OCCASIONAL PAPER

Pathways: developing the skills of Australia's workforce

Hugh Guthrie
John Stanwick
Tom Karmel

National Centre for Vocational Education Research

NCVER

OCCASIONAL PAPER

NCVER

Pathways: developing the skills of Australia's workforce

HUGH GUTHRIE, JOHN STANWICK AND TOM KARMEL

NATIONAL CENTRE FOR VOCATIONAL EDUCATION RESEARCH

This document should be attributed as Guthrie, H, Stanwick, J & Karmel, T 2011, *Pathways: developing the skills of Australia's workforce*.

The National Centre for Vocational Education Research (NCVER) is an independent body responsible for collecting, managing and analysing, evaluating and communicating research and statistics about vocational education and training (VET).

NCVER's inhouse research and evaluation program undertakes projects which are strategic to the VET sector. These projects are developed and conducted by NCVER's research staff and are funded by NCVER. This research aims to improve policy and practice in the VET sector.

ISBN 978 1 921955 00 6 web edition

978 1 921955 01 3 print edition

TD/TNC 103.33

Published by NCVER
ABN 87 007 967 311

Level 11, 33 King William Street, Adelaide, SA 5000
PO Box 8288 Station Arcade, Adelaide SA 5000, Australia

ph +61 8 8230 8400 fax +61 8 8212 3436
email ncver@ncver.edu.au
<http://www.ncver.edu.au>
<http://www.ncver.edu.au/publications/2376.html>

About the research

Pathways: developing the skills of the Australian workforce

Hugh Guthrie, John Stanwick and Tom Karmel, National Centre for Vocational Education Research

This paper was originally developed in April 2010 to help the Training and Skills Commission in South Australia consider the mechanisms used to promote pathways between elements of the education and training system, how well they are working and what improvements could be made. We have since developed the paper to make it national in scope.

We found that quite substantial numbers of vocational education and training (VET) graduates go on to university-level study or further study within VET itself. Of the latter, many undertake additional VET courses at the same or a lower level. Significant numbers of university graduates also go on to study in VET, with management and commerce, and society and culture being the most popular fields. We suggest that entitlement models need to consider horizontal (skills broadening) as well as vertical (only qualifications at a higher level) progression. The caveat is that outcomes need to be worthwhile and that qualifications churning is avoided.

One of the difficulties in analysing pathways is the lack of precise data. A unique student identifier across tertiary education would directly remedy this.

Tom Karmel
Managing Director, NCVER

Contents

Tables

Introduction

This paper was originally produced for the South Australian Training and Skills Commission in April 2010. It sought to:

> understand what mechanisms are currently in place to promote pathways between elements of the education and training system, how well they are working and what improvements can be made. (Training and Skills Commission 2009, p.36)

The impetus for this present paper arose from the commission's 'Skills for Jobs' paper, released in May 2009. In it the commission notes the need for a highly, broadly and deeply skilled workforce, with higher levels of qualifications to help sustain economic growth and provide the skills necessary for South Australia to exploit its economic opportunities and resources. Their paper has an equity focus too, meaning that all people have access to opportunities to ensure the best use is made of their talents. The commission's paper also draws attention to a number of targets reflected in the state's strategic plan, especially in relation to an increased employment-to-population ratio and equalling or bettering the national averages in the proportion of the labour force with non-school qualifications by 2014. South Australia also needs to play its part in meeting national targets agreed to by Council of Australian Governments (COAG) and in other forums. This paper and the motives behind it therefore have a national resonance. Hence both the Training and Skills Commission and the National Centre for Vocational Education Research (NCVER) are keen for the paper to have a broader audience. In order to achieve this we have kept much of the text of the original paper, but reworked the content so that it is more up to date and the data are more national in focus.

As the Training and Skills Commission's 'Skills for jobs' paper suggests, delivering on state and national targets will require a comprehensive and integrated raft of initiatives, including improved access to tertiary study—especially for those from under-represented groups—and improved pathways between schooling and tertiary education. This includes pathways within and between the components of the tertiary and post-school sectors, and better interfaces between education, training and the world of work. It will involve reconciling intersectoral differences, reducing or eliminating barriers between sectors, and expanding appropriate recognition for an individual's education, training and personal experiences.

Our approach in developing this paper involved a literature review, data analysis, and a small number of carefully targeted consultations. The paper first discusses the pathways concept and the range of potential pathways. It then outlines the range of pathways and their relative use, especially those related to school to VET and higher education, VET to VET and to higher education, as well as reverse transition. Next it looks at some of the factors which influence their effectiveness, and finally at possible improvements.

The pathways concept

What are pathways?

Here a pathway is a metaphor for the journeys an individual takes through life. The literature refers to learning pathways as well as occupational or career pathways. These pathways are rarely planned from beginning to end; rather, they occur in a series of stages, some of which arise by personal choice and others through circumstance.

Learning pathways are the ways individuals navigate their learning and life experiences through education and training, work, community and personal life. There are many learning pathways that an individual can take on their way to any particular job. These days most individuals will have a range of jobs in their life, and will continue to learn all the time. Learning pathways also concern transitions that individuals make both within and between educational sectors (schools, adult and community education, vocational education and training and higher education).

Occupational pathways refer to movements and progression within a particular vocational area, and these are often promoted by particular industries keen to attract and retain workers. As we will show later, industry-specific training does not necessarily lead to individuals gaining work in that industry. This raises questions about the balance between specific and more generic knowledge, skills and other attributes in vocational programs to ensure that they are not too constraining in terms of an individual's options. Essentially, the argument is about whether vocational programs and pathways are there to benefit industry or the individual. The challenge is to understand how pathways actually work, rather than any idealised conceptions.

Career pathways are more broadly conceived and concern the way individuals move between jobs, vocational areas and roles, as well as through education and training programs, both formal and informal. The career pathway is a lifelong journey. The pathways that can be taken also depend on having a key set of foundation skills, such as literacy and numeracy. Nevertheless, some individuals remain, by circumstance or choice, detached from work. A range of pathway programs have been put in place to help them into gainful study or employment.

Ideally, pathways might be conceived of as ordered with known destinations and with routes to them clearly marked out. A recent NCVER report (Martin 2007) suggests that many people follow conventional life-course pathways. In a predictable order and at predictable ages, they complete school, possibly undertake post-secondary education, enter paid work, partner, have children (and, if they are women, withdraw from paid work permanently or temporarily), and so on. Recently, Martin suggests, many commentators believe that established life-course models have been changing, fracturing these standardised models so that they are now much more unpredictable. This 'modernised' model is most apparent in the mature-adult age ranges (30–49). Martin (2007) suggests that this increased acquisition of post-secondary qualifications is probably more marked in non-degree qualifications than in degrees and above, and occurring after many—particularly women—are into their 30s. It also shows that patterns of participation are different for different occupations.

In line with Martin's notion, Harris and his colleagues (Harris, Rainey & Sumner 2006) characterise pathways—in their case between VET and higher education—as fragmented or discontinuous stages and a series of personal choices—a journey where the individual needs to have the autonomy to twist and turn on a series of 'stepping stones', 'zigzags' and 'crooked paths'. They characterise pathways as—potentially—'crazy paving'.

How do individuals use the available pathways?

Harris, Rainey and Sumner (2006) describe a number of different types of learner groups. They include:

- *Career developers*: those who show consistent interest in a particular area or occupation and flow, rather than jump, between learning opportunities—even across sectors.
- *Career mergers*: who, having explored interests in other areas, draw these together to move into a more focused course of study. Pathways are usually non-linear but may be complementary.
- *Two trackers*: who attempt to develop an alternative career as insurance for a time when their current career is no longer possible. This pattern also occurs when students are trying to improve their chances of earning an income while studying, for example, doing a hospitality course to help get a job while studying to be a lawyer.
- *Forced learners*: who undertake what appears to be a completely different course of study for professional development reasons, or because some practical factor obliges them to undertake a particular course, such as affordability, location or entry requirements.
- *Interest chasers*: who follow various personal fields of interest, bouncing between them.

It might also be suggested that there is another learner type here, and that is foundation learners, who have a range of learning disabilities and need to further develop in key areas such as literacy, numeracy and interpersonal skills in order to undertake further study. In this sense, perhaps they are a particular type of 'forced learner'.

Unfortunately, however, we have very little comprehensive information about the various pathways. We know how some pathways—mainly learning ones—are used, and what the outcomes are, at least in the short term. We also know what some of the 'bridges' that join inter-sectoral pathways are, and something about the 'tolls' used to control traffic flow across them. These are the articulation and credit transfer arrangements in place. However, we also know that some people are eligible to cross but choose not to exercise their right to some credit. Others shop for the best credit deal, and then use this information to seek entry to a particular course or institution.

Some pathway choices are less constrained than others, and made relatively freely. In some cases, however, choices are not freely made and people may be forced down a path which is not really of their choosing. Other people—often the most disadvantaged—are on roundabouts. That is, they are caught up in a particular set of circumstances or are repeating educational and training programs rather than moving on. Some of these are searching for a suitable exit to begin the journey down a likely better path.

Finally, we need to understand the range of 'traffic restrictions'. Some, like those applying to regulate occupations, are used to control entry and the right to practice (for example, doctors, lawyers, plumbers and electricians). Others are there because qualifications are mandated by law; for example, having a relevant ticket (say to drive a forklift or handle food) or qualifications such as those required to work in child or aged-care facilities.

Another dimension is the way the pathways are designed. Some may have been designed as super highways, but in reality they are only carrying minimal traffic because they cannot attract sufficient numbers. Others may have been designed as a small pathway, but in reality are meeting such a key need that they are grid-locked with people on the pathway, or at the crossroads seeking to enter it.

What are the major pathways of interest?

The ranges of potentially significant pathways include those:

- from school into VET, higher education or work
- within VET, as people move through a range of qualifications in the same or related training packages or to other qualifications. They may also change providers and move up, down or across in the level of qualification undertaken to do this
- from VET to work; their work may be in a related or different area from their qualification
- from VET to higher education; this may involve studies in the same area, or a different one
- within the higher education sector to other courses or institutions
- from higher education to VET, possibly in the same but—more likely—a different field of education (Curtis 2009)
- from higher education and into work. At a later stage they may return to university or to VET for further study
- from unemployment (whether short- or long-term) or absence from the workforce and into adult education, VET or higher education
- from retrenchment, workers' compensation or a disability or supporting parents pension into study to gain new skills to re-enter the workforce.

Some of the above pathways are frequented by young people, others by older ones. It should be noted that not all pathways involve the completion of formal qualifications. NCVER's employer use and views survey shows that employers make significant use of unaccredited and informal training (NCVER 2008a). However, qualifications—and their attainment—are a key policy benchmark, but their value as a commodity can be different for employers and individuals (Blythe & Bowman 2005). Recognition of prior learning (RPL) is the system's way of trying to formalise the informal, and increasing the level of recognition of prior learning as a path to more quickly obtaining qualifications is a policy objective. In some cases recognising previous learning may be the predominant mechanism by which qualifications are gained. We will discuss recognition in more detail later.

Key pathways

While we are aware of the many pathways available, we have concentrated on those within and between sectors. The key pathways we will be considering here include:

- ✧ school to VET and higher education
- ✧ VET to VET and to higher education
- ✧ higher education to VET.

School to VET and higher education

Table 1 is derived from the ABS Survey of Education and Work. It shows school leavers' study destinations for Australia.

Table 1 School leavers aged 15–24 years by level of study in 2010

	'000	% (of all school leavers)
Enrolled in study:	200.9	57.2
Bachelor degree or above	101.8	29.0
Advanced diploma and diploma	19.3	5.5
Certificate level	64.3	18.3
Year 12 or below	4.8*	1.4
Not enrolled in study	150.4	42.8
Total	**351.2**	**100**

Notes: School leavers are persons who attended school in 2009 but who were not attending in May 2010, aged 15–24 years. Year 12 and below are students enrolled in a school qualification but are not at a school institution
* Estimate has a relative standard error of 25% to 50% and should be used with caution.
Source: ABS (2010).

The table shows slightly higher proportions of school students going on to university than VET (29.0% and 23.8% respectively). Data from NCVER's National VET Provider Collection gives more information on numbers of people (all ages) with no post-school education going on to VET. Table 2 shows large numbers of people whose highest prior level of education was below Year 12 going on to VET. If we look further by current course level, we see that three-quarters of diploma students had completed Year 12 as their highest prior level of education. In contrast, a little under a half of people enrolled in certificate III/IV had Year 12, and further, nearly 60% of people enrolled in certificate I/II courses had Year 10 or below as their highest level of education.

Similarly, we can get some idea of the numbers going to university from the Department of Education, Employment and Workplace Relations's Higher Education Collection. Table A2 in the appendix provides information on the number of students admitted on the basis of Year 12. It shows that, in 2009, for Australian universities the greatest proportion were admitted on the basis of secondary school qualifications (although less than half of admissions overall). These are most likely to be school leavers (that is, Year 12 completers). Also note that it is difficult to

compare these numbers with the numbers in VET as they come from a different basis (applicants in the case of universities compared with all current students in VET).

Table 2 Highest prior level of education for people with no post-school education by current VET qualification 2009 (%)

Previous highest education level	Diploma or higher	Certificate III/IV	Certificate I/II	Other*	Total
Year 12	62 071	210 724	55 418	54 394	382 607
Year 11	9 231	80 108	53 780	27 142	170 261
Year 10	9 287	131 224	97 422	47 995	285 928
Year 9 or lower	1 720	31 334	56 174	33 621	122 849
Did not go to school	148	553	2 137	2 283	5 121
Total	**82 457**	**453 943**	**264 931**	**165 435**	**966 766**

* Other includes non-AQF qualification and other.
Source: NCVER National Provider Collection (2009).

VET to VET or higher education

In this section we examine the movement between qualifications within the VET sector itself as well as between VET and higher education. We can look at this in two ways. First, we can consider current students who have a previous qualification. Secondly, we can look at the study destinations of VET graduates.

Prior education

The information in tables 3 and 4 pertains to the highest prior level of qualification held by current VET students. The information is categorised by current qualification being undertaken (table 3) or by field of education of current qualification (table 4).

Table 3 Highest prior qualification by current qualification of VET students 2009

Previous highest education level	Diploma or higher	Cert. III/IV	Cert. I/II	Other**
Bachelor or higher	21 060	50 156	16 620	33 079
Adv diploma/diploma	21 925	35 875	10 532	19 920
Cert III/IV	49 714	106 076	23 746	46 480
Cert I/II	1 317	18 822	9 534	5 286
Year 12	62 071	210 724	55 418	54 394
Below year 12	20 386	243 219	209 513	111 041
Other*	23 538	79 460	60 298	106 474
Total	**200 011**	**744 332**	**385 661**	**376 674**

* Includes miscellaneous education and not known.
** Includes non-AQF and other.
Source: NCVER National Provider Collection (2009).

We can see from the table that there is some measure of VET to VET movement (particularly at certificate III/IV level) and also higher education to VET (also high numbers to certificate III/IV). Post-school there are four main areas which are examined in more detail in table 4. We do this by looking at the current field of education in which students are enrolled. The columns of the table should be read as current qualification first, by highest prior qualification second. For

example, the first column is for students currently enrolled in a certificate III/IV who have a bachelor degree or higher as their highest previous qualification level.

Table 4 Students by selected current VET qualifications and selected highest prior qualification by current field of education 2009

Major course field of education	Cert. III/IV with bachelor	Diploma or higher with cert. III/IV	Cert. III/IV with dip/adv dip*	Cert. III/IV with cert. III/IV	Cert. I/II with cert. III/IV	Total Students in the field
01 - Natural and physical sciences	317	533	201	588	5	6 266
02 - Information technology	1 350	2 162	965	3 020	120	33 236
03 - Engineering and related technologies	**4 072**	**4 663**	**4 219**	**20 445**	**6 362**	**283 563**
04 - Architecture and building	1 274	2 118	1 267	7 438	551	126 113
05 - Agriculture, environmental and related studies	1 976	1 318	1 448	4 447	2 099	70 966
06 - Health	2 476	4 301	2 463	8 297	2 188	89 277
07 - Education	8 563	623	4 626	6 786	67	57 231
08 - Management and commerce	**12 113**	**16 500**	**9 035**	**25 011**	**4 498**	**328 377**
09 - Society and culture	**7 689**	**13 616**	**5 757**	**17 270**	**1 093**	**176 405**
10 - Creative arts	1 815	3 169	1 157	2 884	383	49 380
11 - Food, hospitality and personal services	3 927	507	2 771	6 799	3 459	183 373
12 - Mixed field programmes	4 584	204	1 966	3 091	2 921	194 971
Other (subject only)	0	0	0	0	0	107 520
Total	**50 156**	**49 714**	**35 875**	**10 6076**	**23 746**	**1 706 678**

*Also includes associate degree.
Source: NCVER National VET Provider Collection (2009).

The table shows that the main activity for these selected qualifications is in management and commerce, engineering and related technologies, and society and culture. In addition, there are quite a lot of certificate III/IV students in education who already have a bachelor's degree (8563) and also quite a lot of certificate III/IV students in engineering and related studies who have a certificate III/IV (20 445). It also shows that there is significant movement up, down and across Australian Qualifications Framework (AQF) levels. The level of movement varies with field of education.

Further study

Table 5 Further study of VET graduates by qualification level and type of institution, Australia 2010*

Qualification	University	TAFE	Other*	Not enrolled in further study
Diplomas and above	10 847	8 610	5 059	43 197
Certificate IV	7 626	17 705	8 483	60 960
Certificate III	9 858	30 558	20 424	151 156
Certificate II	5 799	23 916	15 427	75 999
Certificate I	486	6 989	4 121	14 286
Total	**34 616**	**87 778**	**53 514**	**345 599**

*Includes not stated.

Source: NCVER Student Outcomes Survey web tables (2010).

The table shows that about 34 600 students with a VET qualification went on to university (most with diploma level followed by certificate III). However, a further 87 000+ went on to enrol in a further VET-level qualification. Having said this, depending on the admission criteria applied, completing Year 12 is a more significant pathway to university than are TAFE qualifications.

Study at same or lower level

While the aim of many students going on to further study is to undertake it at a higher level, this is not always the case. Table 6 below shows that there are also substantial proportions of certificate III and above graduates in Australia who go on to further study at the same or lower level.

Table 6 VET graduates who undertook further study at a higher, or same or lower level than completed study as a proportion of all VET graduates who undertook further study, by qualification level of completed study, 2010 (%)

	Higher level	Same level	Lower level
Diploma and above	58.6	14.7	26.7
Certificate IV	63.0	15.4	21.6
Certificate III	62.6	18.7	18.7
Certificate II	73.1	10.3	16.6
Certificate I	80.0	10.8	9.2
Total	**65.9**	**14.8**	**19.2**

Note: Certificate I graduates may enrol in statement of attainment or other courses at a lower level than certificate I. Graduates whose further study level is not known have been excluded.
Source: NCVER Student Outcomes Survey (2010).

While the most commonly recognised pathways are through school, VET and higher education the adult and community education (ACE) pathway must not be ignored as it provides pathways for particular demographics, including those who have had poor educational experiences in the past and want to return to study through a pathway they perceive as non-threatening.

Higher education to VET (and further higher education)

While pathways into higher education—especially from schools and VET—have been looked at extensively in both research and data terms, those from higher education to VET have been a path less trodden and are therefore less well understood. What research there is has been summarised in Curtis (2009).

Into higher education

Curtis (2009) showed that, nationally, about 8% of commencing higher education students in 2003 were admitted on the basis of prior VET qualifications. Among younger individuals (less than 25-year-olds), almost 10% of university admissions are made on the basis of a completed VET qualification, while a further 5% of commencing students have prior VET experience. Among older individuals, approximately one-quarter of commencing students have prior VET experience (Curtis 2009).

Institutional arrangements for the VET to higher education path vary greatly. Some arrangements appear to be particularly effective in supporting this pathway. Young (2006) showed that at Swinburne University, 22% of bachelor degree admissions were based on VET

qualifications. This institution coordinates its VET and higher education programs and this coordination facilitates student movement from VET to higher education. Other institutions, for example, Southbank Institute of Technology and Griffith University, have jointly planned award structures to provide almost seamless pathways from VET qualifications into related higher education awards. There are several other institutional arrangements, such as block credit, specified credit and case-by-case credit assessment regimes (Phillips KPA 2006).

From higher education to VET

Curtis (2009) showed that, among younger students, about 5% of university commencers exited their courses without completing them and transferred to VET. A further 4% of commencers completed their university courses and subsequently enrolled in VET qualifications. Curtis suggests that about 10% of older students who are enrolled in VET qualifications hold university qualifications. These are Australia-wide figures. NCVER's National VET Provider Collection provides some detail on students in public VET with higher education qualifications (table 7).

Table 7 VET students in Australia with bachelor degree or higher as their highest level of prior education by field of education 2009

Field of education	Bachelor degree or higher
Natural and physical sciences	792
Information technology	3 244
Engineering and related technologies	9 182
Architecture and building	3 974
Agriculture, environmental and related studies	5 378
Health	7 568
Education	10 874
Management and commerce	26 079
Society and culture	16 380
Creative arts	4 805
Food, hospitality and personal services	8 205
Mixed field programmes	15 980
Other (subject only)	8 454
Total	**120 915**

Source: NCVER National VET Provider Collection (2009).

We see that about 120 000 VET students already had a higher education qualification. The largest numbers are enrolled in management and commerce, society and culture, mixed field studies (perhaps curiously) and education. Most probably these latter individuals are undertaking the Certificate IV in Training and Education.

We can break down this information by qualification level for the fields where there are relatively high numbers with bachelor level degrees (table 8).

Table 8 VET students with bachelor (or higher) qualifications by current qualification and selected fields of education 2009

Major course field of education	Diploma or higher	Cert. III/IV	Cert. I/II	Other*
Engineering and related technologies	1 573	4 072	1 848	1 689
Health	1 035	2 476	2 069	1 988
Education	780	8 563	21	1 510
Management and commerce	8 010	12 113	2 670	3 286
Society and culture	4 205	7 689	2 399	2 087
Food, hospitality and personal services	111	3 927	1 981	2 186
Mixed field programmes	330	4 584	3 590	7 476
Total**	**21 060**	**50 156**	**16 620**	**24 625**

* Non-AQF qualifications

** Total for all fields of study.

Source: NCVER National VET Provider Collection (2009).

The single largest area of activity is with students enrolled in a certificate III/IV course in management and commerce, followed by a certificate III/IV in education and then diploma in management and commerce. Management and commerce courses are potentially useful courses for students with university degrees who may be involved in the running of a business or in the public service. As mentioned previously, the certificate III/IV in the field of education may be associated with the mandating of qualifications for VET practitioners.

A study by Coates and Edwards (2009) which looked at further study activity of university students five years post-graduation found that about 40% of students went on to further study and of those who did, about a half went on to further study at the postgraduate level (see table A3 in the appendix). About 5% of all graduates went on to VET studies. Table A4 in the appendix gives further information by field of education and average overall grade. This table shows apparent differences by field of education. Relatively high proportions in the natural and physical sciences go onto postgraduate study. By contrast, 18% of graduates in education with a lower average overall grade went on to VET within five years of graduating. The reasons for this are not clear from the report. Participation in further education was similar for those with lower or higher average overall grade.

Finally, Karmel and Nguyen (2007) show that completing a VET qualification is of benefit to some student groups, but not all. For those who attain a VET qualification but who are already university graduates there is no wage premium. In fact, the effect seems to be negative. However, it is possible that this is linked to their specific circumstances and might be used by them to increase or open up career options because their earlier qualification has not turned out to be a particularly useful one for them.

Summary of major pathways

In summary, this chapter highlights a couple of major points. The first is the key pathways apparent in the data:

- ✧ Quite substantial numbers of VET graduates go on to university-level study. However, not all VET graduates go on to study at a higher level. A substantial proportion of students going on to further study, including at certificate III level and above, do so at the same or lower level. There may be very valid reasons for undertaking such qualifications and pathways.
- ✧ Having said this, the main pathway to higher education would seem to be Year 12 completion.

- ✧ Substantial numbers of VET students already have VET qualifications. Main areas of activity are in management and commerce and society and culture, although there are also quite a large number in engineering and related technologies, particularly at certificate III/IV level.
- ✧ Substantial numbers of VET students already had higher education qualifications. By field of education, the biggest numbers with higher education qualifications enrolled in VET qualifications were in management and commerce, society and culture, and—curiously—mixed field studies

There are undoubtedly smaller but very significant pathways that remain hidden in this analysis.

The other point to mention is that we have limited information about many pathways. Table A1 in the appendix shows us that about 90% of the possible training package qualifications are active in Australia. However, little or no data are gathered about the wide range of programs and pathways offered by private providers, industry, suppliers and other groups. Having said this, there are systems and processes currently being put in place to collect a data from a wider range of training providers. Over time, this should allow for a more comprehensive picture to emerge.

Effectiveness of the pathways

The literature identifies a diverse range of factors which affect the extent to which particular pathways are taken up. Harris, Rainey and Sumner (2006) found there are a range of reasons why particular pathways are not pursued. The barriers they identified include: finance issues; the location of institutions and the availability of transport; and issues associated with juggling work, family and study. These are very basic issues which are cannot necessarily be readily overcome. Those studying at universities have income-contingent loans. Such loans are not available for most VET courses and the relatively small fees charged for VET public places and the costs of tools and equipment may affect an individual's ability to take particular VET pathways. Many may also wish to study locally, and this necessarily restricts the range of options available to them.

Harris, Rainey and Sumner (2006) also indentified a number of other issues, including inadequate course or career information, the availability of credit transfer or recognition of prior learning, and a lack of confidence or finding the academic work difficult. And there is the obvious reason of lack of places since some VET courses fill up very quickly.

Some of the issues noted above are of a personal nature and are thus difficult for governments to address. Others are of a more institutional nature and are the direct responsibility of government. The major factors of this type are:

- ✧ the impact of profile and 'targets' on the availability of particular pathways
- ✧ the funding models used to support particular pathways
- ✧ the quality and timeliness of careers and course advice
- ✧ the availability of articulation arrangements and credit transfer
- ✧ the recognition of prior learning.

We spend a little time on each of these.

The effects of demands, profile and 'targets'

The availability and use of pathways will be affected by state and national funding arrangements and targets. If the targets do not accord with student demand, then mismatches will occur. The interpretation of such mismatches can be contested. Those who favour the government setting targets argue that they reflect industry needs. By contrast, those who are sceptical about the value of centrally determined targets argue that students are better placed to determine what is of value to them. They also point to the loose link between training and destination occupations for the majority of courses (see NCVER 2008b; Karmel, Mlotkowski & Awodeyi 2008), reflecting the generic aspect of much vocational education and training.

If mismatches are to be addressed, better data on student demand and unmet demand are required—unless the view is that that student demand should drive provision of courses and pathways. In this case the emphasis would be on flexibility of providers and the provision of career information to students.

Funding models

The funding models will affect what pathways are used. For example, Victoria has implemented a funding model based on individual entitlement, which enables those seeking to enrol in qualifications of a higher level than ones they currently hold to do so. The Council of Australian Governments (COAG) has also undertaken a reform agenda aimed at, amongst other things, productivity and workforce participation. There are three strands to the reform: competition and regulation, human capital (including education and training) and the environment (Productivity Commission 2010). COAG's National Education Agreement (2008) further puts forward education targets for young people. These include lifting Year 12 or equivalent attainment rate to 90% by 2020 and halving the gap for Indigenous students across various domains. These reforms have significant implications for funding arrangements The national agreement for skills and workforce development has as one of its objectives that all working-age Australians will have the opportunity to develop the skills and qualifications needed, including through a responsive training system, to enable them to be effective participants in and contributors to the modern labour market. In particular, COAG agreed to the rapid implementation of a Compact with Young Australians, including that:

- Young people aged 15–19 years will have an entitlement to an education or training place for any government-subsidised qualification, subject to admission requirements and course availability.
- Young people aged 20–24 years will have an entitlement to an education or training place for any government-subsidised qualification which would result in the individual attaining a higher qualification, subject to admission requirements and course availability (COAG 2009).

These latter approaches support upskilling at, perhaps, the expense of skill broadening. Another issue is the level of funding. For example, if the pathway programs concern equity groups, funding support may not be adequate to achieve satisfactory outcomes. An alternative approach would be to have additional funding available for people from particular groups.

A critical issue is who pays—government, individuals or employers? Considerations are ability to pay and who benefits. If the individual largely benefits, then it would appear to be reasonable for the individual to pay a fair proportion of the cost. If it is the employer who benefits, then it would be logical for the employer to bear most of the cost. We also need to be careful about conflicting incentives. For example, training incentives to employers will support training that benefits the employer and such incentives could perversely interact with entitlements if employers dictate to employees what training should be undertaken.

In terms of individual investment in training, university graduates are more likely than other young people to secure full-time employment and to have higher status jobs and higher earnings (McMillan 2009). Long and Shah (2008) have shown that rates of return to study in higher-level VET courses mostly provide students with a better-than-adequate incentive to enrol. They also suggest that returns for lower-level courses (at certificate I and II levels) are lower and more variable. Long and Shah also show that the rates of return are mostly slightly higher for those whose highest level of schooling is Year 10 rather than Year 12, which points to the value of VET as a pathway for people—especially females—who do not complete their schooling.

The quality of advice

As we have already said, people with particular demographic characteristics tend to pursue particular pathways. The quality and value of career and other guidance will also affect the pathways taken. Rainey et al. (2008) suggest that career service providers in technical and further education (TAFE) institutes, universities and government agencies believe that they are most

effective in helping young people to explore their options for work and further learning. On the other hand, Harris, Rainey and Sumner (2006) show that only a small proportion of eligible TAFE and university students are accessing available career services. Perhaps the careers advice fraternity overstate their importance.

Career providers need to present services in a way that is likely to enhance their take-up by young people; they also need to help young people to make the best use of available services and pathways (Rainey et al. 2008).

A final element is how relevant the advice people receive is. The issue is whether the advice is actually tailored to their aspirations, achievements and abilities at that time, or whether the advice is restricted to the range of pathways that the advisor is familiar with or may serve the interests of others more.

Articulation and credit transfer and RPL

Articulation is focused on ensuring that an individual can progress through qualifications within or across sectors. Discussion of articulation usually focuses on qualifications that are related to each other in some respect. Articulation may or may not involve the granting of credit.

'Credit transfer' refers specifically to the granting of exemption, status or advanced standing in a course on the basis of relevant previous or concurrent formal studies. Credit may be granted in the form of block credit[1] (for a stage of a course), specified credit (for nominated units), or unspecified credit (for nominated credit points applied to different units for different students).

Credit is usually only formally granted after admission, but individuals may 'shop' across institutions for the best deal, as the amount of credit granted for the same award may vary between institutions at present.

Within the VET sector, articulation arrangements, known as National Recognition, are under the auspices of the Australian Quality Training Framework. These arrangements require that all registered training organisations (RTOs) recognise a qualification or Statement of Attainment issued by another registered training organisation. The achievement should be recognised if it forms part of the new qualification.

However, providers in both the VET and higher education sectors are responsible for meeting the outcomes required of each qualification, often within parameters set by external agencies. An effective articulation policy and supporting arrangements must work by supporting individuals' aspirations and by reducing to a minimum any unnecessary duplication. At the same time the process needs to ensure the integrity of the particular awards provided.

Nevertheless, the take-up and use of articulation arrangements is affected when institutions are mistrustful of the quality of outcomes of prior programs of study. This is particularly so when an individual is trying to move between sectors. VET providers may mistrust the quality of what has been done by schools and, likewise, higher education with VET. In addition, universities have been more receptive to TAFE graduates, treating private VET graduates less favourably (Phillips KPA 2009).[2] At the root of much of this distrust is a lack of knowledge about what other providers do and how well they do it. The key to overcoming this is the development of

[1] A possible drawback to block credit is that it does not necessarily cover off gaps in knowledge, that is, a student could get credit for a subject they have little knowledge of.

[2] This has been borne out by our consultations both with the three South Australian universities and the Australian Council for Private Education and Training.

sustained relationships, possibly even including collaboration in course delivery (Cram & Watson 2008). The development of joint or nested qualifications is a way forward.

There are also competing educational philosophies. For example, universities assess learning outcomes through graded assessment and VET students demonstrate the acquisition of competency, based on units of competency in training packages and endorsed assessment guidelines. The issue of grading in VET is contested ground (Guthrie 2009), but it denies universities and employers alike any information of the relative merit of individuals.

Also, higher education curriculum is developed separately by individual university faculties. This increases the complexity of negotiating articulation and credit transfer arrangements.

A credit matrix developed by the Victorian Registration and Qualifications Authority aimed at providing a common way of describing and comparing learning outcomes across senior secondary, VET and higher education courses. It describes the complexity (or 'level') of learning outcomes and the volume of learning in the component units of courses and qualifications. Whether this matrix is successful in promoting credit transfer remains to be seen.

Another relevant initiative is the development of cross-over qualifications. Our consultations with the University of Adelaide brought to light a new Associate Degree in Electronics Engineering which has been jointly developed and will be offered by TAFE. It will give significant credit in the Bachelor of Electronic Engineering program, but will require that individuals taking it perform sufficiently well to gain access to this latter award. Shreeve (2009) points out that 'Foundation degrees' in the United Kingdom (equivalent to the first two years of a bachelor degree) are largely delivered by further education colleges and offer a 'cross over' level qualification between VET and higher education. He suggests this model is worth considering in Australia if we are to increase articulation into higher education. However, such an approach does not fit particularly well with training package qualifications, which are developed with a vocational outcome in mind, and articulation is not therefore an overriding consideration. Nevertheless, the National Quality Council's recent report (2009) deemed it would be valuable if training packages drew more attention to articulation pathways.

Finally, it is worth noting that articulation and credit transfer issues are receiving much attention nationally. The Australian Qualifications Framework Council (2009) is examining how the AQF can support a more seamless and easily navigable tertiary sector, with one focus being to facilitate pathways, including credit transfer and articulation. In addition, the (then) Deputy Prime Minister commissioned the AQF Council to 'improve the articulation and connectivity between the university and the VET sectors to enable competency-based and merit-based systems to become more student-focussed'. The approaches proposed by the AQF Council (that have now been endorsed) include an AQF qualifications pathways policy (AQF 2011). The purpose of this policy is to maximise credit for learning already undertaken by students. This involves ensuring that policies and processes mean that pathways into and between qualifications are available for all students. Institutions issuing credit have certain obligations in this regard, which include, for example, recognition of learning, regardless of when, how and where it was acquired (provided of course that it is relevant and current).

Recognition of prior learning

Recognition of prior learning (RPL) is often confused with credit transfer. It means recognition of competencies currently held, regardless of how, when or where the learning occurred, so that they may be counted towards the achievement of a qualification. These competencies may be attained in a number of ways, including through any combination of formal or informal training and education, work or general life experience. Recognition of prior learning normally occurs

before actual tuition begins, but in some instances the recognition process takes place after enrolment and commencement of the training program—when it becomes clear that the person has the required knowledge and skills and does not need to undertake the entire subject/course. This type of recognition is not counted as recognition in the VET statistics, which show that 4.9% of all subject enrolments in Australia were by recognition of prior learning in 2008 (table A5 in the appendix).

The data further show that students in education have by far the highest proportion of recognition of prior learning subject enrolments (9.5% overall), particularly at diploma and above (9.7%) or certificate IV level (11.5%). By qualification level the highest proportion of recognition of prior learning is not surprisingly at certificate IV (8.4%) and diploma and above (8.0%). Data from the Graduate Pathways Survey (Coates & Edwards 2009) indicate also that it is education graduates from university with a low average overall grade score who are most likely to undertake VET studies within five years of graduating.

There has been a substantial effort to try to increase the numbers attaining recognition of prior learning through the COAG Recognition of Prior Learning Program. Initiatives have included developing and adopting more contemporary and innovative practices; training and supporting assessors; addressing some of the systemic issues and blockers, such as funding approaches and administrative and other processes; and generally raising the awareness of key parties, including employers and potential candidates. What is needed is good practice throughout the recognition 'supply chain'. This includes providing potential recognition candidates with the information they need, ensuring that registered training organisations respond appropriately to enquiries, providing leadership in this area and embedding and improving the knowledge of recognition of prior learning of Australian Quality Training Framework auditors.

Recognition of prior learning and its use in assisting learning pathways can be affected by perceptions of its credibility. On the one hand it is supported as a way of giving individuals their entitlements but at other times it is condemned as one of the mechanisms that may be used to accelerate people with unreasonable haste—with the consequent effect on the credibility of those awards or the providers that awarded them. This, in turn, may affect the extent to which such awards are seen as a 'negotiable commodity' for articulation and credit transfer purposes. It might also affect their credibility with employers if they doubt that those seeking employment have the competencies and experience required to perform work at the expected standard.

Possible improvements to increase effectiveness

There seems to be a mood in all the sectors to try to work in an increasingly collaborative way to open up and smooth inter- and intra-sectoral pathways and articulation arrangements. The first suggestion is to concentrate on those pathways which large numbers of people take rather than worry about theoretical pathways of little real importance. For the pathways that matter, points to consider include:

- ensuring the funding and support for particular pathways is adequate, including possible supplementary funding for disadvantaged students, to ensure good outcomes for those taking them
- ensuring that funding mechanisms—such as targets and quotas—are not restricting the flow of students
- considering the introduction of grading for the VET programs that are part of pathways to higher education
- developing joint or nested awards, and dual awards. Cross-over degrees or foundation degrees are worth considering.

In addition, there are other actions of a more generic nature to be considered, including:

- developing better approaches to providing the advice individuals need to help them select and access pathways. This advice needs to be relevant, person-appropriate and readily available at critical times
- evaluating the effectiveness of pathways and initiatives routinely. It is especially important that the value of a pathway is considered, not just in the immediate but over a longer term
- utilising the available data better, and supplementing it as appropriate, to help understand the way pathways are actually used by different groups.

Finally, if there is consideration of moving toward an entitlement model we suggest that horizontal (skills broadening) as well as vertical (only qualifications at a higher level) pathways need to be considered, with the caveat that outcomes need to be worthwhile and churning avoided. Also, any move to an entitlement model implies that some sort of unique student identifier would be essential. A unique identifier has huge advantages for monitoring flows along paths and for evaluating outcomes. The introduction of a unique student identifier is now on the agenda for the VET sector at least.

References

ABS (Australian Bureau of Statistics) 2010, *Survey of Education and Work, May 2010*, cat.no.6227.0, Canberra.

AQF (Australian Qualifications Framework) 2011, *The Australian Qualification Framework*, viewed January 2011, <hhtp://www.aqf.edu.au>.

AQF (Australian Qualifications Framework) Council 2009, *Strengthening the AQF: a proposal*, Adelaide.

Australian Productivity Commission 2010, *Impacts and benefits of COAG reforms: reporting framewo*rk, Productivity Commission, Canberra.

Blythe, A & Bowman, K 2005, *Employers and qualifications: at a glance*, NCVER, Adelaide.

Coates H & Edwards D 2009, *The 2008 Graduate Pathways Survey: graduates' education and employment outcomes five years after completion of a bachelor degree at an Australian university*, report to the Department of Education, Employment and Workplace Relations, Canberra.

Council of Australian Governments 2008, *National Education Agreement*, viewed January 2011, <http://www.coag.gov.au>.

——2009 *Council of Australian Governments meeting, April 2009*, viewed January 2011 <http://www.coag.gov.au>.

Cram, B & Watson, L 2008, 'Managing credit transfer from TAFE to university: the case for cross-sectoral collaboration', 11th Australian Vocational Education and Training Research Association Conference, Adelaide, viewed August 2009, <http://www.avetra.org.au/AVETRA%20WORK%2011.04.08/CS2.2%20-%20Barbara%20Cram%20&%20Louise%20Watson.pdf>.

Curtis, D 2009, *Student transfer: at a glance*, NCVER, Adelaide.

Guthrie, H 2009, *Competence and competency-based training: what the literature says*, NCVER, Adelaide.

Harris, R, Rainey, L & Sumner, R 2006, *Crazy paving or stepping stones? Learning pathways within and between vocational education and training and higher education*, NCVER, Adelaide.

Hoeckel, K, Field, S, Justesen, T & Kim, M 2008, *Learning for jobs: OECD reviews of vocational education and training, Australia*, OECD, Paris.

Karmel, T & Nguyen, N 2007, *The value of completing a vocational education and training qualification*, NCVER, Adelaide.

Karmel, T, Mlotkowski, P & Awodeyi, T 2008, *Is VET vocational? The relevance of training to the occupations of vocational education and training graduates*, NCVER, Adelaide.

Long, M & Shah, C 2008, *Private returns to vocational education and training qualifications,* NCVER, Adelaide.

McMillan, J 2009, *University study in Australia: persistence, completion and beyond*, LSAY briefing paper no.18, Australian Council for Educational Research (ACER), Melbourne.

Martin, B 2007, *Skill acquisition and use across the life course: current trends, future prospects*, NCVER, Adelaide.

NCVER (National Centre for Vocational Education Research) 2008a, *Australian vocational education and training statistics: employers' use and views of the VET system 2007*, NCVER, Adelaide.

——2008b, *Australian vocational education and training statistics: student outcomes 2008*, NCVER, Adelaide.

National Quality Council, 2009, *VET training products for the 21st century: final report of the Joint Steering Committee of the NQC and the COAG Skills and Workforce Development Subgroup*, National Quality Council, Melbourne.

Parliament of Victoria 2009, Inquiry into Geographical Differences in the Rate in which Victorian Students Participate in Higher Education, final report, Melbourne, Education and Training Committee, Parliament of Victoria.

Phillips KPA 2006, *Articulation within VET and between VET and higher education, paper for roundtable discussions*, Melbourne, Phillips KPA.

Productivity Commission 2010, *Impacts and benefits of COAG reforms: reporting framewo*rk, Productivity Commission, Canberra.

Rainey, L, Simons, M, Pudney, V & Hughes, E 2008, *What choice? An evaluation of career development services for young people*, NCVER, Adelaide.

Shreeve, R 2009, *Some ideas from England: a practitioner's perspective*, NCVER, Adelaide.

Training and Skills Commission, 2009, *Skills for jobs: priorities for developing South Australia's workforce*, Training and Skills Commission, Adelaide.

Young, I 2006, 'Articulation at Swinburne University of Technology: intersectoral in our approach', Business Higher Education Round Table Symposium, *Bridging the gap*, Melbourne, 18 May.

——2007, *Building better pathways to higher education*, Melbourne, Swinburne University, viewed August 2009, <http://www.swinburne.edu.au/corporate/marketing/mediacentre/core/content/pathways.pdf>.

Appendix: additional data tables

Table A1 Number of possible and active training packages Australia, 2009

Qualification level	Active	Possible	%
Graduate diploma/certificate	2	3	66.7
Advanced diploma	108	118	91.5
Diploma	264	299	88.3
Certificate IV	390	439	88.8
Certificate III	551	616	89.4
Certificate II	287	328	87.5
Certificate I	77	86	89.5
Total	**1679**	**1889**	**88.9**

Note: Active implies at least one course enrolment in training package in 2009. Number of possible training packages is derived from all training packages found in the 2009 National VET Provider Collection. This may not include superseded training packages with any activity.

Source: NCVER's National VET Provider Collection (2009).

Table A2 Domestic students commencing a course at bachelor level or below by basis of admission, 2009

	Secondary school	Higher education	Mature-age special entry	TAFE+ professional	Other	Not stated	Total
Bachelor level	48.0	24.2	6.0	10.4	9.9	1.4	100.0
Advanced diploma/associate degree	29.4	24.8	5.5	14.0	25.3	1.0	100.0
Diploma	57.2	12.1	8.8	4.6	16.8	0.5	100.0
Other undergraduate	11.0	65.4	7.2	5.9	9.3	1.3	100.0
Enabling course	11.3	2.8	26.7	4.1	54.3	0.7	100.0
Non-award courses	15.0	42.1	1.2	2.0	39.0	0.6	100.0
Total (%)	**44.7**	**23.5**	**7.0**	**9.8**	**13.7**	**1.3**	**100.0**
Total (no.)	**10 0156**	**52 615**	**15 665**	**21 972**	**30 775**	**3 024**	**224 207**

Source: Department of Education, Employment and Workplace Relations Higher Education Collection (2009).

Table A3 Further study participation by institution type (year five)

University type	Short training course	Vocational certificate or diploma	Undergraduate degree or diploma	Postgraduate degree, certificate or diploma	Total further study (%)
Group of Eight (Go8)	11	5	3	25	44
Australian Technology Network of Universities	12	5	4	16	37
Innovative Research Universities	9	4	4	22	39
Regional	15	6	3	19	43
Metropolitan	12	6	3	19	40

Source: Coates and Edwards (2009)

Table A4 Further study participation by field of education and average grade (year five)

	Average overall grade	Short training course	Vocational certificate or diploma	Under-graduate degree or diploma	Post-graduate degree, certificate or diploma	Total further study (%)
Natural and physical sciences	Low	15			30	45
	Higher	9	4	3	29	45
Information technology	Low	11		4	12	27
	Higher	15	4	4	14	37
Engineering and related technologies	Low	10	6		6	22
	Higher	18	2	4	19	43
Architecture and building	Low			16	6	22
	Higher	12	4	3	8	27
Agriculture and environmental studies	Low	26	6		32	64
	Higher	14	6	2	23	45
Health	Low	8	8	4	15	35
	Higher	13	8	4	23	58
Education	Low	13	18		14	45
	Higher	10	5	3	12	30
Management and commerce	Low	10	6	10	26	52
	Higher	13	6	3	18	40
Society and culture	Low	6	9	6	26	47
	Higher	9	5	3	27	44
Creative arts	Low	6	6	19	8	39
	Higher	8	6	4	18	36
Total	**Low**	**10**	**7**	**5**	**21**	**43**
	Higher	**11**	**5**	**3**	**21**	**40**

Source: Coates and Edwards (2009).

Table A5 Recognition of prior learning as a proportion of all subject enrolments by subject field of education and qualification level for Australia 2009 (%)

	Dip. or higher	Cert. IV	Cert. III	Cert. II	Cert. I	Non-AQF qual.	Other	Total
Natural and physical sciences	7.8	4.7	6.1	1.9	0.8	0.3	5.3	4.0
Information technology	3.9	2.2	1.2	1.9	1.0	0.3	0.6	2.4
Engineering and related technologies	6.8	14.4	5.5	4.6	1.7	0.5	2.0	5.3
Architecture and building	5.8	7.0	5.2	1.0	1.3	1.7	2.9	4.8
Agriculture, environmental and related studies	12.0	9.9	5.4	2.4	2.1	0.2	4.9	4.4
Health	7.1	7.9	5.4	2.6	1.9	0.8	2.2	4.9
Education	9.7	11.5	3.5	3.5	0.0	0.7	2.8	9.5
Management and commerce	8.8	8.1	4.8	2.5	1.1	1.1	2.1	5.7
Society and culture	9.6	8.6	3.5	1.2	0.2	0.3	3.0	5.0
Creative arts	5.5	2.5	2.4	2.0	1.0	0.6	0.9	3.1
Food, hospitality and personal services	5.1	7.8	3.5	0.7	0.5	5.0	0.8	3.4
Mixed field programmes	10.9	9.5	5.7	2.8	0.7	0.4	2.7	4.1
Total	**8.0**	**8.4**	**4.9**	**2.6**	**0.9**	**0.8**	**2.3**	**4.9**

Source: NCVER's National VET Provider Collection (2009).

National Centre for Vocational Education Research Ltd
Level 11, 33 King William Street, Adelaide, South Australia
PO Box 8288, Station Arcade, SA 5000 Australia

Telephone +61 8 8230 8400 Facsimile +61 8 8212 3436
Website www.ncver.edu.au Email ncver@ncver.edu.au