strategies

Interviewees gave consistent responses regarding what they consider were effective strategies for achieving academic success. Some made use of podcasts, peer study groups, blackboard and online communication with lecturers; one reported that researching the higher education institution and identifying its resources and student services prior to starting studies was helpful. However, all felt that having attributes such as maturity, discipline, determination, effective time management skills, and a clear focus were major contributing factors to success, as well as having significant professional experience in their field of higher education studies. Interviewees also reflected that, unlike many of their younger classmates, they were confident in their interactions with lecturers and this, in turn, assisted in gaining satisfactory academic results. So while interviewees reported varied levels of uptake of the university support services, it was attendance and attentiveness at lectures and tutorials, as well as seeking immediate clarification where necessary from academics, that were of the greatest benefit.

The role of the RPL process in preparation for university

When asked whether the RPL process itself had played a role in interviewees' academic performance responses fell into two broad categories. As mentioned earlier, the majority of people (60%) stated that they would not even have considered undertaking higher education studies if they had not gone through the RPL process. Thanks to pre-existing credit transfer arrangements from diplomas or advanced diplomas, these interviewees discovered that they could effectively also be up to a third of the way through a bachelor degree. The incentive then to continue on with higher education studies proved to be overwhelmingly convincing. It must be added, however, that usually the articulation arrangements, though they reduced university study by a year, did not entail students necessarily going directly into the second year of a degree. Rather, the articulation study plans were more likely designed to ensure that students proceeded through the important scaffolding units of a degree program in order to maximise students' chance of academic success.

The second category of responses mentioned the intrinsically positive and transformative experience of the RPL process itself: it created the motivation and discipline to reflect on professional practice; provided experience of interacting with an assessor; and provided timelines to produce relevant evidence. Interviewees consistently stated that they experienced no disadvantage at university by not having previously completed their VET qualification in a formal learning setting.

Higher education perspective

A number of researchers (for example, Cantwell & Scevak 2004; Fox 2005; Dowling & Burton 2009) have explored the academic performance of students admitted to higher education studies on the basis of an RPL process conducted by the admitting university. In contrast to the findings presented in this paper, these studies have identified concerns about the prospect of students' success due to their lack of academic preparedness for higher education studies, especially when they enter part-way through a degree program. However, the difference in findings may well be reflective of the differences in RPL implementation in the two sectors, especially since 2009 and the completion of the COAG program. Cameron (2011, p.14) has pointed out, 'As time has progressed, and RPL policy and practice has evolved, it has become more central to the vocational education and training (VET) sector than any other post-compulsory educational sector'.

Conclusions

In answer, then, to the question posed by the title of the paper, the findings of this initial study into students on the RPL pathway to university would indicate that a lack of formal study at the diploma level in the VET sector more than likely does not disadvantage students in their higher education academic endeavours. Rather, there are other characteristics of this student cohort which appear to be more critical to successful outcomes at university. These include: extensive high-level and ongoing workplace experience; maturity, life skills and experience; and a strong focus on the benefits of study and therefore a powerful motivation to achieve the qualification. While it is acknowledged that this qualitative research is based on a small number of participants who were sourced from Queensland alone, the national reach of the COAG program and its subsequent positive outcomes in improving robustness and consistency of RPL practices may point to similar results being generated if the study were replicated in other jurisdictions. Indeed, given the recent documented improvements, the authors would also contend that the RPL process at the diploma/advanced diploma level is in itself legitimate preparation for the demands of formal learning at university.

Furthermore, current RPL practice in VET appears to have moved away from the limitations described by Cameron (2005) and Hamer (2009) where successful RPL candidates were probably only going to be those who had the literacy, self-knowledge, and familiarity with a meta-pedagogical language to identify and describe the skills and knowledge that they possess. RPL practice is now characterised by approaches where an assessor enters into a partnership with a candidate in order to generate the evidence necessary for a qualification at a defined AQF level. This requires assessors to have 'particular inter-personal skills and a strongly student-centred approach, "bordering on the therapeutic"' (Harris, cited in Hamer 2009, p.107).

There clearly exists, however, differences in the implementation of RPL by the VET and higher education sectors no doubt due to divergences in their respective missions. Further research clarifying this point of intersection in RPL practice would be beneficial so as to ensure the sectors' improved mutual understanding of each other's processes in the ultimate aim of eventually providing enhanced opportunities for a growing cohort of students who move via diverse pathways from VET to university in the pursuit of their lifelong learning goals.

Acknowledgments

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Deepening the analysis of labour market segmentation

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Abstract

There has been an increasing emphasis on individuals being flexible and entrepreneurial in the way they manage and invest in their education and 'employability'. This focus is predicated on an individual's ability to 'upskill' and 'reskill' for a dynamic labour market which rewards these investments in human capital, and provides for pathways into higher skilled employment. The segmented labour markets literature contests this premise, and has a long tradition of identifying areas of persistent segmentation and discrimination. This paper seeks to investigate labour market mobility and identify segmentation in the Australian labour market using Optimal Matching Analysis (OMA). The findings of this research highlight that the Australian labour market is highly segmented along occupational lines — both high- and low-skill — with very limited evidence of mobility over time. Where mobility exists, it is among higher education graduates moving into professional and managerial roles. For low-skill workers, 'mobility' is characterised by high turnover with little upward progression. The results of this study have significant implications for both social and economic policy, as the job transitions observed during the course of this study suggest limited, not expansive, occupational choice for a wide range of labour market entrants of varied education and training levels.

Introduction

The notion of labour market segmentation is longstanding, emerging most strongly in the 1970s, notably from the work of Doeringer and Piore (1971). The idea of labour market duality emerged within their segmented labour markets (SLM) theory, which posits that the labour market is composed of 'a variety of non-competing segments between which rewards to human capital differ because institutional barriers prohibit all parts of the population from benefiting equally from education and training' (Leontaridi 1998, p.64). The SLM approach contrasts with neoclassical theory, where the process of free wage and employment competition create efficient labour markets, and where differentiated wage structures exist to reward individuals for differentiated levels of human capital.

The SLM literature strongly features a duality in labour markets where jobs belong to the 'primary sector' of 'good' jobs, or the 'secondary sector' of 'bad' jobs. Good jobs are typically found in firms with strong internal labour market structures, or occupational 'craft markets', and have high negotiated wages, economic security and career advancement. Eyraud, Marsden and Silvestre (1990) explain that occupational labour markets (OLM), and internal labour markets (ILM) are two models of labour mobility with different vocational training patterns. An OLM is characterised by greater transferability of skills, predicated on a qualification 'sanctioned by either a diploma or by the judgement of their peer group' (Eyraud, Marsden & Silvestre 1990, p.502); an ILM sees an employer fill vacancies by training/transferring existing staff, limiting external recruitment to a small number of entry points. Bad jobs by contrast typically feature low and competitively determined wages, no career ladder, and low-skill work (Leontaridi, 1998). Doeringer and Piore (1971) also theorised that

secondary sector workers could be trapped by not only poor skills, but their work history, discrimination and place of residence.

The empirical research in the SLM literature attempts to confirm or reject tests for the existence of clearly identifiable segments, barriers to mobility between segments, and different employment/wage setting conditions within each segment. There has been no singular method/test to demarcate these segments, and studies have variously used job characteristics, industrial segments, characteristics of disadvantaged employment, as well as subjective measures, to define the labour market segments (see reviews by Dickens & Lang 1992; Leontaridi 1998). Many studies have estimated wage equations, testing returns to education and experience in the primary and secondary labour markets. Results for labour market duality have been mixed and subject to a range of definitional and methodological criticisms, mostly of the partitioning of the labour market (see review in Leontaridi 1998, pp.79—86). However, a number of studies which have attempted to overcome misclassification issues have found strong support for segmented labour markets (for example, McNabb & Whitfield, 1998; Dickens & Lang, 1985, 1992). In Australia, Watson (2011) finds that for a large segment of casual and fixed-term workers, level of education has limited impact on mobility, and that factors such as workplace size, industry and locality contribute to the persistence of casualised work. He concludes that 'systemic influences count for a great deal, while human capital elements count for much less'. In this paper, we focus on segmentation along occupational lines, and find resonance with the 'good jobs, bad jobs' duality in our results.

There is limited literature on occupational mobility and segmentation in Australia. Shah (2009) used one-year labour mobility data to show that job turnover varies significantly with a number of factors, including age, occupational skill level, industry and educational attainment. Flatau and Lewis (1993) identify three main occupational segments using occupational data from 1989—90. The three segments correspond broadly to a low skill (secondary) segment comprising occupations such as sales persons, clerks and labourers; an intermediate skill segment comprising tradespersons, technicians and para professionals; and a high skill (primary) segment containing mostly professionals and managers. Flatau and Lewis use these results to remark on the difficulty of classifying segments by simply identifying correlation of job characteristics.

The SLM literature gives clear points of reference for our research. With the richness of nine waves of panel data and an ability to consider individuals' trajectories over time, our research questions sought to identify labour market pathways empirically and, specifically, to identify occupational mobility. What we found, however, was characterised best as stasis and segmentation.

The paper is set out as follows. We briefly describe the data and methodology used in our analysis. Using OMA we derive empirically meaningful patterns of individuals' trajectories through the labour market, and group them by likeness. We discuss the implications of these results in light of current understandings of labour market progression and segmentation.

Data and methodology

This research has used data from waves 1 to 9 (2001—09) from the Household, Income and Labour Dynamics in Australia (HILDA) longitudinal survey. The HILDA survey is an Australian panel study which collects information about economic and subjective well-being, labour market dynamics and family dynamics. The survey commenced in 2001 with 19 914 individuals and 7682 households. The key variables used in our research were educational participation and attainment, and occupational classification.

The research uses a technique called optimal matching analysis, which was originally used in the social sciences by Abbott and Hrycak (1990), who modelled the career sequence of German musicians. The method has the advantage of considering a sequence of transitions through a life course, grouping resemblance between pairs of sequences. It is most suitable for a large number of sequences, and a complex structure and ordering of states (Brzinsky-Fay 2007), as is typical of longitudinal data sets. OMA is effective in labour market and career research for a couple of reasons. First, OMA allows tracking of flows into and out of the labour market and, in our case, between broad occupational streams within the labour market, rather than considering a single snapshot of data. Second, OMA offers the ability to observe multiple transitions over the course of many years (rather than single events), and looks for patterns across these transitions. While the technique is non-parametric and does not offer predictive statements, it avoids complications relating to path dependency and multiple transitions associated with more traditional statistical techniques. See Abbott and Hrycak (1990) for a full description of the methodology.

The OMA method requires complete sequences of work/study histories (Halpin & Chan 1998). Of the 11 260 in-scope individuals in wave 1 (under 65 years old and of working age), a total of 5234 (44%) were excluded due to attrition or incomplete sequences. This produced a sample of 6726 valid sequences for analysis. We classify the sequences by occupational group, labour force status, and tertiary student status, at each point in time. The data includes both those in full-time and part-time work and/or study[6]. A more detailed description of the research process, summary statistics, and the impact of attrition and missing data, is included in appendix A.

Findings and discussion

The OMA grouped the sequences into ten distinct clusters[7]. Almost a third (27.5%) of the sample did not make any transition between study, employment, unemployment or occupational groups. Thus while the technique is most useful for deriving patterns of movement, it was in fact the stability of occupational segments which characterised the clusters. The only cluster characterised by common movement was that experienced by higher education graduates into professional occupations. The clusters were identified as per table 1.

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[6] Those studying part-time have been classified as students.

[7] Cluster analysis was performed using Ward's (1963) clustering algorithm. This process classifies the data into groups which minimise the smallest within-cluster variation, while maximising between-cluster variation. The number of clusters was determined by considering the (colour) segmentation present in the sequence plots.

Table 1   Optimal matching analysis clusters

Cluster	Description	N
1	Professionals	1066
2	Labourers	356
3	Machinery operators	306
4	Technician/trades workers	548
5	Clerical/administrative workers	761
6	Higher education study → professional	367
7	Sales workers	364
8	Community/personal services workers	471
9	Managers	786
10	Not in the labour force	1701
	Total	**6726**

Table 2 provides the distribution of time for each cluster, across the available occupations, states of studying, or states of being unemployed or out of the labour force. For each cluster, dominant cells have been highlighted. We can see that, for most of these clusters, the similarity in trajectories was characterised by long episodes in the one occupational group.

The trajectory of each of these clusters is shown visually in the set of sequence plots in figures 2 to 4. Each horizontal line represents the sequence of one individual. We can see that for most of these clusters, the similarity in trajectories was characterised by long episodes in the original state, mostly occupational group. An inspection of these sequence plots shows that the experience of some clusters is much more heterogeneous than others.

The sequence plots provide an insight into the nature of mobility across a heterogeneous set of individuals. The patterns can broadly be categorised as low-skill trajectories, high-skill trajectories, and one of marginal attachment.

Low-skill trajectories

These were characterised by entrenchment in low-skill work. 'Mobility' for those working in low- to semi-skilled roles such as labourers and clerical workers was defined by significant turnover, with little movement into higher skilled roles. These workers are likely to move frequently between these jobs, with little evidence of sustained career progression, and with some spells in unemployment or outside the labour force. This is similar to findings by Watson (2008) regarding churning within the low-pay, low-skill workforce.

For example, the experience of those in Cluster 2 and 7 ('labourers' and 'sales workers') were the most heterogeneous, and were more likely to see spells of unemployment — see figure 2 and table 2. Where transitions occur for labourers, it tended to be short episodes as machinery operators, or as trades workers with little evidence of sustained direction. Similarly, sales workers are likely to move between sales and administrative roles.

Alternatively, low-skill trajectories were also characterised by long tenures in low-skill roles, with minimal engagement with further study or access to higher skill roles. Clusters 3, 5 and 8 ('machinery operators', 'clerical workers' and 'community services workers') were dominated by time spent in their respective occupational groups, with limited movement into and out of higher skill roles — see figure 2.

Table 2   Distribution of time by cluster

Cluster	N	Proportion of time in …													Total
		School	VET study	Higher education study	Manager	Professional	Technician/ trades	Community services	Admin worker	Sales worker	Machinery operator	Labourer	U/E	NILF	
1 Professionals	1066	0.0%	0.6%	0.8%	**3.6%**	**83.1%**	1.9%	0.9%	2.0%	0.6%	0.1%	0.4%	0.8%	**4.9%**	100%
2 Labourers	356	0.1%	0.5%	0.6%	2.2%	0.8%	**10.0%**	4.7%	2.2%	1.6%	5.3%	**65.2%**	2.9%	3.8%	100%
3 Machinery operators	306	0.0%	0.5%	0.2%	4.4%	1.2%	4.1%	1.0%	2.2%	0.9%	**71.3%**	5.0%	2.8%	**6.4%**	100%
4 Technician/ trades workers	548	0.0%	1.1%	0.4%	**5.0%**	2.5%	**78.5%**	0.5%	1.5%	1.1%	2.1%	3.2%	1.3%	2.6%	100%
5 Clerical/administrative workers	761	0.0%	0.5%	0.4%	3.2%	4.6%	1.5%	2.0%	**73.1%**	1.8%	2.1%	1.1%	1.5%	**8.1%**	100%
6 Higher education → professional	367	0.0%	0.8%	**43.2%**	2.9%	**22.0%**	2.6%	3.8%	6.4%	4.1%	0.5%	2.3%	1.8%	9.5%	100%
7 Sales workers	364	0.0%	1.3%	1.1%	**8.6%**	4.4%	2.9%	3.1%	**8.5%**	**54.7%**	1.5%	4.4%	3.4%	6.0%	100%
8 Community/personal services workers	471	0.0%	0.8%	1.6%	4.5%	5.2%	1.4%	**65.7%**	2.9%	2.5%	0.6%	2.3%	2.6%	**9.8%**	100%
9 Managers	786	0.0%	0.6%	0.5%	**64.0%**	**11.5%**	2.3%	1.0%	6.8%	2.6%	0.7%	3.2%	0.9%	5.9%	100%
10 Not in the labour force	1701	0.0%	0.5%	0.2%	0.7%	1.7%	2.1%	1.9%	2.2%	1.8%	0.8%	4.6%	4.8%	**78.7%**	100%

Notes: U/E = unemployed.

NILF = not in labour force.

High-skill trajectories

These were defined as those accessing high-skill occupations, and was often characterised by long tenures in occupations which likely required specialised training over long periods of time (for example, farm managers, and health professionals). For instance, Cluster 4 was characterised by trade workers and shows a very high stability within the occupational group — see figure 3.
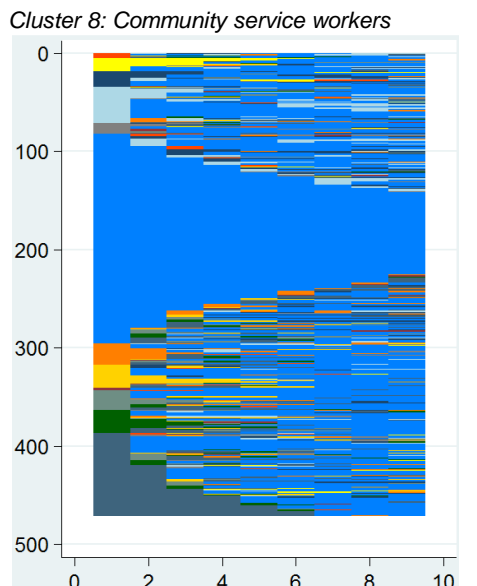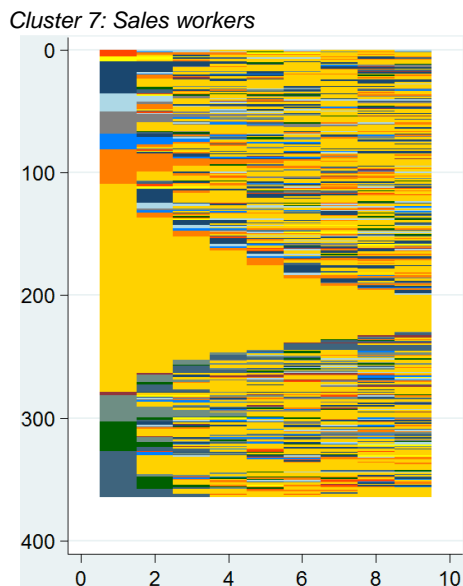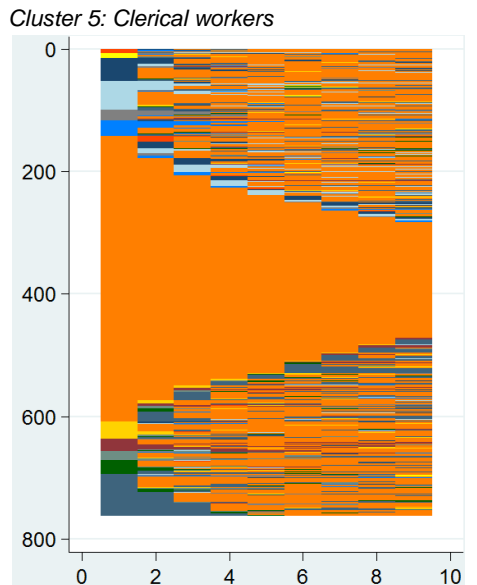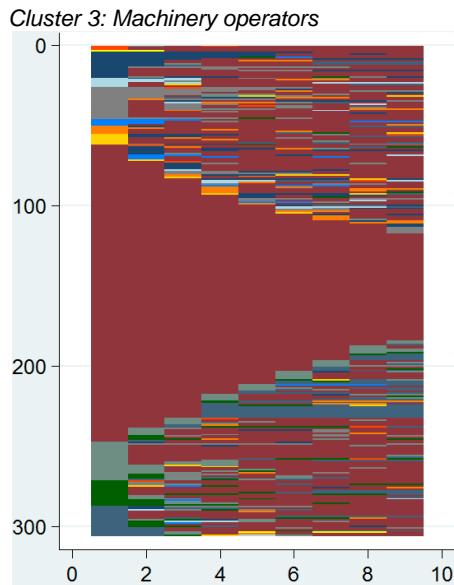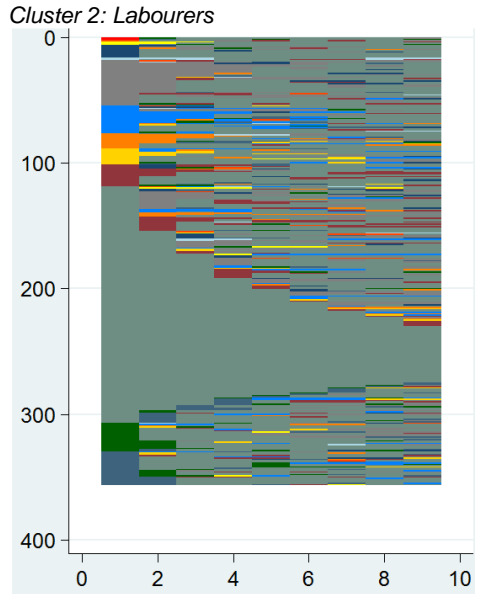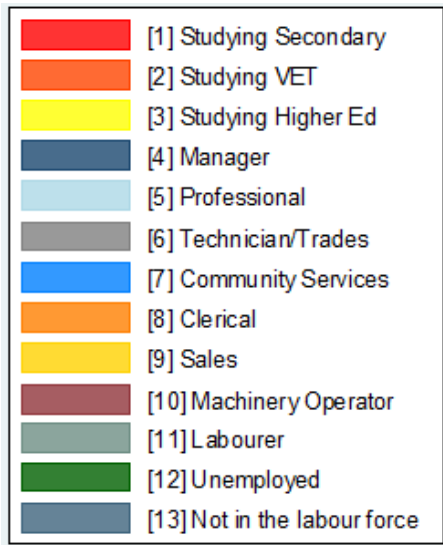
Where upward occupational mobility was observable within the whole sample, this tended to occur within the higher skill occupations only, with clearer paths from higher education studies to professional work, and between professional/managerial roles — see figure 3. This reflects the high entry barriers required by many professional roles, and was the only significant transition identified in the analysis. Similarly, Clusters 1 and 9 were dominated by the managerial and professional states, and frequent movement between the two — see figure 2. This result is consistent with Piore's (1972) theory of an upper tier of primary jobs, and with other studies which find high levels of mobility in these occupations both within and between employers, shifting upward as well as laterally (for example, Hachen, 1990).
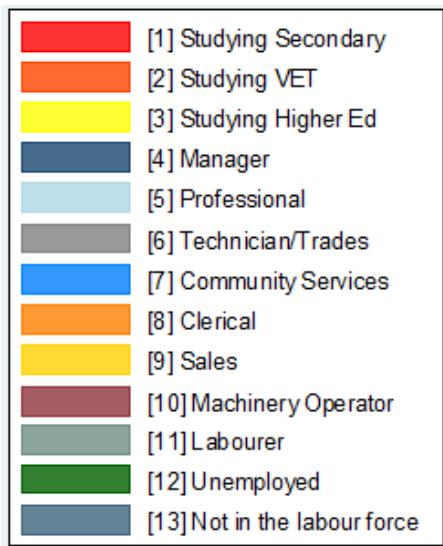
Marginal attachment

This third path is characterised by clusters of activity outside the labour market — see figure 4. The term 'marginal attachment' is used to describe these paths because they can incorporate periods of paid employment, but these episodes appear to occur on the margins of the labour market. We can see that Cluster 10 ('Not in the labour force') spent almost 80% of their time. Marginal attachment often included periods of unemployment, but also affected women moving in and out of the labour force, as well as older workers with decreasing attachment to the labour market — 55% were over the age of 55. As such, this was a very heterogeneous group.

Interestingly, research on marginalisation and disadvantage has largely been predicated on observations about core 'human capital' characteristics (for example, education and training level, employment experience). In other words, those who are identified at greatest risk of marginalisation, are those with diminished or limited skill capital 'holdings'. 'At risk' workers include workers displaced by sectoral shifts who now hold obsolete skills, those with low levels of generic education and schooling, and those with limited post-school qualifications. The OMA method makes an important contribution because actual transitions and movements of workers identified as marginal, are observed over time.

Figure 2   Low-skill trajectories

Legend:
- [1] Studying Secondary
- [2] Studying VET
- [3] Studying Higher Ed
- [4] Manager
- [5] Professional
- [6] Technician/Trades
- [7] Community Services
- [8] Clerical
- [9] Sales
- [10] Machinery Operator
- [11] Labourer
- [12] Unemployed
- [13] Not in the labour force

Cluster 2: Labourers

Cluster 3: Machinery operators

Cluster 5: Clerical workers

Cluster 7: Sales workers

Cluster 8: Community service workers

Figure 3 High-skill trajectories

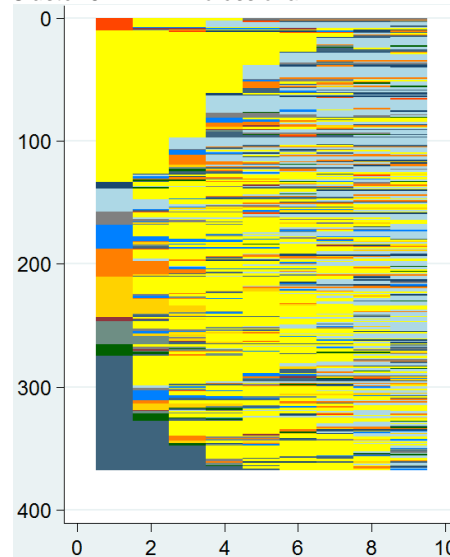| Color	Label
Red	[1] Studying Secondary
Orange	[2] Studying VET
Yellow	[3] Studying Higher Ed
Dark Blue	[4] Manager
Light Blue	[5] Professional
Grey	[6] Technician/Trades
Blue	[7] Community Services
Orange	[8] Clerical
Gold	[9] Sales
Dark Red	[10] Machinery Operator
Grey-Green	[11] Labourer
Green	[12] Unemployed
Blue-Grey	[13] Not in the labour force

Cluster 1: Professionals
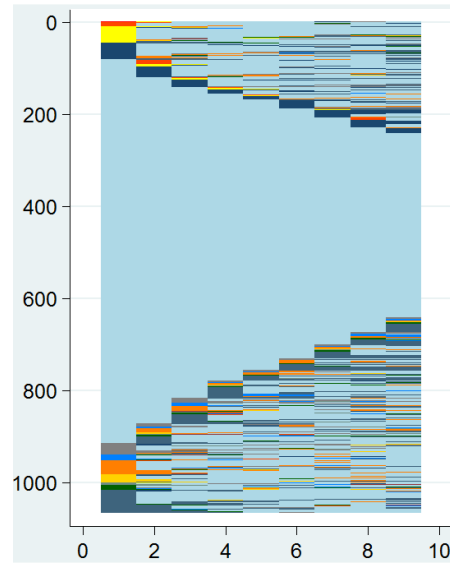
Cluster 4: Trades workers
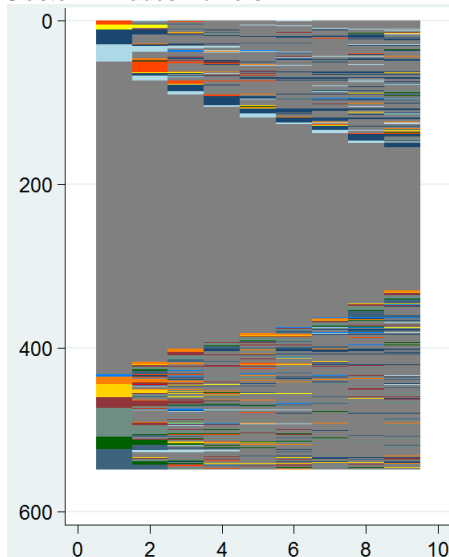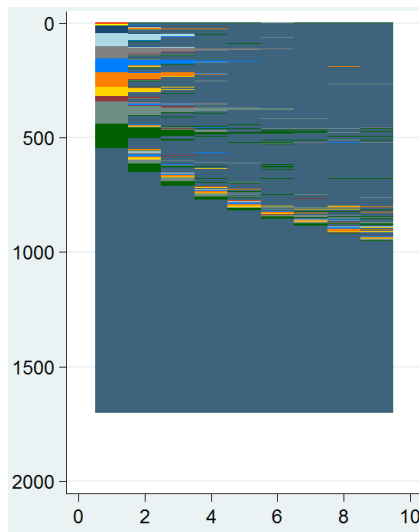
Cluster 6: HE → Professional

Cluster 9: Managers
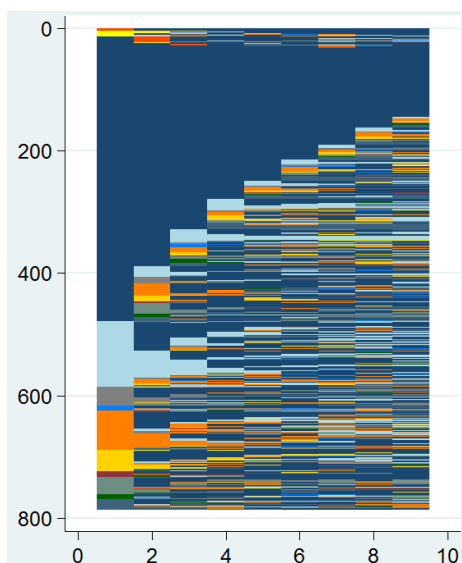
Figure 4   Pathways of marginal attachment

Cluster 10: Not in the labour force

Conclusions

There has been relatively little research into occupational mobility in Australia. Our contribution to the segmented labour markets literature has been to open up the question of segmentation to a relatively new method and, rather than consider a snapshot of data or a single event, investigate the trajectories of Australians over time. Using optimal matching analysis to analyse the trajectories of over 6500 Australians between 2001 and 2009, we paint a picture of very limited occupational mobility. The analysis shows that occupational progression is mostly limited to higher education graduates in professional and managerial roles, and that 'mobility' for low-skill workers is rather characterised by high turnover between low-skill roles. We have broadly classified this segmentation into high-skill, low-skill, and marginal attachment trajectories, and find that the high-skill/low-skill dichotomy reflects the SLM theories of labour market duality. Beyond this simple dichotomy, however, there is a wide array of institutional factors, including industrial, organisational and job structures, which give rise to a far more differentiated interpretation of labour market segmentation[8], which we see as contributing to the mixed results of empirical tests of SLM theory. It is important then to recognise that while we are contextualising our findings within a theory of good jobs and bad jobs, the central focus is on the institutional arrangements, rules and procedures which give rise to these good and bad jobs. This existence of 'structural differentiation' (McNabb & Whitfield 1998; Hachen 1990; Flatau & Lewis 1993) is seen to arise substantially from how businesses choose to compete, and employers' strategies for their organisation of work (Rubery 1994 cited by McNabb & Whitfield 1998).

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[8]   In our follow-up analysis (Yu, Bretherton & Schutz forthcoming) of occupations within four sectors (financial services, agriculture, engineering and trades, healthcare and community services), the differences in industrial, organisational and job structures were vast. This included segments characterised by: differences in modes of engaging workers (from largely permanent workforces in professional roles, to non-standard employment amongst labourers and care workers); the strength of occupational groups and unions (such those representing nurses, trades workers and engineers) versus fragmentation in others (such as for care workers and financial services professionals); support for on-the-job training and career paths (such as strong internal labor markets in financial services) versus limited training opportunities (typical for seasonal, casual and/or shift workers in agriculture and care work); and types of skill formation (from apprenticeships in the engineering trades, to recruiting for high levels of generic skills, plus on-the-job training in financial services). Such institutional structures are amongst the mechanisms by which wage and employment settings diverge and characterise segments of the labour market.

The results give pause to the hypothesis 'that not everyone who wants and is qualified for a primary job can get one' (Dickens & Lang 1985, p.1). Our finding of occupational silos corroborates a significant body of SLM literature and evidence which suggest that it is not solely, or even predominantly, the accumulation of human capital that determines this progression.

Acknowledgments

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Appendix A

OMA was first used in the social sciences by Abbott and Hrycak (1990), who modelled the careers of German musicians. The method has the advantage of considering a sequence of transitions through a life course and is most suitable for a large number of sequences, and a complex structure and ordering of states (Brzinsky-Fay 2007), as is typical of longitudinal data sets. While it is not a parametric statistical technique and does not produce predictive statements, it can be usefully applied to generate typologies of sequences (Halpin & Chan 1998). In reviews of the careers literature, Abbott and Hrycak (1990) illustrate the usefulness of OMA in avoiding the difficulties (and assumptions) of traditional statistical models in modelling a sequence of events, including multiple and/or repeated transitions, and the independence of a series of events (Abbott & Hrycak 1990).

The method seeks resemblance in pairs of sequences, by calculating the minimum 'elementary operations' (or steps) to transform one sequence to another. For example, in figure A1, two individuals move between full-time work and not in the labour force. An elementary operation involves inserting a different status, deleting a status, or substituting one for another. By a series of elementary operations, sequence 2 is transformed into sequence 1. The 'distance' between the two individuals is 4, the total insertions and deletions. Performing this process on every pair of individuals generates a distance, or similarity, between each pair. These steps are then weighted by a subjective cost[9] and standardised, generating a distance matrix which measures similarity between every pair of sequences.

Figure A1 OMA elementary operations example

Sequence							
Individual 1	N	F	F	F	F		
Individual 2	N	N	N	F	F		
Conversion of 2 to 1							
Individual 1	N	N	F	F	F		
Individual 2	N	N(del)	N(del)	F(ins)	F(ins)	F	F

Notes: F = full-time work; N = not in the labour force.

Cluster analysis is then performed on this matrix to classify the data into groups which minimise the smallest within-cluster variation, while maximising between-cluster variation. Following previous studies, we have used Ward's (1963) clustering algorithm. A detailed discussion of this and alternative techniques is provided by Abbott and Hrycak (1990), Pollock, Antcliff and Ralph (2001) and Brzinsky-Fay (2007). We have implemented the method in STATA (data analysis and statistical software), using the sq package created by Brzinsky-Fay et al. (2007).

For each individual, we have nine observations (one per wave in HILDA). We have defined the state space available to each observation as per figure A2:

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[9] The OMA technique can be sensitive to the costs of insertions, deletions and substitutions. These costs reflect, for example, the effort to move from an administrative role to a professional role. In view of existing studies (for example, Brzinsky-Fay 2007) and our intuitive results, we have set indel costs =1 and substitution costs =2.

Figure A2 OMA state space

4	Studying at school
5	Studying for a VET qualification[10]
6	Studying for a higher education qualification
7	Employed as a manager
8	Employed as a professional
9	Employed as a technician/trades worker
10	Employed as a community/personal services worker
11	Employed as a clerical/administrative worker
12	Employed as a sales worker
13	Employed as a machinery operator
14	Employed as a labourer
15	Unemployed (and not studying)
16	Not in the labour force (and not studying)

These states are assigned to each individual, in each year, based on their student status, labour force status and occupational status in each wave of the longitudinal data set.

The key variables used were related to educational participation and attainment, and occupational classification. The relevant classifications of these variables are provided by the Australian Standard Classification of Education (ASCED), and the Australian and New Zealand Standard Classification of Occupations (ANZSCO). These occupational classifications are associated with skill levels, designated by states 4 to 11 in figure A2.

The advantage of OMA lies in its ability to identify typologies and patterns of career paths, without prior knowledge or assumptions regarding what produces such patterns. Our treatment of partial responses (to remove the individual from the sample) is standard within the literature; however, this produces biased characteristics within the remaining sample. Table A1 details the characteristics of the data used, and missing.

As we can see, key biases arise due to certain groups of individuals being more likely to be excluded from the sample. This includes males, those living in major cities, the young and those with lower educational attainment. This treatment of missing data and attrition currently stands as a limitation to the OMA methodology *if* we seek to generalise our analysis to those of a representative population. Indeed, OMA is sensitive to sample variability and, as such, should be applied to as large a sample as possible. Given the large sample size however (particularly compared with existing studies using OMA), the analysis nonetheless provides substantial insight into the movements of individuals into and through the labour market.

In our review of the literature, we did not find any use of imputation models nor more sophisticated treatment of partial responses (such as weighting). Studies have invariably drawn conclusions based on the profile of the sample, not the population. However, OMA is intended to be exploratory, producing analytically meaningful patterns without a suite of statistical tests or a prior hypothesis of any generating mechanism. Most critically, it allows for analysis of a series of transitions without the traditional statistical limitations around multiple and/or repeated events, or limited prior knowledge.

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[10] Those who were simultaneously employed and studying have been classified as studying.

It can therefore be used to enhance our understanding of the question at hand, while respecting the limitations of the sample.

Table A1 Characteristics of used and missing data

	Used data N=6726	Missing data N=5234
Gender		
Female	54.1%	4933.4%
Male	45.9%	50.6%
Location		
Major city	61.5%	65.0%
Regional Australia	36.5%	32.3%
Remote Australia	2.1%	2.7%
Age		
Less than 25 years	13.6%	25.6%
25 to 34 years	21.4%	22.5%
35 to 44 years	27.0%	22.8%
45 to 54 years	22.2%	17.4%
55 to 64 years	15.8%	11.6%
Educational attainment		
Bachelor or higher	21.9%	15.6%
Diploma/adv. diploma	9.4%	7.0%
Certificate III/IV	17.9%	17.6%
Certificate I/II or not defined	1.6%	2.1%
Year 12	14.6%	17.8%
Year 11 and below	34.6%	39.9%

Productively independent: three decades of national research capacity

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Abstract

As one of the enduring features of the vocational education and training sector, the National Centre for Vocational Education Research clearly plays an important role. This paper draws upon analysts using French philosopher Michel Foucault's theoretical approach to policy analysis to identify some of the reasons for NCVER's stability and prosperity in a sector characterised by constant administrative reform. Through questioning the emergence and usage of the word 'independent' and its derivatives in the company's annual reports, insights can be gained into NCVER's role in lubricating intergovernmental relationships and the production of the Australian National Training System.

Introduction

My doctoral research into Australian VET policy has made me very familiar with NCVER. Longevity, in a sector characterised by constant reform to administrative arrangements (Kinsman 2009), is a unique feature of this organisation. Commencing operations in 1981 as the TAFE National Centre for Research and Development, its single change of name in 1992 was made to reflect the emerging range of training providers that would operate in a new national training system (National Centre for Vocational Education Research 1992). An analysis of NCVER's 30 annual reports exposes important, though unstated, reasons for its survival and prosperity. Its independence facilitates communication between levels of government and is instrumental in the continued development of the VET system.

The nine owners of NCVER are the ministers with responsibility for training in the Australian, state and territory governments. The strategic directions of the company are determined and monitored by a Board of Directors whose membership is drawn from experienced individuals with an interest in training, such as public servants, training providers, union officials and employers.

The notion of government as a problem-solver is widely accepted. For example, Colebatch (2006, p.1) depicts the object of government policy as 'what is the problem, and how is government trying to address it?'. Given that NCVER is a creation of the various governments, a question arises about the nature of the problem(s) that it might address. Certainly, NCVER's financial position demonstrates that it is meeting the expectations of its owners and directors. Its first annual income, in 1981—1982, was nearly $0.5m with net assets/total equity of $0.22m (TAFE National Centre for Research and Development 1982). In a linear progression, these figures have grown to an annual income of over $21m and a positive balance sheet position of $3m in 2011 (National Centre for Vocational Education Research 2011).

Ninety per cent of NCVER's funding comes from the Department of Education, Employment and Workplace Relations[11] and the majority of this funding is dedicated to managing and reporting upon VET statistics (National Centre for Vocational Education Research 2011, p.23). The VET research program is funded at much lower levels and the projects that are conducted are based upon sets of statistical relationships. For example, the atypical research project into the issue of disclosure of mental health matters by students started with a statistical relationship between mental health and course completion rates (Venville & Street 2012).

Australian-based feminist policy theorist, Carol Bacchi, provides Foucauldian-inspired tools that can probe the initial conceptualisation of problems by governments. Importantly, she proceeds from the position that problems amenable to government action do not actually exist prior to definition of the problem, also known as problematisation (Bacchi 2009). She calls this a 'what is the problem represented to be?' methodology.

Findings and discussion

In order to determine what the problem is represented to be that governments are addressing through NCVER's existence, a comprehensive analysis of the annual reports was undertaken. At a simple level, this scrutiny indicates the focus of NCVER's activity over the years has shifted from the teaching of technical skills to the gathering, analysis and dissemination of statistics about VET and links between the labour market and education. This view is confirmed in the *2010—13 strategic plan* (National Centre for Vocational Education Research 2010a). In other words, the problems being addressed by NCVER's activities have altered over the years from a concern about pedagogy to one of accounting and research emanating from data considered to be vital to VET.

However, this observation does not directly address the issue of the company's prolonged existence. Returning to the annual reports, closer examination shows that in the first five years, descriptions about the role of the company were contained in objectives with literally the same words relisted as aims until 1991 (TAFE National Centre for Research and Development 1985, 1991). Along with the change in name, NCVER developed a mission in 1992, values in 2001, a vision in 2003 and principles in 2005 (National Centre for Vocational Education Research 1992, 2002, 2003, 2006). Comparing the contents of these items revealed the increased usage of the word independent, or its derivatives, over the years since their first appearance in the 2000 mission statement (National Centre for Vocational Education Research 2001). The organisational mission, values, vision and principles remain in place in 2011 and independent/independence, referring to NCVER's status, appears eight times in the annual report including the mission and values (National Centre for Vocational Education Research 2011).

My focus on the word 'independent' arose partially because it has no obvious, direct relationship to the VET sector. Other major national providers of statistical information and analysis to governments also stress their independence even though they are either wholly or substantially funded from government sources (Australian Bureau of Statistics 2011; Australian Council for Educational Research 2011; Productivity Commission 2011a). The Productivity Commission's Chairman, Gary Banks, has delivered a spirited defence of independence (2011a). He stresses the importance of maintaining a perception of independence to ensure an apt separation between those who provide information and the government of the day. This ensures that the interests of the community as a whole are promoted over more narrow interests.

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[11] In 2012, the Department of Industry, Innovation, Science, Research and Tertiary Education became the funding source for a large proportion of the income previously supplied by the Department of Education, Employment and Workplace Relations.

NCVER's Managing Director, Tom Karmel, describes the use of the word independent in a similar manner. Karmel states (2012), 'we present data and research to promote an understanding of education and training and its links with the labour market, and not to support the views of particular parties, whether government or other'. He also notes that independence is not absolute and can be subject to contractual obligations on the part of those who commission research.

What is the problem represented to be by the word 'independent' in relation to NCVER's permanency? Independence from government is obviously crucial. This concern is likely to be in response to criticisms of research directions, usefully summarised by long-term VET administrator and writer, Kay Schofield. In reference to the early years of VET policy development, Schofield stated (2012), 'Punches were pulled everywhere' and what was not said was often more important than what was said. In her view, the contents of most major reports into VET either depended upon the views of the bureaucracy or reflected political considerations. The concept of independence as used by NCVER squarely addresses this type of criticism by positing that the company is not beholden to particular views.

How has the representation of independence as a problem come about? The seeds of this matter date back to the start of the last century and from outside of VET. The agreement to create the Commonwealth of Australia in 1901 has provided for an unending set of struggles between national and state levels of government (Butlin, Barnard & Pincus 1982), recently exemplified by the need for the comprehensive review of school funding tensions (Gonski et al. 2011).

In 1974, the Kangan Report into Technical and Further Education (TAFE) provided the mechanism that allowed the Australian Government to furnish financial assistance to provide for the skilled labour force needs of the national economy (Australian Committee on Technical and Further Education 1974). This report recommended 'further and more detailed research' into the TAFE problems (1974, xxii) by taking steps to gather and widely publish 'systematic evidence and information concerning the vital aspects of TAFE' (1974, p.103). Within a decade, it emerged that the states and territories would be required to provide sets of nationally consistent data, for purposes of accountability, in order to continue to receive Australian Government funding for VET (Northern Territory Archives Service 1985–1990). In response to intergovernmental contests about accountability measures, the Australian Government transferred its VET statistics functions to NCVER in 1991 to ensure the flow of funding to public training providers in each state and territory in exchange for information through a seemingly neutral body.

Questioning the process of problematisation also turns to the silences of a particular representation. The focus on NCVER's independence completely ignores the more fundamental question as to why there is a need for a national centre at all in the light of its change from pedagogical to statistical-based research. Given that the states and territories control the delivery of formal training, why do they not report on the outcomes in a prescribed format? After all, this type of reporting is the norm for many activities with national policy significance such as schools, the justice system and community services (Productivity Commission 2011b). Yet the necessity of having an independent body to process, interpret and promulgate VET statistics is treated as unproblematic. NCVER's presence as an independent data collection and research agency soothes anxieties about fairness and truth, which in turn implies that statistical processes conducted by NCVER are socially and politically neutral. However, this neutrality is at best a fabricated description. In analysing the emergence of education systems, Australian historian Ian Hunter (1996, p.154) notes, 'the role of social statistics is not so much to represent reality as to problematise it'.

As the major business of NCVER has become more statistically dependent, Canadian Philosopher Ian Hacking's comments on the making up of people are relevant:

> I claim that enumeration requires categorisation, and that defining new classes of people for the purposes of statistics had consequences for the ways we conceive of others and think of our own possibilities and potentialities.   (1990, p.6)

Upon enrolling in a formal VET course, each of the 1.7m students must furnish over 90 fields of information about themselves and their study to NCVER each year (National Centre for Vocational Education Research 2010b). Through econometric analysis of both NCVER data and that held by the other 'independent' information providers, statistically significant relationships can be identified as the basis for research. These, in turn, can be used to make up groups of individuals who can be assigned certain attributes — both positive and negative. In simple terms, the productive and dividing work of NCVER provides the knowledge that creates groups of people, described in a specific manner, making them amenable to government intervention. For example, the 2009 Work Plan (National Centre for Vocational Education Research 2009) nominates the disabled, older workers, youth, Indigenous, the illiterate and equity group members for research attention.

A Foucauldian approach requires an analysis of the effects of the problematisation, in this case of 'independence', on the limitations of what can be said or thought. The control of the national discourse on VET can be summarised by one acronym — AVETMISS. The Australian Vocational Education and Training Management Information Statistical Standard sets the parameters as to what can be known about VET. In addition to very detailed specifications collected from every student who enrols in government-funded courses, information is collected about providers, apprentices and trainees (National Centre for Vocational Education Research 2010b). AVETMISS was originally established in 1993 as a cooperative effort between federal, state and territory governments — the owners of NCVER. AVETMISS is described as the 'authoritative national reference' on information that 'is considered necessary' pertaining to Australian VET data (National Centre for Vocational Education Research 2010b, p.7). It is so influential that changes to the standard are carefully considered as to need and the impact upon business processes of both NCVER and training providers (Pattison & Alliston 2010). My personal experience is that the reporting of hours of training that complies with AVETMISS can become all-consuming to the point that it replaces the actual delivery of training as the major organisational goal for many training providers. The effects of the national management standard create a set of behaviours that determine the priorities and operations of the national training system.

Conclusions

Through analysing the problematisation of NCVER's self-proclaimed independence, two major conclusions can be drawn. Governments that prioritise economic considerations must have information in order to function and an independent NCVER allows the Australian Government to purchase information about VET from the states and territories *on mutually agreeable terms*. The Australian Government's contribution to VET funding does not actually purchase training; it buys information in a specified format.

Secondly, Foucault's linking of power/knowledge is used to describe a positive and productive activity. Instead of seeing power/knowledge as only coercive and negative, he saw this complex as always relational. Thus viewed, it shapes abilities to do things and, in particular, helps produce groups that are voluntarily amenable to government action (Oksala 2007). The independence of

NCVER enables it to be an acceptable contributor to the production of the VET system and the groups of people who require training. This is accomplished through control of the things that can be thought, known and discussed about the system through AVETMISS, other sets of statistics and the related research program. These determine the behaviours of the various groups and organisations in the system.

This work is not accomplished in a secretive manner. Indeed, NCVER goes to great lengths to make its information widely available. The productive capacity of NCVER arises because of its avowed independence *from* the governments of the day. NCVER's longevity can be explained by its ability to serve as a vehicle to overcome the political and financial areas of contestation between the two levels of government by fostering a training discourse that is disconnected from the distinctive nature of actual training process.

However, NCVER is not independent *of* the VET system. The company exerts a productive capacity through the application of statistical and econometric techniques to determine what we know about VET and the citizens who use it. The very genetics of the VET system are engineered by NCVER. This role is significantly more than that of a passive observer and reporter. By questioning the problematisation of independence, and making visible its role in intergovernmental relationships and the production of the national training system, NCVER's permanence and success can be understood as exceeding its function as a neutral observer and reporter.

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